

**Shearon Harris Nuclear Power Plant Units 2 and 3
COL Application
Part 2, Final Safety Analysis Report**

Appendix 2BB

Soil Borehole and Rock Core Logs

The following borehole logs advanced at the PEC COLA site are presented herein:

- BPA-series boreholes located under and adjacent to the planned AP1000 structures (BPA-1 through 50).
- BGA-series boreholes at locations supporting subsurface characterization away from the planned AP1000 structures (BGA-1 through BGA-18).
- BCTA-series boreholes at the planned cooling towers (BCTA-1 through BCTA-8).
- BCA-series boreholes at planned conveyance lines (BCA-1 through BCA-7).

Borehole locations are reported with NAD 27 coordinates, and elevations are reported relative to the NGVD 29 datum. These systems were selected for consistency with survey data for HNP Unit 1.

The degree of weathering indicated on the borehole logs is based on criteria in a 1981 publication by the International Society of Rock Mechanics (ISRM) titled *Suggested Methods for the Quantitative Description of Discontinuities in Rock Masses* edited by E.T. Brown, published by Pergamon Press, Oxford, UK. These weathering criteria were applied to rock at the PEC COLA site to provide conservative estimates of rock mass strength and rating required for foundation bearing capacity and settlement analyses. As such, the existing condition of the rock mass was emphasized, regardless of the processes and mechanisms that produced the current condition from geological perspective. For example, clay seams and very weak rock seams were considered indicative of a moderately or highly weathered rock mass, even if such intervals may not have “decomposed and/or disintegrated” to this condition from previously sound rock. Where information on clay seams or rock strength was considered inconclusive, a conservative degree of weathering was assigned.

This approach to assigning the degree of rock weathering has resulted in more conservative weathering descriptions than would be obtained by a literal geological interpretation of weathering (i.e., based on evidence of staining or degradation of the rock mass from previously more sound condition). However, the approach used is considered conservative and appropriate to characterize the engineering behavior of the rock mass to support safety-related structures.



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-1

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686804.8 N, 2012129.3 E)

ELEVATION : 261.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood/M. Mosely, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 3.3 ft bgs

START : 4/20/06 13:29

END : 4/21/06 11:55

LOGGER : DT/JS

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)							DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE		6"-6"-6" (N)						
261.3	0.0						Clay (CL) 0.0-1.0' - brown, mottled, moist, hard, fine grained, low plasticity, slow dilatancy, v		PT-1 collected 3.0-5.0'	
		12.0	SS1SS	11-9-50/1 (59/7")						
	2.0									
	2.5									
		11.0	SS2SS	19-50/5 (50/5")						
5 256.3							Clay (CL) 2.5-3.5' - brown, mottled, moist, hard, fine grained, low plasticity, slow dilatancy, trace coarse gravel			
	2.5									
	4.5									
	5.0									
		3.0	SS3SS	50/3 (50/3")						Drillers Remark: soft from 5.0-7.0'
10 251.3							Clayey Sand (SC) 5.0-5.3' - gray, moist, very dense, very fine to medium grained, weakly cemented, 40-45% fines			
	7.0									
	7.5									
		4.0	SS4SS	50/4 (50/4")						PT-2 collected 7.0-9.0' Offset: 4.2' S59W of BPA-1 Lab Results USCS: SC
	9.5									
15 246.3							Clayey Sand (SC) 7.5-7.8' - gray, moist, very dense, very fine to medium grained, subangular to rounded, weakly cemented, 25% fines			
	10.0									
		4.0	SS5SS	50/4 (50/4")						
	12.0									Drillers Remark: Harder drilling beginning at 11.5'
	12.5	3.0	SS6SS	50/3 (50/3")						Soil sampling completed at 15:15 on 4/20/06
20	12.8						Clay (CL) 12.5-12.8' - reddish brown, very hard Begin Rock Coring at 12.8 ft bgs See the next sheet for the rock core log			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-1

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686804.8 N, 2012129.3 E)

ELEVATION : 261.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood/M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

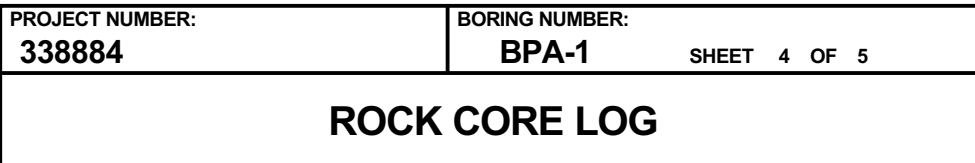
WATER LEVELS : 3.3 ft bgs

START : 4/20/06 13:29

END : 4/21/06 11:55

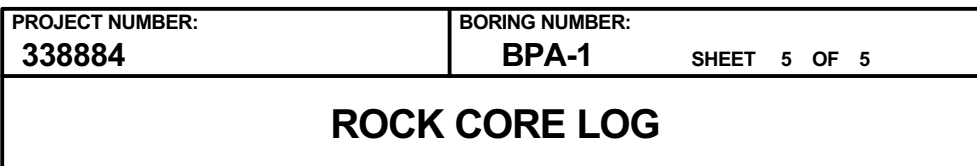
LOGGER : DT/JS

WATER LEVEL: 33.93		START: 4/20/06 15:36		END: 4/20/06 17:00		LOGGERS: D7/00		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15 246.3 <								



LOGGER : DT/JS

Rev. 0



LOCATION : (NAD 27) (686804.8 N, 2012129.3 E)

DRILLING CONTRACTOR : R. Norwood/M. Mosely, S&ME

ORIENTATION : Vertical

LOGGER : DT/JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-2

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	PP (TSF)	COMMENTS	
		RECOVERY (in)				SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE		6"-6"-6"-6" (N)							
259.7	0.0	14.0	SS1SS	2-4-5-9 (9)	Silt (ML) 0.0-0.7' - dark reddish brown, moist, medium dense, possibly reworked native material Silty Sand (SM) 0.7-1.2' - light brownish gray, dry to moist, very loose, possible fill material			2.0			
	2.0										
	2.5	15.0	SS2SS	6-32-50/3 (82/9")	Silty Sand (SM) 2.5-3.8' - light brownish gray, dry to moist, very loose, very fine to fine grained, possible fill material						
	4.5										
5											
254.7	5.0	4.0	SS3SS	50/4 (50/4")	Silty Sand (SM) 5.0-5.3' - light brownish gray, dry to moist, very dense, fine grained, friable						
	7.0										
	7.5	10.0	SS4SS	32-29-21-21 (50)	Clay (CL) 7.5-8.4' - dark reddish brown, moist, dense, fine grained, becoming lithified						
	9.5										
10											
249.7	10.0	5.0	SS5SS	50/5 (50/5")	Silt (ML) 10.0-10.5' - dark reddish brown, dry to moist, dense, fine grained, some black mottling				PT-1 collected 11.0-13.0' Offset: 6.3' S35E of BPA-2 Lab Results USCS: SC		
	12.0										
	12.5	6.0	SS6SS	12-50/5 (50/5")	Silt (ML) 12.5-13.0' - dark reddish brown, dry to moist, dense, fine grained, some black mottling						
	14.5										
15											
244.7	15.0	11.0	SS7SS	13-50/5 (50/5")	Silt (ML) 15.0-16.0' - dark reddish brown, dry to moist, dense, fine grained, some black mottling						
	17.0										
	17.5	2.0	SS8SS	50/2 (50/2")	Silt (ML) 17.5-17.7' - dark reddish brown, dry to moist, dense, fine grained, nonplastic to low plasticity, some black mottling Begin Rock Coring at 17.7 ft bgs See the next sheet for the rock core log				Soil sampling completed at 15:35 on 6/30/06		
	17.7										
20											



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-2

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
17.7	R1NQ 2.3 ft 100%	0	0		x x x	Siltstone 17.7-22.0' - dark reddish brown, fine grained, very soft, highly weathered	Rock coring began at 10:45 on 7/5/06 R1: 10:45-10:53 on 07/05/06 At 17.7-20.0': R-Scale = R0
20			0		x x x		
239.7	20.0		1		x x x		
			0		x x x		
			0		x x x		
	R2NQ 5 ft 100%	0	0		x x x		R2: 11:00-11:12 At 20.0-25.0': R-Scale = R0-R1 SC-1 collected 21.3-22.4'
			1	23.5' - Fracture, 60 deg, rough, undulating, black staining	x x x		
25			1	24.2-24.4' - Fracture, 60 deg, rough, undulating, black staining	x x x		
234.7	25.0		10+	25.6-25.9' - Fracture zone, friable material	x x x		R3: 11:15-11:28
			10+	26.2-26.4' - Fracture zone, dark purple, baked zone	x x x	26.2-26.4' - dark purple, soil-like	At 25.0-31.0': R-Scale = R0-R1
	R3NQ 5 ft 100%	0	10+	26.4' - Fracture, 50 deg, slickensided, planar	x x x	Siltstone At 26.4' - dark reddish brown, fine grained, very soft	
			10+	26.7' - Fracture, rough, undulating, slickensided	x x x	26.4-31.0' - highly weathered, fractured rock, soil-like areas, more competent at bottom	
			1	27.1' - Fracture, rough, undulating, slickensided	x x x		
			10+	27.3' - Fracture, rough, undulating, slickensided	x x x	29.0' - blue-green mottling	
30			10+	28.4' - Fracture, 50 deg, rough, undulating, yellow staining, slickensided	x x x		
229.7	30.0		10+	28.8-29.5' - Fracture, vertical and 50 deg, slickensided	x x x	31.0-45.6' - fresh	R4: 11:39-12:05
			2	29.8' - Fracture, 30 deg and 50 deg, slickensided, planar	x x x	31.0-33.2' - numerous clay clasts, 5% white speckles	
	R4NQ 5 ft 100%	70	0	30.0-31.0' - Fracture, 60 deg, rough, undulating, heavily fractured at bottom	x x x		At 32.3': R-Scale = R3
			0	31.4' - Fracture, rough, undulating, slickensided, rough v notch	x x x		
			0	31.8' - Fracture, 20 deg, rough, undulating, dark staining	x x x		
			1	33.1-35.0' - Fracture zone, 65 deg, numerous existing cracks at 65 deg	x x x	34.0' - blue-green mottling	
35			2	35.3' - Fracture, 30 deg, slickensided, undulating	x x x		R5: 12:35-13:00
224.7	35.0		2	35.8' - Fracture, horizontal and 50 deg, slickensided, undulating	x x x		
	R5NQ 5 ft	70	0	36.3' - Fracture, 50 deg, slickensided, undulating	x x x	36.6-37.0' - blue-green mottling, clay clasts	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-2

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

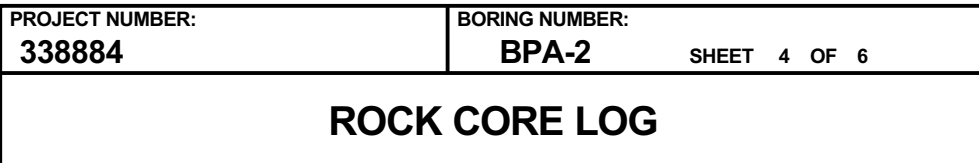
WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
40 219.7	92% 40.0		2	36.5' - Fracture, 40 deg, slickensided, undulating, opposite direction of above fractures	x x x	38.5-38.9' - blue-green mottling, clay clasts 39.0-40.0' - trace very fine to fine sand	At 38.7': R-Scale = R1
			0	38.0-38.3' - Fracture, 60 deg, slickensided, undulating, same direction as first few	x x x		
				38.3-38.5' - Fracture, 60 deg, slickensided, undulating, opposite direction as above (same as 36.5') so wedge of 120 deg	x x x		
			2	40.5-42.0' - Fracture, vertical, rough, undulating	x x x	40.0-45.0' - very fine to fine sand	R6: 13:08-13:40
			2		x x x		
			0		x x x		
	R6NQ 5 ft 108%	74	0		x x x	43.5-44.3' - heavily mottled	At 43.1': R-Scale = R3 SC-2 collected 43.5-44.6'
			0		x x x		
			0		x x x		
45 214.7	45.0		0		x x x	45.0-45.6' - very soft to soft, grades to sandstone	R7: 13:45-14:25
			3	46.0-46.4' - Fractures, 60 deg and horizontal, rough, undulating, to smooth and undulating	x x x		
			1	47.0' - Fracture, horizontal, rough, undulating	x x x		
	R7NQ 5 ft 100%	100	0	48.0' - Fracture, 10 deg, rough, undulating	x x x	47.2-48.0' - white and very dark gray, soft to hard, very fine sand, fresh	At 48.5': R-Scale = R3
			0		x x x		
			0		x x x		
50 209.7	50.0		1	50.7' - Fracture, 30 deg, rough, slickensided	x x x	48.0-49.3' - dark reddish brown, very soft to soft, fresh	R8: 14:37-15:03
			2	51.0-51.8' - Fracture (2), horizontal and vertical, rough, undulating, tightly healed at 51.45-51.75'	x x x		
			2	52.4' - Fracture, 15 deg, rough, slickensided	x x x		
			4	52.7' - Fracture, 15 deg, rough, slickensided	x x x	49.3-49.9' - white and very dark gray, mottled greenish gray and reddish black, soft to hard, very fine sand, fresh, some laminations	At 52.3': R-Scale = R2-R3
	R8NQ 5 ft 100%	88	1	53.3-53.6' - Fracture (1), vertical, rough, undulating, slickensided, smooth	x x x		
			1	54.9' - Fracture, horizontal, rough, undulating	x x x		
55 204.7	55.0		1	55.8' - Fracture, horizontal and 20 deg, rough, undulating	x x x	55.5-55.8' - bedding on 45 degree angle	R9: 15:10-15:30
			3	56.0-56.2' - Fracture (2), horizontal and 45 deg, slickensided, undulating	x x x		
			0	56.8' - Fracture, horizontal, slickensided, undulating, smooth	x x x		
	R9NQ 5 ft	72	0		x x x	56.8' - large greenish gray mottle, 0.1' thick, throughout width of core	At 57.3': R-Scale = R3
					x x x		
					x x x		



LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JF/LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-2

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

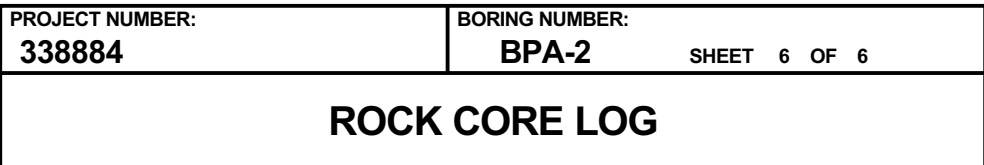
WATER LEVELS : 8.6 ft bgs

START : 6/30/06 13:25

END : 7/6/06 11:00

LOGGER : JF/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
	94%		0		x	Siltstone At 78.2' - very dusky red to dark reddish brown, mottled blue gray and dark purple, very soft to soft, fresh	At 78.2': R-Scale = R1
80	80.0		0		x		
179.7					x		R14: 08:50-09:12
			0		x		
			0		x		
	R14NQ 5 ft 106%	86	0		x		At 82.3': R-Scale = R3-R4
			1		x		
			3	83.9' - Fracture, 10 deg, rough, undulating	x		
85	85.0			84.4-85.0' - Fracture, 70 deg and 80 deg, healed fracture, quartz infilling	x		
174.7				85.0-85.6' - Fracture, vertical, rough, undulating, trace white 1-2 mm speckles, clay seam	x		
			2	85.4' - Fracture, vertical, rough, undulating, trace white 1-2 mm speckles	x	85.0-96.8'	R15: 09:17-09:45
			1		x		
	R15NQ 5 ft 100%	80	1	87.5-87.7' - Fracture, 60 deg, rough, undulating	x		At 87.2': R-Scale = R3
			0		x		
			0		x		
90	90.0		0		x		R16: 09:50-10:16
169.7			0		x		
			0		x		
	R16NQ 5 ft 100%	100	0		x		At 93.1': R-Scale = R3
			1	93.6' - Fracture, 30 deg, slickensided, undulating	x		
			0		x	95.6-96.1' - trace very fine to fine sand 96.3-96.4' - trace very fine to fine sand 96.8-97.5' - blue green, dark purple, and reddish black mottling	R17: 10:20-10:50
95	95.0		0		x		
164.7			0		x		
			0		x		At 98.7': R-Scale = R5
	R17NQ 5 ft	100	0		x		



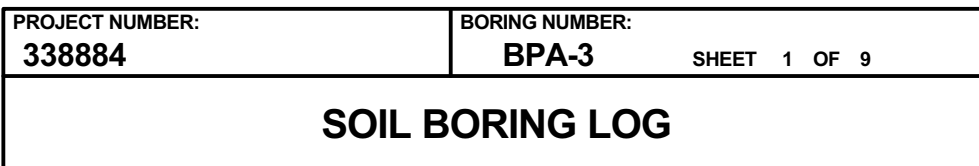
LOCATION : (NAD 27) (686894.0 N, 2012134.4 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

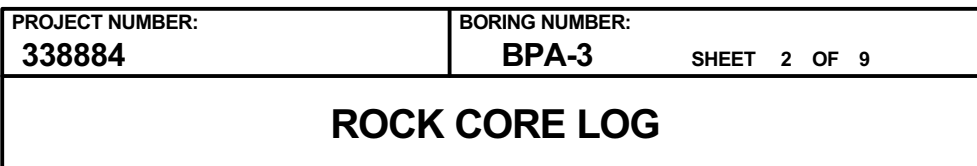
LOGGER : JF/LH

Rev. 0



LOGGER : LH

Rev. 0



LOGGER : LH

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ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges. S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

WATER LEVEL: 23.2 TDS		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
25 235.6	24.2		0				Conglomeratic Sandstone At 20.3' - white and dark gray, soft, fine sand to medium gravel, subangular to rounded, poorly sorted, fresh, coarsens with depth 24.2-28.5' - dark greenish gray fine to medium gravel	R6: 14:02-14:10 At 24.9': R-Scale = R3 At 26.8': R-Scale = R3		
	R6NQ 5 ft 104%		0							
			0							
			0							
			0							
30 230.6	29.2		2	28.5' - Contact between siltstone and sandstone, 45 deg, tightly healed			Siltstone 28.5-29.2' - dark reddish brown, mottled greenish gray, very soft to soft, fresh Conglomeratic Sandstone 29.2-29.8' - white and dark gray, soft, fine sand to medium gravel, subangular to rounded, poorly sorted, fresh, coarsens with depth Siltstone 29.8-30.4' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds Sandstone 30.4-30.7' - fresh, on 45 degree angle, <0.07' thick Siltstone 30.7-31.1' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds Sandstone 31.1-31.2' - fresh, on 45 degree angle, <0.07' thick Siltstone 31.2-31.3' - dark reddish brown, heavily mottled greenish gray and reddish black, very soft to soft, some laminated beds 31.2-31.3' - fresh 31.3-34.8' - slightly weathered 31.7-31.8' - clay seam, very soft, friable material 33.6-33.7' - clay seam, very soft, friable material 34.2-34.8' - almost all of core is mottled reddish black with small greenish gray mottles encircled by reddish black 34.8-48.1' - fresh	R7: 14:16-14:25 At 29.5': R-Scale = R4 At 29.8-31.7': R-Scale = R2 At 31.7-31.9': R-Scale = R1 At 32.4': R-Scale = R3-R4 At 33.5-34.2': R-Scale = R0 At 34.2-34.8': R-Scale = R1 R8: 14:30-14:40 At 35.1': R-Scale = R3-R4 At 37.2': R-Scale = R3-R4 R9: 14:48-15:00 At 40.1': R-Scale = R3.5		
		0	28.7-29.1' - Fractures (2), 45 deg, slickensided, undulating							
		4	29.8' - Contact between siltstone and sandstone, 45 deg, tightly healed							
	R7NQ 5 ft 98%	86	10+	30.4-30.5' - Fractures (2), horizontal, rough, undulating, sandstone lense runs 45 deg of fractures						
			1	30.9' - Fracture, horizontal, rough, undulating						
			1	31.1' - Fracture, 30 deg, rough, undulating						
	35 225.6	34.2		1	31.2' - Fracture, horizontal, rough, undulating					
				1	31.3-31.4' - Fracture zone, rough, undulating, siltstone, very soft					
				1	32.6' - Fracture, horizontal, smooth, planar, greenish gray in fracture					
				1	33.5' - Fracture, horizontal, smooth, planar					
R8NQ 5 ft 98%			10+	34.4-34.6' - Fracture zone, horizontal, rough, undulating, clay seams, very soft, friable material						
			0	34.8' - Fracture, horizontal, rough, planar						
			0							
			0							
			0							
			0							
40 220.6	39.2		0							
	R9NQ 5 ft 97%		0							
			0							
			0							
			0							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

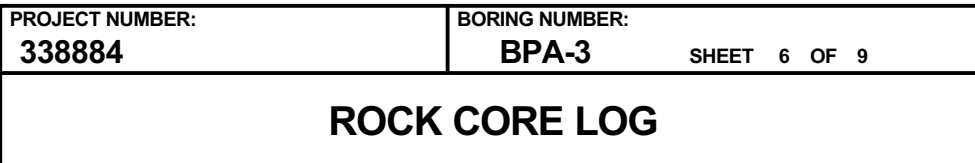
WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
65 195.6	64.2	R14NQ 5 ft 100%	100	0	62.7' - Contact between siltstone and sandstone, 30 deg, tightly healed 62.8' - Fracture, 30 deg, rough, planar 62.9' - Fracture, 30 deg, smooth, planar, greenish gray mottle on upper side of fracture	XXXXXX XXXXXX			



LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
105 155.6	104.2	R22NQ 5 ft 94%	94	0			At 103.3': R-Scale = R3-R4	
	0			104.0-104.2' - mottled reddish black			R22: 13:25-13:40	
	0			104.2-106.8' - becomes coarser with depth, 30% very fine to medium sand			At 104.8': R-Scale = R3-R4	
	0							
	0							
110 150.6	109.2	R23NQ 4.8 ft 100%	77	0			At 107.2': R-Scale = R3-R4	
	1			106.8' - Contact between siltstone and sandstone, 45-40 deg, slightly convoluted				
	2			109.3' - Fracture, 10 deg, rough, undulating			R23: 13:55-14:12	
	10+			109.9' - Contact between sandstones, between sandstone beds			At 110.0': R-Scale = R3-R4	
	10+			110.4' - Contact between siltstone and sandstone, gradual but abrupt as above				
115 145.6	114.0	R24NQ 5.2 ft 100%	100	1			SC-4 collected 113.0-114.0'	
	0			110.8' - Fracture, horizontal, smooth, planar			R24: 14:18-14:35	
	0							
	0							
	0							
120 140.6	119.2	R25NQ 5 ft 100%	92	0				
	1			118.8-119.1' - Fracture, 45 deg, tightly healed			R25: 14:42-14:54	
	2			120.0' - Fracture, horizontal, rough, undulating				
	0			120.5' - Fracture, horizontal, rough, planar			At 120.9': R-Scale = R4	
	1			120.8' - Fracture, horizontal, rough, undulating				
							At 122.6': R-Scale = R3-R4	

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12

LOGGER : LH

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686836.6 N, 2012199.0 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 29.2 ft bgs

START : 6/18/06 08:30

END : 6/20/06 09:12


LOGGER : LH

WATER LEVEL: 29.2 RGS		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
145 115.6	144.2		0	146.3' - Contact between siltstone and sandstone 146.6-146.7' - Fractures (3), horizontal and vertical, rough, undulating 147.3-147.6' - Fractures (4), horizontal and vertical, rough, undulating	<div><div>Siltstone 144.2-145.6' - dark reddish brown, mottled reddish black and greenish gray, soft, laminated bedding, fresh, some beds mottled reddish black, 10-40% very fine sand, transition zone to sandstone</div><div>Sandstone 145.6-146.3' - dark reddish brown and gray, mottled reddish black, soft to hard, laminated bedding, very fine sand, fresh, 0-40% silt, bedding is partially horizontal and partially convoluted</div><div>Siltstone At 146.3' - dark reddish brown, mottled reddish black and greenish gray, soft, laminated bedding, up to 40% very fine sand 146.3-150.1' - fresh 150.1-153.1' - very dark greenish gray and dark gray, mottled reddish black, very soft in fracture zones 150.1-150.5' - clay seam, very soft and 0.02-0.05' thick; alternates with siltstone 150.5-151.5' - 0.02-0.08' thick clay seams, very soft, friable material, fractured 150.1-153.6' - slightly weathered 153.1-153.6' - 0.01-0.05' thick clay seams, very soft, friable material 153.1-159.2' - dark reddish brown, mottled reddish black, greenish gray, and trace olive, very soft to soft 153.6-159.2' - fresh</div><div>157.6-159.2' - 20-40% sand</div></div>	At 143.4': R-Scale = R4		
		0				R30: 07:54-08:11 on 06/20/06		
		0				At 145.4': R-Scale = R3-R4		
		3						
		4						
		0				At 148.3': R-Scale = R3-R4		
		1				R31: 08:19-08:39		
		10+				At 150.0': R-Scale = R3-R4 At 150.1-150.9': R-Scale = R0 - R1		
		10+				At 152.0': R-Scale = R3-R4		
		10+				At 153.1-153.6': R-Scale = R0 - R1 At 153.8': R-Scale = R4 R32: 08:51-09:12		
155 105.6	154.2		0					
			0					
			0			At 157.2': R-Scale = R3-R4 At 158.8': R-Scale = R3-R4 First water level = 29.2' bgs taken 6/20/06 at 09:50 R-Scale performed after drilling on stored samples		
			0					
			0					
160 100.6	159.2		0					
					Bottom of Boring at 159.2 ft bgs on 6/20/06 09:12			



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-4</div>
SHEET 1 OF 6	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)
ELEVATION : 259.6 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer	ORIENTATION : Vertical
WATER LEVELS : 5.2 ft bgs	START : 7/6/06 14:07 END : 7/7/06 15:37 LOGGER : JF/EM

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	PP (TSF)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
		RECOVERY (in)						
259.6	0.0	10.0	SS1SS	2-3-4-50/5 (7)	Silt And Gravel (ML) 0.0-0.3' - dark reddish brown, moist, soft, moist from recent rainfall, fine grained with gravel fill Clay (CL) 0.3-0.5' - dark reddish brown and light reddish brown, moist, soft Silt (ML) 0.5-0.8' - dark reddish brown, dry, soft Silt (ML) 2.5-2.6' - dark reddish brown, dry, very hard, fine grained		1.0	ST-2 collected 2.4-4.1' Soil sampling completed at 14:30 on 7/6/06
	2.0							
	2.5	1.0	SS2SS					
	2.6			50/1 (50/1")				
5	5.0				Begin Rock Coring at 5.0 ft bgs See the next sheet for the rock core log			
254.6								
							</	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
254.6	5.0	R1NQ 5 ft 96%	87	4	5.1' - Fracture, <5 deg, rough, undulating	XXXXXX XXXXXX		



PROJECT NUMBER: 338884	BORING NUMBER: BPA-4	SHEET 3 OF 6
ROCK CORE LOG		

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)
ELEVATION : 259.6 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs	START : 7/6/06 14:07	END : 7/7/06 15:37	LOGGER : JF/EM
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
234.6	R5NQ 5 ft 100%	100	0	27.6' - Contact between siltstone and sandstone, sharp	25.0-27.2' - gray, medium sand to coarse sand	At 27.9' - very dusky red, blue-green mottling, soft, fine grained, trace very fine to fine sand 27.9-31.6' - fresh 28.9-30.0' - clay clasts (0.8 to 1.2)	R5: 16:10-16:21		
0			At 26.0': R-Scale = R1						
0			27.2-27.6' - grades to siltstone				At 27.8': R-Scale = R3		
1			At 28.9': R-Scale = R3						
1			R6: 16:25-16:42						
30 229.6	R6NQ 5 ft 100%	78	0	31.6' - Fracture, <5 deg, rough, undulating 31.7' - Fracture, <5 deg, rough, undulating 31.9' - Fracture, <5 deg, rough, undulating 32.0' - Fracture, <5 deg, rough, undulating 32.1' - Fracture, <5 deg, rough, undulating 32.2' - Fracture, <5 deg, rough, undulating 32.5' - Fracture, 10 deg, slickensided, undulating 33.7' - Fracture, 60 deg, slickensided, undulating 34.7-35.0' - Fracture, 80 deg, rough, undulating 35.0-35.2' - Fracture, 80 deg, rough, undulating 36.2-36.4' - Fracture, 30 deg, rough, undulating	31.6-32.6' - highly weathered, dark purple to reddish black 32.2-32.8' - white-pink clay clasts, 0.4 32.6-78.4' - fresh 32.8-35.0' - trace mottling	35.0-55.0' - dark reddish brown, no mottling, fine grained	R7: 16:50-17:15		
3			At 36.8': R-Scale = R2						
4									
1									
1									
1									
35 224.6	R7NQ 5 ft 100%	84	1	37.8' - Fracture, <5 deg, rough, undulating 38.3' - Fracture, <5 deg, rough, undulating 39.2' - Fracture, <5 deg, rough, undulating	40.0-46.8' - trace very fine to fine sand	41.2' - Fracture, <5 deg, rough, undulating 43.2-43.4' - Fracture, 60 deg, rough, undulating 43.4' - Fracture, <5 deg, rough, undulating, bottom truncation of above 43.9' - Fracture, <5 deg, rough, undulating	R8: 08:10-08:45 on 07/07/06 SC-2 collected 40.0-41.25'		
1			At 43.7': R-Scale = R5						
1									
1									
1									
1									
40 219.6	R8NQ 5 ft 100%	94	0						
1									
0									
3									
2									
45	45.0								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

WATER LEVELS: 3.21 DGS		START: 7/7/00 14:00		END: 7/7/00 15:37		LOGGER: JHEM	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
214.6	R9NQ 5 ft 100%	96	0	44.1' - Fracture, 60 deg, rough, undulating	x 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
194.6	R13NQ 5 ft 104%	76	0	66.6-67.3' - Fracture, 80 deg, rough, undulating 67.8' - Fracture, <10 deg, slickensided, undulating 67.8-68' - Fracture, 50 deg, slickensided, undulating	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-4

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686735.0 N, 2012207.2 E)

ELEVATION : 259.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

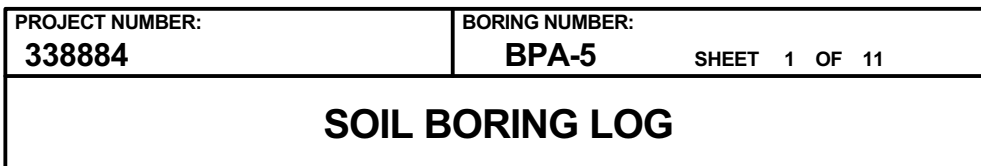
WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
174.6	R17NQ 5 ft 104%	100	0		X	Sandstone 85.2-87.2' - dark reddish gray, mottled blue-green and yellow-tan, soft to hard, medium bedding, fine sand, fresh Siltstone 87.2-87.7' - dark bluish gray, heavily mottled olive, yellow, dark reddish brown, blue green, soft, fresh, beds at 0-30 degrees Siltstone At 87.7' - dark reddish brown, mottled, very soft to soft, fresh, fine grained	R17: 14:00-14:21
			0		X		At 86.3': R-Scale = R2
			2		X		
			0		X		
			0		X		
90	90.0		X		X		
169.6	R18NQ 5 ft 100%	100	0		X	91.1-91.4' - trace dark purple mottling	R18: 14:46-15:06
			0		X		
			0		X		
			0		X		At 93.0': R-Scale = R3
			0		X		
95	95.0		X		X		
164.6	R19NQ 5 ft 100%	100	0		X		R19: 15:17-15:37
			0		X		
			0		X		
			0		X		At 97.2': R-Scale = R1-R2 First water level = 5.2' bgs taken 7/7/06 at 17:15; second water level = 3.3' bgs taken 7/8/06 at 14:45 R-Scale performed after drilling on stored samples
			0		X		
100	100.0		X		X		
159.6						Bottom of Boring at 100.0 ft bgs on 7/7/06 15:37	
105							



LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

2BB-28



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
10 255.7	R1HQ 3.4 ft 90%	89	0	8.8-9.0' - Joint, 50 deg, rough, undulating, unsure of gap size (missing 0.4' of core)		Siltstone 7.6-8.5' - weak red to very dusky red, soft, fresh, fine grained	Rock coring began at 13:15 on 4/25/06 R1: 13:15-13:40 on 4/25/06
			1			Sandstone 8.5-8.7' - weak red to very dusky red, fresh	
			0			Siltstone 8.7-9.0' - weak red to very dusky red, soft, fresh, fine grained	
15 250.7	R2HQ 5 ft 100%	100	0	11.2' - Contact between sandstone and conglomerate, sharp 11.6' - Contact between sandstone and conglomerate, sharp 12.1' - Contact between sandstone and conglomerate, sharp 12.7' - Contact between sandstone and conglomerate, sharp 13.2-13.8' - Fracture, vertical 14.2' - Contact between sandstone and conglomerate, sharp 14.6' - Contact between siltstone and conglomerate, sharp 15.5-15.9' - Fracture, vertical		Sandstone 9.0-9.3' - weak red to very dusky red, fresh	R2: 13:50-14:10
			0			Siltstone 9.3-9.6' - weak red to very dusky red, soft, fresh, fine grained	
			1			Sandstone 9.6-11.2' - weak red to very dusky red, blue-green mottling, fresh	
			1			Conglomerate 11.2-11.6' - weak red, fresh, pebbles at top, fining downward	
			1			Sandstone 11.6-12.1' - reddish brown, blue-green mottling, coarse sand, fresh	
			16.0			Conglomerate 12.1-12.7' - weak red, fresh, pebbles at top, fining downward	
20 245.7	R3HQ 5 ft 100%	88	2	16.0-16.6' - Fracture zone, vertical, rough, undulating 16.8-17.1' - Fractures, fractured with 1.5-2.0' white inclusions 17.8-18.0' - Fracture, horizontal, tight fit 18.0-26.0' - Microfractures, capillary pattern, becoming horizontal in orientation		Sandstone At 12.7' - reddish brown, blue-green mottling, coarse sand, fresh	R3: 14:20-15:00
			0			12.9' - conglomerate lens <0.1'	
			0			13.0' - conglomerate lens <0.1'	
			0			13.7' - conglomerate lens <0.1'	
			0			Conglomerate 14.2-14.6' - weak red, fresh, coarse grained, pebbles at top, fining downward	
			0			Siltstone 14.6-15.5' - reddish brown, soft, fresh, fine grained	
25 240.7	R4HQ 5 ft 100%	100	1	21.6-22.2' - Fracture, 65 deg, rough, undulating		Sandstone At 15.5' - weak red	R4: 15:05-15:30
			1			15.5-16.0' - fresh	
			0			16.0-16.8' - dark reddish brown, hard, coarse sand	
			0			16.0-16.6' - highly weathered	
			0			16.6-16.8' - fresh	
			0			Siltstone At 16.8' - dark reddish brown, soft, fresh, fine grained	
26.0			0			16.8-17.1' - white gray inclusions	R5: 08:00-08:20 on 4/26/06
			0			21.0-39.8' - trace blue green mottling at relic fractures	
			0			26.0-31.0' - very dusky red	

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
50 215.7	R9HQ 5 ft 102%	100	0			Sandstone At 48.0' - reddish brown to blue-gray, hard, fresh 48.4' - conglomerate lense 0.05' thick 48.8-51.0' - very dusky red, trace blue green mottling, soft, fine sand	
51.0			0				
55 210.7	R10HQ 5 ft 100%	100	2	51.0-66.0' - Numerous small/micro fractures, becoming mostly horizontal (80%) 52.7' - Fracture, 20 deg, rough, undulating 53.4' - Fracture, 20 deg, rough, undulating 53.6' - Fracture, 10 deg, rough, undulating		Siltstone At 51.0' - very dusky red, soft, fresh, fine grained, blue-green mottling in relic fractures 52.9-54.0' - small (0.4 to 2) white-gray inclusions	R10: 10:45-11:05
56.0			0				
60 205.7	R11HQ 5 ft 98%	98	0			56.0-57.0' - heavy blue-green mottling 57.0-61.0' - trace blue-green mottling	R11: 11:15-11:55
61.0			0				
65 200.7	R12HQ 5 ft 100%	100	0				
66.0			0				
			0			Sandstone 65.0-66.4' - very dusky red, hard, coarse sand, fresh, clastic infilling	R12: 12:30-13:15
			0			Siltstone At 66.4' - very dusky red, soft, fresh, fine grained	R13: 13:25-14:10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
90 175.7	R17HQ 5 ft 100%	100	0					R18: 08:20-08:45 on 4/28/06	
			0						
			0						
	R18HQ 5 ft 95%	95	0						
			0						
			0						
			0						
	95 170.7	R19HQ 5 ft 98%	75						0
									2
									-
-									
-									
100 165.7	R20HQ 5 ft 99%	89	2						
			2						
			1						
			0						
			0						
	105 160.7			0					
				0					
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106.0			0						
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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	COMMENTS
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
170 95.7	R34HQ 5 ft 96%	71	4	167.4' - Fractures, <5 deg, rough, undulating	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686869.4 N, 2012272.8 E)

ELEVATION : 265.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

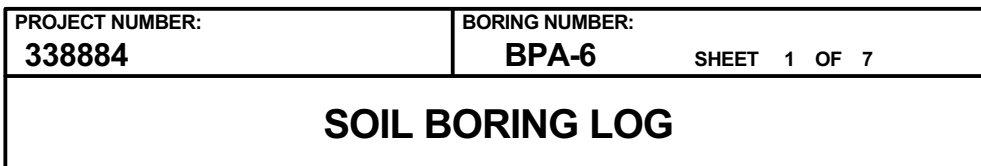
WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS						
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS							
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS								
190 75.7	R38HQ 5 ft 100%	92	1	187.8' - Fractures, <5 deg, rough, undulating 188.2' - Fractures, 30 deg and 40 deg, rough to slickensided, undulating 188.8' - Fractures, <5 deg	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	191.0-193.6' - multicolored reddish-brown, tan-yellow, bluish-gray, and black	SC-6 collected 189.1-190.2'						
			2										
			0										
			0										
195 70.7	R39HQ 5 ft 94%	94	0				195.5' - Fractures, <5 deg	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	193.6-196.0' - black, white, and pink, medium sand to coarse sand, fresh, siltstone laminae throughout	SC-7 collected 193.6-194.5'			
			0										
			0										
			0										
200 65.7	R40HQ 5 ft 104%	100	0							201.0-207.0' - Microfractures, capillary pattern	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	196.0-197.7' - very dusky red to blue-gray, trace blue-green mottling, soft, fresh, fine grained	R40: 09:30-09:50
			0										
			0										
			0										
205 60.7	R41HQ 6 ft 100%	100	0	201.0-207.0' - Microfractures, capillary pattern	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	199.9-201.6' - black, white, pink, and green, medium sand to coarse sand							R41: 10:05-10:55
			0										
			0										
			0										
207.0			0						201.6-207.0' - dark reddish brown to very dusky red, trace blue-green mottling, soft, fresh, fine grained				SC-8 collected 202.8-204.15'
			0										
			0										
			0										
			0										First water level = 1.5' bgs taken 5/3/06 at 08:44; second water level = 2.6' bgs taken 5/4/06 at 08:20
			0										
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			0										R-Scale not performed on rock core samples
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LOGGER : JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 2 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
5 259.3	4.0	R1NQ 1 ft 100%	0	2	x 				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 3 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
25 239.3	25.0		0				
			0			24.9' - 0.1' thick 20 degree banding on relic bedding	R6: 09:23-09:31
			0			Sandstone	At 25.7': R-Scale = R3
			0			25.0-29.3' - reddish gray, medium bedding, slightly weathered to moderately weathered, very soft	At 26.5-29.0': R-Scale = R2
			0			25.0-27.0' - fine to medium grained	
			0			27.0-29.3' - medium to coarse grained	
			1	28.5-28.7' - Fracture, 60 deg, rough, undulating			At 28.2': R-Scale = R3
			2	29.0' - Fracture, <5 deg, rough, undulating			
30 234.3	30.0			29.3-29.4' - Fracture, <5 deg, rough, undulating, shattered rock, stained		Siltstone	R7: 09:35-09:53
			1	29.4-29.6' - Fracture, crack in core with discoloration along surface of break		At 29.3' - dark purple and glue-green, very soft, slightly weathered	At 30.4': R-Scale = R3
			1	30.5-31.8' - Fracture, 85 deg, slickensided, undulating		29.6-31.8' - dark reddish brown	
						30.0-31.3' - blue green mottling, very soft, fine grained, fine sand at bottom	
						31.3-31.8' - 25-30% very fine sand to fine sand	
			0			Sandstone	At 32.5': R-Scale = R3
			1	33.5-33.9' - Fracture, 60 deg, rough, undulating		At 31.8' - dark reddish brown, very hard, laminated to massive bedding, fine sand to medium sand, coarse at bottom	
			0			31.8-35.0' - slightly weathered	At 34.2': R-Scale = R4
35 229.3	35.0					32.2-32.3' - clay seam	R8: 10:00-10:08
			2	35.5-35.6' - Fracture, 45 deg, rough, undulating, black staining		32.3-35.0' - very dusky red, blue-green mottling	
			0	35.9-36.0' - Fracture, 45 deg, rough, undulating, black staining		35.0-40.0' - gray, soft to hard, fine sand to coarse sand	At 36.4': R-Scale = R3
			1	37.0-37.5' - Fracture, <5 deg, rough, undulating, trace yellow staining		35.0-47.0' - fresh	
			0			35.3' - large piece on dark reddish brown sandstone (4)	
			0			36.0-36.4' - trace black mottling	
			0			37.2-37.3' - soft, trace dark reddish brown mottling	
40 224.3	40.0						At 39.3': R-Scale = R3-R4
			0	41.1' - Fracture, 60 deg, rough, undulating, light yellow staining		40.0-45.0' - soft to hard, fine sand to coarse sand, angular to subangular, quartz and mica, red-brown staining at surface top (0.2') relic 20 degrees bedding	R9: 10:12-10:18
			0				At 42.1': R-Scale = R3
			0				
			1				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 4 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
45 219.3	45.0		2	43.5' - Fracture, 60 deg, rough, undulating, light yellow staining 44.1' - Fracture, 60 deg, rough, undulating, light yellow staining 44.2' - Fracture, 60 deg, rough, undulating, light yellow staining				SC-3 collected 40.0-41.1'
	R10NQ 5 ft 100%	100	0	47.0' - Fracture, 40 deg, rough, undulating, sharp contact			45.0-47.0' - soft to hard, very thin to medium bedding, medium sand to coarse sand, angular to subangular, quartz and mica, red-brown staining at surface top (0.2') 20 degree relic bedding, alternating dark and light bands	R10: 10:30-10:40
0						At 46.1': R-Scale = R3		
1								
0						At 48.4': R-Scale = R3-R4		
0								
50 214.3	50.0		2	50.2' - Fracture, <5 deg, smooth, planar 50.4' - Fracture, 30 deg, smooth, planar, along bedding planes				R11: 13:00-13:20
	R11NQ 5 ft 100%	80	1	51.6-52.1' - Fracture, 70 deg, rough, undulating, very thin 52.0' - Fracture, 45 deg, rough, undulating, tight fit 52.9' - Fracture, 30 deg, smooth, planar, along bedding planes				At 51.2': R-Scale = R3-R4
3						At 52.7': R-Scale = R3		
0								
0								
0								
55 209.3	55.0		2	58.0' - Fracture, 20 deg, rough, undulating, along possible bedding plane 59.0' - Fracture, 20 deg, rough, undulating, along possible bedding plane				R12: 13:34-13:50
	R12NQ 5 ft 100%	80	2					
			0				At 57.5': R-Scale = R3	
			1					
			1				At 59.5': R-Scale = R3	
60 204.3			60.0		2	60.4' - Fracture, <5 deg, rough, undulating 60.9' - Fracture, <5 deg, break, at clay seam		
	R13NQ 4.4 ft 100%	89	0	62.0-62.4' - Fracture, 65 deg, rough, undulating, trace dark purple staining				At 62.0': R-Scale = R3
			1					
			0				SC-4 collected 62.8-63.4	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 5 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
65 199.3	64.4		0		XXXXXX XXXX		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-6

SHEET 6 OF 7

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
85 179.3	85.0		4	83.9' - Fracture, 10 deg, smooth, undulating, tight fit 84.4' - Fracture, <5 deg, smooth, planar, tight fit	xx 			

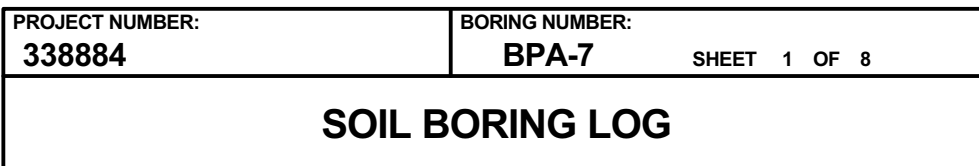


PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-6</div>
SHEET 7 OF 7	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687037.2 N, 2012258.8 E)
ELEVATION : 264.3 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 12.5 ft bgs	START : 6/28/06 16:02	END : 6/30/06 10:00	LOGGER : JF
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
105 159.3	105.0						R23: 09:29-09:39
	R23NQ 5 ft 100%		10+	107.3-107.5' - Fracture, 60 deg, slickensided, undulating 107.4-107.7' - Fracture, <5 deg, crosscuts above planar, rough	XXXXXX XXXX		



LOGGER : JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
10.4 							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
35 230.0	R5NQ 5 ft 100%	85	0	33.3-34.0' - Fractures (5), <5 deg, rough, undulating	x	31.4-31.8' - 30% very fine to fine grained sand 31.9-32.0' - bluish-white clast/sand lens 32.3-34.0' - blue-green mottling, clay rip up clasts 34.0-35.0' - dark purple and trace blue-green mottling 35.5-39.0' - heavily mottled bluish-gray, yellow-green	At 32.0': R-Scale = R3-R4 At 34.3': R-Scale = R3 R6: 12:30-13:05
			0		x		
			0		x		
			5		x		
			0		x		
40 225.0	R6NQ 5 ft 96%	92	1	35.5' - small microfractures, heavily fractured rock, 0.1' thick, clay seam	x	35.5-39.0' - heavily mottled bluish-gray, yellow-green	At 37.0': R-Scale = R3
			0		x		
			0		x		
			0		x		
			0		x		
45 220.0	R7NQ 5 ft 100%	100	0	40.6' - Contact between siltstone and sandstone, sharp contact	x	Sandstone 39.0-39.2' - bluish-gray, soft, fine sand to medium sand, angular, fresh Siltstone 39.2-40.6' - very dusky red, very soft to soft, fresh, fine grained Sandstone 40.6-52.3' - gray, soft to hard, medium sand to coarse sand, angular to subangular, fresh	At 39.3': R-Scale = R3 R7: 14:20-14:35
			0		x		
			0		x		
			0		x		
			0		x		
45 220.0	R8NQ 5 ft 100%	100	0	40.6' - Contact between siltstone and sandstone, sharp contact	x	43.5-43.8' - fine to medium grained	At 41.9': R-Scale = R3-R4 At 43.4': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
50 215.0			0	40.6' - Contact between siltstone and sandstone, sharp contact	x	45.2 and 45.5' - dark gray bands, <0.1' thick 47.5-47.9' - dark gray bands, <0.1' thick	R8: 15:05-15:20 At 45.8': R-Scale = R3 At 47.9': R-Scale = R3-R4 At 49.2': R-Scale = R2 R9: 15:28-15:40
			0		x		
			0		x		
			0		x		
			0		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
55 210.0	R9NQ 5 ft 100%	88	1	50.4' - Fracture, 65 deg, rough, undulating	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
75			0		x	70.8-70.9' - clay clasts	At 70.7': R-Scale = R3-R4
			0		x	71.5-71.9' - clay clasts	
	R13NQ 5 ft 100%	100	1	72.3' - Fracture, 65 deg, rough, undulating, tight fit	x		
			0		x	73.1-73.4' - clay clasts and blue-green mottling	
			0		x	74.0-75.6' - clay clasts and blue-green mottling	
75.0					x		At 74.6': R-Scale = R3-R4
190.0			1	75.0-85.0' - Small microfractures/capillary-like	x	75.0-85.0' - 10-15% very fine to fine sand	R14: 07:50-08:20 on 06/27/06
				75.6' - Fracture, <5 deg, rough, undulating, tight fit	x	75.6-87.3' - trace blue-green mottling, very soft	
	R14NQ 5 ft 100%	100	0		x		At 77.0': R-Scale = R3
			0		x		
			0		x		At 78.7': R-Scale = R3
80			0		x		
185.0			0		x		R15: 08:25-08:55
	R15NQ 5 ft 100%	100	0		x		At 81.4': R-Scale = R3-R4
			0		x	83.0-87.3' - faint dark purple mottling, 20 degree bedding and trace clay clasts	At 84.1': R-Scale = R3-R4
85			0		x		
180.0			0		x	85.0-87.3' - trace very fine to fine sand	R16: 09:00-09:20
			0		x		At 85.8': R-Scale = R3-R4
	R16NQ 5 ft 100%	98	0		x	87.3-90.0' - very dusky red, heavily mottled blue-green and dark purple, very soft to soft, few clay clasts at surface	At 87.9': R-Scale = R3-R4
			2		x		
			0	88.8 and 88.9' - Fractures (2), <5 deg, rough, undulating, staining on edges, slickensided	x		
90					x		
175.0					x		R17: 09:25-09:45

LOGGER : JF



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 7 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
115 150.0	R21NQ 5 ft 100%	60	2	110.5' - Fracture, <5 deg, rough, undulating 110.9' - Fracture, 30 deg, rough, undulating 111.8' - Fracture, <5 deg, rough, undulating 112.1-113.5' - Fracture, near vertical deg, rough, undulating	x 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-7

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686973.9 N, 2012288.8 E)

ELEVATION : 265.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/26/06 08:30

END : 6/27/06 15:10

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
135 130.0	R25NQ 5 ft 100%	100	0	131.7 and 132.7' - Fractures (2), <5 deg, slickensided, undulating, tight fit	x	130.0-130.7' - mottled blue-green, trace very fine sand 130.7-131.7' - heavily mottled blue-green, 25% very fine sand 132.3-132.5' - white ripup clay clasts 132.5-135.0' - trace blue-green mottling 134.5-135.0' - trace very fine sand 139.5-140.0' - 0.8 to 1.2 white/pink, clay clasts 140.0-145.0' - trace blue-green mottling along thin possible root structures 144.6' - clay clasts	SC-5 collected 130.7-131.7' At 132.0': R-Scale = R3 At 134.0': R-Scale = R3-R4 R26: 13:50-14:25 At 135.7': R-Scale = R3-R4 At 139.3': R-Scale = R3 R27: 14:30-15:05 At 143.2': R-Scale = R3 First water level = 10.0' bgs taken 6/27/06 at 16:00; second water level = 9.0' bgs taken 6/28/06 at 15:10 R-Scale performed after drilling on stored samples
			1		x		
			1		x		
			0		x		
			0		x		
140 125.0	R26NQ 5 ft 100%	100	0		x		
			0		x		
			0		x		
			0		x		
			0		x		
145 120.0	R27NQ 5 ft 100%	100	0		x		
			0		x		
			0		x		
			0		x		
			0		x		
150 115.0					x	Bottom of Boring at 145.0 ft bgs on 6/27/06 15:10	
					x		
					x		
					x		
					x		



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-8</div>
SHEET 1 OF 9	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)
ELEVATION : 267.4 ft MSL (NGVD 29)	DRILLING CONTRACTOR : L. Morrison, S&ME
DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer	
ORIENTATION : Vertical	
WATER LEVELS : 12.0 ft bgs	
START : 6/27/06 16:13	END : 6/29/06 10:30
LOGGER : LH/EM	

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (in)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
267.4	0.0					Topsoil 0.0-0.2' Clay (CL) 0.2-1.1' - reddish brown, mottled reddish black and light greenish gray, dry, hard, laminated beds		Soil sampling completed at 16:26 on 6/27/06
	2.0	13.2	SS1SS	1-50/5 (50/5")				
	2.5	3.0	SS2SS	50/3 (50/3")		Clay (CL) 2.5-2.8' - reddish brown, mottled reddish black and light greenish gray, dry, hard, laminated beds Begin Rock Coring at 2.8 ft bgs See the next sheet for the rock core log		
5 262.4								
10 257.4								
15 252.4								
20								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
2.8	R1NQ 1.4 ft 131%	100	0		x x x	Siltstone 2.8-6.2' - dark reddish brown, mottled reddish black and greenish gray, very soft, slightly weathered, laminated beds, 10-30% very fine sand	Rock coring began at 07:59 on 6/28/06
4.2			2	4.1' - Fractures (2), horizontal, rough, planar	x x x		R1: 07:59-08:02 on 06/28/06
5			0		x x x		At 3.9': R-Scale = R3-R4
262.4			2	5.8' - Fracture, horizontal, smooth, planar	x x x		R2: 08:10-08:18
	R2NQ 5 ft 84%	94	1	6.2' - Fracture, horizontal, smooth, planar	x x x		At 4.8': R-Scale = R3-R4
			1	7.7' - Fracture, horizontal, rough, planar	x x x		
			1	8.3' - Fracture, horizontal, smooth, planar	x x x	Sandstone 6.2-7.2' - dark reddish brown, mottled reddish black and greenish gray, very soft, slightly weathered, 30-40% fine sand	At 7.1-8.3': R-Scale = R2
9.2			1	9.5' - Fracture, horizontal, smooth, planar	x x x	6.7-6.8' - clay seam, very soft	
10			10+	10.2-10.6' - Fracture zone, rough, undulating	x x x	Siltstone At 7.2' - dark reddish brown, mottled reddish black and greenish gray, very soft, laminated beds, 10-30% very fine sand	R3: 08:27-08:35
257.4			1	12.0' - Fracture, horizontal, rough, undulating	x x x	7.2-14.2' - slightly weathered	At 9.9': R-Scale = R3-R4
	R3NQ 5 ft 106%	64	1	12.8' - Fracture, horizontal, rough, undulating	x x x		At 11.4': R-Scale = R3-R4
			10+	13.8' - Fracture, horizontal, rough, undulating	x x x	12.1-12.8' - 30% very fine to medium sand	
			1	14.0' - Fracture, horizontal, rough, undulating	x x x	13.2-13.8' - clay seam, very soft	At 13.2-13.8' PP: 1.5 tsf
14.2			1	14.3' - Fracture, horizontal, rough, planar	x x x	14.2-24.2' - fresh	At 13.2-13.8': R-Scale = R0
15			1	15.5' - Fracture, horizontal, rough, undulating	x x x		R4: 08:42-08:49
252.4			0		x x x	15.5-19.2' - 10-20% very fine sand, soft	At 14.2-15.9': R-Scale = R2
	R4NQ 5 ft 92%	90	0		x x x		At 15.5': R-Scale = R2
			0		x x x		
19.2			0		x x x		At 18.9': R-Scale = R5
20			1	21.0' - Fracture, horizontal, smooth, planar	x x x	19.2-24.2' - soft, laminated beds apparent in some areas, 20-40% very fine sand throughout core	R5: 08:54-09:05
247.4			1	21.7' - Fracture, horizontal, smooth, planar	x x x		At 20.5': R-Scale = R3-R4
	R5NQ 5 ft 104%	100	1		x x x		

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bqs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
25 242.4	24.2		0		XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Sandstone At 24.2' - light gray and very dark gray, trace black mottling, very soft to soft, medium to thick bedding, very fine sand to coarse sand, angular to subrounded, poorly sorted, fresh, lighter and darker bands of sediment in a few areas At 25.8' - shale, gray, <0.02' thick	At 23.0': R-Scale = R3 <		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

WATER LEVEL: 120.855		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	COMMENTS	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
45 222.4	44.2 R10NQ 5 ft 97%	97	0	48.1' - Fracture, horizontal, rough, planar		XXXXXX XXXXXX			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

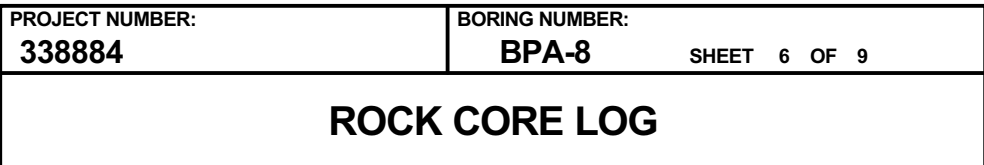
WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS			
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS				
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
65 202.4	R14NQ 5 ft 100%	79	0	64.3' - Contact between siltstone and sandstone, 45 deg, smooth, planar, tightly healed 64.6' - Fracture, horizontal, smooth, planar 65.0' - Fracture, horizontal, smooth, planar 65.1' - Fracture, horizontal, smooth, undulating 65.9' - Fracture, horizontal, smooth, undulating 66.2-66.4' - Fracture, 45 deg, slickensided, undulating 66.5' - Fracture, horizontal, smooth, planar 66.7' - Fracture, horizontal, smooth, undulating 67.6' - Fracture, horizontal, rough, undulating	64.2-64.3' - mottled dark reddish brown Siltstone At 64.3' - dark reddish brown, mottled greenish gray and reddish black, soft 64.3-83.8' - fresh 65.5-65.9' - 0.1' thick greenish gray mottles 66.7-67.2' - soft, laminated bedding 66.9-67.2' - clay seam, very soft, friable material 67.2-68.1' - white clasts	At 63.6': R-Scale = R3-R4				
			0			R14: 11:24-11:37				
			3			At 65.5': R-Scale = R3				
			1			At 66.8-67.2': R-Scale = R0				
			4			At 67.9': R-Scale = R3-R4				
			1							
			0							
			69.2							
			70 197.4			R15NQ 5 ft 103%	97	0	68.9-69.3' - greenish gray mottles throughout width of core	R15: 11:46-11:55
			4					69.8-69.9' - 0.05' thick greenish gray mottle	At 69.9': R-Scale = R3-R4	
0	70.2-70.3' - 0.03' thick greenish gray mottle									
0	70.3-70.6' - soft, laminated bedding									
0	72.2-72.5' - 0.02' thick greenish gray mottle, along fracture, tightly healed	At 72.1': R-Scale = R3-R4								
0		At 73.2' PP: 1.5 tsf								
74.2										
75 192.4	R16NQ 5 ft 88%	88	0	74.1-74.2' - 0.15' thick greenish gray mottle	R16: 13:18-13:30					
0			74.2-83.1' - soft, 0-20% very fine sand	At 74.8': R-Scale = R3-R4						
0										
0				At 76.9': R-Scale = R3-R4						
0				At 78.2': R-Scale = R3-R4						
79.2				R17: 13:37-13:48						
80 187.4			R17NQ 5 ft 102%	100*	0		SC-3 collected 79.7-80.7'			
0										
0					81.5-83.1' - 0-30% fine to coarse sand, and gravel sized white clasts	At 82.0': R-Scale = R3-R4				
					81.5-87.4' - gravel sized white clasts					



LOGGER : LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

WATER LEVEL: 120.000		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	COMMENTS		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
105 162.4	104.2		0			103.1-103.2' - 0.06' thick greenish gray mottle 103.6-104.0' - 0.01-0.03' thick greenish gray mottles 104.5-104.8' - 0.15' thick greenish gray mottle	At 103.4': R-Scale = R3 R22: 15:35-15:47 At 106.0': R-Scale = R3-R4			
		0								
	R22NQ 5 ft 103%	100	0							
			0							
			0							
			0							
110 157.4	109.2		0					110.4' - Fracture, horizontal, rough, planar 111.6-111.7' - Fractures (2), horizontal, rough, planar 111.8' - Fracture, horizontal, rough, planar 111.2' - Fracture, horizontal, smooth, planar 112.4' - Fracture, horizontal, smooth, planar 113.0' - Fracture, horizontal, smooth, planar 113.2-113.8' - Fracture zone, horizontal, smooth, slickensided, clay seams (50%), very soft clay 113.9' - Fracture, 30 deg, smooth, planar 114.1' - Fracture, 10 deg, smooth, planar 114.5-114.9' - Fracture zone, horizontal, rough, planar / undulating, clay seams (50%) 115.3' - Fracture, horizontal, rough, planar 116.1' - Fracture, horizontal, smooth, planar 116.2' - Fracture, horizontal, rough, undulating 116.5' - Fracture, horizontal, rough, undulating 116.6' - Fracture, horizontal, rough, undulating 116.6' - Fracture, horizontal, rough, undulating 116.7' - Fracture, horizontal, rough, undulating	110.4-110.5' - 0.03' thick greenish gray mottle Siltstone At 111.6' - very dark greenish gray, olive, mottled greenish gray and dark reddish brown, very soft to soft, slightly weathered	At 108.6': R-Scale = R3-R4 R23: 15:58-16:11 At 109.8': R-Scale = R3-R4 SC-4 collected 110.4-111.6' At 112.1': R-Scale = R3
		0								
		1								
	R23NQ 5 ft 100%	68	3							
			3							
			7							
115 152.4		114.2		10+	Siltstone At 119.2' - dark reddish brown, mottled pale olive and olive yellow, soft, subangular, well sorted, slightly weathered, very fine to fine grained 119.3-119.4' - laminated bedding	At 117.2': R-Scale = R3-R4				
		3								
	R24NQ 5 ft 95%	67	4							
			0							
			0							
			0							
120 147.4	119.2		0	121.9' - Fracture, horizontal, rough, undulating, 0.02' clay infilling				R25: 07:59-08:15 on 06/29/06 At 119.6': R-Scale = R3-R4 At 121.5': R-Scale = R4		
		0								
		2								
	R25NQ 5 ft 99%	91	2							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
125 142.4	R26NQ 5 ft 90%	90	0	122.1' - Fracture, horizontal, rough, undulating, 0.02' clay infilling 122.2' - Fractures (2), horizontal, rough, undulating, 0.02' clay infilling	<div><div>Sandstone 120.0-120.2' - dark greenish gray, mottled pale olive, olive yellow, and dark reddish brown, soft, very fine sand to fine sand, subangular, well sorted, slightly weathered</div><div>Siltstone 120.2-120.3' - dark reddish brown, mottled pale olive and olive yellow, soft, slightly weathered</div><div>Sandstone 120.3-120.9' - dark greenish gray, mottled pale olive, olive yellow, and dark reddish brown, soft, very fine sand to fine sand, subangular, well sorted, fresh</div><div>Siltstone At 120.9' - dark reddish brown, mottled olive yellow, greenish gray, and reddish black, very soft to soft, fresh 121.9-121.9' - laminated bedding 121.9-122.2' - very soft, laminated bedding 122.2-124.2' - soft 122.4-122.6' - 0.02-0.05' thick greenish gray mottle 126.2-126.4' - laminated bedding 129.2-134.2' - reddish black and little greenish gray mottling, soft to hard</div></div>	At 123.6': R-Scale = R3-R4 R26: 08:24-08:40	
			0				
			1	124.7' - Fracture, horizontal, rough, undulating			
			0				
			1	126.2' - Fracture, horizontal, rough, undulating			
			0				
129.2	R27NQ 5 ft 103%	92	0			At 125.8': R-Scale = R3-R4	
			0				
			0				
			0				
			3	132.6' - Fracture, horizontal, rough, undulating 132.9' - Fracture, horizontal, rough, planar 133.2' - Fracture, horizontal, rough, undulating, clay seam, 0.05' thick, hard, friable material			
			0				
134.2	R28NQ 5 ft 104%	100	0	134.4' - Fracture, horizontal, rough, undulating		At 128.1': R-Scale = R3-R4 R27: 08:53-09:10	
			0				
			0				
			0				
			0				
			0				
139.2	R29NQ 5 ft 100%	100	0			At 130.7': R-Scale = R3	
			0				
			0				
			0				
			0				
			0				
140 127.4			0			At 132.4': R-Scale = R4	
			0				
			0				
			0				
			0				
			0				
			0			R28: 09:19-09:32 At 134.7': R-Scale = R3-R4	
			0				
			0				
			0				
			0				
			0				
			0			At 137.4': R-Scale = R3-R4	
			0				
			0				
			0				
			0				
			0				
			0			R29: 09:54-10:07 At 139.6': R-Scale = R3-R4	
			0				
			0				
			0				
			0				
			0				
			0			SC-5 collected 141.3-142.5'	
			0				
			0				
			0				
			0				
			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-8

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686839.1 N, 2012351.4 E)

ELEVATION : 267.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

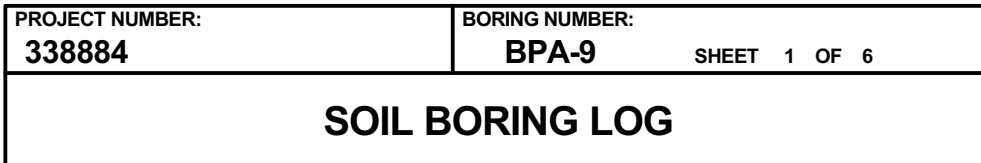
WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

WATER LEVEL: 12.0' bgs		START: 6/29/06 10:30		END: 6/29/06 10:30		LOSS: 0' bgs	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
145 122.4	144.2	R30NQ 3.3 ft 100%	91	1	142.5-144.2' - Microfractures, partial clay infilling 143.0' - Fracture, 20 deg, smooth, undulating	x 	



LOGGER : EM/LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-9

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
5 261.8	3.3 R1NQ 1 ft 100%	0	4	3.6' - Fracture, horizontal, rough, planar 3.7' - Fracture, 45 deg, rough, undulating 4.1' - Fracture, horizontal, rough, planar 4.3' - Fracture, horizontal, rough, planar	x x					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-9

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 241.8	24.3		0			23.7-24.3' - 10-30% fine sand	R6: 15:33-15:41 At 24.8': R-Scale = R3
	R6NQ 5 ft 100%	99	1	24.4' - Fracture, horizontal, smooth, undulating	24.3-26.0' - 10-30% fine sand		
			1				
			0	26.1' - Fracture, horizontal, smooth, undulating	Sandstone 26.0-26.3' - light greenish gray, soft, fine sand to medium sand, fresh		
			1	26.9' - Contact between sandstones, sandstone contact	Siltstone 26.3-26.6' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh		
			0	28.1' - Fracture, horizontal, smooth, undulating, little black staining	Sandstone 26.6-26.9' - light greenish gray, soft, fine sand to medium sand, fresh, gradational contact		
30 236.8	29.3		1	29.4' - Fracture, horizontal, rough, undulating		R7: 15:48-15:56	
	R7NQ 5 ft 100%	99	0		Siltstone 26.9-28.9' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh	At 30.4': R-Scale = R3-R4	
			1	31.5' - Contact between siltstone and sandstone	Sandstone 28.9-31.5' - light greenish gray and light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh, feldspar and quartz	At 32.0': R-Scale = R5	
			1	31.6' - Fracture, 50 deg, rough, undulating			
			0	32.8' - Fracture, horizontal, smooth, undulating 32.8' - Fracture, 45 deg, smooth, undulating	Siltstone 31.5-33.0' - fresh, lens		
			0		Sandstone 33.0-33.3' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh	R8: 16:02-16:11 At 34.8': R-Scale = R5	
35 231.8	34.3		3	35.1-35.3' - Fractures (4), horizontal, smooth, undulating			
	R8NQ 5 ft 92%	78	1	35.3' - Contact between siltstone and sandstone, sharp	Siltstone 33.3-33.4' - fresh, lens		
			1	35.6' - Fracture, 10 deg, smooth, undulating	Sandstone 33.4-33.6' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh	At 36.4': R-Scale = R3	
			0	37.0' - Fracture, horizontal, smooth, undulating	Siltstone 33.6-33.7' - fresh, lens		
			0	37.3' - Fracture, horizontal, smooth, undulating	Sandstone 33.7-34.6' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh	At 38.4': R-Scale = R3	
			0		Siltstone 34.6-34.7' - fresh, lens	R9: 16:18-16:26	
40 226.8	39.3		2	39.1' - Fracture, 85 deg, rough, undulating			
	R9NQ 5 ft 98%	90	10+	39.8' - Fracture, horizontal, undulating	Sandstone 34.7-35.3' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh	At 41.5': R-Scale = R3-R4	
			0	40.3' - Fracture zone, 85 deg, rough, undulating, heavily fractured, crumbled	Siltstone At 35.3' - dark reddish brown, mottled reddish black and greenish gray, soft		
			0	40.7' - Fracture, 50 deg, smooth, undulating	35.3-51.3' - fresh		
				35.7' - 0.2' thick mottles			
				36.1' - 0.2' thick mottles			

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

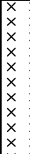

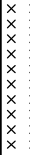
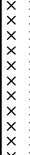
ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY				
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	COMMENTS			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
45 221.8	44.3		0	45.6' - Fracture, horizontal, rough, planar		36.4-38.0' - 0.01-0.05' thick white clasts	R10: 07:59-08:08 on 06/30/06 At 44.6': R-Scale = R3-R4 At 46.7': R-Scale = R3-R4 At 48.5': R-Scale = R3-R4 R11: 08:26-08:37 At 50.3': R-Scale = R3-R4 At 53.0': R-Scale = R4 R12: 08:45-08:55 At 54.8': R-Scale = R4 At 56.8': R-Scale = R3-R4 At 58.6': R-Scale = R3-R4 R13: 09:03-09:12 Driller's remark: Lost ~25 gallons of water At 60.9': R-Scale = R3-R4 SC-2 collected 62.4-63.4'			
		0								
		1								
	R10NQ 5 ft 108%	100	0							
		0								
	49.3		0							
	50 216.8					0		51.2' - Fracture, horizontal, rough, undulating 51.7-52.4' - Fracture zone, rough, undulating		48.4-49.3' - gravel sized white clasts 48.6-48.8' - laminated beds
			0							
			1							
		R11NQ 5 ft 100%	75			10+				
		10+								
		1								
54.3			1							
55 211.8			1	55.1' - Fracture, horizontal, rough, undulating		50.6-50.8' - <0.05' thick greenish gray mottle 51.2-51.3' - very soft 51.3-52.4' - highly weathered 51.3-51.4' - clay seam, very soft, friable material (siltstone laminated alternating within it) 51.7-52.4' - very soft 52.4' - gravel sized white clasts 52.4-62.8' - fresh 52.5' - gravel sized white clasts 53.0' - gravel sized white clasts 53.5-54.3' - gravel sized white clasts 53.9-54.3' - very soft 54.3-55.1' - very soft 54.3-54.8' - gravel sized white clasts 55.0-55.1' - laminated beds (barely apparent)				
			0							
		R12NQ 5 ft 101%	100			0				
		0								
		0								
	59.3		0							
	60 206.8		0			R13NQ 5 ft 96%	96	58.1-59.3' - 30-40% very fine sand		
			0							
			0							
			0							
		0								
		0								
		0								
		0								
		0								
		0								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-9

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)

ELEVATION : 266.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/29/06 13:14

END : 6/30/06 10:51

LOGGER : EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
65 201.8	64.3		1	63.4' - Fracture, 60 deg, rough, undulating	X 			

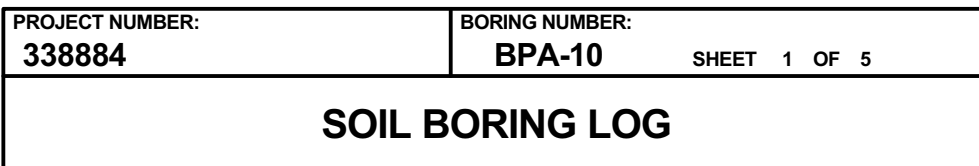


PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-9</div>
SHEET 6 OF 6	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686777.5 N, 2012379.1 E)
ELEVATION : 266.8 ft MSL (NGVD 29)	DRILLING CONTRACTOR : L. Morrison, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 5.3 ft bgs	START : 6/29/06 13:14	END : 6/30/06 10:51	LOGGER : EM/LH
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WATER LEVEL: 10.0 RGS		DISCONTINUITIES		LITHOLOGY		COMMENTS		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
85 181.8	84.3		0			x x		



LOGGER : JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-10

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.4 N, 2012383.0 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME 550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.5 ft bgs

START : 6/27/06 17:00

END : 6/28/06 14:45

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS		
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS			
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
10 255.9	7.6	R1NQ 2.5 ft 95%	44*	0	8.2' - Fracture, <5 deg, rough, undulating, tight fit 8.4' - Fracture, <5 deg, rough, undulating, tight fit 9.2' - Fracture, <5 deg, rough, undulating, tight fit 9.7' - Fracture, <5 deg, rough, undulating, tight fit	Sandstone 7.6-8.4' - dark reddish brown, soft, fine sand to medium sand, moderately weathered, 75% sand, 25% silt matrix 8.0' - siltstone lens ~10 degree bedding Siltstone At 8.4' - dark reddish brown, very soft, fine grained, soil-like characteristics 8.4-12.5' - moderately weathered 9.0-11.1' - some very fine to fine sand (25%) 10.3-10.5' - clay seam 10.9' - clay seam 11.1' - clay seam 11.1-12.0' - becoming more competent 12.0' - clay seam 12.5' - clay seam 12.5-15.6' - fresh	Rock coring began at 07:45 on 6/28/06 R1: 07:45-08:00 on 06/28/06 At 8.5-9.0': R-Scale = R0 At 9.0-10.0': R-Scale = R1 At 10.0-10.2': R-Scale = R0 R2: 08:05-08:35 At 10.2-10.8': R-Scale = R1 At 10.3-10.8': PP: 1.0 tsf At 10.8-10.9': PP: 1.5tsf At 10.9-11.0': PP: 1.0 tsf At 10.95-11.1': PP: 0.5 tsf SC-1 collected 10.5-10.8' At 11.1-12.4': R-Scale = R2 At 12.0': PP: 1.0 tsf At 12.5': PP: 0.5 tsf At 13.7': R-Scale = R3-R4		
	2								
	2								
	15 250.9	10.0	R2NQ 5 ft 97%	71*	10+	11.3-11.5' - Fracture zone, 70 deg, rough, undulating, tight fit 11.5' - Fracture, <5 deg, rough, undulating, tight fit			
		10+							
		3							
		0							
		0							
		0							
	20 245.9	15.0	R3NQ 5 ft 100%	100	1	15.6' - Fracture, <5 deg, rough, undulating, some darker staining 17.8' - Fracture, <5 deg, rough, undulating		Sandstone 15.6-16.4' - dark reddish brown, trace mottling, soft, fine sand, angular, fresh Siltstone At 16.4' - dark reddish brown, trace blue-green mottling, very soft, fresh, pink clay clasts, mottling band at bottom	R3: 08:40-08:55 At 15.9': R-Scale = R3-R4
0									
1									
0									
0									
0									
25 240.9		20.0	R4NQ 5 ft 100%	100	0	23.5' - Contact between siltstone and sandstone	20.0-23.6' - with fine sand At 22.5' - sandstone lens, fine to medium grained, 0.05' thick blue-green mottling at top and bottom, bedding at 25 degrees Sandstone At 23.6' - reddish gray, fine to medium grained, soft to hard, angular, fresh 24.2-24.7' - fine grained, soft, subangular 24.7-25.0' - angular to subangular At 25.0' - gray, fine to medium grained, soft to hard, subangular 25.5' - trace siltstone lens 26.7' - trace siltstone lens	R4: 09:00-09:12 At 20.72': R-Scale = R3-R4 At 23.8': R-Scale = R3-R4	
		0							
		0							
		0							
	0								
	0								
	25.0	R5NQ		0			R5: 09:14-09:25		
	0								



PROJECT NUMBER: <div style="background-color: black; color: white; padding: 2px 5px; font-weight: bold;">338884</div>	BORING NUMBER: <div style="background-color: black; color: white; padding: 2px 5px; font-weight: bold;">BPA-10</div>
SHEET 4 OF 5	
<div style="background-color: black; color: white; font-size: 1.2em; font-weight: bold; padding: 5px 20px;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686920.4 N, 2012383.0 E)
ELEVATION : 265.9 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME 550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 3.5 ft bgs	START : 6/27/06 17:00	END : 6/28/06 14:45	LOGGER : JF
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
50 215.9	5 ft 100%	100	0	50.1' - Fracture, <5 deg, rough, undulating 50.2' - Fracture, <5 deg, rough, undulating 50.4' - Fracture, <5 deg, rough, undulating 50.5' - Fracture, <5 deg, rough, undulating 50.6' - Fracture, <5 deg, rough, undulating 52.2' - Fracture, <5 deg, rough, undulating	x x			

338884

BORING NUMBER:

BPA-10

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.4 N, 2012383.0 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME 550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.5 ft bgs

START : 6/27/06 17:00

END : 6/28/06 14:45

LOGGER : JF

[illegible]



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-11

SHEET 1 OF 9

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

DEPTH BELOW EXISTING GRADE (ft)		STANDARD PENETRATION TEST RESULTS			SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
INTERVAL (ft)	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION		
264.3	0.0				Sand (SP-SM) 0.0-0.4' - very pale brown, dry, loose, very fine to coarse grained, little silt		
		19.2	SS1SS	4-4-6-8 (10)	Silt (ML) 0.4-1.6' - red, dry, loose		
	2.0						
	2.5				Clayey Gravel (GC) 2.5-2.6' - dark reddish brown, moist to just, very dense		
		5.0	SS2SS	50/5 (50/5")	Clay (CL) 2.6-3.1' - dark reddish brown, moist, hard		
5							
259.3	5.0				Clay (CL) 5.0-5.3' - dark reddish brown, dry to moist, hard, laminated beds		Soil sampling completed at 15:05 on 6/5/06 Soil was friable throughout
		4.0	SS3SS	50/4 (50/4")			
	7.0						
	7.5	2.0	SS4SS	50/2 (50/2")	Clay (CL) 7.5-7.7' - dark reddish brown, mottled light greenish gray, dry to moist, hard, laminated beds 7.7-8.1' - clay seam, very soft Begin Rock Coring at 7.7 ft bgs See the next sheet for the rock core log		
10							
254.3							

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges. S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

[illegible]

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges. S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

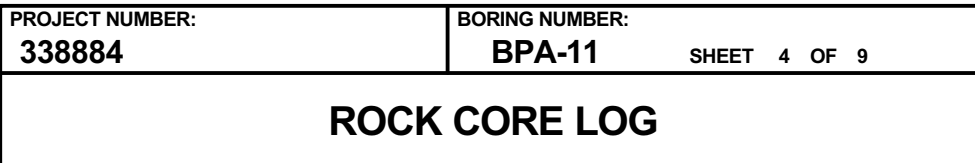
WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

WATER LEVELS: 4.6 ft bgs		START: 05/00 14:10		END: 05/00 09:17		LOGGER: LHM/J		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
								DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
30 234.3	100%			26.4' - Fracture, horizontal, smooth, undulating 26.4' - Fracture, horizontal, smooth, undulating 26.5' - Fracture, horizontal, smooth, undulating 26.8' - Fracture, horizontal, smooth, undulating 27.1' - Fracture, horizontal, smooth, undulating 27.2' - Fracture, horizontal, smooth, undulating 27.3' - Fracture, horizontal, smooth, undulating 27.6' - Fracture, horizontal, smooth, undulating 28.0' - Fracture, horizontal, smooth, undulating 28.1' - Fracture, horizontal, smooth, undulating 28.1' - Fracture, horizontal, smooth, undulating 28.5-29.6' - Fracture, rough, undulating 29.0' - Fracture, 45 deg, rough, undulating 30.0' - Fracture, rough, undulating 30.1' - Fracture, rough, undulating 30.4-31.0' - Fragmented, little pieces, contact point 33.0-33.4' - Fracture zone		28.1-28.5' - clay seams	At 28.6': R-Scale = R3-R4 R7: No time recorded At 30.2-30.7': R-Scale = R0-R1 At 32.1-33.4': R-Scale = R0-R1	
	29.6	1	3	Sandstone 28.5-29.0' - weak red, soft, fine sand to coarse sand, slightly weathered, coarsens with depth Conglomerate 29.0-30.8' - weak red, soft, coarse sand to fine gravel, slightly weathered Siltstone At 30.8' - dark reddish brown, greenish gray mottling, soft, laminated bedding 30.8-34.6' - bioturbations filled in with darker gray silt/clay 30.8-34.9' - slightly weathered 32.2-32.5' - clay intrusion				
		40	10+					
		3						
		3						
		3						
		3						
		3						
		3						
		3						
35 229.3				34.6-34.8' - Fracture zone, smooth, undulating 35.0' - Fracture, smooth, undulating		34.6-43.0' - black clast throughout 34.9-46.6' - fresh	R8: 11:27-11:35 At 36.5': R-Scale = R3 SC-1 collected 37.5-38.5' At 39.2': R-Scale = R3-R4 R9: No time recorded	
				35.9' - Fracture, horizontal, smooth, undulating				
		92	1					
		1						
		0						
		1						
40 224.3				40.5-40.8' - Fracture zone, smooth, undulating 40.8' - Fracture, vertical 41.1' - Fracture, horizontal, rough, undulating		43.0-44.0' - very soft, very thin bedding, banded layers of clay, <0.2' thick	At 44.1': R-Scale = R3 R10: 13:45-13:56	
				43.3' - Fracture, horizontal, smooth, undulating, clay seam 43.8' - Fracture, horizontal, smooth, undulating 44.4' - Fracture, horizontal, smooth, undulating 44.8' - Fracture, horizontal, rough, planar 45.2' - Fracture, horizontal, rough, planar				
		82	1					
		0						
		2						
45 219.3				46.0' - Fracture, horizontal, rough, planar 46.1' - Fracture, horizontal, rough, planar 46.6-47.3' - Fracture zone, horizontal, clay seams present (<0.04' thick)		46.6-47.3' - highly weathered 47.3-48.6' - fresh	Driller's Remark: Had to stop/slow down, several times to let the coring water clean out the bit	
		70	10+					



LOGGER : LH/MJ

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-11

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS					
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS						
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS							
110 154.3	R23NQ 5.2 ft 100%	78*	0	<div>110.3' - Fracture, horizontal, rough, undulating</div> <div>110.7' - Fracture, horizontal, rough, undulating</div> <div>110.9' - Fracture, horizontal, rough, undulating</div> <div>110.9' - Fracture, horizontal, rough, undulating</div> <div>111.8' - Fracture, horizontal, rough, undulating</div> <div>111.9' - Fracture, horizontal, rough, undulating</div> <div>112.4' - Fracture, horizontal, rough, planar</div> <div>112.5' - Fracture, horizontal and vertical, rough, stepped</div> <div>113.5' - Fracture, horizontal, rough, planar</div> <div>113.6-114.6' - Fracture zone, rough, planar, with clay seams (<0.1' thick)</div>	<div>107.5-107.8' - 0.06' thick greenish gray mottle</div> <div>109.4-111.8' - grading to very fine to fine sandstone; trace <0.05 thick black clasts</div> <div>111.4-111.5' - clay seam, 0.05' thick, very soft</div> <div>Sandstone</div> <div>111.8-114.6' - dark reddish brown and olive gray, very soft, laminated bedding, moderately weathered, alternating sandstone and siltstone with clay seams (0.6-0.01' thick)</div> <div>112.6-112.7' - clay seam, (0.05' thick) soft</div> <div>112.9' - clay seam, (0.05' thick) soft</div>	R23: 11:28-11:36 At 109.8': R-Scale = R3-R4 SC-4 collected 110.9-111.8'						
			0									
			1									
			3									
			10+									
			3									
			7									
			115 149.3				R24NQ 5 ft 84%	62*	10+	<div>115.2-116.2' - Fracture zone, horizontal and vertical, rough, planar / undulating, clay seams (0.05' thick)</div> <div>116.8' - Fracture, 30 deg, rough, undulating</div> <div>117.4' - Fracture (2), horizontal, rough, undulating, no stains</div> <div>117.7' - Fracture, horizontal, tightly healed</div> <div>118.0' - Fracture, horizontal, tightly healed</div> <div>118.2' - Fracture, horizontal, rough, undulating</div>	<div>Clay</div> <div>114.6-115.2' - gray, very soft, laminated bedding, moderately weathered, clay seam</div> <div>Siltstone</div> <div>115.2-118.0' - olive gray, greenish gray, and white, soft, moderately weathered, laminated beds</div> <div>116.4' - clay seam, (0.01' thick) very soft</div> <div>117.2-117.2' - clay seam, (0.05' thick) laminated beds, very soft</div>	R24: 11:50-12:13
									10+			
									2			
3												
0												
120 144.3	R25NQ 4.7 ft 98%	74		10+	<div>119.6-120.0' - Fracture zone, horizontal, rough, undulating, clay seams (<0.02' thick)</div> <div>121.2' - Fracture, horizontal, smooth, undulating</div> <div>121.3' - Fracture, horizontal, smooth, undulating</div> <div>123.5' - Fracture, horizontal, rough, planar</div> <div>123.9-124.3' - Fracture zone, horizontal, rough, undulating, with clay seams</div>	<div>Sandstone</div> <div>118.0-119.2' - dark reddish brown, very soft, medium bedding, grades to fine material at bottom</div> <div>118.0-118.2' - moderately weathered</div> <div>118.2-119.2' - slightly weathered</div> <div>Siltstone</div> <div>119.2-121.9' - dark reddish brown and olive gray, greenish gray mottling, soft to hard, slightly weathered, gradational contact</div> <div>Sandstone</div> <div>121.9-122.5' - gray and white, hard, thin bedding, very fine sand to fine sand, slightly weathered</div>			R25: 13:25-13:39			
				0								
				0								
				0								
				10+								
			125 139.3	R26NQ 5.1 ft 98%			100	0		<div>122.5-127.7' - dark reddish brown, greenish gray mottling, soft to hard, gradational contact</div> <div>122.5-124.3' - slightly weathered</div> <div>124.3-127.7' - fresh</div>	At 122.3': R-Scale = R3-R4	
								0				
								0				
								0				
								0				
0												
0												
0												
0												
0												



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-11

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
130 134.3	R27NQ 5.2 ft 99%	89	0	129.5-129.6' - Fracture zone, horizontal and vertical, smooth, undulating, and 45 deg		At 127.7' - gray and white, hard to thin, medium bedding, very fine sand to fine sand, fresh	R27: 14:12-14:29 At 130.0': R-Scale = R3-R4
			0				
			10+				
			0				
			3				
			3				
135 129.3	R28NQ 5.1 ft 99%	100	0	132.8-133.0' - Fracture zone, horizontal and vertical, smooth, planar, clay seams (<0.01' thick) laminated beds		130.0-133.9' - reddish brown, becomes coarser with depth	At 132.8-133.1': R-Scale = R0-R1
			0				
			0				
			0				
			0				
			0				
140 124.3	R29NQ 5 ft 100%	78*	0	136.1-137.7' - Contacts with sandstone and conglomerate and siltstone and conglomerate, sharp		133.9-136.1' - black and white, hard, very fine sand to coarse sand, angular to subrounded, trace fine gravel	R28: 14:34-14:44 At 135.2': R-Scale = R3-R4
			0				
			0				
			0				
			0				
			0				
145 119.3	R30NQ 5 ft 98%	54*	0	139.7-144.7' - Microfractures throughout core, tightly healed		137.7-139.0' - dark reddish brown, mottled black, very soft to hard, fresh, trace to some medium sand, grades to sandstone	At 139.0': R-Scale = R3-R4 R29: 14:52-15:01
			2				
			2				
			0				
			10+				
			10+				
145 119.3	R30NQ 5 ft 98%	54*	0	142.4' - Fracture, horizontal, smooth, undulating 142.6' - Fracture, horizontal, smooth, undulating 142.7' - Fracture, horizontal, smooth, undulating 144.0-144.7' - Fracture zone, horizontal, rough, planar, clay seams (hard, <0.03' thick) 144.7-145.4' - Fracture zone, horizontal, rough, undulating, with clay seams, are 0.1' thick (3) 145.8-146.6' - Fracture zone, horizontal and vertical, slickensided / rough, undulating		At 139.0' - dark reddish brown, black, greenish gray, and white, soft, fine sand to coarse sand, angular to subrounded, poorly sorted	At 141.9': R-Scale = R3-R4
			2				
			0				
			10+				
			10+				
			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-11

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687016.5 N, 2012396.5 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

START : 6/5/06 14:15

END : 6/8/06 09:17

LOGGER : LH/MJ

WATER LEVEL: 148.0 bgs		START: 6/8/06 14:10		END: 6/8/06 09:17		LOSS: 4.6' bgs	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
150 114.3	149.7		0	149.1-149.7' - Fracture zone, 45 deg, rough, undulating	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, NW-1 Casing and AWJ Rods, Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		RECOVERY (in)		#TYPE		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG		COMMENTS	
								6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
263.9	0.0										Lean Clay (CL) 0.0-2.0' - red, mottled gray and white, moist, hard, medium plasticity, slow dilatancy, some silt				
	2.0		24.0	SS1SS				5-14-42-39 (56)							
	2.5										Lean Clay (CL) 2.5-3.4' - red, mottled gray and white, moist, hard, medium plasticity, slow dilatancy, some silt				
	4.5		11.0	SS2SS				12-24-38-36 (62)							
5															
258.9	5.0										Lean Clay (CL) 5.0-6.6' - red, mottled gray and white, moist, hard, medium plasticity, slow dilatancy, some silt, more moist than above, slickensides				
	6.5		19.0	SS3SS				5-8-14-19 (22)							PT-1 collected 5.0-7.0' Offset: 5.5' N57W of BPA-12 Lab Results USCS: Sandy CL
	7.5										Lean Clay (CL) 7.5-8.3' - red, mottled gray and white, moist, hard, low to medium plasticity, slow dilatancy, trace fine sands; wet zone @ 7' - approximately 0.5 inches thick				Driller Remark: Switched over to recirculation water after using ~750 gallons
	9.5		8.0	SS4SS				36-50/2 (50/2")							
10															
253.9	10.0										Lean Clay (CL) 10.0-11.6' - red, some mottling, moist, low to medium plasticity, slow dilatancy, trace fine sands				
	12.0		19.0	SS5SS				15-32-28-50/3 (60)							Soil sampling completed at 17:00 on 4/12/06
	12.5										Lean Clay (CL) 12.5-12.6' - red, moist to do that, low to medium plasticity, slow dilatancy, trace fine sands				
	12.6	1.0	SS6SS					50/1 (50/1")			Begin Rock Coring at 12.7 ft bgs See the next sheet for the rock core log				
15															
248.9															
20															



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
12.7	R1/R2NQ 9.3 ft 100%	81*	0	15.8-17.0' - Fracture zone, 20 deg, rough, undulating	x x x	Siltstone At 12.7' - grayish red, some greenish gray and light gray mottling more frequent in upper half foot, hard, fine grained 12.7-15.8' - fresh	Rock coring began at 08:10 on 4/13/06 R1: 08:18-08:49
			0		x x x		
			0		x x x		
15			0		x x x		
248.9			10+		x x x		
			10+		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
20	R3/R4NQ 10 ft 100%	92	0	21.0' - Fracture, 20 deg, undulating	x x x	Sandstone 18.2-22.0' - grayish red, very fine sand to coarse sand, subrounded, poorly sorted, fresh, <50% silt, fining upward sequence	R2: 08:57-09:21
243.9			0		x x x		
			1		x x x		
			0		x x x		
22.0			0		x x x		
			0		x x x		
			10+		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
25	R3/R4NQ 10 ft 100%	92	0	23.4-24.0' - Fracture zone, undulating	x x x	Conglomerate 21.0-23.5' - grayish red, very fine sand to coarse gravel, subrounded, poorly sorted, fresh, <50% silt Sandstone At 23.5' - grayish red, fine sand to medium sand, poorly sorted, fresh, <50% silt, some rounded grains, thin to medium bedding 24.0-25.6' - lighter gray 26.0-30.4' - becomes coarser with depth, conglomerate for about a half a foot, grades to fine grained silty sandstone 26.7-30.4' - up to 40% light gray infilling in matrix	R3: 09:45-10:05
238.9			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
30	R3/R4NQ 10 ft 100%	92	10+	30.5-31.0' - Fracture zone, 30 deg, rough, undulating	x x x	Siltstone At 30.4' - grayish red, light gray mottling, hard, medium bedding, fresh, coarsens with depth to 33.5'	R4: 10:10-10:33
233.9			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			1		x x x		R5: 10:52-11:32



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

WATER LEVEL (ft)		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 228.9	R5/R6NQ 10 ft 99%	99	0	32.5-33.0' - Fractures, 20 deg, rough, undulating				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

WATER LEVEL		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
55 208.9	R9/R10NQ 10 ft 99%	92		52.5-53.0' - Fractures, 10 deg, undulating	XXXX XXXX			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-12

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686970.3 N, 2012488.0 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

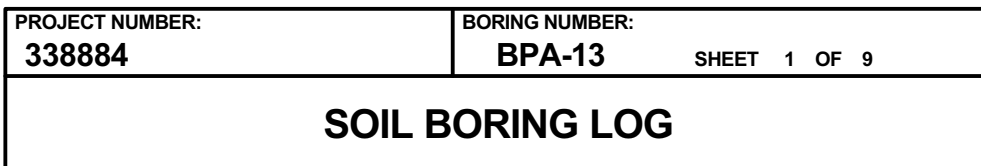
WATER LEVELS : ---

START : 4/12/06 14:45

END : 4/14/06 13:10

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
75 188.9	R13/R14NQ 10 ft 97%	96	0		x x x x	73.0-74.0' - larger mottling zones	R14: 11:13-11:42
			0		x x x x	73.5-73.8' - light gray clasts	
			0		x x x x		
			0		x x x x		
			2	77.2-78.1' - Fractures, 70 deg, undulating	x x x x	Sandstone 77.0-78.7' - reddish brown, light gray, occasional grayish red clasts or greenish gray mottling, medium bedding, fine sand to medium sand, fresh, gradational contact with underlying siltstone	
80 183.9	R15NQ 5 ft 100%	92	0		x x x x	Siltstone At 78.7' - grayish red, fresh, sandstone stringers every foot or so, with coarsening with depth, bottom coarse grained sand is 50% volume of rock	R15: 11:55-13:10
			0		x x x x		
			2	81.2-81.3' - Fractures, 20 deg, undulating	x x x x	81.6-82.0' - dark greenish gray mottling, light gray clasts to 1/2	
82.0			2	82.4-83.0' - Fractures, 15 deg and 30 deg, undulating	x x x x	83.5-85.3' - mottled greenish gray, occasional light gray clasts, some mottling is almost purplish, in lower half foot	
			0	84.3-84.7' - Fractures, 20 deg, undulating	x x x x	85.5-87.0' - fewer and smaller clasts/mottles	
85 178.9			0		x x x x		Drillers Remark: Recirculation mud was thick R-Scale not performed on rock core samples
			0		x x x x		
87.0					x x x x	Bottom of Boring at 87.0 ft bgs on 4/14/06 13:10	
90 173.9							



LOGGER : LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
15 248.7	10.8	R1NQ 3.3 ft 0%	0			No Recovery 10.8-14.1'	Rock coring began at 08:00 on 6/9/06	
	14.1						R1: 08:00-08:08 on 06/09/06	
	19.1	R2NQ 5 ft 100%	0	10+	14.2-14.3' - Clay seam, horizontal and vertical, rough, undulating, 0.01' thick, alternating with siltstone	Siltstone At 14.1' - dark reddish brown, mottled black and greenish gray, very soft, laminated bedding, many clay seams ranging from 0.01' to 0.1' thick 14.1-19.1' - highly weathered 15.3-15.4' - clay seam, very soft, friable material 17.1-17.2' - clay seam, very soft, friable material 18.25-19.1' - <0.05' thick white clasts 19.1-23.3' - fresh 19.1-23.3' - very soft to soft 19.1-20.3' - white clasts	R2: 08:54-09:04 At 14.1-19.1': R-scale = R0 (with some R1 and R2)	
				10+	14.70' - Fracture, horizontal, rough, planar		At 15.6-16.0': R-scale = R2	
				10+	15.0' - Fracture, horizontal, rough, planar			
				10+	15.1' - Fracture, horizontal, rough, planar			
				10+	15.6-16.1' - Fracture zone, horizontal and 45 deg, rough, undulating			
	24.1	R3NQ 5 ft 100%	72	10+	16.3' - Fracture, horizontal, rough, undulating			
				10+	16.7' - Fracture, horizontal, rough, undulating			
				10+	17.5-17.9' - Fracture zone, horizontal, rough, undulating			
3				18.2' - Fracture, horizontal, rough, undulating	At 18.4-18.8': R-scale = R1			
3				18.7-18.9' - Fracture zone, horizontal, rough, undulating		R3: 09:18-09:30		
25 238.7	R4NQ 5 ft 98%	98	3	19.2' - Fracture, horizontal, rough, undulating		At 19.8': R-Scale = R3-R4		
			4	19.5' - Fracture, horizontal, rough, undulating				
			3	19.9' - Fracture, horizontal, rough, undulating				
			3	20.0' - Fracture, horizontal, rough, undulating	At 21.1': R-Scale = R3-R4			
			3	20.3' - Fracture, horizontal, rough, undulating				
			10+	20.4' - Fracture, horizontal, rough, undulating				
29.1			10+	20.5' - Fracture, horizontal, rough, undulating				
			10+	20.6' - Fracture, horizontal, rough, undulating				
			10+	21.5-21.8' - Fracture zone, horizontal and vertical, rough, undulating				
			10+	22.1-22.2' - Fracture zone, rough, undulating, clay seams (0.05' thick)	At 23.0': R-Scale = R3			
			10+	22.6' - Fracture, horizontal, rough, undulating	At 23.3-23.5': R-Scale = R0			
			10+	23.6' - Contact between siltstone and sandstone, horizontal, rough, undulating	R4: 09:38-09:47			
30 233.7			0			At 25.3': R-Scale = R3-R4		
			0					
			0					
			0					
			0					
			0	28.0' - Contact between siltstone and sandstone, horizontal, tightly healed, very evident	At 28.5': R-Scale = R3			
						R5: 09:53-10:07		
							At 30.5': R-Scale = R3-R4	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

WATER LEVEL: 106.855		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 208.7	R9NQ 5 ft 98%	88		51.8-51.9' - Fractures (2), horizontal, rough, undulating, contact between siltstone and sandstone	47.2-47.6' - 30-40% very fine sand with traces of medium and coarse sand in sandy lenses Sandstone At 47.7' - white, light reddish brown, greenish gray and dark gray, very soft to soft, medium bedding, medium sand to coarse sand, angular to rounded, poorly sorted, fresh 49.1-51.8' - light reddish brown, white, very dark grayish brown, greenish gray, light and dark reddish brown, thin bedding, silty bands to 50.9'	At 51.4': R-Scale = R3-R4	
			10+				
			0				
	54.1			53.8' - Fracture, horizontal and 45 deg, slickensided, undulating 54.1-59.1' - Microfractures throughout core sample, greenish gray infilling		At 53.5': R-Scale = R3-R4 R10: 14:00-14:16	
	60 203.7	R10NQ 5 ft 98%	98	0		Siltstone 51.8-53.2' - dark reddish brown, mottled greenish gray, very soft, thin bedding, fresh, white clasts (<0.05' thick) throughout 51.8-52.8' - mottled olive 51.9-52.0' - clay seam, stiff, friable material Sandstone 53.2-53.4' - greenish gray and white, soft, very thin to thin bedding, fine sand to medium sand, fresh Siltstone At 53.4' - dark reddish brown, mottled greenish gray, very soft, thin to medium bedding, fresh 54.1-59.1' - mottled greenish gray, black, and reddish black, very soft to soft 61.5' - 0.02' thick, 0.07' long greenish gray mottle with a vug in the middle, 0.001' thick, 0.02' long	At 56.3': R-Scale = R4
0							
0							
59.1						R11: 08:22-08:36 on 06/13/06	
65 198.7		R11NQ 5 ft 100%	100	0	63.3-63.6' - Fracture, vertical and 60 deg, tightly healed	63.9-61.5' - greenish gray mottle, very soft, 0.1' thick, small pin point vugs in the middle 64.6-65.0' - grades to 40% very fine sand 66.5-68.6' - grades to 40% very fine sand 67.7-69.1' - trace 0.02' thick white inclusions	At 60.5': R-Scale = R3-R4
	0						
	0						
	64.1					At 62.6': R-Scale = R3-R4	
	70 193.7	R12NQ 5 ft 98%	98	0	65.8-66.0' - Fracture, vertical and 70 deg, tightly healed, very soft	69.1-71.7' - <0.03' thick white inclusions 70.0-75.6' - mottled reddish black	R12: 09:12-09:26
1							
0							
69.1						At 67.6': R-Scale = R3-R4	
				10+	69.1-69.7' - Fracture zone, horizontal, rough, undulating 69.2-74.1' - Trace microfractures with greenish gray infilling throughout core		R13: 09:29-09:47
			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

WATER LEVEL: 100.00		START: 09:59:13.7		END: 09:59:59.00		LOGGER: LK			
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
75 188.7	R13NQ 5 ft 98%	86	0		x			At 72.3': R-Scale = R3-R4	
			0		x				
			0		x				
			0		x				
	74.1				x			R14: 09:51-10:13	
	R14NQ 5 ft 102%	100	0		x				
			0		x				
			0		x				
			0		x				
			0		x				
79.1				x			At 77.0': R-Scale = R3		
R15NQ 5 ft 99%	99	0		x					
		0		x					
		0		x					
		0		x					
80 183.7	R15NQ 5 ft 99%	99	0		x			R15: 10:18-10:28	
0				x					
0				x					
0				x					
84.1				x			At 81.65': R-Scale = R3-R4		
R16NQ 5 ft 92%	22	10+	85.3' - Fracture, horizontal, rough, undulating 85.4' - Fracture, horizontal, rough, undulating 85.7-88.8' - Fracture zone, horizontal and vertical, rough, undulating	x					
		10+		x					
		10+		x					
		10+		x					
89.1				x			SC-2 collected 83.1-84.1' R16: 10:32-10:47 Driller's Remark: Start losing water about 20 gallons a run At 85.1-89.1': R-Scale = R0-R1		
		10+	88.8-89.1' - Fracture zone, horizontal and vertical, rough, undulating, some greenish gray mottles in clay	x					
		10+		x					
		10+		x					
90 173.7					x		R17: 11:00-11:19		
				x					
				x					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 6 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

WATER LEVEL: 106.88		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION				ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
95 168.7	R17NQ 5 ft 98%	84	0	89.4-89.5' - Fracture zone, rough, undulating, <0.01' thick clay infilling, clay between laminated siltstone beds, greenish gray mottling		X 			

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)		R Q D (%)		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
						DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
										DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS	
115 148.7	R21NQ 5 ft 101%	90	10+	111.2' - Fracture, horizontal, smooth, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	111.3' - clay seam, very soft, 0.03' thick	At 110.7': R-Scale = R3-R4 At 111.3': R-Scale = R0 Driller's Remark: Lost 23 gallons of water during core run At 112.9': R-Scale = R3-R4				
		0									
		0									
		0									
	114.1		0	118.3' - Fracture, horizontal, rough, planar	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	113.7-117.9' - dark reddish brown, mottled greenish gray, soft to hard, fine sand to medium sand, subangular to rounded, poorly sorted, fresh, trace medium grained sand	R22: 13:47-13:58 At 115.0': R-Scale = R3				
		0									
	R22NQ 5 ft 100%	100	0								
		0									
		1									
	119.1		1								
120 143.7	R23NQ 5 ft 98%	82	10+	119.5' - Fracture, 45 deg, smooth, undulating 120.1-120.5' - Fracture zone, horizontal, rough, planar 121.1-121.5' - Fracture zone, horizontal, rough, undulating, greenish gray stains	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	116.8-117.2' - coarse grained layer 117.6-117.9' - coarse grained layer Siltstone At 117.9' - dark reddish brown, mottled greenish gray and reddish black, soft, fresh 119.1-129.1' - very soft to soft 119.5-124.1' - laminated beds on 10-40 degree angles 119.9-120.1' - very fine sand layers, laminated, lighter	R23: 14:04-14:18 At 119.9': R-Scale = R3-R4				
			10+								
			0								
			0								
	124.1		1	124.5' - Fracture, horizontal, smooth, undulating 125.6' - Fracture, horizontal, rough, undulating 126.0-126.4' - Fracture, 45 deg, rough, stepped	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	129.9-130.1' - trace coarse grained sand	At 122.0': R-Scale = R3-R4 R24: 14:23-14:36 Driller's Remark: Water loss now becomes 10 gallons a core run SC-4 collected 126.4-127.4' At 128.4': R-Scale = R3-R4 R25: 14:44-14:57				
		1									
R24NQ 5 ft 99%	96	1									
	0										
	0										
129.1		0									
130 133.7			0								
			0								



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-13

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686879.4 N, 2012520.3 E)

ELEVATION : 263.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 10.0 ft bgs

START : 6/8/06 15:17

END : 6/15/06 09:50

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS			
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
135 128.7	R25NQ 5 ft 104%	99	0		x	130.3-130.4' - 30-40% very fine to fine sand	At 132.6': R-Scale = R3-R4			
			0		x	131.0-131.2' - 0.05' thick, 0.3' long greenish gray mottle				
			10+		x	132.7-133.5' - dark and light sand layers				
	R26NQ 5 ft 94%	32*	3	133.5' - Fracture, horizontal, smooth, planar, top of (0.04' thick) clay seam 133.7' - Fracture, horizontal, rough, planar 134.2' - Fracture, horizontal, smooth, planar 134.5' - Fracture, horizontal, smooth, undulating 134.7-134.8' - Fracture (2), horizontal, smooth, planar 135.1-135.7' - Fracture zone, horizontal and vertical, smooth, rough, planar 136.0-136.5' - Fracture zone, horizontal, rough, smooth, planar/undulating 136.9' - Fracture, horizontal, smooth, planar/stepped 137.1-137.5' - Fracture zone, horizontal, rough, smooth, planar/undulating 137.9-138.2' - Fracture, 45 deg and horizontal, rough, undulating 138.5' - Fracture, horizontal, smooth, undulating 138.8' - Fracture, horizontal, rough, undulating 139.0-139.1' - Fracture zone, horizontal and vertical, rough, undulating 139.2' - Fracture, horizontal, rough, undulating 139.3' - Fracture, horizontal, rough, undulating 139.5' - Fracture, horizontal, rough, undulating 139.7' - Fracture, horizontal and 45 deg, rough, undulating 140.3' - Fractures (2), horizontal, rough, planar 141.1' - Fracture, horizontal, smooth, planar 142.0' - Fracture, horizontal, smooth, planar 143.3' - Fracture, horizontal, smooth, planar 143.5' - Fracture, horizontal, smooth, planar 143.5' - Fracture, horizontal, tightly healed	x	Siltstone At 133.5' - olive gray, dark reddish brown, and greenish gray, mottled very dusky red, very soft 133.5-139.8' - moderately weathered 133.8' - clay seam, 0.03' thick, very soft to soft 135.7-136.0' - clay seam, very soft, friable material 136.5-136.8' - clay seam, very soft, friable material 137.5-137.9' - clay seam, soft, friable material	At 133.5': R-Scale = R0 At 133.8': R-Scale = R0 At 133.9': R-Scale = R3 R26: 15:03-15:20 At 134.5-138.0': R-Scale = R0-R1 At 134.8-135.2': R-Scale = R3			
			10+		x					
			1		x		At 137.0-137.3': R-Scale = R3			
			10+		x					
			139.1		x					
			140 123.7	R27NQ 5 ft 98%	76	10+		x	139.8-144.1' - trace medium grained sand 139.8-145.0' - fresh 140.5' - clay seam, 0.03' thick, very soft, friable material 142.0-144.1' - coarsens a little, 30-40% very fine sand	At 139.0': R-Scale = R4 R27: 15:38-15:49 At 139.6-139.8': R-Scale = R0
						2		x		
3		x					At 141.3': R-Scale = R3			
0		x								
2		x								
144.1		x								
145 118.7	R28NQ 5 ft 104%	59*				1		x		R28: 16:00-16:19
			10+		x	145.0-147.3' - moderately weathered	At 144.7': R-Scale = R4			
			10+		x		At 145.5-146.3': R-Scale = R1			
			2		x	147.3-149.1' - fresh	At 146.3-146.6': R-Scale = R3-R4 At 146.6-147.3': R-Scale = R1			
			1		x					
			149.1		x					
			150 113.7			0	148.0' - Fracture, horizontal and vertical, rough, undulating 148.1' - Fracture, horizontal and vertical, rough, undulating	x	Siltstone At 156.5' - dark reddish brown, mottled reddish black and greenish gray, very soft to soft, medium to laminated bedding, fresh, 30-40% very fine sand	R29: 08:46-09:00 on 06/15/06
0		x								
0		x								



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-14</div>
SHEET 1 OF 6	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)
ELEVATION : 263.9 ft MSL (NGVD 29)	DRILLING CONTRACTOR : L. Morrison, S&ME
DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer	ORIENTATION : Vertical
WATER LEVELS : 0.0 ft bgs	START : 7/6/06 17:20 END : 7/7/06 16:20 LOGGER : LH

WATER LEVELS : 0.0 ft bgs		START : 7/6/06 17:20		END : 7/6/06 18:20		LOGGER : EIT		
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	PP (TSF)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)					
263.9	0.0	23.0	SS1SS	3-2-3-3 (5)	Topsoil (CL) 0.0-0.2' - reddish brown, dry to moist, soft, trace gravel and organics		2.0	Soil sampling completed at 17:45 on 7/6/06
2.0								
2.5								
	2.5	15.0	SS2SS	8-10-50/3 (60/9")	Clay (CL) 2.5-3.9' - reddish brown, mottled light greenish gray, moist, stiff		4.5	
	3.8				Begin Rock Coring at 3.9 ft bgs See the next sheet for the rock core log			
5								
258.9								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
5 258.9	3.9	R1NQ 1.1 ft 64%	0	0	x x x x x x x x x x	Siltstone At 3.9' - reddish brown to dark reddish brown, mottled light greenish gray, very soft 3.9-6.7' - highly weathered 3.9-5.0' - clay-like material 5.0-5.9' - clay seam, horizontal breaks, very soft 5.9-9.6' - mottled light greenish gray and reddish black, laminated bedding 6.9-10.0' - moderately weathered 7.3-7.5' - trace gravel sized white clasts	Rock coring began at 08:35 on 7/7/06 R1: 08:35-08:43 on 07/07/06 R2: 08:54-09:06 At 5.0' PP: 2.0 tsf	
	5.0			3				
				0				
		R2NQ 5 ft 104%	61	0				
				0				
				10+				
				10+				
				10+				
				10+				
				10+				
10 253.9	10.0				x x x x x x x x x x	9.6-10.0' - mottled reddish black, soft to hard 10.0-11.9' - clay-like material, very soft, 4 clay seams 10.0-13.2' - highly weathered 11.9-13.3' - mottled reddish black	R3: 09:19-09:28 At 10.0' PP: 3.2 tsf At 10.0-12.8': R-scale = R0 At 10.4': PP: 2.1 tsf At 11.2': PP: 4.5+ tsf	
				10+				
				10+				
		R3NQ 5 ft 100%	36	0				
				0				
				1				
				1				
				1				
				1				
				1				
15 248.9	15.0				x x x x x x x x x x	13.2-15.6' - fresh 13.3-15.0' - mottled reddish black, soft to hard 14.6-14.6' - very soft, laminated bedding 15.0-17.7' - no mottling, clay-like material 15.0-17.7' - clay seam, horizontal breaks, very soft 15.6-17.6' - highly weathered 15.7-16.1' - friable material 17.3-17.7' - friable material 17.6-22.4' - slightly weathered 17.7-20.0' - mottled olive	At 12.8-15.0': R-Scale = R1-R2	
				1				
				1				
				3				
		R4NQ 5 ft 102%	46	3				
				4				
				3				
				3				
				3				
				3				
20 243.9	20.0				x x x x x x x x x x	19.0' - Fracture, horizontal, smooth, planar 19.1' - Fracture, rough, planar 19.6' - Fracture, horizontal, rough, planar 19.7' - Fracture, horizontal, rough, planar 20.2' - Fracture, horizontal, smooth, planar 20.3' - Fracture, horizontal, smooth, planar 20.4-20.6' - Fracture zone, horizontal, smooth, planar 20.8' - Fracture, horizontal, rough, planar 21.0-21.5' - Fracture, 60 deg, rough, undulating 22.3' - Fracture zone, horizontal, rough, planar, 0.05' thick 23.3' - Fracture, 10 deg, smooth, planar	R4: 09:36-09:45 At 15.5': PP: 2.2 tsf SC-1 collected 15.0-15.7' At 15.7-17.7': R-Scale = R0 At 16.3': PP: 1.4 tsf At 16.7': PP: 1.2 tsf At 17.2': PP: 1.6 tsf	
				1				
				1				
				10+				
				10+				
				10+				
				10+				
				10+				
				10+				
				2				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
25 238.9	25.0		3	24.2' - Fracture, horizontal, rough, undulating 24.5' - Fracture, 10 deg, rough, undulating 24.8' - Fracture, horizontal, rough, undulating	xx 				

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
45 218.9	45.0		0				
	R10NQ 5 ft 100%	100	0		45.2-45.6' - gravel sized white clasts		R10: 11:28-11:33
			0				
			0				At 47.3': R-Scale = R3
			0				At 49.1': R-Scale = R3-R4
			0				
50 213.9	50.0		0		50.3-50.3' - trace medium sand		R11: 12:58-13:10
	R11NQ 5 ft 97%	97	0		50.9-51.2' - sandstone lens		
			0		51.5-51.7' - sandstone lens		
			0		Sandstone 52.1-58.5' - white and very dark greenish gray, soft, laminated to medium bedding, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh, coarsens with depth		At 52.1': R-Scale = R3-R4 SC-2 collected 53.0-53.95'
			0				
55 208.9	55.0		0				R12: 13:15-13:28
	R12NQ 5 ft 104%	94	0				At 56.3': R-Scale = R3-R4
			0				
			0				At 58.2': R-Scale = R3-R4
			0				
60 203.9	60.0		4	59.3' - Contact between siltstone and sandstone, horizontal, smooth, planar			
	R13NQ 5 ft 102%	78	0	59.4' - Fracture, horizontal, rough, undulating			R13: 13:33-13:44
			0	59.5' - Fracture, horizontal, smooth, planar			
			8	59.8' - Fracture, horizontal, rough, undulating			
			8	59.9' - Fracture, horizontal, rough, undulating			
			3	61.1' - Fracture, horizontal, rough, undulating			At 61.2-62.4': R-Scale = R1
			3	61.1' - Fracture, horizontal, rough, undulating			
			0	61.4' - Fracture, horizontal, rough, undulating			
			0	61.5' - Fracture, horizontal, rough, undulating			
			0	61.7' - Fracture, horizontal, rough, undulating			
			0	61.7' - Fracture, horizontal, rough, undulating			
			0	62.0' - Fracture, horizontal, rough, undulating			
				62.1' - Fracture, horizontal, rough, undulating			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
65 198.9	65.0		0	62.3' - Fracture, horizontal, rough, undulating 62.4' - Fracture, horizontal, rough, undulating	XXXXXX 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-14

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686783.7 N, 2012564.5 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 0.0 ft bgs

START : 7/6/06 17:20

END : 7/7/06 16:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
85 178.9	85.0		0				
	R18NQ 5 ft 104%	82	3	85.2' - Fracture, horizontal, rough, planar 85.4' - Fracture, horizontal, rough, planar 85.7' - Fracture, horizontal, rough, undulating 86.0' - Fracture, horizontal, smooth, planar 86.3' - Fracture, horizontal, rough, planar	XXXXXX 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)				SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE		6"-6"-6"-6" (N)						
262.7	0.0	24.0	SS1SS	4-7-14-18 (21)	Clay (CL) 0.0-2.0' - reddish brown, mottled light greenish gray and black, dry, very stiff			PT-1 collected 3.0-5.0'		
	2.0									
	2.5	24.0	SS2SS	16-27-45-35 (72)	Clay (CL) 2.5-4.5' - reddish brown, mottled light greenish gray and black, dry, hard					
	4.5									
5										
257.7	5.0	15.6	SS3SS	15-20-50 (70)	Clay (CL) 5.0-6.3' - reddish brown, mottled light greenish gray and black, moist, hard					
	7.0									
	7.5	16.2	SS4SS	20-28-50/4 (78/10")	Clay (CL) 7.5-8.9' - reddish brown, mottled light greenish gray and black, moist, hard					
	9.5									
10										
252.7	10.0	9.0	SS5SS	24-50/3 (50/3")	Clay (CL) 10.0-10.9' - reddish brown, mottled light greenish gray and black, moist, hard					
	12.0								Soil sampling completed at 17:06 on 7/6/06	
	12.5	3.0	SS6SS	50/3 (50/3")	Clay (CL) 12.5-12.8' - reddish brown, mottled light greenish gray and black, moist, hard				Drillers Remark: Drilled through 12.65-13.4' with tricone bit.	
	12.8				Begin Rock Coring at 13.4 ft bgs					
	13.4				See the next sheet for the rock core log					
15										
247.7										
20										



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15 247.7	13.4 R1NQ 0.9 ft 44%	44	10+	13.4-13.5' - Fracture zone, rough, undulating 13.9' - Fracture, horizontal, rough, undulating	XXXXXX XXXXXX			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 227.7	34.3		0		XXXXXX XXXXXX			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687089.1 N, 2012553.1 E)

ELEVATION : 262.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

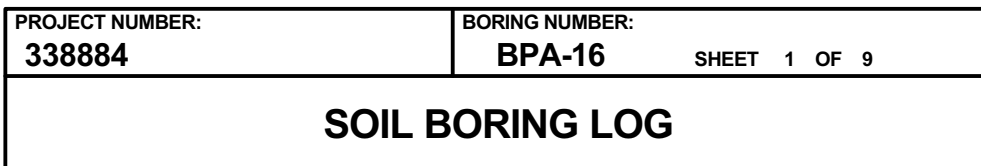
WATER LEVELS : 1.5 ft bgs

START : 7/22/06 16:01

END : 7/24/06 08:43

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
55 207.7	54.3		1	52.6' - Fracture, <5 deg, rough, undulating, 0.01' thick clay infilling 53.9' - Fracture, <5 deg, rough, undulating	x x			



LOGGER : LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
257.8	4.8	0	0		XXXXXX XXXXXX			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
237.8	R5NQ 5 ft 102%	88	1		x x x	24.3-27.6' - trace very fine to medium sand	At 26.5': R-Scale = R3-R4
			2	25.7' - Fracture, horizontal, rough, planar	x x x	24.3-24.4' - clay seam, very soft, friable material	
			1		x x x	25.4-25.5' - clay seam, very soft, friable material	
			1	27.4' - Fracture, horizontal, rough, planar 27.6' - Contact between siltstone and sandstone, horizontal, rough, planar	x x x		
			0		x x x		
29.3	R6NQ 5 ft 99%	86	0		x x x	Sandstone 27.6-33.0' - weak red, soft to hard, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh	R6: 15:33-15:41 Drillers remark: lost 40 gallons in last 2' of core run At 31.5': R-Scale = R3
30			0		x x x	29.3-33.0' - bands of coarser and finer materials	
232.8			3	30.6-30.8' - Fracture zone (3), horizontal and vertical, rough, undulating	x x x		
			0		x x x		
			1		x x x		
	R7NQ 5 ft 100%	94	1	33.3' - Fracture, 30 deg, rough, undulating, black and greenish gray stains 34.0' - Fracture, 30 deg, rough, undulating	x x x	Siltstone 33.0-34.3' - dusty red, soft, fresh, very fine to coarse grained sand, fine gravel (<5%), medium bed	R7: 15:46-15:56 At 35.0': R-Scale = R3-R4 At 37.7': R-Scale = R3-R4
34.3			0		x x x	Sandstone 34.3-36.5' - weak red, soft to hard, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh, bands of coarser and finer materials	
35			2	35.5-35.6' - Fractures (2), horizontal, rough, planar, silt lense with breaks on top and bottom	x x x		
227.8			2	36.5' - Contact between siltstone and sandstone, horizontal, rough, planar 36.7' - Fracture, horizontal, rough, planar	x x x	Siltstone At 36.5' - dark reddish brown, mottled greenish gray, very soft, fresh 37.3-37.7' - very soft to soft, white clasts (0.02-0.04' thick)	
			0		x x x		
	R8NQ 5 ft 94%	94	0		x x x		R8: 16:01-16:12 At 41.7': R-Scale = R3-R4
39.3			0		x x x	39.8-40.2' - very fine sand (30%)	
40			0		x x x	40.4-43.1' - trace to some white clasts (0.02-0.1')	
222.8			0		x x x	41.4-41.9' - very fine to fine sand (30%)	
			0		x x x		
			0		x x x		R9: 16:17-16:31
44.3			0		x x x	44.3-49.3' - mottled greenish gray	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
217.8	R9NQ 5 ft 103%	100	0		x	47.4-49.3' - soft, trace medium sand	At 48.3': R-Scale = R3
			0		x		
			0		x		
			0		x		
			0		x		
49.3	R10NQ 5 ft 104%	100	0	51.0' - Contact between siltstone and sandstone, mixed up; silt extends (in portions) into sandstone	x	49.3-50.4' - mottled greenish gray, soft, 0-30% very fine sand	R10: 08:06-08:12 on 6/21/2006 At 50.0': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
50 212.8	R11NQ 5 ft 97%	97	0	57.9' - Contact between siltstone and sandstone, 45 deg, rough, undulating	x	50.4-57.9' - very dark gray and light reddish gray, soft, very thin to medium bedding, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh	R11: 08:17-08:24 At 55.7': R-Scale = R3 SC-2 collected 56.2' - 57.2'
			0		x		
			0		x		
			0		x		
			0		x		
54.3	R12NQ 5 ft 99%	85	0	59.6' - Fracture, horizontal, rough, planar 60.1' - Fracture, horizontal, rough, planar 60.2' - Fracture, horizontal, rough, undulating	x	53.8-54.1' - beds on 30 degree angle	R12: 08:30-08:37 At 61.7': R-Scale = R3-R4 At 63.5': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
55 207.8			0	62.3' - Fracture, horizontal, rough, planar 62.4' - Fracture, horizontal, rough, planar 62.5' - Fracture, horizontal, rough, planar	x	57.9' - dark reddish brown, mottled greenish gray, very soft, white clasts (0.02' - 0.04' thick) 57.9-97.7' - fresh 59.3-64.3' - mottled greenish gray and reddish black, very soft to soft 59.3-62.3' - white clasts (0.01-0.05' thick)	R13: 08:42-08:48
			0		x		
			0		x		
			0		x		
			0		x		
59.3			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
60 202.8			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
64.3			0		x		
			0		x		
			0		x		
			0		x		
			0		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 5 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

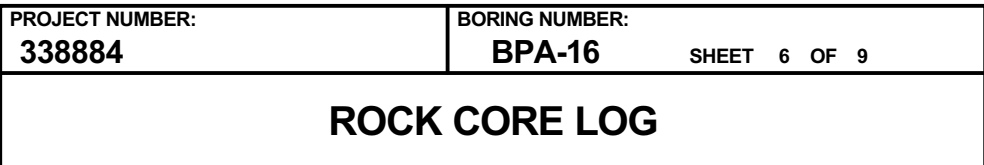
WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
197.8	R13NQ 5 ft 100%	100	0		x	64.3-69.3' - mottled greenish gray and reddish black, very soft to soft	At 65.9': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
69.3	R14NQ 5 ft 104%	100	0		x	69.3-99.3' - mottled greenish gray and reddish black, soft	At 68.1': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
70	R15NQ 5 ft 100%	100	0		x	72.2' - white clast (0.05')	At 71.7': R-Scale = R3-R4
192.8			0		x		
			0		x		
			0		x		
			0		x		
74.3	R16NQ 5 ft 102%	82	0		x	81.1-81.5' - clay seams	At 73.7': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
75	R17NQ 5 ft 100%	100	0		x	75.2-76.0' - white clasts (0.01' - 0.05' thick)	At 76.1': R-Scale = R3-R4
187.8			0		x		
			0		x		
			0		x		
			0		x		
79.3	R18NQ 5 ft 100%	100	1	76.8' - Fracture, horizontal, smooth, undulating	x	76.7-79.3' - white clasts (0.01' - 0.05' thick)	At 77.2': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
80	R19NQ 5 ft 102%	82	1	79.4' - Fracture, horizontal, smooth, undulating	x	81.1-81.5' - clay seams	At 79.9': R-Scale = R3-R4
182.8			4	80.9' - Fracture, 20 deg, smooth, undulating	x		
			4	81.1-81.5' - Fractures (7), horizontal, smooth, undulating, 0.01-0.02' thick clay seams	x		
			0	82.2' - Fracture, horizontal, rough, planar	x		
			1	83.6' - Fracture, horizontal and 20 deg, rough, planar	x		
84.3	R20NQ 5 ft 100%	100	0	84.2' - Fracture, horizontal, rough, planar	x		R17: 09:51-10:00
			0		x		
			0		x		
			0		x		
			0		x		



LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
157.8	R21NQ 5 ft 104%	100	0	110.6-111.0' - Fracture, 60 deg, rough	XXXXXX 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687020.2 N, 2012592.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 6/20/06 11:11

END : 6/27/06 14:36






LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
137.8	R25NQ 5 ft 100%	87	1	124.0' - Contact between siltstone and sandstone, 20 deg, rough, planar, tightly healed	x x		



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-17</div>
SHEET 1 OF 4	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)
ELEVATION : 262.4 ft MSL (NGVD 29)	DRILLING CONTRACTOR : L. Morrison, S&ME
DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer	ORIENTATION : Vertical
WATER LEVELS : 5.3 ft bgs	START : 7/8/06 08:15 END : 7/8/06 11:26 LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS
	INTERVAL (ft)			SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION		
	RECOVERY (in)	#TYPE					
			6"-6"-6"-6" (N)				
262.4	0.0				Topsoil 0.0-0.1'		
		20.4	SS1SS	3-7-11-11 (18)	Clay (CL) 0.1-0.7' - yellowish red, mottled black and gray, dry, medium stiff		
	2.0				Clay (CL) 0.7-1.7' - reddish brown, dry, very stiff		
	2.5				Clay (CL) 2.5-4.1' - reddish brown, mottled dark reddish gray, weak red, and light greenish gray, dry, very stiff		
	4.5						
5							Soil sampling completed at 08:41 on 7/13/06
257.4	5.0	1.0	SS3SS		Clay (CL) 5.0-5.1' - reddish brown, mottled dark reddish gray, weak red, and light greenish gray, dry, very stiff Begin Rock Coring at 5.2 ft bgs See the next sheet for the rock core log		
	5.1			50/1 (50/1")			
10							
252.4							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-17

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 08:15

END : 7/8/06 11:26

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
10 252.4	5.2 R1NQ 4.8 ft 100%	0	0	6.2' - Fracture, horizontal and 30 deg, rough, undulating	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-17

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 08:15

END : 7/8/06 11:26

LOGGER : LH

WATER LEVELS : 5.3' bgs		DISCONTINUITIES		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
30 232.4	R5NQ 5 ft 98%	61	10+	25.0-25.5' - Fracture zone, some clay	x 		

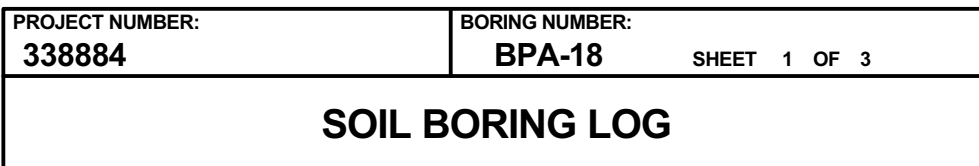


PROJECT NUMBER: <div style="border: 1px solid black; padding: 2px; font-weight: bold;">338884</div>	BORING NUMBER: <div style="border: 1px solid black; padding: 2px; font-weight: bold;">BPA-17</div>
SHEET 4 OF 4	
<div style="border: 1px solid black; padding: 5px; font-size: 1.2em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686934.2 N, 2012635.6 E)
ELEVATION : 262.4 ft MSL (NGVD 29)	DRILLING CONTRACTOR : L. Morrison, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 5.3 ft bgs	START : 7/8/06 08:15	END : 7/8/06 11:26	LOGGER : LH
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
50 212.4				44.0' - Contact between siltstone and sandstone, horizontal, rough, undulating, hummocky, tightly healed	Siltstone 44.0-45.0' - dark reddish brown, mottled reddish black and greenish gray, very soft to soft, fresh, laminated beds, 0-20% very fine to medium sand Bottom of Boring at 45.0 ft bgs on 7/8/06 11:26		
55 207.4							
60 202.4							
65							



LOGGER : JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-18

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687144.9 N, 2012671.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

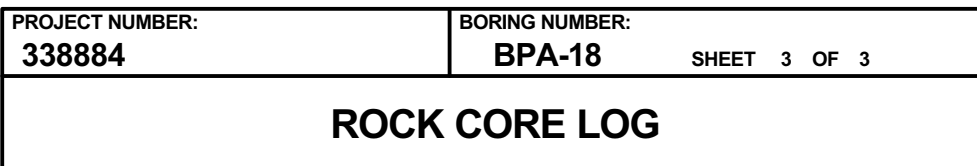
WATER LEVELS : 5.5 ft bgs

START : 7/13/06 16:25

END : 7/14/06 13:18

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
15 246.9	10.3	R1NQ 4.2 ft 101%	53	10+	x 			



LOCATION : (NAD 27) (687144.9 N, 2012671.5 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JF

Rev. 0

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

LOGGER : LH/EM

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-19

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
13.0	R1NQ 1.6 ft 88%	0	2	13.5' - Fracture, horizontal, rough, planar	x x	Siltstone At 13.0' - dark reddish brown, reddish black and greenish gray, very soft, highly weathered, very soft	Rock coring began at 16:10 on 7/11/06
14.6			0	14.0' - Fracture, horizontal, rough, planar	x x		R1: 16:10-16:15 At 13.7': R-Scale = R4
15					x x	14.6-21.8' - laminated bedding	R2: 16:32-16:41
246.4			0		x x		
	R2NQ 5 ft 96%	0	4	16.2' - Fracture, horizontal, rough, planar	x x		
			0	16.2' - Fracture, horizontal, rough, planar	x x		At 16.9': R-Scale = R1
			0	16.5' - Fracture, horizontal, rough, planar	x x		
			1	16.6' - Fracture, horizontal, rough, planar	x x	17.9-18.3' - soft	At 18.2': R-Scale = R3-R4
			0	18.4-18.8' - Fracture zone, 60 deg, rough, undulating	x x		
19.6					x x		
20			10+	19.8' - Fracture, horizontal, rough, planar	x x		R3: 08:18-08:27 on 7/12/2006
241.4			10+	19.9-20.2' - Fracture, horizontal, rough, planar	x x		
			10+	20.5-20.8' - Fracture, horizontal, rough, planar	x x		
	R3NQ 5 ft 102%	56*	2	21.0-21.1' - Fracture zone, horizontal and vertical, rough, planar	x x		At 21.4': R-Scale = R2
			2	21.8' - Fractures (2), horizontal, rough, planar	x x	Sandstone At 21.8' - dusky red and weak red, soft to hard, thin to medium bedding, very fine sand to fine sand, subangular to subrounded, well sorted	
			2	21.8' - Contact between siltstone and sandstone	x x	21.8-24.3' - fresh	At 23.4': R-Scale = R3-R4
			2	22.6' - Fracture, 60 deg, rough, undulating	x x		
			2	22.9' - Fracture, 40 deg, rough, undulating	x x		
24.6				24.3' - Fracture, horizontal, rough, undulating	x x	24.3-26.3' - moderately weathered	R4: 08:34-08:45 SC-1 collected 24.8-25.6'
25			10+	24.5' - Fracture, horizontal, rough, undulating	x x		
236.4			2	24.7' - Fracture zone, rough, undulating	x x		
			2	25.8-26.2' - Fracture zone, vertical, rough, undulating	x x	25.6-25.8' - clay-like siltstone lens	At 26.0': R-Scale = R5
	R4NQ 5 ft 104%	100*	2	26.6' - Fracture, horizontal, rough, planar	x x	25.6-25.8' - clay seams, alternating siltstone, very soft to firm friable material	At 26.2-27.1': R-Scale = R2
			2		x x	Siltstone 26.3-27.3' - dark reddish brown, mottled reddish black and greenish gray, very soft, moderately weathered	At 27.1-27.4': R-Scale = R0
			2		x x	27.1-27.3' - clay seam, very soft to stiff, very fine to fine sand (0 - 30%) in clay, friable material	
29.6			1	28.4-28.5' - Fracture zone, rough, undulating	x x	Sandstone 27.3-27.5' - dark reddish brown, mottled reddish black and greenish gray, soft, thin bedding, very fine sand to coarse sand, subangular, poorly sorted, moderately weathered	At 29.1-29.3': R-Scale = R0
				29.0' - Contact between siltstone and sandstone, horizontal, rough, undulating	x x		R5: 08:51-09:07
30			1	30.1' - Fracture, horizontal, rough, undulating	x x		At 30.1-30.7': R-Scale = R2
231.4			3	30.6-31.1' - Clay seams (3), horizontal, rough, planar, alternating with siltstone, friable material, very soft	x x		At 30.7-32.7': R-Scale = R0
			10+	31.2-31.3' - Fracture zone, horizontal, rough, planar, 0.02' thick clay infilling	x x	Siltstone 27.5-28.1' - dark reddish brown, mottled reddish black and greenish gray, very soft, moderately weathered	
	R5NQ 5 ft 102%	34*		31.4-33.3' - Clay seams, horizontal, rough, planar, up to 0.35' thick clay infilling	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-19

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
35 226.4 							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-19

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687070.7 N, 2012705.5 E)

ELEVATION : 261.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

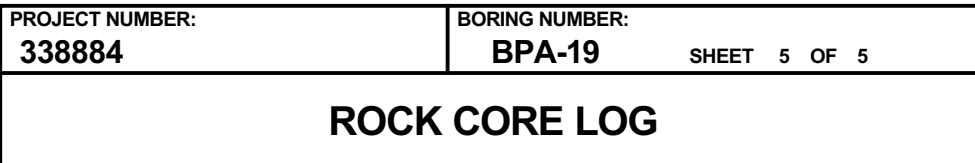
WATER LEVELS : 9.6 ft bgs

START : 7/11/06 14:09

END : 7/13/06 14:25

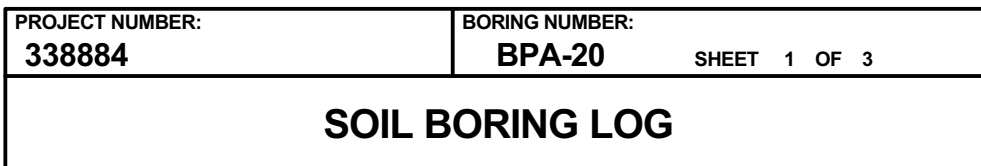
LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 206.4	54.6	R10NQ 5 ft 103%	92	1	51.1' - Fracture, horizontal, rough, undulating	XXXXXX 	



LOGGER : LH/EM

Rev. 0



LOGGER : LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-20

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686985.3 N, 2012742.1 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison/D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 13:42

END : 7/11/06 10:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
8.2	R1NQ 1.4 ft 111%	0	0	8.7' - Fracture, horizontal, rough, planar	x x x	Siltstone At 8.2' - dark reddish brown, mottled reddish black and greenish gray, soft	Rock coring began at 17:05 on 7/10/06
9.6			2	9.3' - Fracture, horizontal, rough, planar	x x x	8.2-8.5' - clay seam, firm to stiff	R1: 17:10-17:16 on 07/10/06
10			10+	9.8' - Fracture, 15 deg, smooth, planar	x x x	8.2-13.2' - highly weathered	At 8.2'-8.4': PP: 2.0 tsf
251.5				10.0-10.1' - Fracture zone, horizontal, rough, planar	x x x	8.2-9.6' - very soft, laminated bedding	At 9.0': R-Scale = R1
			1	10.2' - Fracture, horizontal, smooth, planar	x x x		R2: 17:28-17:44
	R2NQ 5 ft 100%	49	2	10.3-10.4' - Fracture zone, horizontal, rough, planar	x x x		
			0	10.4-10.5' - Fracture, 45 deg, rough, planar	x x x	12.2-12.3' - clay seam, soft, friable material	
			0	10.7-10.8' - Fracture zone, horizontal, rough, planar	x x x	13.2-13.5' - very soft to soft	
			0	11.9' - Fracture, horizontal, smooth, planar	x x x	13.2-17.0' - slightly weathered	At 13.5': R-Scale = R3-R4
			0	12.3' - Fracture, horizontal, rough, undulating, soft, friable material	x x x		
14.6				14.7' - Fracture, horizontal, smooth, planar	x x x	14.6-16.0' - soft	R3: 08:47-08:57 on 07/11/06
15			1	15.6' - Fracture, horizontal, rough, undulating	x x x		At 15.7': R-Scale = R2-R3
246.5			2	16.45' - Fracture, horizontal, smooth, planar	x x x		
	R3NQ 5 ft 100%	49	0		x x x	17.0-17.1' - light yellowish brown mottle	
			0		x x x	17.0-21.0' - highly weathered	
			0		x x x	17.1-19.6' - clay seam, stiff	SC-1 collected 18.4-19.0'
			0		x x x		At 18.4': PP: 2.9 tsf
19.6					x x x		At 18.9': PP: 4.5 tsf
20			0		x x x	19.6-21.0' - very soft, laminated bedding	R4: 09:03-09:12 and 09:20-09:23
241.5			3	21.0' - Fracture, horizontal, rough, planar	x x x	19.6-20.3' - clay seam, soft	At 19.8': PP: 3.0 tsf
			0	21.4' - Fracture, horizontal, rough, planar	x x x	19.6-19.9' - trace medium sand	
	R4NQ 5 ft 101%	71	0	21.5' - Fracture, horizontal, rough, planar	x x x	21.0-24.6' - fresh	
			0		x x x		
			0		x x x	23.1-24.0' - trace medium sand	At 23.6': R-Scale = R3-R4
24.6			9	24.8-25.0' - Fractures (7), horizontal, rough, planar	x x x	24.2-24.6' - very soft, laminated bedding	
25			3	25.1-25.2' - Fractures (2), horizontal, rough, planar	x x x	24.6-33.8' - slightly weathered	R5: 09:27-09:40
236.5			8	25.7' - Fracture, horizontal, rough, planar	x x x	24.8-25.2' - very soft, laminated bedding	
				25.8' - Fracture, horizontal, rough, planar	x x x	25.7-26.0' - very soft, laminated bedding	
	R5NQ 5 ft 102%	65		25.9' - Fracture, horizontal, rough, planar	x x x	26.6-27.1' - very soft, laminated bedding	At 26.3': R-Scale = R3-R4
				26.7-26.9' - Fracture, horizontal, rough, planar	x x x	27.0' - Fracture, horizontal, rough, planar	
				27.0' - Fracture, horizontal, rough, planar	x x x	27.4-28.1' - very soft, laminated bedding	
				27.1' - Fracture, 30 deg, rough, planar	x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-20

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686985.3 N, 2012742.1 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : L. Morrison/D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 7/8/06 13:42

END : 7/11/06 10:20

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
30 231.5	29.6		0	27.4-27.5' - Fracture (3), horizontal, rough, planar	x		
			2	29.0' - Fracture, 20 deg, rough, planar	x		
			1	29.5' - Fracture, rough, undulating, parabolic shaped	x	29.4-29.6' - very soft, laminated bedding	R6: 09:45-09:54
				29.8' - Fracture, horizontal, rough, planar	x		
			0		x		
	R6NQ 5 ft 101%	81	0		x	31.4-32.6' - very soft, laminated bedding	At 32.3': R-Scale = R2
			0		x		
			5	33.8-34.2' - Fracture (4), horizontal, rough, planar	x	33.2-34.6' - very soft, laminated bedding	
35 226.5	34.6		10+	34.4' - Fracture, horizontal, rough	x	33.8-35.8' - moderately weathered	
				34.7-35.0' - Fracture (6), horizontal, rough, planar	x	34.7-37.4' - very soft, laminated bedding	R7: 09:59-10:08
			3	35.3' - Fracture, 30 deg, rough, undulating	x		
				35.5-35.6' - Fracture zone, horizontal, rough, undulating	x	35.8-39.6' - slightly weathered	
	R7NQ 5 ft 100%	76	0	35.7' - Fracture, 30 deg, rough, undulating	x	35.9-36.1' - white clasts	At 37.0': R-Scale = R3-R4
			0	35.8' - Fracture, 30 deg, rough, undulating	x		At 40.0': R-Scale = R2
			0	36.3' - Fracture, horizontal, rough, planar	x		At 40.3' PP: 0.75 tsf
			0		x		R8: 10:16-10:20
40 221.5	39.6		2	40.0' - Fracture, horizontal, rough, undulating	x	39.2-41.2' - very soft, laminated bedding	First water level = 5.25' bgs taken 7/11/06 at 13:58;
				40.2-40.4' - Clay seam, horizontal, rough, undulating, with fractures at top, very soft	x	39.6-41.2' - highly weathered	second water level = 5.5' bgs taken 7/12/06 at 12:10
	R8NQ 1.6 ft 97%	0	0		x		
					x	40.9-41.0' - clay seam, very soft, friable material	R-scale performed after drilling on stored samples
					x	Bottom of Boring at 41.2 ft bgs on 7/11/06 10:20	
45 216.5							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-21

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, 3-5/8 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

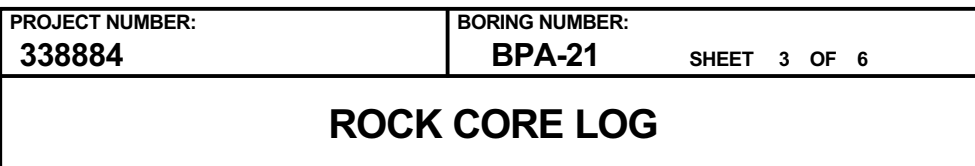
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS			
		RECOVERY (in)	#TYPE				6"-6"-6"-6" (N)		PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
261.5	0.0	11.0	SS1SS	3-3-3-4 (6)	Sandy Silt (ML) 0.0-0.9' - very dark brown to light brown, loose, grades from dark to light, black specks in light brown material at bottom	1.5	PT-1 collected 2.0-4.0'			
2.0										
2.5	18.0	SS2SS	2-2-2-4 (4)	Sandy Silt (ML) 2.5-4.0' - light brown, very loose, black fine grains at 3.0', organic roots	0.75					
4.5										
5										
256.5	5.0	20.0	SS3SS	3-4-5-7 (9)	Sandy Silt (ML) 5.0-6.7' - light brown, loose, very fine to fine grained	3.0	PT-2 collected 5.0-7.0'			
7.0										
7.5	17.0	SS4SS	6-7-13-33 (20)	Sandy Silt (ML) 7.5-8.9' - light brown, loose, very fine to fine grained	1.5-					
9.5				Sandy Silt (ML) 8.0-8.5' - light and dark brown, medium stiff, fine grained	3.5					
10					Sandy Silt (ML) 8.5-9.2' - dark brown, medium stiff, fine grained		PT-3 collected 9.0-11.0' Offset: 1.9' S41W of BPA-21 Lab Results USCS: CL			
251.5	10.0	8.5	SS5SS	41-50/2.5 (50/2.5")	Sandy Silt (ML) 10.0-10.8' - very dark brown, trace mottling, hard, fine to medium grained, mica fragments	4.5				
12.0										
12.5	4.0	SS6SS	50/4 (50/4")	Sandy Silt (ML) 12.5-12.8' - black and very dark brown, hard, mica fragments	3.5					
14.5										
15										
246.5	15.0	11.0	SS7SS	32-50/5 (50/5")	Sandy Silt (ML) 15.0-15.9' - very dark brown, trace mottling, hard, fine grained, mica fragments, black layers at 15.67' and 15.92'	3.5	Soil sampling completed at 11:00 on 7/20/06			
17.0										
17.5	8.0	SS8SS	12-20-50/2 (70/8")	Sandy Silt (ML) 17.5-18.3' - dark brown, trace mottling, hard, fine to medium grained, mica fragments	1.5-					
19.5					3.0					
20										



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-21</div>
SHEET 2 OF 6	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)
ELEVATION : 261.5 ft MSL (NGVD 29)	DRILLING CONTRACTOR : K. Canuel, S&ME
DRILLING EQUIPMENT AND METHOD : CME-750, 3-5/8 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer	
ORIENTATION : Vertical	
WATER LEVELS : 7.8 ft bgs	
START : 7/20/2006	END : 7/21/06 11:00
LOGGER : MJ	

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	RECOVERY (in)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	PP (TSF)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
241.5	20.0	3.0	SS9SS	50/3 (50/3")	Silty Sand (SM) 20.0-20.3' - light brown, very dense, fine to medium grained, sandy silt at top of sample, mica fragments Begin Rock Coring at 20.3 ft bgs See the next sheet for the rock core log	11		
25	20.3							
236.5								
30								
231.5								
35								
226.5								
40								



LOGGER : MJ

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS			
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.			
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
45 216.5	42.2	R6NQ 4.9 ft 94%	100	1	40.1' - Fracture, 40 deg, smooth, undulating, multiple fractures along one long fracture	<div>36.5-37.2' - pinkish gray, fine sand to coarse sand 37.2-39.6' - fresh 37.2-38.2' - reddish brown, mottled, fine sand 38.2-39.0' - greenish gray 39.0-39.6' - fine sand to medium sand, 0.05' thick inclusions Siltstone At 39.6' - reddish brown, mottling throughout, laminated bedding, fresh 39.8-40.5' - reddish gray clasts 41.0-42.1' - 0.03' pinkish gray inclusions 41.3' - 0.03' pinkish gray inclusions 41.4' - 0.03' pinkish gray inclusions 41.6' - 0.03' pinkish gray inclusions 41.8' - 0.03' pinkish gray inclusions 41.9' - 0.03' pinkish gray inclusions 42.1-42.8' - laminated bedding, transitions to more siltstone, pinkish gray clasts throughout 42.8-43.7' - pinkish gray clasts 43.7-44.5' - grains become coarse, fine to medium grains 44.5-45.0' - grains become coarser, more pinkish gray clasts 45.0-45.9' - 0.05' thick pinkish gray clast 45.9-46.5' - 0.05' thick pinkish gray clast 46.5-47.0' - greenish gray mottling inclusions, more clasts speckled throughout, fine to medium grains 47.0-47.4' - 0.05' thick pinkish gray clast 47.4-48.0' - 0.02-0.06' thick greenish gray clasts 50.6-51.2' - large greenish gray mottle inside core, with fine grains and trace medium grains 51.2-52.9' - grains become more coarse, transitions to sandstone Sandstone 52.9-53.4' - pinkish gray, mottled, fine sand, fresh Siltstone 53.4-54.1' - reddish brown, mottling throughout, fresh, very fine grained Sandstone At 54.1' - pinkish gray, fine sand to medium sand, fresh 55.0' - fine sand, 0.03' thick gray band, 150 degree angle 55.2' - rust colored band 56.5' - rust colored band 56.9' - rust colored band 57.2' - 0.01' thick gray band 58.6' - 0.01' thick rust bands 30 angle degree</div>	R6: 13:43-14:05				
				1	40.3' - Fracture, 35 deg, rough		At 43.1': R-Scale = R3-R4				
	0			43.7-44.5' - Microfractures	0		47.1' - Fracture, at top of run	R7: 08:15-08:30 on 07/21/06 At 47.8': R-Scale = R3			
	0				0			At 49.8': R-Scale = R3			
	0				0			R8: 08:37-08:52			
	0				0						
	0				0						
	0				0						
	55 206.5			52.1	R7NQ 5 ft 100%			97	1	54.1' - Fractures (2), 35 deg and 40 deg, smooth, undulating, contact between siltstone and sandstone	At 56.9': R-Scale = R4 R9: 09:05-09:20 SC-2 collected 58.6-59.6'
									0		
2											
0											
60 201.5	57.5	R8NQ 5.4 ft 100%	94	0	59.8' - Fracture, horizontal, rough						
				0							
				0							
				0							
60 201.5	59.8	R9NQ 4.6 ft 100%	100	1							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-21

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687645.7 N, 2011704.8 E)

ELEVATION : 261.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, HQ Double Barrel

ORIENTATION : Vertical

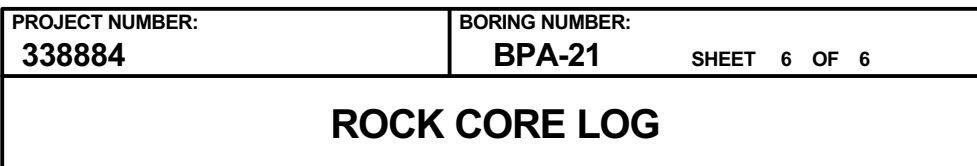
WATER LEVELS : 7.8 ft bgs

START : 7/20/2006

END : 7/21/06 11:00

LOGGER : MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
65 196.5	R10NQ 5.4 ft 100%	100	0	62.2' - Fracture, horizontal, smooth 62.8' - Fracture, horizontal and 40 deg, smooth, undulating 64.4' - Fracture, horizontal, smooth, undulating 66.3' - Fracture, horizontal, smooth, undulating	<div>58.9' - 0.03' thick rust clast</div> <div>59.1' - very fine sand to fine sand, transitions to siltstone; white, pink, gray grains</div> <div>Siltstone</div> <div>59.1-59.9' - dark reddish brown, fine sand</div> <div>59.4-59.9' - mottling and gray clasts</div> <div>Sandstone</div> <div>At 59.9' - pinkish gray, fine sand to coarse sand, white, gray, pink, and rust colored grains</div> <div>61.0-61.7' - rust specks are clustered</div> <div>61.7-61.9' - white specks are clustered</div> <div>62.5-64.3' - gray, pink, rust colored grains</div> <div>64.3-66.1' - reddish brown, mottled throughout, sandstone with silt</div> <div>66.1-66.3' - fine sand</div> <div>66.3-67.5' - sandstone with silt; gray, pink, rust grains</div>	At 61.6': R-Scale = R3-R4 R10: 09:25-09:40		
			1					
			1					
			0					
			1					
			0					
	67.5	R11NQ 5 ft 104%	100			0	67.7' - 0.01' thick rust colored band, 140 degrees 68.6' - 0.05' greenish gray clast 69.1-69.2' - rust colored mottling clustered 70.2-70.5' - rust colored mottling clustered 70.7' - soft, grains become coarser 71.3' - white inclusion 72.1-76.1' - coarse sand, pink, white, gray, rust colored grains 72.4' - coarse grains, mostly pink, white, gray 73.0' - 0.01' thick inclusions 73.7' - 0.02' thick greenish gray mottling inclusion 73.9-74.4' - rust colored mottling	R11: 09:50-10:05
						0		
						0		
						0		
						0		
						0		
70 191.5	R12NQ 5 ft 96%	100	0	76.1' - reddish brown, green mottling throughout, soft, fine sand, fresh 77.7' - greenish gray clasts 77.8' - greenish gray clasts 78.0' - greenish gray clasts	At 71.7': R-Scale = R4 R12: 10:10-10:30			
			0					
			0					
			0					
			0					
			0					
72.5	R13NQ 5.2 ft 95	95	0		78.2' - Fracture, rough, undulating 78.4' - Fracture, rough, undulating 79.0' - Fracture, 30 deg, smooth, undulating	At 76.4': R-Scale = R3-R4 R13: 10:40-11:00		
			0					
			0					
			0					
			0					
			0					
75 186.5	R13NQ 5.2 ft 95	95	0	78.2' - Fracture, rough, undulating 78.4' - Fracture, rough, undulating 79.0' - Fracture, 30 deg, smooth, undulating		At 78.7': R-Scale = R5 First water level = 7.8' bgs taken 7/21/06 at 18:30; second water level = 7.6' bgs taken 7/22/06 at 17:06		
			0					
			0					
			0					
			0					
			0					
77.5	R13NQ 5.2 ft 95	95	0		78.2' - Fracture, rough, undulating 78.4' - Fracture, rough, undulating 79.0' - Fracture, 30 deg, smooth, undulating	At 78.7': R-Scale = R5 First water level = 7.8' bgs taken 7/21/06 at 18:30; second water level = 7.6' bgs taken 7/22/06 at 17:06		
			0					
			0					
			0					
			0					
			0					
80 181.5	R13NQ 5.2 ft 95	95	0	78.2' - Fracture, rough, undulating 78.4' - Fracture, rough, undulating 79.0' - Fracture, 30 deg, smooth, undulating		At 78.7': R-Scale = R5 First water level = 7.8' bgs taken 7/21/06 at 18:30; second water level = 7.6' bgs taken 7/22/06 at 17:06		
			0					
			0					
			0					
			0					
			0					



LOGGER : MJ

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer









ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	PP (TSF)	COMMENTS	
			RECOVERY (in)						
									#TYPE
262.1	0.0	12.0	SS1SS	3-2-4-5 (6)	Sandy Silt (ML) 0.0-0.4' - brown, moist, loose, low plasticity, 25% very fine to medium sand Clay (CL) 0.4-1.0' - red, moist, low plasticity, slow dilatancy, color increasing in intensity with depth			PT-1 collected 5.0-7.0'	
	2.0								
	2.5	14.0	SS2SS	3-7-16-21 (23)	Fat Clay (CH) 2.5-2.9' - reddish brown, mottled white, moist, stiff, medium to high plasticity, no dilatancy Lean Clay (CL) 2.9-3.7' - reddish brown, mottled purple, black, white, moist, very stiff, medium plasticity, slow dilatancy		2.5		
	4.5								
5									
257.1	5.0	16.0	SS3SS	8-10-12-20 (22)	Lean Clay (CL) 5.0-6.3' - reddish brown, mottled purple, black, white, moist, very stiff, medium plasticity, slow to no dilatancy, similar to above, scattered black staining with white lenses (irregularly shaped)		4.0	PT-2 collected 10.0-12.0'	
	7.0								
	7.5	22.0	SS4SS	24-26-42-50/4.5 (68)	Silt With Sand (ML) 7.5-8.7' - reddish brown, heavily mottled, low plasticity, rapid dilatancy, with white lenses, 0.5' thick, black staining, 15-20% very fine sand, micaceous, more sand with depth Sandy Silt (ML) 8.7-9.3' - light gray, mottled yellow and red, moist, dense, low plasticity, 30% very fine to fine sand, mica				
	9.5								
10									
252.1	10.0	21.0	SS5SS	20-28-36-50/5 (64)	Silt With Sand (ML) 10.0-11.8' - reddish brown, mottled white, moist, hard, low plasticity, slow to rapid dilatancy, similar to above, 15% very fine sand, mica particles				
	12.0								
	12.5	13.0	SS6SS	12-21-30-27 (51)	Clay (CL) 12.5-13.6' - brown, mottled white, light red, moist, hard, low to medium plasticity, slow to rapid dilatancy, 15% very fine sand and scattered medium sand, abundant mica				
	14.5								
15									
247.1	15.0	5.0	SS7SS	50/5 (50/5")	Clay (CL) 15.0-15.3' - reddish brown, mottled white, moist, hard, low to medium plasticity, slow to rapid dilatancy, trace very fine to fine sand, abundant mica				
	17.0								
	17.5	4.0	SS8SS	16-50/4 (50/4")	Clay (CL) 17.5-18.6' - reddish brown, mottled white, some yellow, black, moist, hard, low to medium plasticity, slow to rapid dilatancy, scattered medium sand, less mottled in last 2				
	19.5								
20								Soil sampling completed at 09:50 on 5/19/06	



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-22</div>
SHEET 2 OF 6	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)
ELEVATION : 262.1 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer	ORIENTATION : Vertical
WATER LEVELS : 8.4 ft bgs	START : 5/18/06 15:00 END : 5/22/06 11:15 LOGGER : JS

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	RECOVERY (in)	#TYPE	STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	PP (TSF)	COMMENTS
				6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
242.1	20.0	1.5	SS9SS	50/1.5 (50/1.5")	Clay (CL) 20.0-20.2' - reddish brown, mottled white, some yellow, black, moist, hard, low to medium plasticity, slow to rapid dilatancy 20.0-20.3' - clay seam Begin Rock Coring at 20.3 ft bgs See the next sheet for the rock core log			
25								
237.1	20.2							
30								
232.1								
35								
227.1								
40								

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
45 217.1	45.0 R5NQ 5 ft 100%	56	4	40.7-40.9' - Fracture zone, bedrock pieces	x x x	41.8-42.3' - soft	R6: 14:05-14:25
			3	41.2' - Fracture, horizontal, rough, undulating	x x x		
			0	41.9' - Fracture, 10 deg, rough, undulating	x x x		
			6	43.1' - Fracture, horizontal, rough, stepped	x x x		
			10+	43.3-43.5' - Fracture zone, horizontal, smooth, undulating	x x x		
			10+	45.4' - Contact between siltstones, 60 deg, smooth, stepped	x x x		
			1	46.4' - Fracture, 30 deg, smooth, undulating	x x x		
			0		x x x		
			0		x x x		
			0		x x x		
50 212.1	50.0 R6NQ 5 ft 94%	88	0		x x x	Sandstone At 47.9' - dark reddish brown to gray, trace greenish gray mottling, soft, laminated to medium bedding, very fine sand to fine sand, fresh, faint convoluted laminae in last 0.5' 50.0' - more convoluted laminae, scattered red brown silt inclusions in irregular shapes and bands, discontinuous bedding generally at 150 degrees, becomes lighter colored and more gray with depth 52.4-52.6' - reddish brown siltstone swirled in with sandstone 52.6-53.4' - gray, soft to hard, fine sand to medium sand, multicolored grains, mottling around some grains, 10-15% scattered coarse grains 53.4-53.7' - medium sand to coarse sand, mottling around grains 53.7-53.8' - dark gray, very fine sand to fine sand 53.8-54.2' - fine sand to medium sand, finer grained than 52.6-53.4' 54.2-54.3' - light gray, very fine sand to fine sand 54.3-55.0' - medium sand to coarse sand, mottling around grains 55.0' - soft to hard, 10% coarse grains scattered throughout, 5% scattered silt inclusions to coarse sands size 56.7-57.6' - mottled, several hairline silt seams, dark gray mottling 57.6-57.9' - mixed siltstone and sandstone	R7: 14:50-15:04
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
55 207.1	55.0 R7NQ 5 ft 99%	99	0		x x x	55.0' - soft to hard, 10% coarse grains scattered throughout, 5% scattered silt inclusions to coarse sands size 56.7-57.6' - mottled, several hairline silt seams, dark gray mottling 57.6-57.9' - mixed siltstone and sandstone	R8: No time recorded
			0		x x x		
			0		x x x		
			2	57.6' - Fracture, 10 deg, smooth, undulating	x x x		
			1	57.9' - Fracture, 10 deg and 30 deg, rough, undulating, in silt lens	x x x		
			0	58.8' - Fracture, 80 deg, rough, undulating	x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
60 202.1	60.0 R8NQ 5 ft 95%	84	0		x x x		R9: 15:27-15:39
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel





ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
65 197.1	R9NQ 5 ft 102%	100	1	60.3' - Fracture, horizontal, rough, planar		Siltstone 57.9-58.0' - dark reddish brown, mottled greenish gray, soft, fresh	R10: 09:20-09:36 on 05/22/2006
			0			Sandstone 58.0-60.8' - gray, soft to hard, very fine sand to fine sand, fresh, pink mottling	
			0			58.4' - 10% coarse grains scattered throughout, 5% scattered silt inclusions to coarse sands size	
			0			58.5' - rhomboidal shaped feature, yellow and red with white; hard	
			0			60.7' - light gray, medium sand to coarse sand	
70 192.1	R10NQ 5 ft 100%	98	0	69.9' - Fracture, 15 deg, smooth, undulating, not as loose fit		Siltstone 60.8-60.9' - dark reddish brown, soft to hard, fresh	R11: 09:49-10:02
			0			Sandstone At 60.9' - light reddish brown, hard, fine sand to medium sand, fresh	
			0			60.9-64.7' - banded in finer and coarser grained beds, trace silt inclusions	
			1			64.7-65.0' - soft to hard	
			0			65.0-66.4' - pinkish gray	
75 187.1	R11NQ 5 ft 100%	98	0	72.1' - Fracture, 5 deg, rough, planar, in siltstone seam, tight		65.0-67.4' - fine to medium grained with some coarse sand grains	R12: 10:27-10:39
			0			67.4-68.7' - medium grained with 25% coarse grained material in bands	
			0			67.8-69.2' - pinkish gray	
			0			68.7-69.2' - more coarse sized material, to 1/4 size, some silt inclusions	
			0			Siltstone At 69.2' - dark reddish brown, mottled trace greenish gray, soft, fresh, fine grained	
80 182.1	R12NQ 5 ft 89%	99	0	76.3' - Fracture, horizontal, rough, undulating, in fine grained material		69.8-70.0' - trace very fine sand	R13: 10:50-11:08
			1			70.5-71.0' - siltstone and sandstone beds alternating	
			0			Sandstone 71.0-74.3' - very dark gray, mottled reddish with multicolored grains, soft to hard, medium sand, fresh, generally beds on 0-10 degrees, remainder on 20-30 degrees	
			0			71.0-71.6' - fine sand to medium sand	
			0			71.6-72.8' - fine grained, up to 20% medium grained, laminae siltstone lenses, some irregularly shaped	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687755.6 N, 2011728.0 E)

ELEVATION : 262.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

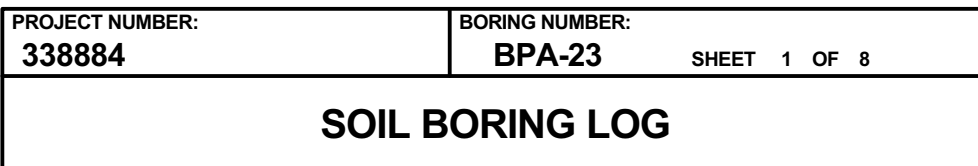
WATER LEVELS : 8.4 ft bgs

START : 5/18/06 15:00

END : 5/22/06 11:15

LOGGER : JS

WATER LEVEL : 84 RGS		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DESCRIPTION	
DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
85 177.1	R13NQ 5 ft 101%	100	0	<div>XXXXXX</div>	Conglomerate 74.3-75.8' - very dark gray, soft to hard, coarse sand to fine gravel, fresh	First water level = 8.4' bgs taken 5/22/06 at 11:29; second water level = 7.6' bgs taken 5/23/06 at 18:00
			2		74.3-75.0' - grades from sandstone to conglomerate	
			0		Sandstone 75.8-76.2' - very dark gray, soft to hard, fine sand, fresh, banded with light gray brown	
			0		Siltstone 76.2-76.9' - black, mottled faint yellow and lighter gray, stained	
			0		yellow-orange, very soft to soft, fresh, very fine sand lenses, light gray with mottling	
90 172.1					Sandstone At 76.9' - dark reddish gray, soft to hard, fine sand, fresh, faint red and light gray banding, black laminae beds, abundant mica particles 77.3-80.7' - reddish gray to pale red, heavy pink and red mottling, medium grained with some beds finer and other coarse, 10% fine grained sand, 30% coarse grained sand, laminated silt (dark gray) seams at bottom 0.65' 80.7-82.9' - dark gray, lighter and darker bands, beds on 20-30 degree angle, some yellow and red mottling 80.7-81.1' - fine to medium grained with black silt lenses 81.1-82.2' - fine to medium grained with lenses of medium to coarse grained sand, some laminated black silt lenses, laminae 82.2-82.9' - fine to medium grained, finer than previous, trace 1/8 silt inclusions	R-scale not performed on rock core samples
				Siltstone 82.9-85.0' - dark reddish brown, very soft to soft, fresh, fine grained		
				Bottom of Boring at 85.0 ft bgs on 5/22/06 11:15		
95 167.1						



LOGGER : MJ/JS/JF/DT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
12.8	R1NQ 1.2 ft 107%	0	1		x	Siltstone At 12.8' - reddish brown, mottled greenish gray in streaks, very soft to soft, fine grained	Rock coring began at 08:15 on 6/15/06 R1: No time recorded on 06/15/06 R2: No time recorded
14.0			0		x	12.8' - clay seam, 0.05' thick	
15			1	15.6' - Fracture, 70 deg, smooth, undulating, black staining	x	12.8-28.0' - highly weathered to completely weathered	At 12.8-21.1': R-Scale = R0-R1
15.6	R2NQ 5 ft 102%	0	0		x	14.0' - dark reddish brown, mottled purple and becomes yellow in clayey zones	
17.3			1	17.3' - Fracture, 70 deg, smooth, undulating, black and yellow staining (may be in rock)	x	15.0-15.6' - clay and rock	SC-1 collected 16.0-17.1'
18.2			4	18.2' - Fractures (2), horizontal and 40 deg, smooth, undulating, (at contact with clayey seam)	x	16.0-18.2' - clay and rock	
18.8			8	18.8' - Fractures (2), 60 deg and 60 deg, rough, undulating	x		R3: 08:54-09:15
19.5			10+	19.5-19.7' - Fractures (8), horizontal and 10 deg, black stains	x	19.3-19.8' - very fine sand	
20			10+		x		
20.8	R3NQ 5 ft 100%	0	10+		x	20.8-20.9' - clay seam, bedrock	SC-2 collected 21.8-23.0'
21.0			0		x	21.0-21.1' - clay seam	At 21.1-23.0': R-Scale = R0-R1
22.8			10+		x		
23.5			1	23.5' - Fracture, 5 deg, in weak rock	x	22.8-23.4' - very fine sand	At 23.0-25.0': R-Scale = R0-R1
23.7			10+	23.7-24.3' - Fracture, 5 deg, 1/2-1' clay seams and very soft rock	x		R4: Finished at 09:25
24.0			0	24.0' - Fracture, horizontal	x	25.0-25.5' - clay seam	At 25.0-26.0': R-Scale = R2
25			10+		x	25.6-27.0' - soft, harder than above, very fine sand	
25.3	R4NQ 5 ft 97%	20	0	25.3' - Fracture, 20 deg, smooth, undulating	x		
25.6			10+	25.6' - Fracture, 20 deg, smooth, undulating	x	27.0-27.6' - very soft, clay seams, mixed with rock	
28.3			3	28.3-28.7' - Fractures (3), horizontal, smooth, undulating, some black and yellow staining	x	27.6-29.0' - few green mottles, up to 35% fine sand	At 28.0': R-Scale = R2
29.0			0		x	28.0-39.0' - slightly weathered	R5: Finished at 10:10
30			0		x		
30.0			0		x	30.0-30.5' - mottled greenish gray	
30.5	R5NQ 5 ft 90%	71	10+		x	30.5-32.1' - mottled greenish gray and purple, soft, up to 40% very fine sand	At 30.5': R-Scale = R3-R4
31.6			0		x	31.6-32.1' - clay seam	Driller Remarks: Expect lost recovery in clayey seam, very fast drilling in this section
32.1			0		x	32.1-33.1' - very soft to soft, 5-15% very fine sand	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
35 224.7	34.0		2	33.1' - Fracture, 45 deg, smooth, undulating, black and orange staining 33.3' - Fracture, 45 deg, partly open to <0.5 mm 34.0-34.3' - Fracture zone, vertical, rough, undulating	XXXXXX XXXXXX				



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-23</div>
SHEET 4 OF 8	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)
ELEVATION : 259.7 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 5.3 ft bgs	START : 6/9/2006	END : 6/19/06 11:00	LOGGER : MJ/JS/JF/DT
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 204.7	54.0		1	x 			

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
					DESCRIPTION			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
75 184.7	73.5		0				x	73.5-74.5' - very fine to fine sand	R14: 11:20-11:40		
	R14NQ 5 ft 100%	100	0				x				
			0				x				
			0				x				
			0				x				
			0				x				
	78.5		0				x			At 75.0': R-Scale = R4	
	R15NQ 5 ft 100%	100	0				x				
			0				x				
			0				x				
			0				x				
	80 179.7	R16NQ 4.3 ft 101%	100	0						x	82.8-82.9' - laminated dark gray siltstone lens, 20 degree bedding 82.9-83.5' - fine sand to medium sand 83.5-84.7' - light reddish brown, soft to hard, medium sand to coarse sand, feldspathic, 20 degree bedding at bottom 84.7-85.4' - pinkish white, hard, medium sand to coarse sand, quartzitic	At 78.0': R-Scale = R4 R15: 12:00-12:30
0							x				
0							x				
0							x				
0							x				
83.5			0				x	At 81.0': R-Scale = R4			
R17NQ 5 ft 100%		100	0				x				
			0				x				
			0				x				
			0				x				
85 174.7		R18NQ 5 ft 100%	100	0				x	85.4' - Contact between siltstone and sandstone, sharp	R16: 12:35-13:00 At 84.0': R-Scale = R3	
				0				x			
	0						x				
	0						x				
	0						x				
	87.8		0				x	At 85.0': R-Scale = R4			
	R19NQ 5 ft 100%	100	0				x				
			0				x				
			0				x				
			0				x				
	90 169.7	R20NQ 5 ft 100%	100	0				x	85.4-97.5' - very dusky red to dark reddish brown, mottled blue-green, very soft to soft, fresh, fine grained 85.7-94.0' - mottled purple and green 85.7-86.2' - <0.007" light pink clasts	SC-4 collected 85.6-86.8'	
				0				x			
0							x				
0							x				
0							x				
92.8			0				x	R17: 13:10-13:35 At 88.0': R-Scale = R3			
R21NQ 5 ft 100%		100	0				x				
			0				x				
			0				x				
			0				x				
95 164.7		R22NQ 5 ft 100%	100	0				x	At 91.0': R-Scale = R3		
				0				x			
	0						x				
	0						x				
	0						x				
	97.8		0				x				
	R23NQ 5 ft 100%	100	0				x				
			0				x				
			0				x				
			0				x				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
94.0	R18NQ 1.2 ft 97%	100	0		x		R18: 13:40-13:55 At 93.0': R-Scale = R3
95			0		x		
164.7			0		x		R19: 14:00-14:15
			0		x		
	R19NQ 5 ft 100%	100	2		x		At 96.0': R-Scale = R4
			0		x		
			0	97.4' - Fracture, 25 deg, smooth, planar, very tight slickensided surfaces on MB's (upper portion)	x		At 97.5': R-Scale = R5
99.0			0	97.5' - Fracture, 25 deg, smooth, planar, very tight	x		
			0		x		
100			0		x		R20: 14:20-14:45
159.7			0		x		At 99.5': R-Scale = R5
			0		x		
	R20NQ 5 ft 100%	94	2		x		
			1	101.9' - Contact between sandstones, sharp contact at 20 deg	x		
			1	102.4' - Fracture, 20 deg, smooth, planar, in gray lens, thin clay coating over ~1/2 of surface	x		At 102.5': R-Scale = R4
104.0					x		
			0	103.8' - Fracture, horizontal, rough, undulating	x		
105			0	104.3' - Contact between sandstones, 20 deg, sharp	x		R21: 14:50-15:10
154.7			0	105.1' - Contact between sandstones, horizontal, sharp	x		At 104.5': R-Scale = R3-R4
			0		x		
	R21NQ 5 ft 97%	94	0		x		SC-5 collected 106.4-107.4'
			2		x		
			0	108.3' - Fracture, horizontal, rough, undulating	x		
109.0			0	108.4' - Fracture, horizontal, rough, undulating	x		
			0		x		
110			0		x		R22: 15:15-15:27
149.7			0		x		At 109.5': R-Scale = R5
			0		x		SC-6 collected 112.15-113.15'
	R22NQ 5 ft 101%	100	0		x		
			0		x		
			0		x		At 112.0': R-Scale = R2

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687694.4 N, 2011792.5 E)

ELEVATION : 259.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

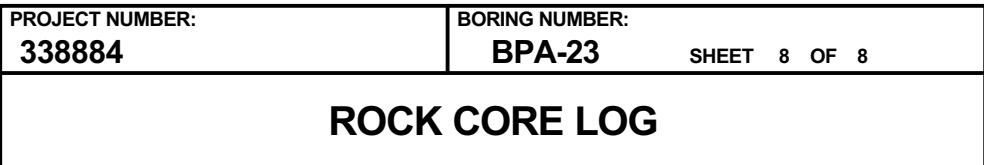
WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

WATER LEVELS: 3.3 FT BGS		START: 0/9/2000		END: 3/19/00 11:00		LOGGER: M/JSS/JT/DY				
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS		
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
115 144.7	114.0		0		114.4' - Fracture, 20 deg, smooth, stepped, with 0.02' relief 114.8-115.2' - Fractures (5), horizontal, to 10 deg, smooth to rough, undulating, several hairline fractures 115.3' - Fracture, horizontal, smooth, stepped, 0.02' relief 115.5' - Fracture, 20 deg, hairline	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Siltstone At 111.6' - dark reddish brown, faintly mottled yellow-green and purple, very soft to soft, fresh, very fine grained 114.0-115.3' - heavily mottled green, yellow, red, fine fractures throughout 115.3-116.0' - begin picking up very fine sand, coarsens with depth, gradational contact Sandstone 116.0-117.7' - dark reddish brown, mottled green and yellow, fresh, interbedded sandstone and siltstone, sandstone is very fine to fine grained, hard, siltstone is soft, laminated to thin bedding, gradational contacts Siltstone At 117.7' - dark reddish brown, mottled green and yellow, soft, fresh, fine grained, little sand 120.5-123.0' - mottled bluish gray, bioturbation	R23: 15:34-16:00 At 114.5': R-Scale = R2 At 115.5': R-Scale = R4		
		6								
		2								
	R23NQ 5 ft 90%	84	0							
		0								
		0								
	119.0									
	120 139.7		0	119.7' - Contact between siltstone and sandstone, horizontal, sharp contact					XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	At 119.5': R-Scale = R3
			0							
		R24NQ 5 ft 100%	100							
		0								
		0								
125 134.7	124.0				XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	R25: 09:17-09:40 At 124.0': R-Scale = R3				
		0								
		0								
	R25NQ 5 ft 97%	98	0							
		0								
130 129.7	129.0				XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	R26: 09:52-10:14 At 129.0': R-Scale = R3				
		0								
		1	130.5' - Fracture, 40 deg, slickensided, undulating, loose	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX			At 130.5': R-Scale = R3-R4			
	R26NQ 5 ft 101%	100						0		
		0								



LOGGER : MJ/JS/JF/DT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-24

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

ELEVATION : 259.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.6 ft bgs

START : 6/7/06 09:30

END : 6/8/06 13:51

LOGGER : JS

WATER LEVEL: 13.0 RGS		START: 07:55:00		END: 08:55:10		EQUIP: 00			
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
15 244.0	12.6	100	1	13.0' - Fracture, 30 deg, smooth, undulating			Sandstone At 12.6' - dark reddish brown, some mottling, very soft, laminated to medium bedding, fine sand to medium sand, slightly weathered	Rock coring began at 12:00 on 6/7/06 R1: 12:10-12:18 on 06/07/06 At 13.6': R-Scale = R3 R2: No time recorded At 15.9': R-Scale = R3	
	R1NQ 2.3 ft 104%		1						
	14.9	0	14.4' - Fracture, 30 deg, rough, planar						14.9-16.3' - few black laminae siltstone lenses 15.9-16.3' - soft, 15-20% coarse sand 16.3-17.1' - brown, soft to hard, fine sand to coarse sand, subangular, poorly sorted, multi-colored clasts- white, black, pink, purple, and yellow 17.1-19.7' - brown, soft to hard, laminated to thin bedding, fine sand to coarse sand, well sorted, 0-20 degree bedding
	R2NQ 5 ft 98%	1	15.5' - Fracture, 20 deg, smooth, stepped, some black stains, 0.02' relief						
		1	16.9' - Fracture, horizontal, rough, undulating, <0.01' relief						
0		17.8' - Fracture, horizontal, smooth, undulating							
20 239.0	19.9	52*	10+	19.8-19.9' - Fracture zone, bedrock pieces to gravel sized, clay 20.1-20.5' - Fracture zone, horizontal and 70 deg, smooth, undulating, little relief; 70 deg fracture has 0.03' white fat clay infilling			Fat Clay (CH) 19.7-19.9' - moderately weathered, clay lens and bedrock pieces Sandstone & Siltstone 19.9-20.8' - brown, very soft to soft, laminated to thin bedding, fine sand to coarse sand, moderately weathered, well sorted Clay (CL) 20.8-22.4' - mottled, very soft Siltstone At 22.4' - reddish brown, faintly mottled green and yellow, very soft, fine grained, very friable 22.4-40.5' - moderately weathered	At 19.65-23.6': R-Scale = R0-R1 R3: 14:02-14:13 SC-1 collected 22.65-23.6' At 24.1': R-Scale = R2	
	4								
	2								
	0								
	0								
25 234.0	24.9	20*	10+	24.9-25.2' - Fracture zone, clay, friable material			24.9-51.0' - dark reddish brown, trace mottling 25.5-25.7' - clay and clay-like rock 25.7-26.0' - clay and clay-like rock 26.6-27.3' - very soft to soft, more coarse silt 27.5-27.9' - clay and clay-like rock 28.3-28.6' - 1/2" thick clay/clay-like rock seams, 2 29.1-29.9' - trace green mottling, very soft to soft, very fine grained, 40% coarse silt or very fine sand, many hairline fractures 31.1-32.8' - rounded, 5-10% black coarse sand	R4: 14:22-14:36 At 24.9-26.7': R-Scale = R0-R1 At 27.5': PP: 2.5 tsf At 28.3-28.9': R-Scale = R0-R1 R5: 14:55-15:09 At 30.0': R-Scale = R3	
	1		26.6' - Fracture, horizontal, smooth, undulating, in 1/4-1/2 clay seam						
	2		27.3' - Fracture, horizontal, smooth, undulating, in 1/4-1/2 clay seam						
	10+		28.6-28.9' - Fractures (2), horizontal, coarse gravel sized bedrock pieces, some clay						
	10+		29.0' - Fracture, horizontal, smooth to rough, undulating, <0.01 relief 29.2-30.0' - Fracture zone, 80 deg and horizontal, very tight fit, hairline fractures 30.6' - Fracture, 70 deg, 0.0002' hard white infilling, tightly healed						
30 229.0	29.9	92*	1						
	0								
	R5NQ 5 ft		2						



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-24

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

ELEVATION : 259.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.6 ft bgs

START : 6/7/06 09:30

END : 6/8/06 13:51

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
35 224.0	103%			32.6' - Fracture, horizontal, rough, undulating, bedrock fragments, coarse sand sized	X X				

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

ELEVATION : 259.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

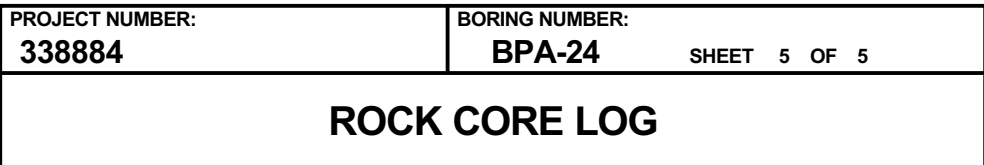
WATER LEVELS : 7.6 ft bgs

START : 6/7/06 09:30

END : 6/8/06 13:51

LOGGER : JS

WATER LEVELS: 7.01 RGS		START : 6/7/99 09:30		END : 6/8/99 13:31		LOSSER : JS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 204.0	100%			X X			



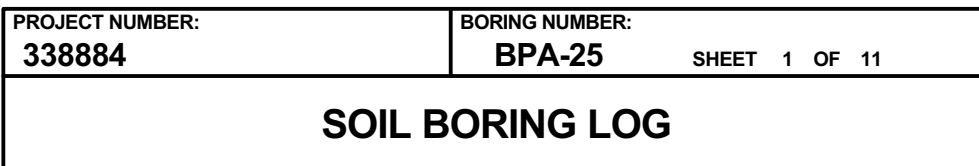
LOCATION : (NAD 27) (687599.0 N, 2011809.7 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 0



LOGGER : JS/JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

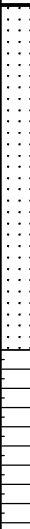

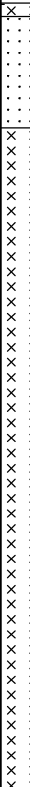
ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
8.0	R1HQ 8 ft 87%	0	1	8.5' - Fracture, 50 deg, smooth, undulating		Sandstone 8.0-13.3' - light gray, very soft, fine sand to medium sand, highly weathered to completely weathered, multicolored grains	Rock coring began at 15:30 on 4/28/06 R1: 15:30-15:55	
10			1	9.7' - Fracture, horizontal, smooth, planar				
256.4			0					
			10+	11.0-11.2' - Fracture zone, horizontal and 70 deg, loose sand and clay				
			2	11.8' - Fracture, horizontal, rough, undulating, loose sand and clay				
			1	12.6 and 13.0' - Fractures (2), 0-10 deg, smooth, undulating, loose sand and clay				
			1					
15	R2HQ 10 ft 100%	0				Claystone 13.3-16.0' - red, pink, greenish white, very soft, highly weathered to completely weathered, fine grained 13.3-13.7' - fat clay (CH), white and red brown, heavily mottled, highly plastic 14.2-14.4' - clay seam, highly plastic, laminated Siltstone 16.0-16.2' - dark reddish brown, very soft, highly weathered to completely weathered, with mica particles, fine grained Sandstone 16.2-17.9' - brown, mottled red, white, black, very soft, highly weathered to completely weathered, fine sand, abundant silt/clay Siltstone At 17.9' - brown to yellow brown, multicolored mottling, very soft to soft, highly weathered to completely weathered, fine grained, varying amounts of fine sand, some in bands	GS-1 collected 13.3-13.7' R2: 16:07-16:45 <	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 3 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
30 236.4 								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 4 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
50 216.4	R5HQ 10 ft 94%	84	2	48.3' - Fracture, horizontal, smooth, undulating, tight fit	x	Siltstone At 47.7' - dark reddish brown, mottled green 47.7-49.8' - fresh 48.9-49.6' - scattered coarse sand 49.8-51.0' - highly weathered 50.4-51.0' - mottled gray, very soft 51.0-56.0' - green and gray mottling, soft to hard, fresh	
			0	48.4' - Fracture, 60 deg, smooth, undulating, loose fit	x		
			10+	50.3' - Fracture, horizontal, smooth, undulating, loose fit	x		
			2	50.4-51.0' - Fracture zone	x		
			0	51.0' - Fracture, 60 deg, smooth, undulating	x		
			1	51.2' - Fracture, horizontal, smooth, planar	x		
			0		x		
55 211.4	R6HQ 10 ft 100%	85	0	53.4' - Fracture, 10 deg, smooth, undulating	x	56.0-57.7' - mottled green, yellow, gray, soft to hard, fresh 57.1-57.7' - fine sand 57.7-58.4' - very soft, highly weathered 58.4-59.4' - soft, fresh 59.4-67.1' - dusky red, mottled black and green, fresh, very fine sand increasing with depth, soft to hard	SC-2 collected 53.35-54.65'
			1		x		
			10+	56.3' - Fracture, horizontal, rough, planar	x		
			10+	57.7-58.4' - Fracture zone, mostly horizontal breaks, laminated	x		
			1	59.1' - Fracture, horizontal, smooth, stepped	x		
			1	60.2' - Fracture, horizontal, smooth, planar, tight fit	x		
			0		x		
			0		x		
			10+	63.0-63.4' - Fracture zone, smooth to rough, stepped, main fracture at 70 deg	x		
			1	63.8' - Fracture, horizontal, smooth, planar	x		
60 206.4	R6HQ 10 ft 100%	85	0	64.4' - Fracture, horizontal, smooth, planar	x		R6: 10:00-10:26 and 10:30-10:40
			0		x		
			0		x		
			10+	63.0-63.4' - Fracture zone, smooth to rough, stepped, main fracture at 70 deg	x		
			1	63.8' - Fracture, horizontal, smooth, planar	x		
65 201.4	R6HQ 10 ft 100%	85	0		x		R7: 11:08-11:52
			0		x		
			0		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

WATER LEVEL: 17.7 REG		DISCONTINUITIES		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
70 196.4 							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 7 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT			
			DESCRIPTION			
			DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
110 156.4	R11HQ 10 ft 99%	99	0		107.8-112.9' - pinkish gray, hard to very hard, medium sand to coarse sand, multicolored grains	SC-4 collected 109.7-110.6'
			0			
			0			
			0		110.6' - Fracture, horizontal, smooth, stepped, loose fit	
			0			
	R12HQ 10 ft 97%	97	0		112.9' - fine to medium sand, banded	R12: 10:20-10:52 and 11:10-11:39
115 151.4			0			
			0		115.1' - medium sand to coarse sand	
			0			
			0			
			0			
			0			
			0			
			0			
			0			
120 146.4			1		Siltstone At 118.3' - dark reddish brown, mottled green, very soft to soft, fresh	R13: 11:55-12:17 and 12:22-12:45
			1		119.7-120.7' - Microfractures	
			0		119.9' - Fracture, horizontal, smooth to rough, planar	
			0		120.7' - Fracture, horizontal, smooth, planar	
			0			
			1		122.4' - Fracture, horizontal, smooth, planar	
			1		123.4' - Fracture, 60 deg, partial fracture over 1/4 of core	
			0			
125 141.4			0		123.1' - soft to hard, fine sand	
			0			
			0		126.0' - soft	
			0			
			0			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 8 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS			
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.				
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS							
130 136.4	R13HQ 10 ft 98%	97.5	0				128.4' - grading to sandstone	Rig begins to chatter at 129.0' bgs			
			1	129.3' - Fracture, 30 deg, smooth, undulating							
			2	130.3' - Fracture, 20 deg, smooth, undulating, loose fit							
			1	130.8' - Fracture, 10 deg, smooth, planar, loose fit							
			1	131.2' - Fracture, 5 deg, smooth to rough, undulating, tight fit							
			2	132.0' - Fracture, 20 deg, smooth, undulating, loose fit							
			1	133.1' - Fracture, 10 deg, smooth, stepped, loose fit							
			1	133.9' - Fracture, 10 deg, smooth to rough, stepped, loose fit							
135 131.4	136.0	100	1	134.6' - Fracture, 5 deg, rough, undulating, loose fit, in fine grained band			133.9-136.0' - gray, hard to very hard, medium sand to coarse sand, multicolored grains	R14: 13:28-13:50			
			1	135.4' - Fracture, 15 deg, rough, undulating, loose fit			135.4' - siltstone clasts				
			0				136.0-138.6' - reddish gray, hard to very hard, medium sand to coarse sand, multicolored grains, siltstone clasts				
			0								
			1	138.6' - Fracture, horizontal, smooth, undulating							
			0								
			0								
			0								
140 126.4	141.1	96	0					R15: 14:15-14:49			
			1								
			0	142.7' - Contact between siltstone and sandstone, 10 deg, rough, undulating, loose fit			Sandstone 142.7-144.5' - very dark gray, hard to very hard, medium sand to coarse sand, fresh, multicolored grains		SC-5 collected 141.4-142.4'		
			2	144.5' - Contact between siltstone and sandstone, horizontal, smooth, undulating, loose fit			Siltstone At 144.5' - dark reddish brown, mottled green and dark gray, very soft to soft				
			0	144.6' - Fracture, horizontal, smooth, stepped, tight fit			144.5-146.0' - fresh				
			146.0		6	146.0-149.0' - Fracture zone, horizontal, smooth, stepped				146.0-149.0' - moderately weathered to highly weathered	R16: 16:00-16:48 and 16:57-17:30
						5					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
170 96.4 <								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687725.1 N, 2011875.8 E)

ELEVATION : 266.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, HQ Double Barrel, water with EZ mud

ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

WATER LEVEL: 17.7 bgs		START: 4/29/06 11:05		END: 5/3/06 11:05		LOSS: 0.0%							
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS						
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.						
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS								
190 76.4	5.9 ft 96%	100	1	.	.	187.7-188.8' - multicolored fine to medium sand, soft to hard 188.8-194.3' - medium to coarse sand	Water pressure lost at 191.0' bgs R21: 08:45-09:10						
		0	188.8' - Fracture, <5 deg, rough, undulating										
		0											
	191.0	XXXX											
		0											
		1						192.8' - Fracture, <5 deg, smooth, undulating					
		0											
		1											
	195 71.4								1	194.3 and 195.5' - Fractures (2), <5 deg, rough, undulating			
		1											
	196.0								1				
		5							196.6-197.0' - Fractures (4), <5 deg, rough, undulating				
	0												
	1	198.7' - Fracture, <5 deg, smooth, planar											
	0												
	0												
200 66.4			0	Siltstone 196.6-206.0' - dark reddish brown, mottled blue-green, soft, fresh									
			1		R22: 09:20-10:05								
			1			R23: 10:20-11:05							
			1				SC-7 collected 203.9-204.9'						
			2					First water level = 17.7' bgs taken 5/4/06 at 16:35; second water level = 16.8' bgs taken 5/5/06 at 10:20					
			1							R-scale not performed on rock core samples			
			2								Bottom of Boring at 206.0 ft bgs on 5/3/06 11:05		
			2										
			2										
		2											
		2											
		2											
		2											
		2											
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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-26

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	PP (TSF)	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)					
252.3	0.0	19.0	SS1SS	2-1-1-1 (2)	Silty Sand (SM) 0.0-0.6' - brown, moist, very loose, very fine to medium grained, scattered organics and black staining Silty Sand (SM) 0.6-1.6' - brown, moist to wet, very loose, very fine to medium grained, low plasticity, very rapid dilatancy, scattered orange staining			
	2.0							
	2.5	23.0	SS2SS	0-0-0-1 (0)	Fat Clay W/ Sand (CH) 2.5-4.4' - light yellowish brown, wet, very soft, high plasticity, no dilatancy, heavy orange staining, scattered organics, 20-25% very fine to medium sand, becomes finer with depth		0	
	4.5							
5								
247.3	5.0	17.0	SS3SS	3-3-4-4 (7)	Fat Clay W/ Sand (CH) 5.0-6.9' - light yellowish brown, moist, stiff, high plasticity, heavy orange staining (>50%), 10-15% very fine to medium sand		2.0-3.0	ST-1 collected 5.0-7.0'
	7.0							
	7.5	14.0	SS4SS	3-3-4-13 (7)	Fat Clay (CH) 7.5-7.9' - dark yellowish brown, moist, stiff, medium to high plasticity, slow to no dilatancy, 15% very fine to medium sand Clay (CL) 7.9-8.7' - dark reddish brown, moist, stiff, low to medium plasticity, slow to rapid dilatancy, trace very fine sand; 1/2 sand lens, black staining, stiffer with depth		1.25-1.5	
	9.5							
10								
242.3	10.0	11.0	SS5SS	13-16-21-26 (37)	Clay (CL) 10.0-10.9' - reddish brown, mottled black and light green, stiff, low to medium plasticity			PT-2 collected 9.0-11.0' Offset: 2.6' N50E of BPA-26 Lab Results USCS: CL w/Sand
	12.0							
	12.5	9.0	SS6SS	35-50/3 (50/3")	Clay (CL) 12.5-13.4' - reddish brown, mottled black and light green, stiff, low to medium plasticity			
	14.5							
15								Soil sampling completed at 14:50 on 6/1/06
237.3	15.0 15.3	2.0	SS7SS	50/3 (50/3")	Clay (CL) 15.0-15.3' - reddish brown, heavy white mottling, stiff, low to medium plasticity Begin Rock Coring at 15.3 ft bgs See the next sheet for the rock core log			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-26

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15.3 <								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-26

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
40 212.3	40.0	R5NQ 5 ft 100%	85	5	<div>35.6' - Fracture, horizontal, rough, undulating 35.7' - Fracture, 30 deg, smooth, planar, gravel sized fragments</div>	<div>Sandstone 35.0-36.9' - gray to dark gray, slightly weathered, lighter gray and darker gray banding throughout on 0-20 degree bedding planes, thin bedding 35.5-36.1' - rust colored mottling, very soft, fine sand 36.5-36.9' - clay-like material Siltstone 36.9-38.6' - dark reddish brown, faint green mottling, very soft to soft, slightly weathered, fine grained, 20% sand/coarse silt</div>	R5: No time recorded	
				10+			At 36.5-36.9': PP: 4.0 tsf	
				0				
				0				
				1				
45 207.3	45.0	R6NQ 5 ft 100%	86	10+	<div>39.8' - Fracture, horizontal, smooth to rough, undulating 40.0' - Microfractures 40.7' - Fracture, 25 deg, smooth, undulating, 0.02' relief</div>	<div>Sandstone 38.6-39.7' - very dark gray, mottled darker gray and rust, soft, slightly weathered, fine grained, gradational contact over 0.1' with siltstone below Siltstone 39.7-39.8' - very dark gray to very dark greenish gray, very soft, slightly weathered, fine grained Siltstone At 39.8' - dark reddish brown, green mottling, very soft 39.8-41.2' - slightly weathered 40.0-40.6' - mottled dark gray and green, very soft 40.2-40.4' - clay seam, coarse sand sized fragments of bedrock</div>	At 39.9-40.0': PP: 4.5 tsf R6: Finished at 09:58	
				0			SC-2 collected 42.6-43.5'	
				0				
				0				
				0				
50 202.3	50.0	R7NQ 5 ft 102%	100	0	<div>50.0-60.0' - Microfractures</div>	<div>40.6-43.7' - trace green mottling, soft, fine grained, 15% white medium sand throughout; 20% of sand/ coarse silt 41.2-45.0' - fresh 43.7-43.9' - sandy lens; 50% medium grained sand 44.1-45.0' - becomes coarser with depth; grading into sandstone/siltstone mix; silt varies from 40-60% very fine to fine sand Sandstone At 45.0' - gray, soft to hard, fine sand to medium sand, fresh, multi-colored grains: white pink, gray, and black; contacts at 0 degrees 45.0-46.1' - rusty mottling at top, scattered coarse sand sized clasts 46.1-46.1' - medium to coarse lens 46.1-46.2' - dark brown colored silty lens 46.2-46.5' - medium sand to coarse sand 46.5-47.0' - irregular shaped dark brown bands approximately 0.05-0.1' thick 47.0-47.4' - up to 10% coarse sand sized clasts; interfingering silty lenses 47.4-47.8' - dark brown colored silty lens</div>	R7: 10:04-10:14	
				0			At 45.8': R-Scale = R3-R4	
				0				
				0				
				0				
55 197.3	55.0	R8NQ 5 ft 100%	100	0	<div>51.9' - Fracture, horizontal, smooth, undulating</div>		R8: 10:33-10:47	
				1				At 52.5': R-Scale = R3
				0				
				0				
				0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-26

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)

ELEVATION : 252.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs

START : 6/1/06 13:16

END : 6/6/06 10:00

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
60 192.3	R9NQ 5 ft 100%	100	0	59.6' - Fracture, horizontal, smooth, to rough, planar 60.6' - Fracture, 50 deg, smooth, undulating, 0.01' relief, hairline fractures 0.05' away	x x			

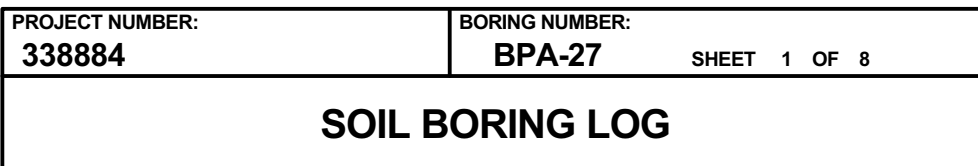


PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-26</div>
SHEET 5 OF 5	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687898.8 N, 2011865.2 E)
ELEVATION : 252.3 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	ORIENTATION : Vertical

WATER LEVELS : 2.0 ft bgs	START : 6/1/06 13:16	END : 6/6/06 10:00	LOGGER : JS
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
80 172.3	R13NQ 5 ft 100%	100	0			Sandstone At 72.0' - gray to reddish gray, fine sand to medium sand, fresh, trace coarse sand sized siltstone clasts, laminated to medium bedding, bedding on 20 degree angle, darker and lighter bands of well sorted sand, rust colored mottling 74.6-74.7' - siltstone lens 75.0-77.2' - gray to brown 77.2' - medium grained, light gray sandstone lens 0.03' thick, black thready silt lens at bottom 77.5-79.2' - gray, white, pink, and black grains; gradation varies in zones; a few thready silt lenses <0.0002' Siltstone 79.2-79.5' - dark reddish brown, trace green mottling, soft, fresh, dark gray and light gray sand beds interfingering in siltstone, laminated bedding Sandstone At 79.5' - gray to reddish gray, trace rust color mottling, fresh, trace coarse sand sized siltstone clasts 80.0-85.0' - gray, soft to hard, medium grained with varying amounts of fine grained and up to 20-30% coarse grains 80.9-81.0' - conglomerate lens, silt to fine gravel sized grains 81.7-82.0' - fine grained lens with rust colored mottling 82.9-84.1' - scattered coarse sand sized siltstone clasts Bottom of Boring at 85.0 ft bgs on 6/6/06 10:00	R13: No time recorded
			0				At 76.1': R-Scale = R3-R4
			0				At 78.3': R-Scale = R3-R4
			0				R14: No time recorded
			0				At 82.9': R-Scale = R3-R4
	R14NQ 5 ft 100%	98	0				First water level = 2.0' bgs taken 6/6/06 at 16:56; second water level = 1.3' bgs taken 6/7/06 at 19:18
			0				
85 167.3			3	84.3' - Fracture, horizontal, rough, planar			R-scale performed after drilling on stored samples
				84.9' - Fractures (2), horizontal, smooth and rough			
90 162.3							
95 157.3							



LOGGER : JF/JS/MJ

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
15 243.3	12.8	RA1NQ 3.7 ft 85%	0	2	12.8' - Fracture, 50 deg, smooth, undulating	X X	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 223.3	33.0	R3NQ 5 ft 100%	84	1	33.5' - Fracture, 45 deg, rough, undulating	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

WATER LEVELS: 6.5 ft bgs		START: 0/2/00 06:20		END: 0/12/00 10:45		LOGGER: JF/JS/MS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 203.3	R7NQ 4.5 ft 100%	100	XXX	XXXXXX XXXX			

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
95 163.3	93.4		0	92.6' - Fracture, vertical, vertical inclusion, slight fracture of side of core	x x x x x x	Siltstone 92.6-93.4' - fresh, greenish gray inclusions	At 93.2': R-Scale = R3-R4 R15: 15:12-15:30
	R15NQ 4.9 ft 96%	96	0			Sandstone 93.4-108.4' - light reddish brown, mottled greenish gray, soft, laminated bedding, fine sand to coarse sand, fresh 93.6' - greenish gray band 20 degree 94.3' - 0.02' thick greenish gray band 94.6-95.5' - medium sand 95.5' - soft to hard, white, black, rust colored, fine to medium grained 95.6' - rust colored band 97.4-98.2' - becomes coarser	
			0				
			0				
			0				
			0				
98.3		0	98.4' - Fracture, horizontal, smooth, undulating	x x x x x x	97.9-98.2' - rust colored 0.05-0.1' thick bands	At 97.9': R-Scale = R3-R4 R16: 15:47-16:08	
R16NQ 5 ft 100%	100	1			98.3-103.3' - fine sand to medium sand 98.5' - rust colored mottling, coarse sand, siltstone inclusions 98.9' - rust color mottling, black band around core, white and gray grains 99.4-99.6' - rust colored bands at 20 degree angle 99.8-101.6' - greenish gray band at 10 degree angle 101.6' - rust colored band 101.6' - rust colored siltstone inclusion, 0.05' thick, fine grained, smooth around inclusion 102.3' - siltstone inclusions 102.8-103.5' - medium sand to coarse sand, white, black, light reddish brown, greenish gray grains are 0.05' thick 103.0' - mottled, rust band at 103' 103.3-108.4' - pinkish white, mottled, white, gray, black, pink fine to medium grains 106.0' - mottling through to end of core, very soft, sandstone/siltstone mixture 106.5-106.7' - gray, reddish brown, alternating bands 106.7' - clay seam, 0.01' thick 106.8' - clay seam, 0.01' thick 107.0' - very soft, very fine sand, clay seams, reddish brown 107.0-108.4' - dark mottling, larger grains observed 108.1-109.3' - dark mottling		
		0					
		0					
		0					
		0					
103.3		0	106.0' - Fracture, smooth, undulating 106.9' - Fracture, 10 deg, fissure along core	x x x x x x	102.3' - siltstone inclusions	At 102.3': R-Scale = R3-R4	
R17NQ 5.1 ft 100%	94	0			102.8-103.5' - medium sand to coarse sand, white, black, light reddish brown, greenish gray grains are 0.05' thick 103.0' - mottled, rust band at 103' 103.3-108.4' - pinkish white, mottled, white, gray, black, pink fine to medium grains 106.0' - mottling through to end of core, very soft, sandstone/siltstone mixture 106.5-106.7' - gray, reddish brown, alternating bands 106.7' - clay seam, 0.01' thick 106.8' - clay seam, 0.01' thick 107.0' - very soft, very fine sand, clay seams, reddish brown 107.0-108.4' - dark mottling, larger grains observed 108.1-109.3' - dark mottling		
		0					
		1					
		1					
		0					
108.4		0	106.0' - Fracture, smooth, undulating 106.9' - Fracture, 10 deg, fissure along core	x x x x x x	102.8-103.5' - medium sand to coarse sand, white, black, light reddish brown, greenish gray grains are 0.05' thick	R17: 08:36-08:55 on 06/07/06 At 104.4': R-Scale = R4	
R18NQ 5.1 ft 100%	100	0			103.0' - mottled, rust band at 103' 103.3-108.4' - pinkish white, mottled, white, gray, black, pink fine to medium grains 106.0' - mottling through to end of core, very soft, sandstone/siltstone mixture 106.5-106.7' - gray, reddish brown, alternating bands 106.7' - clay seam, 0.01' thick 106.8' - clay seam, 0.01' thick 107.0' - very soft, very fine sand, clay seams, reddish brown 107.0-108.4' - dark mottling, larger grains observed 108.1-109.3' - dark mottling		
		0					
		0					
		0					
		0					
110 148.3		0	106.0' - Fracture, smooth, undulating 106.9' - Fracture, 10 deg, fissure along core	x x x x x x	103.0' - mottled, rust band at 103'	SC-4 collected 106.0-106.5' At 107.4': R-Scale = R3-R4	
R18NQ 5.1 ft 100%	100	0			103.3-108.4' - pinkish white, mottled, white, gray, black, pink fine to medium grains 106.0' - mottling through to end of core, very soft, sandstone/siltstone mixture 106.5-106.7' - gray, reddish brown, alternating bands 106.7' - clay seam, 0.01' thick 106.8' - clay seam, 0.01' thick 107.0' - very soft, very fine sand, clay seams, reddish brown 107.0-108.4' - dark mottling, larger grains observed 108.1-109.3' - dark mottling		
		0					
		0					
		0					
		0					

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687838.2 N, 2011884.8 E)

ELEVATION : 258.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/K. Canel. S&ME

CORING EQUIPMENT AND METHOD : BK-51/CME-750, NQ Double Barrel

ORIENTATION : Vertical

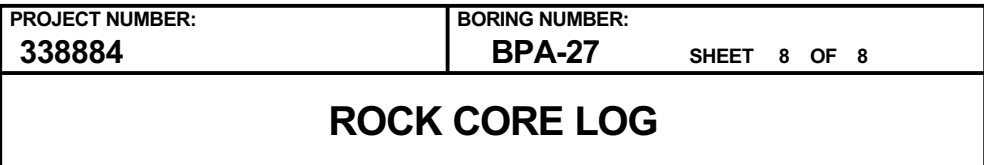
WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

WATER LEVELS : 0.5 FT BGS				START : 07/20/06 08:20		END : 07/20/06 10:45		LOGGERS : JF/JSM/MJ	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS			
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
115 143.3	113.5		0	x 					



LOGGER : JF/JS/MJ

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 1 OF 8

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, 3-5/8 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer









ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS			
		RECOVERY (in)	#TYPE				6"-6"-6"-6" (N)		PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
272.7	0.0	8.0	SS1SS	3-3-4-5 (7)	Clayey Sand (SC) 0.0-0.3' - yellow brown, moist, medium dense, organics Clay (CL) 0.3-0.7' - yellow red, mottled, moist, medium stiff, organics		3.0	PT-1 collected 2.0-4.0'		
2.0										
2.5		13.0	SS2SS	5-7-12-14 (19)	Clay (CL) 2.5-3.6' - reddish brown, mottled, moist, medium stiff		4.0			
4.5										
5										
267.7	5.0		17.0	SS3SS	8-12-28-25 (40)	Clay (CL) 5.0-6.4' - reddish brown, mottled, moist, medium stiff		4.5		
7.0										
7.5		12.0	SS4SS	22-27-50/4 (77/10")	Clay (CL) 7.5-8.5' - reddish brown, mottled, dry to moist, stiff		4.5+			
9.5										
10										
262.7	10.0		3.0	SS5SS	50/3 (50/3")	Clay (CL) 10.0-10.3' - reddish brown, mottled, dry to moist, stiff to hard		4.5+	PT-2 collected 10.0-11.5' Offset: 4.1' N49E of BPA-28 Lab Results USCS: CL w/Sand	
12.0										
12.5		4.5	SS6SS	50/4.5 (50/4.5")	Clay (CL) 12.5-12.9' - reddish brown, mottled, dry to moist, stiff to hard		4.5+			
14.5										
15										
257.7	15.0		4.5	SS7SS	50/4.5 (50/4.5")	Clay (CL) 15.0-15.4' - reddish brown, mottled, dry to moist, stiff to hard			Soil sampling completed at 11:50 on 5/30/06	
17.0										
17.5	3.0	SS8SS	50/3 (50/3")	Clay (CL) 17.0-17.8' - reddish brown, mottled, dry to moist, stiff to hard						
17.8				Begin Rock Coring at 17.8 ft bgs See the next sheet for the rock core log						
20										

PT-1 collected 2.0-4.0'

PT-2 collected 10.0-11.5'
Offset: 4.1' N49E of BPA-28
Lab Results USCS: CL w/Sand

Soil sampling completed at 11:50 on 5/30/06



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
17.8	R1NQ 7.7 ft 103%	0	0		x x	Siltstone At 17.8-17.9' - dark reddish brown, very soft, highly weathered, fine grained, brittle	Rock coring began at 13:05 on 5/30/06
20			1	18.9' - Contact between sandstones, 5 deg and 70 deg, rough, undulating, sharp	.		R1: 13:05-13:40 on 05/30/06
20.7			3		.	Sandstone At 17.9' - dark reddish brown to light gray, soft, fine sand	At 17.5-20.5': R-Scale = R2
25			1	20.3' - Fracture, 5 deg, rough, undulating, black stains	.	17.9-25.5' - highly weathered	At 20.0-20.9': R-Scale = R0-R1
25.7			1	20.5' - Fracture, 5 deg, rough, undulating, black stains	.	18.9-20.3' - light gray, hard, fine sand to coarse sand, angular to subangular	
			1	20.6' - Fracture, 5 deg, rough, undulating, black stains	.	19.6-19.6' - siltstone lens, 0.03' thick, 0.2' light staining on each side	
			0	20.8' - Fracture, 20 deg, rough, undulating	.	20.3-24.5' - mottled, very soft, some black staining on surfaces, more coarse at the bottom, some rip up clasts (0.007')	At 22.4': R-Scale = R1
25	R2NQ 5 ft 100%	100	0	24.5-25.5' - Contact between siltstone and sandstone, 15 deg and 20 deg, sharp	.	24.5-25.5' - light reddish brown, very soft to soft, very fine sand, fining upward sequence	At 24.1': R-Scale = R2
25.7			0		.	25.5-30.5' - light gray, hard, very fine sand to fine sand, 20 degree bedding plane	R2: 13:55-14:10
			0		.	25.5-33.7' - slightly weathered	At 27.0': R-Scale = R2
30			0		.	27.7' - very thin red lense parallel to bedding	
30.7			0		.	28.0-28.4' - very thin, tan-gray, silt lenses parallel to bedding	At 29.2': R-Scale = R2
			0		.	30.5-33.7' - fining upward sequence, bottom is coarse	R3: 14:15-14:30
			0		.		At 31.1': R-Scale = R2
35	R3NQ 5 ft 88%	88	0		x x	Siltstone At 33.7' - dark reddish brown, very soft, fine grained, slightly brittle	At 34.1': R-Scale = R2
35.7			1	33.7' - Contact between siltstone and sandstone, 30 deg, rough, undulating, sharp	x x	33.7-40.5' - slightly weathered	
			0		x x		
			0		x x		R4: 14:35-14:55
			0		x x		
			0		x x		At 36.9': R-Scale = R2
			0		x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40 232.7	R4NQ 5 ft 100%	94	1	38.0' - Fracture, 35 deg, rough, undulating	x	38.0-38.7' - mottled blue green	SC-1 collected 35.5-36.5'
			4	38.7-39.2' - Fracture zone, 35 deg, rough, undulating, dark stains	x		
			0	39.2-45.5' - Microfractures	x		
	40.5		0		x	40.5-41.8' - some blue green mottling	At 39.4": R-Scale = R2
45 227.7		98	0		x	40.5-47.0' - fresh	R5: 15:00-15:25
			0		x	41.8-45.5' - very dusky red, soft, fine grained, some sand	
			0		x	41.8-43.8' - mottled blue green	At 42.7": R-Scale = R3
	45.5		2		x	43.8-45.5' - mottled blue green and dark purple, numerous surface microfractures	At 45.0": R-Scale = R3
50 222.7		100	0		x		R6: 15:30-15:55
			0		x		
			1	48.5' - Fracture, 60 deg and vertical, rough, undulating	x	Sandstone 47.0-48.0' - very dusky red, mottled, very soft to soft, very fine sand to fine sand, fresh, laminations at bottom	At 47.6": R-Scale = R4
	50.5		1	49.5' - Fracture, 5 deg, rough, undulating	x	Siltstone 48.0-50.5' - dark reddish brown to greenish gray, heavily mottled, very soft, fresh, fine grained, bedding on 30 degree angle	
55 217.7		100	0		x	Sandstone At 50.5' - dark reddish brown to greenish gray, soft, very fine sand to fine sand, fresh	R7: 16:00-16:20
			2	51.9' - Fracture, 60 deg and vertical, rough, undulating, tight fit	x	51.0-51.6' - black mottling	At 51.6": R-Scale = R3-R4
			0	52.0' - Fracture, 60 deg and vertical, rough, undulating, tight fit	x	52.2-55.5' - heavily mottled, disturbed bedding, and iron staining	
	55.5		0		x		At 54.6": R-Scale = R3-R4
			0		x	55.5-56.3' - very dark greenish gray, fine sand, dark staining, bedding at 30 degrees, slightly disturbed	R8: 08:10-08:50 on 05/31/06
			0		x	55.9-56.3' - no staining	
			0		x	56.3-56.8' - fine sand, dark staining, bedding at 30 degrees, slightly disturbed	At 56.9": R-Scale = R4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

[illegible]

338884

BORING NUMBER:

BPA-28

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

[illegible]

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-28

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687697.1 N, 2011943.3 E)

ELEVATION : 272.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 21.2 ft bgs

START : 5/30/06 10:05

END : 6/1/06 11:50

LOGGER : JF/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
140 132.7 							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer, and Cathead

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)				SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE		6"-6"-6"-6" (N)						
276.4	0.0	14.0	SS1SS	4-4-7-9 (11)	Lean Clay (CL) 0.0-1.2' - reddish yellow, moist, stiff, low plasticity, trace fine sand, trace organics					
	2.0									
	2.5	19.0	SS2SS	17-24-36-42 (60)	Clayey Sand (SC) 2.5-4.1' - very pale brown, moist, very dense, fine to coarse grained, subangular					
	4.5									
5										
271.4	5.0	23.0	SS3SS	20-28-37-46 (65)	Sandy Silt (ML) 5.0-6.9' - pale yellow, moist, very dense, fine to coarse grained, subangular					
	7.0									
	7.5	11.0	SS4SS	37-50/5 (50/5")	Silty Sand (SM) 7.5-8.4' - pale yellow, moist, very dense, fine to coarse grained, subangular, some clay					
	9.5									
10										
266.4	10.0	5.0	SS5SS	50/5 (50/5")	Silty Sand (SM) 10.0-10.4' - pale yellow, moist, very dense, fine to coarse grained, subangular, some clay					
	12.0									
	12.5	3.0	SS6SS	50/3 (50/3")	Silty Sand (SM) 12.5-12.8' - pale yellow, moist, very dense, fine to coarse grained, subangular, some clay					
	14.5									
15										
261.4	15.0	12.0	SS7SS	30-38-50/3 (88/9")	Siltstone 15.0-16.0' - dark reddish brown, hard, platy, black oxidized zones					
	17.0									
	17.5	2.0	SS8SS	50/2 (50/2")	Siltstone 17.5-17.7' - reddish brown, hard, platy, black oxidized zones Begin Rock Coring at 17.7 ft bgs See the next sheet for the rock core log			Soil sampling completed at 10:55 on 5/10/06		
	17.7									
20										



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
20 256.4	R1NQ 7.8 ft 92%	84	2	17.8' - Fracture, horizontal, rough, undulating, tight fit		Siltstone 17.7-23.0' - reddish brown, mottled greenish gray, very soft to soft, slightly weathered, fresh, trace fine sand 18.0-23.0' - pale brown	Rock coring began at 11:10 on 5/10/06 R1: 12:10-12:24 and 12:25-12:43 on 05/10/06		
			0	17.9' - Fracture, 25 deg, rough, stepped, tight fit					
			1						
			0	20.3' - Fracture, horizontal, rough, undulating, tight fit					
			0						
			0						
			0						
			0						
			0						
			0						
25 251.4	25.5			Sandstone 23.0-26.4' - greenish gray, soft to hard, thick bedding, fine sand to medium sand, subangular, slightly weathered, fresh, fining upward sequence		Conglomerate 26.4-26.9' - bluish gray, very soft to soft, very thin bedding, fine sand to fine gravel, slightly weathered, part of above fining upward sequence Siltstone At 26.9' - grayish red, soft 26.9-29.0' - slightly weathered 29.0-40.6' - fresh	SC-1 collected 23.5-24.4'	R2: 12:50-13:05 and 13:08-13:45	
0									
1	26.7' - Fracture, 20 deg, rough, undulating, tight fit								
0									
1	29.0' - Fracture, 25 deg, smooth, undulating, loose fit								
0									
1									
1	32.1' - Fracture, horizontal, smooth, undulating, tight fit								
1	32.6-32.9' - Fracture, 60 deg, smooth, undulating, loose fit								
0									
35 241.4	35.5			35.5-45.5' - Microfractures		35.9-37.0' - white silt clasts	R3: 13:50-14:21 and 14:25-14:48		
	1								
			0	36.4' - Fracture, 35 deg, rough, stepped, tight fit					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40 236.4	R3NQ 10 ft 100%	77	0		x x x x	40.6-43.7' - slightly weathered	Coring rate slows
			0		x x x x		
			0		x x x x		
			2	40.6' - Fracture, horizontal, smooth, planar, loose fit	x x x x		
			2	41.2' - Fracture, 60 deg, smooth, planar, tight fit	x x x x		
			2	41.7' - Fracture, 30 deg, smooth, planar, tight fit	x x x x		
			2	42.1' - Fracture, 50 deg, rough, undulating, loose fit	x x x x		
	45 231.4	45.5	2	42.7' - Fracture, 10 deg, smooth, planar, loose fit	x x x x	Sandstone 43.7-47.9' - light gray, banded greenish gray and brownish gray, soft, fine sand to medium sand, fresh, larger grained beds are lighter, finer grained beds are darker, bedding is undulatory	R4: 15:00-15:15 and 15:17-15:31
			2	42.9' - Fracture, 50 deg, rough, undulating, tight fit	x x x x		
			0	43.5' - Fracture, horizontal, rough, undulating, loose fit	x x x x		
			2	43.7' - Fracture, smooth, planar, loose fit	x x x x		
			2	45.6' - Fracture, horizontal, rough, undulating, loose fit	x x x x		
			0	45.7' - Fracture, 60 deg, rough, undulating, loose fit	x x x x		
			2	47.9' - Fracture, horizontal, rough, undulating, loose fit	x x x x		
			1	48.1' - Fracture, horizontal, smooth, planar, tight fit	x x x x		
			0	48.6' - Fracture, 10 deg, rough, undulating, loose fit	x x x x		
			0		x x x x		
50 226.4	R4NQ 10 ft 95%	89.5	0		x x x x	Siltstone 47.9-48.8' - dark gray, soft, laminated bedding, fresh, flat lying, almost fissile and shale-like, upper surface eroded at contact with sandstone indicative of scour	
			0		x x x x		
			0		x x x x		
			0		x x x x		
			0		x x x x		
			0		x x x x		
			0		x x x x		
55 221.4	55.5			55.5-65.5' - Microfractures	x x x x	Sandstone 48.8-55.5' - light gray, soft, massive bedding, fine sand to medium sand, fresh	R5: 15:35-16:00 and 16:02-16:30
			0		x x x x		
			0		x x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

WATER LEVEL: 15.1755		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
60 216.4	R5NQ 10 ft 98%	90	0		x x x	61.0-62.0' - bluish green silt inclusions	
			0		x x x		
			1		x x x		
			2	60.6' - Fracture, horizontal, smooth, planar, loose fit	x x x		
			2	61.8' - Fracture, 20 deg, rough, undulating, tight fit	x x x		
			1	62.2' - Fracture, 45 deg, rough, undulating, tight fit	x x x		
			0	62.9' - Fracture, horizontal, smooth, undulating, loose fit	x x x		
			2	64.9' - Fracture, 60 deg, rough, undulating, tight fit	x x x		
			x x x	65.3' - Fracture, horizontal, smooth, undulating, loose fit	x x x		
			0		x x x		
65 211.4	65.5	91	0		x x x	R6: 07:43-08:03 and 08:04-08:22 on 05/11/06	
			1		x x x		
			0	67.5' - Fracture, 60 deg, rough, undulating, tight fit	x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			2	71.0' - Fracture, 10 deg, rough, undulating, tight fit	x x x		
			1	71.3' - Fracture, 10 deg, smooth, undulating, loose fit	x x x		
			1	72.1' - Fracture, 10 deg, rough, undulating, loose fit	x x x		
			0	73.4' - Fracture, 50 deg, rough, undulating, tight fit	x x x		
70 206.4	R6NQ 10 ft 99%	91	0		x x x	Siltstone 69.1-75.0' - dark bluish gray, soft, fresh, some laminated beds, some very fine sandstone, gradual change from reddish brown siltstone at 69.0' to 70.5', light olive brown and very dark red mottling	
			2	71.0' - Fracture, 10 deg, rough, undulating, tight fit	x x x		
			1	71.3' - Fracture, 10 deg, smooth, undulating, loose fit	x x x		
			1	72.1' - Fracture, 10 deg, rough, undulating, loose fit	x x x		
			0	73.4' - Fracture, 50 deg, rough, undulating, tight fit	x x x		
			0		x x x		
			1		x x x		
			0		x x x		
			0		x x x		
			1		x x x		
75 201.4	75.5	91	0		x x x	73.8-74.1' - green mottling	
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
75 201.4	75.5	91	0		x x x	Sandstone 75.0-83.6' - light bluish gray, soft, fine sand, fresh, 1 to 3% medium grained sand in sandier beds, coarsens with depth 75.0-80.0' - interbedded siltstone and sandstone, becomes sandstone at bottom	R7: 08:32-08:50 and 08:52-09:12
			0	75.3' - Fracture, 10 deg, smooth, undulating, loose fit	x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-29

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687642.7 N, 2011979.1 E)

ELEVATION : 276.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

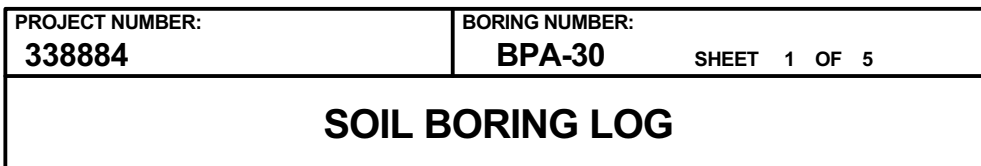
WATER LEVELS : 19.1 ft bgs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
80 196.4	R7NQ 10 ft 99%	93	1	77.9' - Fracture, 20 deg, smooth, undulating, tight fit	.			
			0					
			0					
			1					
			1					
			0					
			0					
85 191.4	85.5	93	0		x x			



LOGGER : DT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-30

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687781.4 N, 2011981.6 E)

ELEVATION : 269.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.9 ft bgs

START : 5/8/06 09:30

END : 5/9/06 13:25

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
20 249.2	15.5	R1NQ 10 ft 100%	0	1	15.9-16.2' - Fracture, 70 deg, smooth, undulating	x 	

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687781.4 N, 2011981.6 E)

ELEVATION : 269.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.9 ft bgs

START : 5/8/06 09:30

END : 5/9/06 13:25

LOGGER : DT

WATER LEVEL		CORE RUN		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
40 229.2 										



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-30

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687781.4 N, 2011981.6 E)

ELEVATION : 269.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

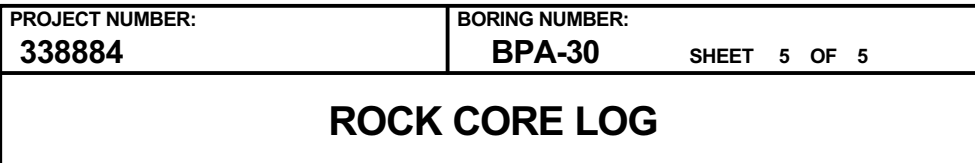
WATER LEVELS : 5.9 ft bgs

START : 5/8/06 09:30

END : 5/9/06 13:25

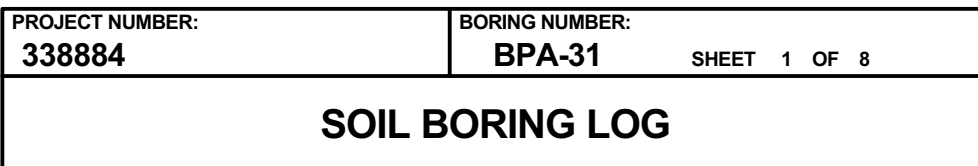
LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
60 209.2	R5NQ 10 ft 100%	91	0		x x	55.0-56.7' - becomes sandy	R5: 09:05-09:18 and 09:21-09:39
			0	57.0' - Fracture, 30 deg, red stains	x x	Sandstone 56.7-60.1' - light gray, soft, thin to medium bedding, medium sand to coarse sand, fresh, 5-10% darker mineral grains in fresh surfaces 58.0-58.1' - light gray siltstone layers, fissile and shale-like	
			0		x x		
			0		x x		
			2	59.6' - Fracture, 70 deg, filled with calcite, tightly healed 59.7-60.0' - Fracture, 75 deg, rough, undulating, tight fit	x x	59.6-60.1' - becomes coarser with depth	
			1	60.1' - Contact between siltstone and sandstone, 20 deg, rough, undulating, sharp, fractured	x x	Siltstone 60.1-64.5' - light olive gray to brownish gray, soft, fresh	
			0	60.9-61.1' - Fracture, 70 deg, rough, stepped	x x		
			0		x x		
			0		x x		
			0		x x		
65 204.2	65.5		2	65.1' - Fracture, 50 deg, rough, undulating, loose fit 65.3' - Fracture, 20 deg, rough, undulating, loose fit 65.8' - Fracture, 10 deg, rough, planar, tight fit	x x	Sandstone 64.5-70.7' - light gray to gray, hard, fresh, silt to medium grained sand, brittle rock, fining upward sequence 66.0-67.8' - brownish gray	R6: 09:50-10:05 and 10:08-10:40
			1	67.1' - Fracture, horizontal, rough, undulating, loose fit	x x		
			1		x x		
			0		x x	67.8-70.7' - grayish red	
			0		x x		
70 199.2	R6NQ 10 ft 98%	81.5	0		x x		
			2	70.7' - Fracture, 5 deg, smooth, stepped, loose fit	x x	Siltstone At 70.7' - light olive green and gray, soft, laminated bedding, bedding is contorted and possibly folded 70.7-72.8' - fresh	
			2	71.2' - Fracture, 15 deg, smooth, planar, tight fit	x x		
			2	71.8' - Fracture, 20 deg, smooth, undulating 71.9-72.3' - Fracture, vertical, quartz-filled, terminates abruptly above and below at silty or softer zones that did not deform	x x	72.8-73.6' - highly weathered	
			2	72.2' - Fracture, 20 deg, smooth, undulating	x x		
			1	72.8' - Fracture, 20 deg, smooth, undulating 73.0-73.4' - Fracture zone, slickensided, undulating, all faces of rock fragments have well developed slickensides, indicates shear zone	x x	73.6-74.0' - fresh	
75 194.2	75.5		1		x x	Siltstone 74.0-89.0' - grayish red, mottled greenish gray, soft, fresh	



LOGGER : DT

Rev. 0



LOGGER : JS/DT/LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 2 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15.1 <								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

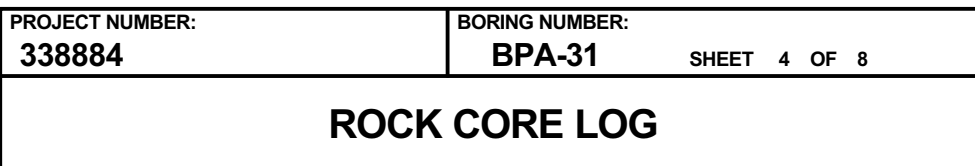
WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
40 223.1	R5NQ 5 ft 100%	84	0	34.2' - Contact between siltstone and sandstone, sharp	x x			



LOGGER : JS/DT/LH

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

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PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 7 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
120	R21NQ 5 ft 104%	100	0	117.0' - Fracture, evidence of microfractures throughout core, tightly healed	x		R21: 12:09-12:34
			0		x		
			0		x		At 117.1': R-Scale = R3
			0		x		
			0		x		
120 143.1	120.0		x		x	120.0-125.0' - dark reddish brown, soft to hard, thick beds	R22: 13:44-14:06
	R22NQ 5 ft 98%	98	0		x		
			0		x		
			0		x		At 123.5': R-Scale = R3-R4
			0		x		
125 138.1	125.0		x		x	125.0-130.0' - dusky red 125.0-127.1' - little very fine to fine sand	R23: 14:13-14:38
	R23NQ 5 ft 97%	97	0		x		At 125.8': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
130 133.1	130.0		x		x	Sandstone 127.1-127.4' - fresh, 60% very fine to fine sand, 40% silt Siltstone 127.4-128.7' - dusky red, mottled greenish gray, soft to hard, fresh, little very fine to fine sand Sandstone 128.7-129.4' - pink and reddish brown, hard, fresh Siltstone 129.4-132.0' - dusky red, mottled greenish gray, soft to hard, fresh, little very fine to fine sand 130.0-132.0' - becomes coarser with depth Sandstone 132.0-145.0' - gray and white, fresh, very fine to medium sand 133.3-133.5' - silty seam (40% silt) 134.0-134.6' - silty seam (40% silt)	R24: 14:44-15:08
	R24NQ 5 ft 104%	100	0		x		
			0		x		
			0		x		At 133.6': R-Scale = R3-R4
			0		x		
135	135.0		1		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687883.1 N, 2011990.2 E)

ELEVATION : 263.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

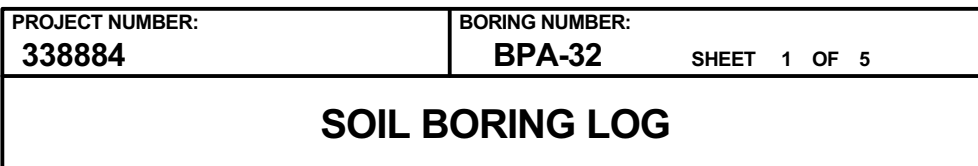
WATER LEVELS : 16.8 ft bgs

START : 5/26/06 10:15

END : 5/31/06 15:52

LOGGER : JS/DT/LH

WATER LEVEL: 10.6 RGS		START: 5/29/06 10:10		END: 6/9/06 10:02		LOSS: 600 FEET																																																																	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS																																																																
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.																																																																
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS																																																																		
140 123.1	R25NQ 5 ft 99%	99	1	135.9' - Fracture, rough, undulating 136.7' - Fracture, rough, undulating		134.6-139.5' - gray to white, very fine sand to coarse sand	R25: 15:15-15:27																																																																
			0																																																																				
			0																																																																				
			0																																																																				
			0																																																																				
	R26NQ 5 ft 100%	100	0					139.7-144.0' - gravel sized siltstone clasts in sandstone																																																															
			0																																																																				
			0																																																																				
			0																																																																				
			0																																																																				
145 118.1	R26NQ 5 ft 100%	100	0	144.0-145.0' - becomes silty in layers		144.0-145.0' - becomes silty in layers	R-scale performed after drilling on stored samples																																																																
			0																																																																				
150 113.1											Bottom of Boring at 145.0 ft bgs on 5/31/06 15:52																																																												



LOGGER : JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-32

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687832.2 N, 2012083.2 E)

ELEVATION : 268.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


ORIENTATION : Vertical

WATER LEVELS : 19.0 ft bgs

START : 5/8/06 11:00

END : 5/9/06 14:07

LOGGER : JS

WATER LEVEL: 10.0 RGS		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
15 253.9	10.1 R1NQ 4.9 ft 106%	0	0		Sandstone At 10.1' - light brownish gray, heavily mottled, very soft, fine sand, highly weathered 10.7-15.0' - medium sand, scattered thin clay seams at high angle, pockets of clay, black, yellow and red staining	Rock coring began at 13:00 on 5/8/06 R1: 13:45-13:51 At 10.6': R-Scale = R3 At 12.1-18.3': R-Scale = R1	
			1	11.0' - Fracture, horizontal, smooth, undulating			
			2	12.1' - Fracture, horizontal, smooth, undulating 12.5' - Fracture, horizontal, smooth, undulating			
			1				
			4	14.2' - Fracture, horizontal, smooth, undulating 14.4' - Fracture, horizontal, smooth, undulating 14.8' - Fracture, horizontal, smooth, undulating			
20 248.9	15.0 R2NQ 5 ft 100%	0		15.0-15.8' - Fractures, horizontal, smooth, undulating	15.0-21.0' - becomes coarser with depth - medium to coarse grained.	R2: 14:05-14:11	
			5	16.1-16.5' - Fractures, horizontal, smooth, undulating			
			3	17.1' - Fracture, horizontal, smooth, undulating 17.6' - Fracture, horizontal, smooth, undulating 17.9' - Fracture, horizontal, smooth, undulating			
			3	18.4' - Fracture, horizontal, smooth, undulating 18.5' - Fracture, horizontal, smooth, undulating 18.8' - Fracture, horizontal, smooth, undulating			
			3	19.0' - Fracture, horizontal, smooth, undulating 19.2' - Fracture, horizontal, smooth, undulating 19.9' - Fracture, 15 deg, rough, undulating 20.3' - Fracture, horizontal, rough, stepped			
25 243.9	20.0 R3NQ 5 ft 100%	0	2	21.0' - Fracture, horizontal, rough, planar	Siltstone At 21.0' - weak red, heavily mottled, very soft, fine grained 21.0-25.0' - highly weathered 22.1-22.5' - clay seam 22.9-23.1' - clay seam 24.4-24.7' - clay seam 25.0-30.0' - dusky red, green mottling, soft 25.0-32.8' - fresh	At 19.6': R-Scale = R3-R4 R3: 14:35-15:00 At 20.5': R-Scale = R3	
			0				
			3	23.3' - Fracture, 50 deg, rough, planar			
			1				
			2				
30	25.0 R4NQ 5 ft 100%	100	0	26.1' - Fracture, 60 deg, smooth, undulating		R4: 15:05-15:19 At 27.2': R-Scale = R3-R4 At 28.6': R-Scale = R3-R4	
			1				
			0				
			0				
			0				

338884

BORING NUMBER:

BPA-32

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687832.2 N, 2012083.2 E)

ELEVATION : 268.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

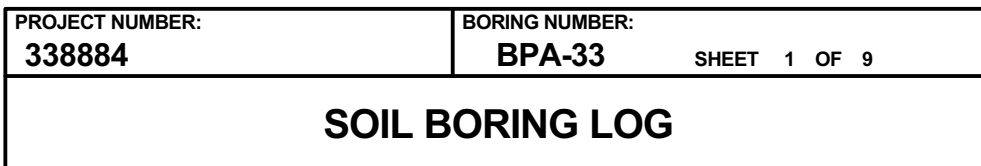
WATER LEVELS : 19.0 ft bgs

START : 5/8/06 11:00

END : 5/9/06 14:07

LOGGER : JS

WATER LEVEL: 19.0 ft bgs		START : 9/26/11.00		END : 9/26/14.00		LOGGER : JS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 213.9 							



LOGGER : DT/JS

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel



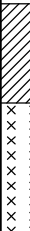
ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS				
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.			
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
15 255.4	10.3	R1NQ 9.7 ft 101%	0	0		Sandstone 10.3-12.6' - light yellowish brown, soft, fine sand to medium sand, subangular, highly weathered	Rock coring began at 14:16 on 5/12/06 R1: 14:16-14:35 and 14:40 - 14:56 on 5/12/06				
				3		Siltstone 12.6-18.9' - dark reddish brown, soft to very soft, highly weathered, some fine sand					
				1							
				1							
				1							
				1							
				1							
				1							
				1							
				1							
20 250.4	20.0	R2NQ 5 ft 82%	0	2		Sandstone At 18.9' - dark brown, soft, fine sand to coarse sand, subangular, highly weathered 20.0-21.8' - dark grayish brown 21.2-21.7' - mottled dark purple 21.8-25.8' - light yellowish brown	Boring abandoned on 5/15/06 for geophysical work. R2: 09:10-09:15 on 5/22/06; moved about 2' S of original location and started at 20' At 20.0-22.4': R-Scale = R1-R2 At 23.2': R-Scale = R2				
				2							
				2							
				2							
				1							
				23.5' - Fractures (2), horizontal and 70 deg, smooth, undulating 24.1' - Fracture, horizontal, smooth, undulating							
				25.0-25.8' - Fracture zone							
				25.8' - Fracture, 30 deg, smooth, undulating							
				26.8' - Fracture, horizontal, smooth, stepped 27.0' - Fracture, horizontal, smooth, undulating, black stains 27.2' - Fracture, horizontal, smooth, undulating, black stains							
				28.3-28.4' - Fracture zone, horizontal 28.6' - Fracture, horizontal, smooth, undulating, black stains							
25 245.4	25.0	R3NQ 5 ft 90%	0	10+		Clay Seam (CL) 26.8-28.3' - grayish brown, mottled greenish white, black, yellow, red, very stiff, highly weathered, fine grained Siltstone At 28.3' - reddish brown, mottled black, yellow, white and purple, highly weathered, fine grained	R3: 09:20-09:35 At 26.8-28.8': R-Scale = R0 At 26.8-28.3': PP: 3.5-4.5+ tsf				
				1							
				2							
				10+							
				0							
				30.0-30.6' - Fracture zone, numerous fractures							
				30 240.4		30.0					R4: 10:03-10:21



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-33

SHEET 3 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 235.4	R4NQ 5 ft 107%	48	10+	30.6' - Fracture, horizontal and 10 deg, smooth, undulating 30.8' - Fracture, horizontal and 10 deg, smooth, undulating 31.5' - Fracture, horizontal, smooth, planar, contact with clay seam	x x x x x x x x x x	28.3-28.5' - very soft, clay to weathered bedrock 28.5-30.0' - very soft to soft 30.0-32.6' - mottled greenish gray, purple and yellow, very soft, clay seams, clay-like	At 30.6-31.0': PP: 4.5+ tsf At 31.5-31.9': PP: 1.5 tsf
			10+				
			2				
			1				
			0				
	R5NQ 5 ft 102%	92		35.5' - Fracture, horizontal, smooth, undulating, brown and yellow stains 35.7' - Fracture, 20 deg, smooth, undulating, brown and yellow stains 38.2-38.4' - Fractures (2), horizontal and 40 deg, rough, undulating, black stains 38.9' - Fracture, horizontal, rough, undulating	x 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
55 215.4	R8NQ 5 ft 93%	88	10+	50.5-50.8' - Fracture zone, horizontal, smooth, undulating, 0.01' relief 52.6' - Fracture, horizontal, smooth, undulating, 0.01' relief	<div>XXXXXX</div>	<div>Siltstone 47.4-48.0' - dark gray, mottled gray, yellow, purple, very soft, moderately weathered, very fine grained, clay seams 47.4-47.6' - clay seam, dark gray 47.7-47.8' - clay seam, dark gray 48.0-48.3' - clay seam, laminated alternating siltstone and clay seams, contacts are horizontal, smooth, undulating Siltstone 48.0-50.3' - dusky red, mottled gray and greenish gray, very soft 48.0-48.3' - moderately weathered 48.3-49.2' - fresh 49.0-49.1' - 0.02' thick clay seam and 0.02' thick bedrock piece (like 48.0-48.3' alternating, but thinner beds), smooth, undulating, 0.02' relief 49.2-50.3' - brown and black, soft, laminated bedding, fresh, becomes coarser Claystone 50.3-50.9' - dark reddish gray, mottled yellowish brown, very soft, fresh, very fine grained, gradational contacts Siltstone At 50.9' - dark reddish brown, mottled greenish gray and yellow, very soft to soft, fresh, fine grained 53.1-55.0' - soft, coarser grained silt, 5-10% white medium to coarse grained sand 56.9-57.4' - transition zone from siltstone to underlying sandstone; interbedded 57.3-57.4' - fine black bedding at end of transition zone Sandstone At 57.4' - gray to light greenish gray, soft to hard, fine sand to medium sand, poorly sorted, fresh 57.6-58.3' - pale red lens 60.0-63.6' - medium sand, trace coarse sand sized clay clasts, well sorted 63.6-63.7' - clay seam, green gray, sand wraps around clay Siltstone 63.7-65.0' - very dark gray, mottled brown, red, light gray, green, soft, fresh, fine grained Siltstone 65.0-73.4' - dark reddish brown, mottled greenish gray and black, soft, fresh, fine grained</div>	At 52.1': R-Scale = R2-R3		
			0						
			1						
			0						
			0						
	R9NQ 5 ft 102%	100	0	57.6' - Fracture, horizontal, smooth, undulating	<div>XXXXXX</div>		R9: 13:50-14:01		
			0						
			1						
			0						
			0						
60 210.4	R10NQ 5 ft 98%	92	0	62.3-62.5' - Fractures (2), horizontal and 60 deg, smooth, undulating, thin quartz infilling (~0.0002' thick) 63.6' - Contact between siltstone and sandstone, horizontal, smooth, undulating, in clay seam at contact, sharp 63.7' - Fracture, 30 deg, smooth, undulating, small slickenside piece (1/2 sized)	<div>XXXXXX</div>		R10: Finished at 14:40 At 60.4': R-Scale = R3-R4		
			0						
			2						
			0						
			0						
	R11NQ 5 ft 102%	98	0	67.6-67.9' - Fracture zone 68.5-68.7' - Fractures (2), 70 deg, undulating, partial fractures	<div>XXXXXX</div>		R11: 14:45-15:05 At 65.7': R-Scale = R3		
			0						
			10+						
			2						
			0						
70 200.4							R12: Finished at 15:37		

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 6 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
95	R16NQ 5 ft 98%	70	0	91.0-91.3' - Fracture zone, 70 deg, rough, undulating, 1 main fracture with several broken pieces	×	Sandstone 87.5-91.7' - light gray, white, gray, and black, soft to hard, poorly sorted, fresh, fine to medium sand, becomes coarser and harder with depth, contact is sharp on 30 degree angle 87.8' - 1/4 claystone clast 88.2' - dark red stained beds 88.6' - dark red stained beds 89.3' - dark red stained beds 90.0-91.7' - medium sand to coarse sand, 10-20% several 1/8 to 1/4 gray siltstone rip up clasts	At 90.5': R-Scale = R3
175.4			6	91.7' - Contact between siltstone and sandstone, 30 deg, smooth, undulating, 0.02' thick discolored zone at contact in siltstone (gray), very soft	×		
			0	91.7-105.1' - Microfractures throughout in capillary pattern	×		
			1	93.8' - Fracture, horizontal, smooth, undulating	×		
			6	94.1-94.4' - Fractures (5), horizontal, smooth, undulating	×		
			0	94.6' - Fracture, horizontal, smooth, undulating	×		R17: Finished at 11:10
			0	95.0-100.0' - Microfractures	×		
			0		×		At 96.7': R-Scale = R3
			0		×		
			1	99.4' - Fracture, 20 deg, smooth, undulating	×		At 98.9': R-Scale = R3-R4
100	R17NQ 5 ft 98%	88	0	100.0-100.7' - Microfractures	×	98.7-100.0' - heavily mottled green, becomes coarser, coarse silt, 40% very fine sand 99.4-100.0' - trace to 10% green speckles to 0.0007" 100.3-100.7' - green and red mottling covering the core surface 100.7-101.1' - very soft to soft, broken up zone of siltstone; bedrock fragments 101.1-103.4' - heavily mottled dark red, gray, dark purple, and green, very soft to soft, very fine grained 103.4-105.1' - mottled light gray, tan, dark gray, green, soft to hard, coarser, 40% coarse silt and very fine sand	R18: 10:30-10:55
170.4			10+	100.3' - Fracture, horizontal, smooth, undulating, 0.01' relief	×		
			10+	100.7-101.1' - Fracture zone, bedrock fragments	×		
			1	102.9' - Fracture, 10 deg, smooth, undulating, fossil bed organics	×		
			0	103.4' - Contact between siltstone and sandstone, horizontal, strong contact	×		At 103.7': R-Scale = R3-R4
			0		×		
105	R18NQ 5 ft 100%	86	2	105.8' - Fracture, 30 deg, slickensided, undulating, gray contact	×		R19: 11:05-11:25
165.4			10+	106.0' - Fractures (2), 20 deg, rough, undulating, gray material, 0.02' apart, lower surface, smooth, undulating, almost slickensided, possible fossilized organics	×		
			1	106.3-106.5' - Fracture zone, horizontal and 20 deg, smooth and slickensided	×		
			0	106.6' - Fracture, horizontal, smooth, undulating	×		At 108.4': R-Scale = R3-R4
			0	106.9' - Contact between siltstones, horizontal, sharp	×	Siltstone 105.1-106.9' - very dark gray to very dark greenish gray, mottled brown, dark yellow, dark red, mottling in irregular bands and streaks, most at 150 degrees, very soft to soft, fresh, mottling/banding irregular, bedding on 150 degrees, very fine grained with very fine sandy zone 105.2-105.7' - irregular shaped zone 106.6-106.8' - dark red/purple lenses Siltstone 106.9-112.1' - dark reddish gray, mottled dark yellow, light gray, very soft to soft, fresh, horizontal bedding	
110	R19NQ 5 ft 97%	90	0	107.0' - Fracture, horizontal, smooth, undulating	×		
160.4			0		×		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
115 155.4	R20NQ 5 ft 100%	100	0	110.0-112.0' - Microfractures in fine zones		107.3-110.0' - faint green, red, yellow mottling, soft to hard, up to 50% very fine to fine sand, fine grained	R20: Finished coring at 12:00	
			0			110.0-110.5' - mottled yellow and black, 50% very fine sand	At 111.4': R-Scale = R3	
			0			110.5-112.1' - very dusky red, dark gray, purple, and dark yellow mottling, trace coarse silt/very fine sand, coarsens with depth, up to 30-35%		
			0			Siltstone 112.1-112.8' - very dark gray, faintly mottled dark red, fresh, some laminated beds of very fine gray siltstone, some very fine sand beds, interbedded	At 113.1': R-Scale = R3-R4	
			0			Sandstone 112.8-116.6' - black, mottled red, soft to hard, very fine sand to coarse sand, well sorted, fresh, coarsens with depth, becomes harder with depth	R21: No time recorded	
	R21NQ 5 ft 107%	100	0	116.6' - Contact between siltstone and sandstone, 10 deg, smooth, undulating		112.8-115.0' - grades from siltstone to sandstone	At 115.8': R-Scale = R3-R4	
			1			113.2-113.3' - medium to coarse grained sand bed	SC-3 collected 117.3-118.4'	
			0			114.9' - fine grained siltstone lens		
			0			115.0-116.6' - heavily mottled red	At 119.0': R-Scale = R3	
			1			115.3' - reddish gray, medium sand, coarsens with depth, medium to coarse grained		
120 150.4	R22NQ 5 ft 103%	100		120.0-122.8' - Microfractures		Siltstone 116.6-117.7' - very dark gray, mottled black, soft, fresh	R22: Finished at 14:20	
			1			Siltstone At 117.7' - dark reddish gray, mottled red, soft, fresh		
			0	120.8' - Fracture, 40 deg, slickensided, planar, not entire surface is slickensided, partial fractures at same angle opening up below this fracture		118.8' - white speckles, very fine grained, 30% very fine sand	At 122.2': R-Scale = R3	
			0			120.0-122.8' - dusky red, dark red mottling		
			0			122.8-123.1' - grades to sandstone		
	R23NQ 5 ft 102%	50	0	124.4' - Fracture, 20 deg, smooth, undulating, in gray seam		Sandstone At 123.1' - very dusky red, 10% black mottling, soft to hard, fine sand, well sorted, fresh, 0.05' thick medium grained zones, very thin claystone bedding, discontinuous	At 124.6': R-Scale = R3-R4	
				125.5' - Fractures (2), 70 deg and 80 deg, rough, undulating, little brown-orange stains		125.0-126.2' - dark brown, dark brownish-purple mottling in bands, very thin to thin bedding, fine sand to medium sand, angular	R23: 08:20-08:43 on 5/25/06	
			2	126.0' - Fracture, 50 deg, rough, undulating			SC-4 collected 126.4-127.3'	
			1	127.3' - Fracture, 20 deg, smooth, undulating		Siltstone 126.2-129.3' - very dark gray, mottled dark red, light gray, black, soft, very fine grained, up to 50% very fine sand/coarse silt		
			10+			126.2-129.0' - fresh		
130 140.4			4	128.0' - Fracture, 20 deg, smooth to slickensided, undulating, tight fit	129.0-129.3' - highly weathered	At 129.3-130.0': R-Scale = R0		
				128.4-128.6' - Fracture zone, horizontal and 70 deg, smooth, planar to undulating, little brown staining on some surfaces, healed fracture about 1 long at 70 deg angle just above fractured zone, uneven whitish-yellow infilling		At 129.4': PP: 3.0 tsf		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
135 135.4	R24NQ 5 ft 100%	80	6	128.7' - Fracture, 20 deg, slickensided, undulating, 90% of surfaces (both sides) irregularly shaped, very tight fit	x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687730.7 N, 2012118.9 E)

ELEVATION : 270.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

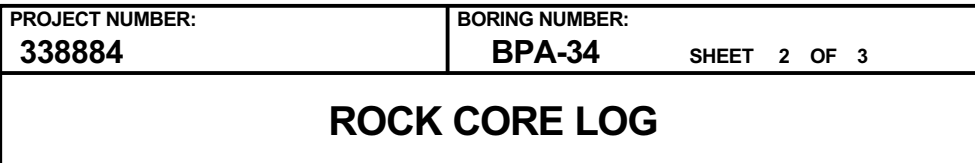
WATER LEVELS : 14.9 ft bgs

START : 5/12/06 10:00

END : 5/25/06 17:20

LOGGER : DT/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
155	155.0	94	0	148.8' - Fracture, horizontal, smooth, undulating	x x x	153.5-153.8' - soft, fine grained with trace medium sand throughout, some zones with more very fine sand/coarse silt	At 153.7': R-Scale = R3-R4
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
115.4					x x x	155.0-157.0' - zones of very fine sand/coarse silt, grades in and out of these zones, several inches thick	R29: 16:45-17:07
			1	155.6' - Fracture, 10 deg, rough, undulating, tight fit	x x x		
			10+		x x x	156.2-156.3' - clay seam, bedrock fragments and clay mixed together	SC-5 collected 158.55 - 159.5'
		99	0		x x x		
			0		x x x		
			0		x x x		
160	160.0				x x x	Siltstone 157.0-160.0' - very dark gray, laminated bedding, fresh, gradual darkening to this depth, faint banding of black, light gray, some very fine sand, coarse silt	At 158.0': R-Scale = R3-R4 First water level = 14.9' bgs taken 5/31/06 at 15:00 R-scale performed after drilling on stored samples
110.4					x x x		
						Bottom of Boring at 160.0 ft bgs on 5/25/06 17:20	
165							
105.4							
170							
100.4							



LOGGER : JS

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687640.2 N, 2012160.6 E)

ELEVATION : 267.1 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.8 ft bgs

START : 5/11/06 11:20

END : 5/12/06 16:56

LOGGER : JS

WATER LEVEL: 33.9 R59		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 232.1	R5NQ 5 ft 95%	100	0			SC-2 collected 33.9-34.9'		
			0					
			0					
	35.5		X X X				R6: 16:07-16:19	
		0						
		0						
40 227.1	R6NQ 5 ft 96%	100	0		36.7-38.1' - gray, mottled pink and greenish gray, fine sand to medium sand			
			0					
			0					
	40.5		X X X				R7: 16:27-16:45	
		0						
		0						
45 222.1	R7NQ 5 ft 104%	100	0		40.5-42.8' - gradational contact with sandstone, coarsening with depth			
			0					
			0					
	45.5		X X X				R8: 16:54-16:56	
		0						
		0						
50 217.1	R8NQ 1.5 ft 113%	98	0		42.8-43.4' - dark reddish brown, soft to hard, thin bedding, very fine sand to fine sand, fresh			
			1					
			X X X					First water level = 5.8' bgs taken 5/11/06 at 17:38; second water level = 14.2' bgs taken 5/12/06 at 15:35
	47.0		X X X				R-scale not performed on rock core samples	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-35

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	PP (TSF)	COMMENTS
	RECOVERY (in)	#	TYPE					
267.6	0.0	12.0	SS1SS	2-3-4-5 (7)	Fat Clay (CH) 0.0-1.0' - yellowish-red, moist, medium stiff, medium to high plasticity, trace root material		0.75	Recirculating drilling mud
	2.0							
	2.5	13.0	SS2SS	4-4-6-8 (10)	Fat Clay (CH) 2.5-2.8' - dark reddish brown, mottled orange, moist, medium stiff, fine to medium grained, medium to high plasticity Silty Sand (SM) 2.8-3.6' - strong brown, mottled orange, moist, medium stiff, fine to medium grained		0.5	
5								
262.6	5.0				Silty Sand (SM) 5.0-5.3' - strong brown, medium stiff, loose, saturated			PT-1 collected 6.0-8.0' Offset: 3.3' S43W of BPA-35 Lab Results USCS: CL
		15.0	SS3SS	6-10-17-28 (27)	Fat Clay (CH) 5.3-6.3' - light greenish gray, mottled red brown, moist, medium stiff		2.5	
	7.0							
	7.5				Fat Clay (CH) 7.5-8.2' - light greenish gray, mottled red brown, moist, medium stiff			4.0
		12.0	SS4SS	18-50 (50")	Silt (ML) 8.2-8.5' - brown, mottled greenish gray, dry to moist, medium dense			
	9.5							
10								
257.6	10.0				Silt (ML) 10.0-10.7' - brown, mottled greenish gray, dry to moist, medium dense			PT-2 collected 11.0-13.0'
		16.0	SS5SS	9-11-20-31 (31)	Fat Clay (CH) 10.7-11.3' - light greenish-gray, mottled dark orange and black, moist, stiff, high plasticity, trace of very fine sand		4.0	
	12.0							
	12.5				Sandy-Silt (ML) 12.5-13.0' - dark reddish brown, moist, hard, fine grained, low to non plasticity, platy, micaceous, some black staining along surfaces			50/4 (50/4")
		4.0	SS6SS					
	14.5							
15								
252.6	15.0				Sandy-Silt (ML) 15.0-15.5' - dark reddish brown, mottled light green gray, moist, hard, fine grained, low to non plasticity, micaceous, some black staining along surfaces			35-50/5 (50/5")
		6.0	SS7SS					
	17.0							
	17.5				Sandy-Silt (ML) 17.5-17.7' - dark reddish brown, moist, hard, fine to medium grained, low to non plasticity, platy, micaceous, some black staining along surfaces			50/2 (50/2")
	17.7	2.0	SS8SS					
20								Soil sampling completed at 15:25 on 5/22/06
					Begin Rock Coring at 20.0 ft bgs See the next sheet for the rock core log			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-35

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
247.6	20.0	R1NQ 8.2 ft 95%	95	1	20.2' - Fracture, <5 deg, rough, undulating	x x	Siltstone 20.0-21.4' - dark reddish brown, very soft, moderately weathered 20.7-21.4' - some fine sand and mottling	Rock coring began at 15:50 on 5/22/06 R1: 15:50-16:15 on 05/22/06 At 21.3': R-Scale = R5
			1	21.4' - Contact between siltstone and sandstone, 20 deg, rough, undulating	x x	Sandstone At 21.4' - reddish brown, very soft, very thin to medium bedding, fine sand 21.4-24.9' - moderately weathered 22.5-25.0' - pale brown to brown, soft, fine sand to medium sand 23.9' - black oxidized horizons 24.0-24.9' - mottled orange, black oxidized horizons 24.9-25.0' - slightly weathered		
			1	22.8' - Fracture, <5 deg, rough, undulating	x x			
			0		x x			
			1	24.9' - Fracture, <5 deg, rough, undulating	x x			
25 242.6					1	25.7' - Fracture, <5 deg, rough, undulating	x x	Siltstone 25.0-25.3' - dark reddish brown, slightly weathered 25.2' - very soft, soil-like characteristics
					0			
					0			
				0				
	28.2	R2NQ 10 ft 100%	100	1	28.4' - Fracture, <5 deg, rough, undulating, orange stains 29.0' - Contact between sandstones		Sandstone At 25.3' - pale brown to brown, very soft, fine sand to medium sand, slightly weathered, soil-like characteristics 29.0-31.1' - greenish gray, soft, fine sand to medium sand	At 26.1': R-Scale = R1
				0				
				1	31.2' - Fracture, <5 deg, rough, undulating, orange stains			
				0				
30 237.6						0		
						0		
						1	34.4' - Fracture, 10 deg, rough, undulating, orange stains	
						0		
						0		
						0		
35 232.6				0			At 33.6': R-Scale = R1 SC-1 collected 34.4-35.3'	
				0			At 35.9': R-Scale = R1-R2	
	38.2			0				
				0			R3: 08:10-08:45 on 05/23/06	
40				1	39.1' - Contact between siltstone and sandstone, <5 deg, rough, undulating	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-35

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
227.6	R3NQ 10 ft 100%	93	1	40.4' - Fracture, <5 deg, rough, undulating	x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-35

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687956.7 N, 2012158.6 E)

ELEVATION : 267.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

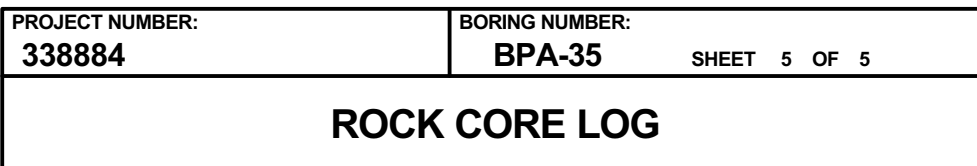
WATER LEVELS : 4.5 ft bgs

START : 5/22/06 12:20

END : 5/23/06 13:55

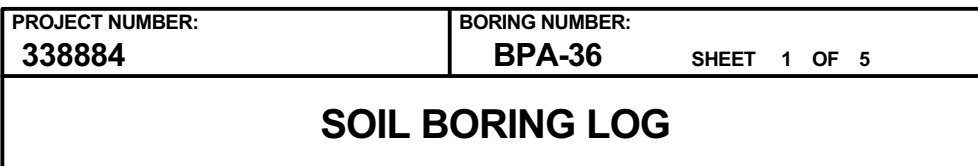
LOGGER : JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
207.6	R5NQ 10 ft 100%	100	0		x	60.4-61.4' - some fine sand (micaceous)	At 61.0': R-Scale = R3-R4	
			0		x			
			0		x			
			0		x			
			0		x			
65			0		x	61.5-61.9' - small (0.02') hard, white-pink rip up inclusions		
202.6			0		x			
			0		x			
			0		x			
			0		x			
67.5	R6NQ 10 ft 100%	100	0	x	65.0-67.5' - 0.03-0.06' hard, white-pink rip up inclusions	At 66.5': R-Scale = R3-R4		
			0	x				
			0	x				
			0	x				
			0	x				
70					0	x	67.5-68.0' - mottled blue-green, soft, some micaceous very fine sand	R6: 11:20-12:15
197.6					0	x		
					0	x		
					0	x		
					0	x		
75			1	x	74.7' - Fracture, <5 deg, smooth to rough, undulating	At 71.3': R-Scale = R3		
192.6			1	x				
			1	x				
			0	x				
			0	x				
77.5			0	x	75.8' - Fracture, 60 deg, rough, undulating	At 76.1': R-Scale = R3		
			1	x				
			0	x				
			0	x	77.5-87.5' - soft	R7: 13:00-13:55		
			1	x				
80					79.3' - Fracture, 60 deg, rough, undulating	At 79.3' - begins to coarsen with depth		



LOGGER : JF

Rev. 0



LOGGER : JV/JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-36

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687881.0 N, 2012189.2 E)

ELEVATION : 269.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 13.9 ft bgs

START : 6/19/06 15:55

END : 6/21/06 10:33

LOGGER : JV/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
20 249.8	R1NQ 5 ft 56%	0	-	19.7' - Fracture, 60 deg, smooth, undulating, 1/16" clay infilling, black stains	.	No Recovery 16.0-18.0'	Rock coring began at 09:40 on 6/20/06 R1:09:40-09:48 on 06/20/06 16.0-18.0' Blown out of the hole; Not recovered. At 17.1': R-Scale = R1	
			-			.		Sandstone At 18.0' - tan, black and red grains, very soft, fine sand to medium sand, highly weathered, staining, poorly indurated, very friable 19.7' - clay infilling, highly plastic, not enough for PP 19.9-20.3' - heavy staining
			0					
25 244.8	R2NQ 5 ft 54%	0	1	21.9' - Fracture, 40 deg, smooth, planar, black stains 22.3' - Fracture, 40 deg, smooth, planar, black stains 22.6' - Fracture, horizontal and 5 deg, smooth, undulating 23.1' - Fracture, 30 deg, smooth, undulating	.	21.0-26.0' - black mottling, silty, poorly indurated, very friable	SC-1 collected 20.2-20.9' R2: 10:05-10:19 At 22.5': R-Scale = R0-R1	
			2			.		22.4-22.5' - black band at 30 degrees
			1					
30 239.8	R3NQ 5 ft 100%	0	3	26.1' - Fracture, horizontal, smooth 26.8' - Fracture, horizontal, smooth, black stains 26.9' - Fracture, 15 deg, smooth, undulating, black stains 27.9' - Fracture, <5 deg, slickensided, planar, black stains 28.1' - Fracture, horizontal, smooth, undulating, 1/16" clay infilling 28.7' - Fracture, 5 deg, smooth, planar, 1/16" clay infilling 29.1-29.4' - Fracture zone, clay and rock fragments	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-36

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687881.0 N, 2012189.2 E)

ELEVATION : 269.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

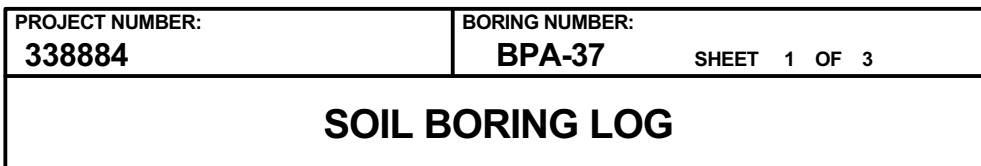
WATER LEVELS : 13.9 ft bgs

START : 6/19/06 15:55

END : 6/21/06 10:33

LOGGER : JV/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
80 189.8	R13NQ 5 ft 102%	100	0		x x x	69.6-69.8' - grades from sandstone and siltstone, irregular contact, interbedded, siltstone is very dark gray	R13: 09:10-09:30
			0		x x x	Siltstone	
			0		x x x	At 69.8' - dark reddish brown, heavy green mottling, very soft to soft, fresh, fine grained	
			0		x x x	70.6' - irregular sandstone lens, fine to medium sand	
			0		x x x	71.0-76.0' - very fine sand	At 79.2': R-Scale = R4
			0		x x x	72.1' - mottling decreases	
81.0			0		x x x	72.8' - increased very fine sand content, <0.0003' white feldspar grains abundant, black mottling	
			0		x x x	73.9' - greenish gray and black mottling, staining, feldspar sandy zone	R14: 09:40-10:02
			0		x x x	75.8-76.0' - green mottled zone	
			0		x x x	76.0-77.5' - trace very fine white feldspar grains	
			0		x x x	77.5' - increase in very fine sand, decrease to trace green mottling	
			0		x x x	77.9-78.2' - very fine to fine sand sized feldspar clasts abundant	At 83.5': R-Scale = R5
			0		x x x	78.2-78.5' - greenish gray mottled zone	
			0		x x x	78.6-78.9' - very fine sand	
85 184.8	R14NQ 5 ft 96%	96	0		x x x	79.5-70.8' - very fine sandy zone, white and pink	
			0		x x x	80.2-80.4' - very fine feldspar sand zone, less sand than 79.5-79.8'	
			0		x x x	80.5-80.9' - sandy zone, very fine feldspar white, pink, graded zone	R15: 10:10-10:33
			0		x x x	81.0-86.0' - very soft to soft, stained, very fine sand and siltstone clasts	
			0		x x x	82.6' - pitted where siltstone clasts were ripped out, decreased mottling	At 87.7': R-Scale = R3
			0		x x x	84.7' - increase in staining and black mottling, becomes soft	SC-5 collected
			0		x x x	86.0-91.0' - very soft, fine grained	89.8-90.6'
			0		x x x	86.5-86.6' - clay seam	First water level = 13.9' bgs taken 6/21/06 at 19:00;
			0		x x x	86.9-87.9' - greenish gray and black mottling	second water level = 15.6' bgs taken 6/22/06 at 16:30
90 179.8	R15NQ 5 ft 96%	96	0		x x x	87.4' - soft, trace very fine sand	
			0		x x x	89.4-90.3' - 20-30% very fine white and pink feldspathic sand, soft	R-scale performed after drilling on stored samples
			0		x x x	89.7-90.4' - greenish gray mottling	
			0		x x x	Bottom of Boring at 91.0 ft bgs on 6/21/06 10:33	
95 174.8							



LOGGER : JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-37

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687795.2 N, 2012225.3 E)

ELEVATION : 266.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.4 ft bgs

START : 5/10/06 09:40

END : 5/10/06 14:55

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
15 251.5	R1NQ 4.7 ft 89%	0	2	10.6-10.7' - Fractures (2), horizontal and 70 deg, smooth, stepped, gray stains	<div>xx xx</div>		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-38

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688010.8 N, 2012267.8 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead










ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

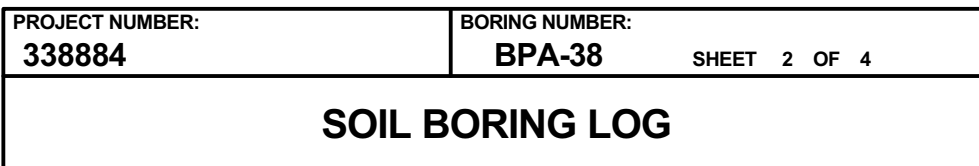
START : 5/19/06 08:40

END : 5/19/06 14:20

LOGGER : DT/JF

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
264.5	0.0	19.0	SS1SS	2-3-4-7 (7)	Fat Clay (CH) 0.0-1.6' - yellowish red, mottled, moist, medium stiff, medium to high plasticity, organics (roots)		PT-1 collected 8.0-9.5' Offset: 0.2' S38W to BPA-38 Lab Results USCS: CL w/Sand
	2.0						
	2.5	9.0	SS2SS	5-8-9-12 (17)	Fat Clay (CH) 2.5-3.3' - dark reddish brown, some mottling, moist, very stiff, medium to high plasticity, micaceous		
	4.5						
5							
259.5	5.0	17.0	SS3SS	10-12-50/5 (62/11")	Fat Clay (CH) 5.0-6.3' - dark reddish brown, some mottling, moist, very stiff, medium to high plasticity, micaceous		
	6.5				Clay (CL) 6.3-6.4' - dark reddish brown, moist, hard, medium to high plasticity, micaceous		
	7.5	5.0	SS4SS	50/5 (50/5")	Clay (CL) 7.5-8.0' - dark reddish brown, moist, hard, low to medium plasticity, platy		
	8.0						
10							
254.5	10.0	4.5	SS5SS	50/4.5 (50/4.5")	Sandy Silt (ML) 10.0-10.5' - dark reddish brown, dry to moist, hard, micaceous, fine grained trace clay		
	10.5						
	12.5	10.0	SS6SS	28-50/4 (50/4")	Clay (CL) 12.5-13.4' - dark reddish brown, mottled, moist, hard, medium plasticity, micaceous		
	13.5						
15							
249.5	15.0	4.0	SS7SS	50/4 (50/4")	Sandy Silt (ML) 15.0-15.5' - dark reddish brown, moist, hard, micaceous, some clay, platy, fine grained, some black staining along platy surfaces		
	15.5						
	17.5	9.0	SS8SS	33-50/3 (50/3")	Clay (CL) 17.5-18.3' - dark reddish brown, mottled, moist, hard, low plasticity, platy, micaceous, some black staining along platy surfaces		
	18.5						
20							

PT-1 collected
8.0-9.5'
Offset: 0.2' S38W to BPA-38
Lab Results USCS: CL w/Sand



LOGGER : DT/JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-38

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688010.8 N, 2012267.8 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

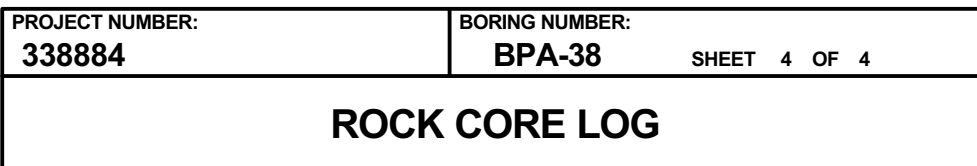
WATER LEVELS : 5.2 ft bgs

START : 5/19/06 08:40

END : 5/19/06 14:20

LOGGER : DT/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 239.5 <							



LOGGER : DT/JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-39

SHEET 1 OF 8

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
		RECOVERY (in)	#TYPE				
6"-6"-6"-6" (N)							
265.8	0.0	15.0	SS1SS	2-2-4-5 (6)	Silty Sand (SM) 0.0-0.6' - brown, moist, loose, fine to medium grained, low plasticity, rootlets, 25% fines Lean Clay (CL) 0.6-1.3' - yellowish red, heavily mottled orange, moist, medium stiff, medium plasticity, no dilatancy, 15% fine to medium sand		Drilling from 0-2.5' water bubbling up around rig due to sand at surface
2.0	2.5	17.0	SS2SS	3-5-7-16 (12)	Lean Clay (CL) 2.5-3.1' - reddish yellow, with orange-yellow mottling, moist, medium stiff, medium plasticity, no dilatancy, 15% fine to medium sand Fat Clay (CH) 3.1-3.7' - white, dark brown, and dark yellowish red, moist, stiff, medium to high plasticity, laminated bedding, mica particles, some fine sand		
5	5.0	19.0	SS3SS	17-19-35-50/4 (54)	Silty Sand (SM) 3.7-3.9' - brown, moist, medium dense, low plasticity, 25% very fine to medium sand Silty Sand (SM) 5.0-5.8' - reddish yellow, moist, high, fine to medium grained, low plasticity, 25% fines		
260.8	7.0	5.0	SS4SS	50/5.5 (50/5.5")	Sandy Clay (CL) 5.8-6.1' - brown, some mottling, moist, very stiff, low plasticity, 35% fine to medium sand Fat Clay (CH) 6.2-6.5' - greenish gray, moist, stiff, very fine to fine grained, high plasticity, no dilatancy, 10% fine sand		
10	9.5				Silty Sand (SM) 6.5-6.7' - pale red, moist, very dense, low plasticity, 15-20% fine to medium grained sand		Similar to sandstone in BPA-25 near surface
255.8	10.0	5.0	SS5SS	50/5.5 (50/5.5")	Silty Sand (SM) 7.5-8.0' - light gray, moist, very dense, fine to course grained, low plasticity Silty Sand (SM) 10.0-10.4' - light gray, moist, very dense, fine to course grained, low plasticity		
	12.0						
	12.5	7.0	SS6SS	25-50/5.5 (50/5.5")	Clayey Sand (SC) 12.5-13.1' - light gray, moist, very dense, fine to medium grained, low to medium plasticity, black, yellow, and red pockets, scattered coarse sand		
15	14.5						
250.8	15.0	17.0	SS7SS	38-37-26-42 (63)	Clayey Sand (SC) 15.0-16.4' - light gray, moist, very dense, fine to medium grained, low to medium plasticity, black, yellow, and red pockets, scattered coarse sand		
	17.0						
	17.5	5.0	SS8SS	50/5 (50/5")	Lean Clay (CL) 17.5-17.9' - reddish brown, moist, hard, low to medium plasticity, slow dilatancy		
	19.5						
20							



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-39</div>
SHEET 2 OF 8	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)
ELEVATION : 265.8 ft MSL (NGVD 29)	DRILLING CONTRACTOR : A. Martin, S&ME
DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead	ORIENTATION : Vertical
WATER LEVELS : 14.5 ft bgs	START : 5/3/06 09:34 END : 5/4/06 18:34 LOGGER : JS/JF

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
245.8	20.0			6"-6"-6"-6" (N)	Lean Clay (CL) 20.0-20.3' - reddish brown, moist, hard, low to medium plasticity, slow dilatancy, greenish white and black pockets of fat clay, high plasticity		Soil sampling completed at 12:42 on 5/3/06
		4.0	SS9SS	50/4 (50/4")			
	22.5						
	22.8	3.0	SS10SS	50/3 (50/3")	Lean Clay (CL) 22.5-22.8' - reddish brown, moist, hard, low to medium plasticity, slow dilatancy, greenish white and black pockets of fat clay, high plasticity Begin Rock Coring at 22.8 ft bgs See the next sheet for the rock core log		
25							
240.8							

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 240.8 30 235.8 35 230.8 40 225.8	22.8	R1HQ 2.8 ft 119%	36	1		Siltstone At 22.8' - dark reddish brown, soft, fine grained, some fine sand 22.9-24.5' - highly weathered 24.5-38.2' - slightly weathered to moderately weathered 25.6-30.6' - blue-green mottling	Rock coring began at 15:30 on 5/3/06 R1: 15:30-16:00 on 05/03/06 Surface rock washed/eroded out	
	25.6		0	25.4' - Fracture, <5 deg, smooth, undulating				
	25.6		64	1				27.6' - Fracture, 50 deg, rough, undulating 28.2-28.6' - Fractures (2), 75 deg, rough, undulating 29.6-30.3' - Fractures, 70 deg and 75 deg, rough, undulating	R2: Began at 16:15 SC-1 collected 27.75-28.85'
	30.6	2						
	30.6	0		30.6-35.6' - green mottling, very soft to soft 31.5' - soft, fine gravel sized inclusions, hard		R3: 17:30-17:53 Higher recovery than run likely due to soft weathered seam that fit back together		
	35.6	66	10+	32.1' - Fracture, horizontal, smooth, undulating, loose fit 32.3' - Fracture, 70 deg, smooth, undulating 32.6-33.9' - Fracture zone, horizontal and vertical, smooth, undulating, clay seams				
	35.6	0	1	34.1' - Fracture, 70 deg, smooth, undulating, tight fit, stained				
	35.6	68	1	36.0' - Fracture, horizontal, smooth, undulating 37.2' - Fractures (2), 70 deg, rough, undulating, tight fit 37.8' - Fracture, 20 deg, smooth, undulating		R4: 18:08-18:38 Clay (CL) 38.2-39.6' - very soft, highly weathered		
	40.6	10+		39.1-39.6' - Fracture zone, some clay				
	40.6	1		40.0' - Fracture, 5 deg, smooth, undulating			R5: 18:49-19:05	
		0						
		0						

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS						
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS							
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS								
45 220.8	R5HQ 5 ft 102%	100	0			Sandstone At 42.5' - gray, dark red mottling, fine sand to medium sand, fresh, some bands of darker gray and dark red, inclusions 42.5-44.3' - fine sand 44.3-45.6' - medium sand	R6: 07:40-08:00 on 05/04/06						
			0										
			0										
50 215.8	R6HQ 5 ft 100%	100	0						46.5-48.6' - red-orange staining at bottom	R7: 08:15-08:35			
			0										
			0										
55 210.8	R7HQ 5 ft 100%	100	0									52.0-52.6' - multicolored, light gray, medium sand to coarse sand 52.6-53.6' - multicolored, light gray with dark reddish brown 53.2-55.2' - bluish gray, dark reddish brown mottling, fine sand	R8: 08:40-09:10
			0										
			0										
60 205.8	R8HQ 5 ft 100%	90	1												Siltstone 56.5-56.8' - dark bluish gray, fresh, soft, fine grained Sandstone 56.8-59.5' - dark bluish gray, fine sand, fresh 57.95-58.6' - gray, fine sand to medium sand 58.6-59.5' - blue gray, fine sand, banded Siltstone 59.5-62.5' - dark bluish gray, soft, fresh, banded 60.6-62.5' - dark greenish gray, some dark red mottling, very soft	SC-2 collected 59.6-60.6'
			2										
			0										
			0		60.7' - Fracture, 30 deg, rough, undulating 61.4' - Fracture, 30 deg, rough, undulating 61.8' - Fracture, 15 deg, rough, undulating 62.0' - Fracture, <5 deg, rough, undulating 62.2' - Fracture, <5 deg, rough, undulating	R9: 09:20-09:55							
			0										
			0										
			2										
			4										



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-39

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

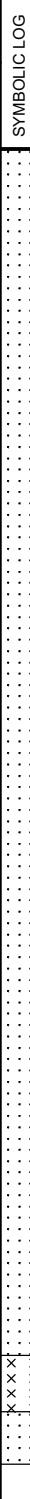
ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
65 200.8 65.6 70 195.8 70.6 75 190.8 75.6 80 185.8 80.6	R9HQ 5 ft 100%	83	0	62.3' - Fracture, <5 deg, rough to smooth, undulating 62.5-68.2' - Microfractures		Sandstone At 62.5' - very dusky red, blue green mottling, soft, laminated to thick bedding, fine sand, fresh	R10: 10:00-10:30	
			0					
			0					
			0			66.0-68.2' - dark reddish brown, soft, fine sand		
			0					
		R10HQ 5 ft 100%	100	0			68.2-69.0' - reddish brown, fine sand to medium sand 69.0-70.5' - gray, medium sand to coarse sand	R11: 10:35-10:55
				0				
			0				70.6-73.4' - pinkish gray, soft to hard, medium sand	
			0					
			0			73.0' - black-oxidized band at contact between medium and coarse grain size 73.4-75.6' - pinkish gray, soft to hard, medium sand to coarse sand		
		R11HQ 5 ft 100%	100	1		73.4' - Fracture, 50 deg, rough, undulating		R12: 11:00-11:20
				0				
			0				75.6-77.4' - pinkish gray, soft to hard, medium sand to coarse sand	
			1			76.9' - Fracture, 60 deg, rough, undulating, tight fit		
			1				77.4-80.6' - dark gray, soft to hard, medium sand to coarse sand	
		R12HQ 5 ft 100%	100	1				R13: 11:20-12:05
			0					
		0						
		0			80.6-81.2' - dark blue gray, fine sand			
		1		81.0' - Fracture, <5 deg, rough and undulating to smooth and planar	Siltstone 81.2-82.0' - dark blue gray, fresh, fine grained			
			0					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-39

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687929.9 N, 2012297.9 E)

ELEVATION : 265.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

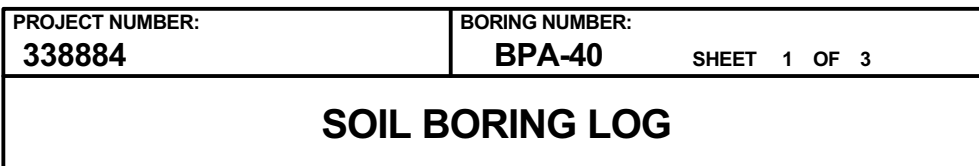
WATER LEVELS : 14.5 ft bgs

START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
85 180.8 								



LOGGER : LH/EM/DT

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687842.4 N, 2012342.8 E)

ELEVATION : 259.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.9 ft bgs

START : 6/26/06 16:20

END : 6/27/06 14:10

LOGGER : LH/EM/DT

WATER LEVELS: 7.5 RODS		START: 06/26/06 10:20		END: 06/27/06 14:10		LOGGER: LHM/MDT			
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
10 249.2	7.7	95	0	9.2' - Fracture, 5 deg, smooth, undulating, stained, loose fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Siltstone 7.7-9.2' - dark reddish brown, very soft to soft, bedding, moderately weathered, fine grained, 25% fine sand, micaceous Sandstone 9.2-9.6' - greenish gray, very soft to soft, fine sand to medium sand, moderately weathered, micaceous	Rock coring began at 08:28 on 6/27/06 R1: 08:28-09:25 on 06/27/06 At 8.5': R-Scale = R0-R1 R2: 08:58-09:25 At 12.3': R-Scale = R1-R2 R3: 09:40-10:00 At 18.7': R-Scale = R3 R4: 10:10-10:21 At 21.2': R-Scale = R2 At 24.0': R-Scale = R1 R5: No time recorded At 27.3': R-Scale = R2		
	1								
	0								
	15 244.2	11.4	83	2	10.6' - Fracture, 5 deg, rough, stepped, stained, tight fit 10.6-11.4' - Fracture, vertical, black stains, tight fit 11.4-11.9' - Fracture, vertical and 80 deg, rough, undulating, black stains, tight fit 12.6' - Fracture, 20 deg, smooth, planar, black stains, tight fit 12.9' - Fracture, 25 deg, smooth, undulating, black stains, loose fit 14.6' - Fracture, 5 deg, rough, undulating, loose fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX		Siltstone 9.6-12.6' - dark reddish brown, very soft to soft, moderately weathered, fine grained, micaceous, 20% fine sand, bioturbated 12.6-12.9' - very soft, moderately weathered 12.9-17.0' - soft, slightly weathered, bioturbated	
		1							
		2							
		20 239.2	15.4	96	0	18.8-19.1' - Fracture, 65 deg, smooth, undulating, calcitic infilling, tight fit 19.7' - Fracture, 10 deg, smooth, undulating, loose fit 19.8' - Fracture, 5 deg, smooth, undulating, loose fit		XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Sandstone 17.0-19.7' - dark reddish gray, fine sand, slightly weathered, 30% silt, micaceous, medium bedding, soft
			0						
			0						
			25 234.2	20.4	100	1		23.4-24.1' - Fracture, 75 deg, rough, undulating, calcitic infilling, tight fit 24.1-24.7' - Fracture, 70 deg, rough, undulating, calcitic infilling, tight fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Siltstone 19.7-22.3' - dark reddish brown, slightly weathered, fine grained, micaceous, 15% fine sand, soft Sandstone At 22.3' - greenish gray, slightly weathered, micaceous, 20% silt, soft, fine sand
2									
0									
26.1				NA	0	25.5-25.6' - coarse gravel, quartz, feldspar 26.0-26.8' - light bluish gray, fine sand to medium sand, quartz mica, 5% medium gravel	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX		
	2								
	NA								
	27.3			1	1	26.8' - Fracture, 5 deg, rough, undulating, tight fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX		
		2							
		NA							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-40

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687842.4 N, 2012342.8 E)

ELEVATION : 259.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 7.9 ft bgs

START : 6/26/06 16:20

END : 6/27/06 14:10

LOGGER : LH/EM/DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
30 229.2 								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 1 OF 9

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
264.6	0.0	24.0	SS1SS	2-3-4-5 (7)	Top Soil 0.0-0.5'		
	2.0				Clay & Fine Sand (CL&SP-SM) 0.5-1.4' - reddish brown and light brown, moist, medium stiff, loose, trace roots, fill		
	2.5				Fine Sand (SP-SM) 1.4-2.0' - light brown, moist, loose, fill		
	4.5	18.0	SS2SS	28-50/5 (50/5")	Clay (CL) 2.5-4.0' - reddish brown, greenish gray mottling, moist, hard, laminated bedding, friable		
5							
259.6	5.0	3.0	SS3SS	50/3 (50/3")	Clay (CL) 5.0-5.3' - greenish gray mottling, moist, hard, laminated bedding, friable		Soil sampling completed at 13:20 on 6/15/06
	5.3				Begin Rock Coring at 5.7 ft bgs		
	5.7				See the next sheet for the rock core log		
10							
254.6							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 2 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
10 254.6	5.7 R1NQ 3.5 ft 97%	77*	3		<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges. S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

WATER LEVELS : 20.4 ft DWS				START : 9/19/89 12:47		END : 9/17/89 14:46		LOGGER : LHT	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS		
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
30 234.6	R5NQ 5 ft 94%	94	0		XXXXXX XXXXXX				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 4 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
50 214.6	R9NQ 5 ft 94%	94	0		XXXXXX XXXXXX		

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

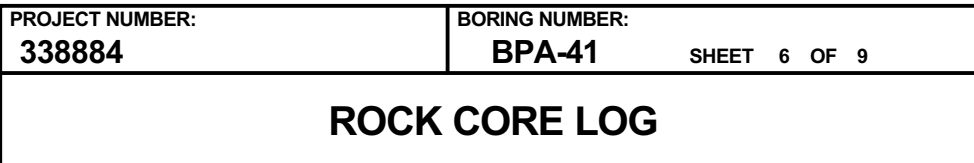
WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

WATER LEVELS : 20.4 ft DWS				START : 8/19/00 12:47		END : 8/17/00 14:48		LOGGER : LIT	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS		
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
70 194.6	R13NQ 5 ft 104%	100	0		x 				



LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 7 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
110 154.6	R21NQ 5 ft 98%	64	3	105.7' - Fracture, horizontal, rough, planar	x 		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 8 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
130 134.6	R25NQ 5 ft 98%	72	10+	125.4-126.0' - Fracture zone, horizontal, rough, planar, clay seams (0.01-0.02' thick), very soft, undulating	x x x	122.1-122.2' - clayey /silt (alternating) seam unbroken	At 127.8': R-Scale = R3
			1	126.4' - Fracture, horizontal, rough, undulating	x x x	122.2-122.9' - clayey/silt (alternating) seam unbroken, has more silt layers at bottom than at top	
			0		x x x	123.0-123.3' - clayey /silt (alternating) seam broken	
			5	128.2-128.6' - Fracture zone, horizontal, smooth, planar, clay seams (0.01-0.03' thick), very soft	x x x	123.7-123.9' - clayey /silt (alternating) seam broken	
			0		x x x	Siltstone At 124.2' - olive and dark reddish brown, dark greenish gray mottling, soft, laminated bedding, slightly weathered	
135 129.6	R26NQ 5 ft 104%	96	0		x x x	125.4-126.0' - very soft	R26: 11:09-11:26 At 130.0': R-Scale = R3-R4
			0		x x x		
			2	131.4-131.8' - Fracture zone, horizontal, rough, undulating, clay seams (0.01-0.02' thick), very soft with very soft siltstone alternating in laminated beds	x x x	131.4-131.8' - very soft	
			1	132.9' - Fracture, horizontal, rough, undulating	x x x		
			1		x x x		
140 124.6	R27NQ 5 ft 100%	100	0	133.9-134.0' - Fracture, horizontal, smooth, planar, clay seams (0.01-0.02' thick), very soft with very soft siltstone alternating in laminated beds	x x x	133.9-134.0' - very soft	R27: 11:30-11:42 At 136.4': R-Scale = R3-R4
			0		x x x	Sandstone 134.2-137.5' - olive gray and dark greenish gray, mottled dark reddish brown and greenish gray, soft, laminated to medium bedding, very fine sand to fine sand, subrounded to subangular, poorly sorted, fresh, very silty (30-45%)	
			0		x x x		
			0		x x x	Siltstone 137.5-139.2' - olive gray and dark greenish gray, mottled dark reddish brown and greenish gray, soft, fresh	
			0		x x x		
145 119.6	R28NQ 5 ft 100%	96	1	139.9' - Fracture, horizontal, rough, planar	x x x	Siltstone 139.2-143.8' - dark reddish brown, reddish black mottling, very soft to soft, laminated bedding, fresh	R28: 11:48-12:01 SC-5 collected 139.9-140.8' At 141.2': R-Scale = R4 At 142.5': R-Scale = R3
			1	140.8' - Fracture, horizontal, rough, planar	x x x	139.2-139.6' - greenish gray mottling	
			3	141.5' - Fracture, horizontal, rough, planar	x x x		
			0	141.6' - Fracture, horizontal, rough, undulating	x x x		
			0	141.7' - Fracture, horizontal, rough, undulating	x x x		
145 119.6			1	143.8' - Contact between siltstone and sandstone, 30 deg, sharp contact	x x x	Sandstone At 143.8' - dark reddish gray and light reddish gray, soft to hard, laminated to medium bedding, fine sand, subangular, well sorted, fresh	R29: 13:00-13:20 At 145.0': R-Scale = R3-R4
			0		x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 9 OF 9

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686943.6 N, 2012431.0 E)

ELEVATION : 264.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

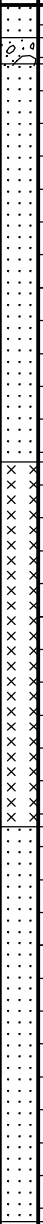
ORIENTATION : Vertical

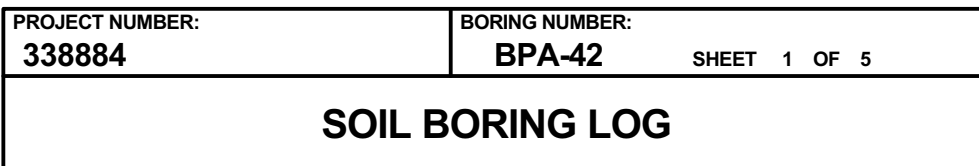
WATER LEVELS : 26.4 ft bgs

START : 6/15/06 12:47

END : 6/17/06 14:46

LOGGER : LH

WATER LEVEL: 20.4 FEET		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
150 114.6	R29NQ 5 ft 96%	96	0	152.7' - Contact between siltstone and sandstone, horizontal, rough, undulating 152.9' - Fracture, horizontal, rough, undulating 153.2-153.3' - Fracture zone, horizontal, rough, planar, clay seams (0.01-0.02' thick), very soft 154.9-155.1' - Fracture zone, horizontal and 30 deg, smooth, planar, planar 158.1' - Fracture, horizontal, rough, planar 158.2' - Contact between siltstone and sandstone, horizontal, planar, partially convoluted			144.2-149.2' - reddish black and greenish gray mottling, very fine sand to medium sand, subangular to subrounded, poorly sorted to well sorted Conglomerate 145.0-145.3' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, very thin bedding, subangular to subrounded, fresh, poorly sorted to well sorted Sandstone 145.3-146.2' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, soft to hard, laminated to medium bedding, very fine sand to medium sand, subangular to subrounded, well sorted, fresh Conglomerate 146.2-146.6' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, very thin bedding, subangular to subrounded, fresh, poorly sorted to well sorted Sandstone 146.6-152.7' - dark reddish gray and light reddish gray, mottled reddish black and greenish gray, soft to hard, laminated to medium bedding, very fine sand to medium sand, subangular to subrounded, well sorted, fresh 149.2-152.7' - light reddish brown, dark reddish brown, and very dark greenish gray, reddish black mottling, laminated to medium bedding, very fine sand to coarse sand, subangular to subrounded, poorly sorted, bands of coarser and finer material 150.7-151.5' - Conglomeratic material Siltstone At 152.7' - dark reddish brown, reddish black mottling, very soft to soft, laminated bedding, fresh At 154.2' - soft 155.9-156.9' - 30-50% very fine sand coarsens with depth 156.9' - fines with depth Sandstone 158.2-164.2' - weak red and dark reddish brown, dark reddish brown mottling, soft, very fine sand to medium sand, subangular to subrounded, well sorted, fresh 159.2-164.2' - trace greenish gray mottling	At 147.0': R-Scale = R4 	



LOGGER : JS/JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-42

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.1 ft bgs

START : 7/10/06 08:30

END : 7/11/06 09:52

LOGGER : JS/JF

WATER LEVEL: 0.1 RGS		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
10 254.3	7.6 R1NQ 2.4 ft 96%	0	0		x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-42

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

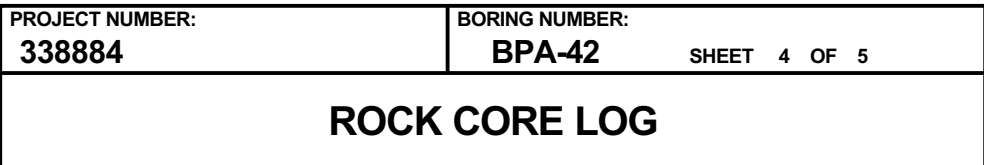
WATER LEVELS : 9.1 ft bgs

START : 7/10/06 08:30

END : 7/11/06 09:52

LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
5 ft 234.3	5 ft 86%	86	0		x		
			0		x		
			0		x		
30 234.3	30.0				x	29.0-29.8' - mottled purple and blue	At 28.1': R-Scale = R3-R4
			1		x		
			0		x		
	R6NQ 5 ft 102%	98	0		x		R6: 12:55-13:02 and 12:55-13:02 At 30.6': R-Scale = R3-R4
			0		x		
			0		x		
35 229.3	35.0				x		At 33.5': R-Scale = R3
					x		
			0		x		
			0		x	35.8-36.2' - fine sand sized clay clasts	R7: 14:02-14:18
			0		x		
	R7NQ 5 ft 103%	100	0		x	36.9-37.8' - very soft to soft, very small white speckles and clay clasts	
			0		x		
			0		x	38.3-39.0' - white speckles, clay clasts (.04 - 1.2)	At 38.0': R-Scale = R3
			0		x		SC-2 collected 39.1-40.0'
40 224.3	40.0				x	40.0-51.5' - fresh	R8: 14:26-14:48
			0		x		
			0		x	41.0-42.2' - 10% clay clasts (.04)	
			0		x		
	R8NQ 5 ft 100%	100	0		x		At 43.3': R-Scale = R3-R4
			0		x		
			0		x	44.0-45.0' - 10% clay clasts (.04)	
45 219.3	45.0				x		
			0		x	45.0-50.0' - massive bedding 45.0-45.1' - mottled white	R9: 14:52-15:12
			0		x		
	R9NQ				x		At 46.9': R-Scale = R4



LOGGER : JS/JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-42

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686687.3 N, 2012578.9 E)

ELEVATION : 264.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

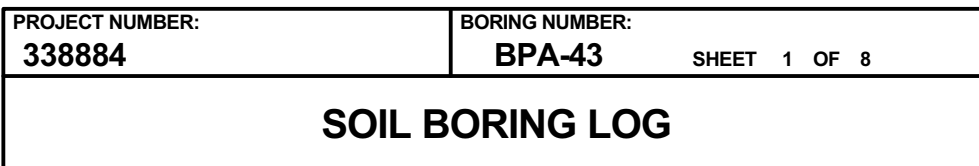
WATER LEVELS : 9.1 ft bgs

START : 7/10/06 08:30

END : 7/11/06 09:52

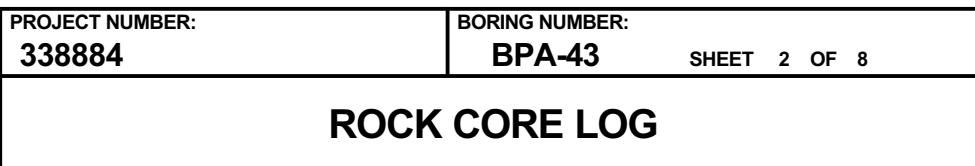
LOGGER : JS/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
70 194.3	5 ft 104%	100	0		x x x x	68.0' - blue-green mottling	At 68.7': R-Scale = R3-R4
			0		x x x x		
			0		x x x x		
			0		x x x x		R14: 08:36-08:56
			0		x x x x		
			0		x x x x		
			0		x x x x		At 73.7': R-Scale = R3-R4
			0		x x x x		
			0		x x x x		
75 189.3	75.0	100	0		x x x x	74.7-75.0' - small clay clasts (<.04)	At 74.7': R-Scale = R4 R15: 09:00-09:18
			0		x x x x	75.0-80.0' - dusky red, heavily mottled olive, yellow, blue-green	
			0		x x x x	75.1-77.4' - 25% <0.2 white clasts	
			0		x x x x		At 77.6': R-Scale = R3-R4
			0		x x x x	77.4-79.2' - trace very fine to fine sand	
			0		x x x x		
			0		x x x x	79.2-80.0' - significantly less mottling	R16: 09:23-09:52
			0		x x x x		
			0		x x x x	80.0-85.0' - dark reddish brown to very dusky red, trace blue-green mottling	
			0		x x x x		At 82.2': R-Scale = R3-R4 At 84.4': R-Scale = R3-R4 First water level = 9.1' bgs taken 7/11/06 at 12:00; second water level = 7.8' bgs taken 7/12/06 at 12:21
			0		x x x x		
			0		x x x x	83.5-85.0' - trace very fine to fine sand	
85 179.3	85.0	100	0		x x x x	Bottom of Boring at 85.0 ft bgs on 7/11/06 09:52	R-Scale performed after drilling on stored samples



LOGGER : JV

Rev. 0



LOGGER : JV

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 3 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40	40.0	88	1	34.8' - Fracture, horizontal and 25 deg, smooth, undulating	x	34.7-34.8' - soft, very fine sand, sandy silt lens	R5: 08:30-08:48 on 06/15/06
			1	35.3' - Fracture, horizontal and 5 deg, smooth, undulating	x		At 36.0': R-Scale = R3
			0	36.6' - Fracture, 85 deg, smooth, undulating, 0.3' long, healed above 0.1', angle decreases to 70 deg	x	At 37.2' - clasts increase in size and frequency, 0.1-0.5' long	
			0		x		
			1		x		At 39.0': R-Scale = R2
229.7		98	0	39.7' - Fractures (2), 0-5 deg, 80 deg, smooth, undulating	x	40.0-45.0' - green mottling, fine grained	SC-2 collected 39.2-39.8'
			0		x		R6: 08:58-09:18
			0		x		At 41.5': R-Scale = R3
			0		x		
			1	44.2' - Fracture, 40 deg, smooth, undulating	x		At 44.0': R-Scale = R3
45	45.0	100	0		x	45.0-50.0' - green mottling, fine grained with very fine sand	R7: 09:45-10:06
224.7			1		x		At 45.5': R-Scale = R3-R4
			0		x		
			0		x		At 48.0': R-Scale = R3
			0		x		At 49.5': R-Scale = R3
50	50.0	82	0		x	50.7-51.0' - soft, arkose silty sand clasts 0.03-0.1' long	R8: 10:25-10:45
219.7			1	51.4' - Fracture, 55 deg, smooth, undulating	x		
			0		x	52.7' - no apparent bedding, increase in very fine sand content	
			0		x	53.6-54.5' - no apparent bedding, greenish-gray silty sand clast 0.04' long and sand stringers 0.01-0.03' wide	At 53.0': R-Scale = R3
			10+	54.2' - Fracture, 60 deg, smooth, undulating	x		
55	55.0			54.5-54.8' - Fracture zone, smooth, undulating, <0.25' thick clay infilling	x		
214.7					x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 4 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

WATER LEVEL: 10.0 R9:5		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
60 209.7	R9NQ 5 ft 94%	90	0	54.8' - Fracture, 5 deg, smooth, planar	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 5 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
80 189.7	R13NQ 5 ft 106%	100	0	76.4' - Fracture, 65 deg, smooth, undulating, cemented, silty 79.0' - Fracture, 55 deg, smooth, undulating	<div>xx </div>		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 6 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
100 169.7	100.0	R17NQ 5 ft 103%	100	1	95.5' - Fracture, 5 deg, smooth, undulating	Sandstone 89.8-90.0' - greenish gray, reddish brown mottling, hard, very thin bedding, very fine sand, fresh, gradational contact Siltstone At 90.0' - dark reddish brown, green mottling, very soft, fresh, some very fine sand 90.2-90.7' - siltstone clasts, 1/8 to 1/4 diameter, angular 90.5-91.0' - green mottling 93.5-94.1' - heavy green mottling Sandstone 94.1-94.3' - greenish gray, fresh, very fine sand, gradational contact Siltstone At 94.3' - dark reddish brown, green mottling, very soft, fresh 95.5' - black clasts, very soft, 1/8 diameter 97.5-97.7' - Lighter brown zone with abundant dark red brown to black clasts 99.0-99.4' - heavy green mottling 99.4-99.6' - green, very fine sandy silt band, very soft, 30 degree bedding 99.6-99.7' - black band, very soft, 30 degree bedding 101.6-102.1' - increased very fine sand in sand stringers 0.05' thick 102.1' - laminated alternating siltstone and sandy siltstone, 30 degree bedding Siltstone At 102.7' - fresh, greenish gray silt band 103.1-103.7' - reddish brown and greenish gray, very soft, laminated bedding, banded 104.7' - sand lense, gradational contact, greenish gray, mottled reddish brown, soft Sandstone 105.0-105.4' - gray, mottled black and reddish brown, soft to hard, very fine sand, fresh, minor staining Siltstone 105.4-116.3' - dark reddish brown, very soft, fresh, with green banding, little sand, banding along bedding at 30 degrees 106.3' - green mottling, banding disappears, trace very fine sand 108.8' - heavy green mottling, laminated banding 110.0-115.0' - dark reddish brown, soft, 20-30% very fine sand 110.9-111.5' - black mottling	R17: 11:10-11:31	
				1	96.6' - Fracture, 15 deg, smooth, planar, pink encrusting, thin		At 96.0': R-Scale = R3-R4	
				0			At 98.0': R-Scale = R3-R4	
				0				
				0				
105 164.7	105.0	R18NQ 5 ft 106%	90	1	100.2' - Fracture, 5 deg, smooth, undulating	R18: 12:10-12:30		
				1	101.4' - Fracture, 65 deg, smooth, undulating	At 102.0': R-Scale = R3-R4		
				0	103.9' - Fracture, 70 deg, smooth, undulating	At 104.0': R-Scale = R3-R4		
				1				
				0				
110 159.7	110.0	R19NQ 5 ft 92%	86	0	106.1' - Fracture, horizontal, slickensided, planar, smooth 106.2' - Fracture, 30 deg, slickensided, planar, smooth	R19: 12:29-13:10		
				2		At 106.0': R-Scale = R3-R4		
				0		At 108.5': R-Scale = R3		
				0				
				0				
115 154.7	115.0	R20NQ 5 ft 108%	100	0		R20: 13:30-13:50		
				0				
				0		At 113.5': R-Scale = R4		
				0				
				0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 7 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

WATER LEVEL: 10.0 RESS		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
120 149.7	R21NQ 5 ft 98%	98	0	118.4' - Contact between siltstone and sandstone, 30 deg, sharp 119.2' - Contact between siltstone and sandstone, sharp	x 				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 8 OF 8

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687805.9 N, 2012031.0 E)

ELEVATION : 269.7 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

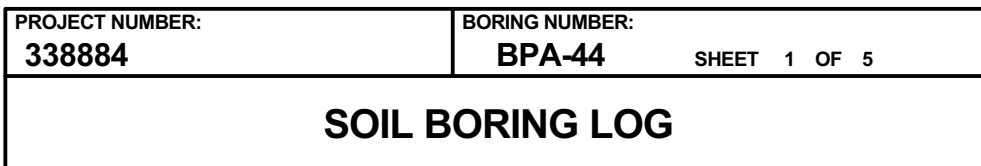
WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
140	R25NQ 5 ft 94%	94	1	135.9' - Contact between siltstone and sandstone, 30 deg, sharp	...	135.1' - becomes finer with depth	R25: 09:08-09:23
129.7			0		x	Siltstone At 135.9' - dark reddish brown, mottled greenish gray and black, very soft, fresh, trace very fine sand, contact at 30 degrees	At 136.0': R-Scale = R4
			0		x	138.3-138.9' - small (1/8) white clasts	
			0		x	139.0' - sandy lens, red brown silt, medium grained gradational contact with siltstone	
			0		x	140.0-145.0' - dusky red, mottled green and black, fine grained	R26: 09:34-10:04
			0		x	140.5-140.6' - mottled greenish gray	
			0		x	142.0-142.4' - heavily mottled green	At 143.0': R-Scale = R4
145	R26NQ 5 ft 105%	100	0		x		
124.7			0		x	144.8' - greenish gray linear feature 0.6' long at a 55 degree angle	R27: 12:35-13:18
			0		x	145.0-150.0' - weak red, trace very fine sand	
			0		x	145.3-145.4' - some staining	
			0		x	146.2' - 0.15' long horizontal green stringer with some very fine sand and silt (<1/8' wide)	
			0		x	146.5' - heavy green mottling	At 147.3': R-Scale = R4
			0		x	147.5-148.8' - 1/16 diameter black clasts	SC-6 collected 148.7-150.0'
150	R27NQ 5 ft 103%	100	0		x	149.6-150.0' - white fine to medium grained	First water level = 18.6' bgs taken 6/20/06 at 08:52; second water level = 19.0' bgs taken 6/21/06 at 07:50
119.7			0		x	Bottom of Boring at 150.0 ft bgs on 6/19/06 13:10	R-Scale performed after drilling on stored samples
155							
114.7							



LOGGER : JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-44

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15 251.3	R1NQ 5 ft 100%	86	0	13.4' - Fractures, 70 deg, undulating, several parallel healed fractures, visible 14.7' - Fracture, 30 deg, undulating, hairline fracture	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-44

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
35 231.3	R5NQ 5 ft 98%	98	0		x	31.0-41.0' - less mottling, soft, very fine to fine grained with up to 25% very fine sand	R5: 12:58-13:16
			0		x	31.0-46.0' - fresh	
			0		x		At 32.9': R-Scale = R3
			0		x		SC-3 collected 34.2-35.3'
			2		x	35.3-35.6' - fine to medium grained sand	
36.0				36.1' - Fracture, horizontal, undulating, tightly healed	x		R6: 13:30-13:50
			2	36.3' - Fracture, 50 deg, undulating, tightly healed	x		
			1	37.2' - Fracture, horizontal, undulating, long, tightly healed	x	37.3-41.0' - very fine grained with no to very little sand	
	R6NQ 5 ft 100%	100	0	37.5-41.0' - Fractures, capillary microfractures	x		At 38.1': R-Scale = R3
			0		x		
40 226.3			0		x	39.7-41.0' - scattered medium sand-sized clasts, rounded, dark purple; 5%; harder than matrix	
			0		x		R7: 14:01-14:17
			0		x		At 42.0': R-Scale = R3-R4
			10+	42.3' - Fracture, 50 deg, undulating, partial fracture, ~0.0002' wide	x	42.1' - mottled purple, dark yellow, and green, very soft, very fine grained with little sand	
			3	42.4-42.8' - Fracture zone, rough, stepped, some very hard white infilling, green and purple staining	x		
	R7NQ 5 ft 100%	80	1	42.8-43.1' - Fracture zone (3), 60 deg and 80 deg, rough, undulating, some very hard white infilling, green and purple staining	x		
45 221.3			3	43.4' - Fracture, 70 deg	x	45.2-45.3' - clay seam, softer rock lens	
			3	44.8' - Fracture, 40 deg, smooth, undulating, some white infilling, green and purple staining	x		
			10+	45.4' - Fracture, horizontal, smooth, undulating, 0.03' relief, partially slickensided (~50% of surface); bedrock fragments	x	Siltstone	R8: 14:40-15:01
			0	46.0-46.9' - Fracture zone, horizontal, smooth, undulating, some slickensided surfaces, 0.1' thick gray clay seam	x	46.0-46.9' - dark gray, fresh, very fine grained, lighter and darker laminations	
			0		x	Siltstone	At 47.5': R-Scale = R3-R4
	R8NQ 5 ft 96%	80	0		x	At 46.9' - dark reddish brown, soft, fresh, 30% very fine sand, coarse silt	
			1		x	47.3-48.8' - mottled green and black, fine grained, 25% very fine sand	
50 216.3			1		x		At 49.6': R-Scale = R3-R4
			1		x	49.9-50.3' - green mottling, fine grained	
51.0					...		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-44

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687543.3 N, 2012170.4 E)

ELEVATION : 266.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

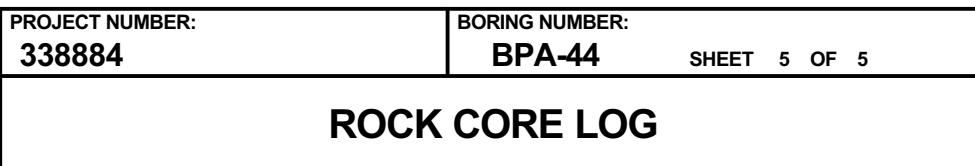
WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

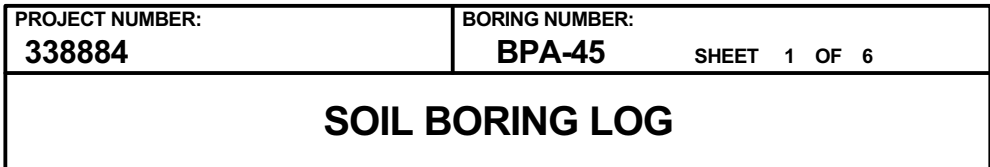
LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 211.3	R9NQ 5 ft 100%	100	0	50.4' - Fracture, horizontal, smooth, undulating, 0.02' relief		Sandstone 50.3-51.6' - dark reddish gray, some green mottling, soft to hard, very fine sand to fine sand, fresh, 35% silt 51.1-51.6' - very dark gray, rust, white, gray, black mottling, interbedded contact over ~0.1'; fine grained to 0.0002' Siltstone 51.6-51.8' - dark reddish brown, green mottling, soft, fresh, fine grained Sandstone 51.8-55.2' - gray, rust mottling, soft to hard, poorly sorted, fresh, abrupt contact at 20 degrees; multi-colored grains, 60% silica, 40% feldspar, fine to coarse grains Siltstone 55.2-58.1' - dark reddish brown, trace green mottling, soft, fresh, fine grained, 15% very fine sand 56.0-58.1' - increasing sand content with depth Sandstone 58.1-60.3' - dark reddish brown, little mottling, very fine sand to fine sand, fresh, up to 25% silt, coarser with depth 59.8-60.3' - soft to hard, 35% medium grained sand Siltstone 60.3-74.0' - very dark gray to dark brown, mottled dark green and yellow, soft, fresh, very fine grained with trace to 10% medium sand grains, angular 61.0' - last 0.5' gray 62.0' - very dark gray, some yellow mottling, very soft to soft, banded, laminated in swirled patterns, very fine to medium grained with sandy lenses at 62.45-65.55' 66.0-67.6' - dark yellow and faint green mottling, soft 67.6' - reddish brown, mottled green, purple and yellow, 25% very fine sand 69.2-69.8' - trace to no sand 69.8-71.0' - Trace medium white sand grains	R9: 15:13-15:21
			0				At 52.1': R-Scale = R3-R4
			0				At 54.5': R-Scale = R3-R4
			0				
			1				
56.0	R10NQ 5 ft 100%	100	0			R10: 15:37-15:50	
			0			At 57.7': R-Scale = R3-R4	
			0			At 59.2': R-Scale = R3-R4	
			0				
			1	60.3' - Contact between siltstone and sandstone, horizontal, rough, undulating			
60 206.3	R11NQ 1 ft 100%	50	2	61.5' - Fracture, horizontal, smooth, stepped, 0.03' relief 61.9' - Fracture, horizontal, smooth, stepped, 0.02' relief 62.3' - Fracture, horizontal, smooth, undulating, 0.05' clay infilling		R11: 08:08-08:29 on 06/29/06	
			1			At 63.6': R-Scale = R3-R4	
			0			SC-4 collected 64.7-65.9'	
			0			R13: 08:44-09:05	
			0			At 68.3': R-Scale = R3-R4	
65 201.3	R12NQ 4 ft 98%	90	10+	66.2' - Fracture, horizontal, smooth, undulating 66.5-66.6' - Fracture zone, horizontal and 20 deg, rough, undulating, bedrock fragments 67.3' - Fracture, horizontal, smooth, undulating 67.6' - Fracture, horizontal, smooth, undulating			
			2				
			0				
			0				
			0				
70 196.3	R13NQ 5 ft 100%	84	0				
			0				
			0				
			0				
			0				
71.0							



LOGGER : JS

Rev. 0



LOGGER : JS/LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-45

SHEET 2 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

WATER LEVEL: 110.00		START: 08:00 10/12		END: 04:00 10/12		LOGGERS: JEFF	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
5 260.9	2.8	R1NQ 2.5 ft 100%	93*	2	2.8' - Fracture, 10 deg, smooth, undulating, 0.01 relief	X X	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-45

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 240.9 							

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

ELEVATION : 265.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

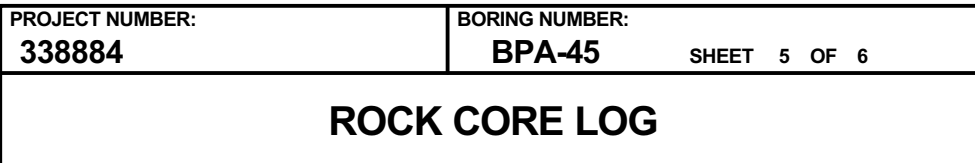
WATER LEVELS : 14.5 ft bgs

START : 8/3/06 13:12

END : 8/4/06 12:25

LOGGER : JS/LH

WATER LEVEL: 14.5 ft bgs		START: 8/3/00 13:12		END: 8/4/00 12:23		LOGGER: JS/ET		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
45 220.9 								



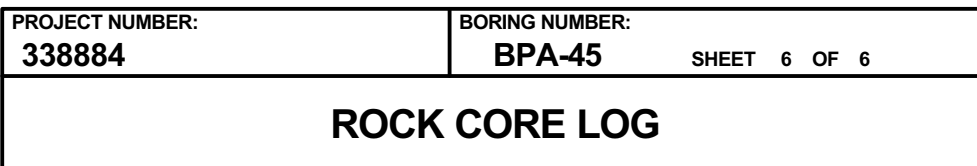
LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

LOGGER : JS/LH

Rev. 0



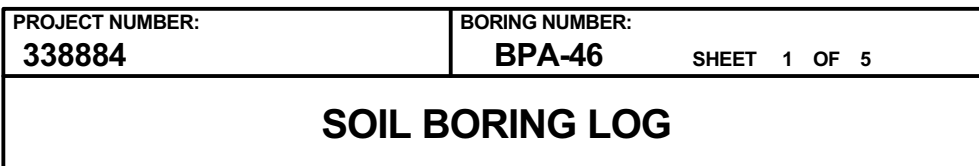
LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

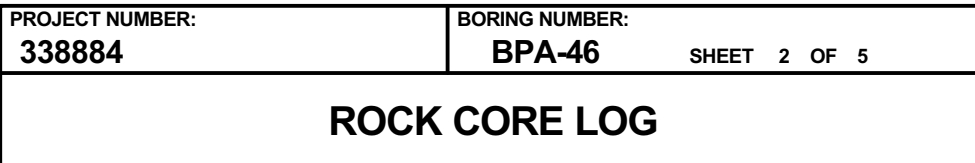
LOGGER : JS/LH

Rev. 0



LOGGER : AT/EM/LH

Rev. 0



LOGGER : AT/EM/LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-46

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.6 N, 2011923.3 E)

ELEVATION : 268.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.8 ft bgs

START : 8/7/06 08:58

END : 8/8/06 16:24

LOGGER : AT/EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
40 228.0	R5NQ 5 ft 101%	99	0	36.8' - Contact between siltstone and sandstone, 30 deg, rough, undulating	x 		



PROJECT NUMBER: <div style="background-color: black; color: white; text-align: center; padding: 2px;">338884</div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> BORING NUMBER: <div style="background-color: black; color: white; text-align: center; padding: 2px;">BPA-46</div> </td> <td style="width: 50%; padding: 5px; text-align: right;"> SHEET 4 OF 5 </td> </tr> </table> <div style="text-align: center; padding: 10px; font-size: 1.2em; font-weight: bold;"> ROCK CORE LOG </div>	BORING NUMBER: <div style="background-color: black; color: white; text-align: center; padding: 2px;">BPA-46</div>	SHEET 4 OF 5
BORING NUMBER: <div style="background-color: black; color: white; text-align: center; padding: 2px;">BPA-46</div>	SHEET 4 OF 5		

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687760.6 N, 2011923.3 E)
ELEVATION : 268.0 ft MSL (NGVD 29)	DRILLING CONTRACTOR : K. Canuel, S&ME
CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel	ORIENTATION : Vertical

WATER LEVELS : 19.8 ft bgs	START : 8/7/06 08:58	END : 8/8/06 16:24	LOGGER : AT/EM/LH
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WATER LEVEL: 10.6 R 55.0		START: 5:17:59 55.0		END: 5:30:59 10.2		LOSS: 17.7 W 10.2	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
60 208.0 <							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-46

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.6 N, 2011923.3 E)

ELEVATION : 268.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 19.8 ft bgs

START : 8/7/06 08:58

END : 8/8/06 16:24

LOGGER : AT/EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
80	80.0	100	0		x x x x	75.0-81.0' - soft	R13: 15:10-15:28
			0	76.1-76.5' - Fracture, 70 deg, rough, undulating	x x x x		
	R13NQ 5 ft 100%		0		x x x x		At 77.6': R-Scale = R3
			1		x x x x		
			1	78.9' - Fracture, horizontal, rough, planar, few black stains	x x x x		
85	85.0			79.2' - Fracture, horizontal, rough, planar, few black stains	x x x x		
188.0			0		x x x x		R14: 15:38-16:05
			0		x x x x	81.0-81.6' - grades to sandstone	
	R14NQ 5 ft 108%	100	1		x x x x	Sandstone	At 82.4': R-Scale = R4
			0	83.0-83.2' - Fracture, 60 deg, rough, undulating	x x x x	81.6-85.7' - very dark gray and white, soft to hard, thin to medium bedding, very fine sand to medium sand, subrounded to rounded, well sorted	
			0		x x x x	81.6-85.0' - fresh	
85	85.0		0		x x x x	81.6-82.8' - stained dark reddish brown	R15: 16:16-16:24
183.0			0		x x x x	83.3-84.8' - siltstone lense	
	R15NQ 2 ft 115%	100*	0		x x x x	85.0-85.7' - moderately weathered, red laminated beds on irregular angles	First water level = 19.8' bgs taken 8/10/06 at 11:59
			10+	86.3-86.4' - Fracture zone, smooth, undulating	x x x x	Siltstone	R-Scale performed during rock core logging
				86.6' - Fracture, 20 deg, rough, undulating	x x x x	85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered	
					x x x x	Siltstone	
					x x x x	86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered	
					x x x x	Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	
90							
178.0							
95							



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BPA-47</div>
SHEET 1 OF 12	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)
ELEVATION : 264.5 ft MSL (NGVD 29)	DRILLING CONTRACTOR : Duggan, Trigon Engineering
DRILLING EQUIPMENT AND METHOD : B-57, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer	ORIENTATION : Vertical

WATER LEVELS : ---	START : 12/8/06 08:20	END : 12/14/06 10:03	LOGGER : EM/JS
--------------------	-----------------------	----------------------	----------------

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	RECOVERY (in)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
264.5							
	3.8						
5		4.0	SS1SS	50/4 (50/4")	Sandy Silt (ML) 3.8-4.2' - reddish brown, greenish gray mottling, dry to moist, hard, low to medium plasticity		
259.5	5.8						Soil sampling completed at 09:45 on 12/8/06
	6.3	3.0	SS2SS	50/3 (50/3")	Sandy Silt (ML) 6.3-6.5' - reddish brown, greenish gray mottling, dry to moist, very hard, low to medium plasticity Begin Rock Coring at 6.5 ft bgs See the next sheet for the rock core log		
	6.5						
10							
254.5							
15							
249.5							
20							

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57. HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

WATER LEVEL		DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
10 254.5 <								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 3 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
27.0			5	24.8' - Fracture, horizontal, smooth, stepped, <0.02' thick clay infilling, 0.05' relief (likely with in weak zone)		Siltstone 24.4-25.1' - dark reddish brown, very soft to soft, slightly weathered, very fine to fine grained, one fine to medium irregular sandstone lens 1 thick 24.8-25.1' - clayey lenses Sandstone 25.1-26.7' - dusky red, hard, slightly weathered, very fine to fine grained, 10-20% silt Siltstone At 26.7' - dark reddish brown, very soft to soft, very fine to fine grained 26.7-27.0' - slightly weathered 27.0-29.4' - green mottling, moderately weathered, harder with depth, 0-15% very fine sand Conglomerate 29.4-29.6' - soft, subrounded to rounded, moderately weathered, multicolored grains, siltstone matrix; 20-25% fine to coarse sand Siltstone At 29.6' - dark reddish brown, green mottling, very soft to soft, very fine to fine grained; trace very fine sand 29.6-30.4' - moderately weathered 29.6-31.8' - trace white clasts to 1/2 29.7-29.9' - large clast 30.4-51.0' - fresh 32.0-37.0' - soft, fine sand increase to 10-15% in last 2' 37.0-42.0' - dark reddish brown, trace purple and green mottling, soft, darker with depth; very fine sand increases with depth from 5-10% to 20%; scattered white irregular clasts to 3/8 with 5-10%, most in the last 2' 42.0-47.0' - trace purple and green mottling 42.0-42.6' - 20-25% very fine sand with 0.2-0.3' thick very fine to fine irregular sand lens, light gray 42.6-46.0' - trace sand 46.0-47.0' - 20% very fine sand	R6: 14:08-14:45 SC-1 collected 27.5-28.4' At 28.4': R-Scale = R3 At 28.5': R-Scale = R2 At 31.1': R-Scale = R2 At 31.3': R-Scale = R2 R7: No time recorded At 32.9': R-Scale = R2 At 33.9': R-Scale = R3 R8: 08:24-08:51 on 12/9/2006 At 41.0': R-Scale = R3 At 41.5': R-Scale = R3 R9: 09:13-09:48 At 42.7': R-Scale = R2-R3 Driller Remark: bit plugging up, mostly in last 2-3' At 43.0': R-Scale = R2-R3 SC-2 collected 44.5-45.3'
30	R6HQ 5 ft 95%	76*	5	25.1' - Fracture, horizontal, smooth, stepped, <0.01' thick clay infilling, bedrock fragments to 1/2 in size			
30			0	25.3' - Fracture, 80 deg, rough, undulating, black stains, 0.0007 relief			
30			2	25.9' - Fracture, horizontal, smooth, undulating, <0.0001' thick clay infilling, loose fit			
30			2	26.6' - Fractures, 50 deg, smooth, undulating			
30			2	26.7-26.9' - Fractures (3), horizontal, smooth, undulating, little relief			
30			0	27.5' - Fractures, horizontal, smooth, undulating			
32.0			0	29.4' - Fracture, horizontal and 5 deg, loose fit			
32.0			0	30.0' - Fracture, horizontal, rough, undulating, 0.0009' relief, loose			
32.0			0	30.1' - Fracture, 10 deg, smooth, undulating, loose fit			
32.0			0	30.4' - Fracture, horizontal, smooth, planar			
35	R7HQ 5 ft 106%	92	2	34.7-34.9' - Fractures (3), horizontal and 5 deg, middle break at 5 deg. and has clay coating, <0.0002' thick, loose		42.0-47.0' - 20% very fine sand	
35			0				
35			4	36.5' - Fracture, 70 deg, rough, undulating, tight fit			
37.0			1	36.7' - Fracture, horizontal and 5 deg, rough, undulating, tight fit			
37.0			1	37.0' - Fracture, horizontal and 5 deg, rough, undulating			
37.0			0	37.2' - Fracture, horizontal and 5 deg, rough, undulating			
37.0			0	37.8' - Fracture, horizontal, smooth, undulating			
37.0			0	38.8' - Fracture, horizontal and 5 deg, rough, undulating, tight fit			
37.0			0				
37.0			0				
40	R8HQ 5 ft 100%	100	0				
40			0			42.0-47.0' - 20% very fine sand	
40			0				
40			0				
42.0			0				
42.0			4	43.4-43.4' - Fractures, horizontal, smooth, undulating			
42.0			3	43.7' - Fracture, horizontal, smooth, planar			
42.0			3	43.9' - Fracture, horizontal, smooth, undulating, slickensided, over 60% of surfaces			
42.0			3	44.1' - Fracture, horizontal, smooth, undulating, slickensided over 10% of surface			
42.0			3	44.3' - Fracture, horizontal, smooth, undulating			
42.0			3	44.5' - Fracture, horizontal, smooth, undulating			
45	R9HQ 5 ft 100%	70					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 4 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
50 214.5	47.0 R10HQ 5 ft 99%	93	1	45.3' - Fracture, horizontal, rough, undulating, 0.0002-0.0003' relief	x x	47.0-51.0' - dark reddish gray to dark gray, soft, transition siltstone to sandstone (approximately 35% siltstone and 65% sandstone with silty matrix)	At 46.4': R-Scale = R3
			1	45.8-45.9' - Fractures, horizontal and 5 deg, rough, undulating, ~1/4 of clay and chewed up rock fragments to medium to coarse sand size	x x		R10: 09:59-10:26
			2	46.0' - Fracture, 40 deg, slickensided, undulating	x x		At 48.2': R-Scale = R3
			0	47.2' - Fracture, horizontal, rough, planar	x x		At 48.4': R-Scale = R3
			0	47.9' - Fracture, horizontal, 2 long hairlike fracture	x x		
			0	48.7' - Fracture, 30 deg, rough, undulating, <0.0003' relief	x x		
			0	48.9' - Fracture, horizontal, rough, planar, parallel hairlike fracture 0.002' above	x x	Sandstone 51.0-54.6' - gray to dark gray, soft to hard, fresh, fine to medium grained in a 0.4' lens then very fine to fine grained 52.0-54.6' - very fine to fine grained	At 50.7': R-Scale = R3
55 209.5	52.0 R11HQ 5 ft 100%	100	0		x x		R11: 11:03-11:24
			1	53.3' - Fracture, horizontal, rough, undulating, <0.0003' relief; bottom surface has a gray silty/clayey coating-siltstone lens <<0.5 mm thick	x x	53.4' - 0.2' thick medium to coarse grained lens	At 52.5': R-Scale = R2-R3
			0		x x	Siltstone 54.6-55.0' - very dark gray, soft, fresh, up to 35% very fine sand, very thin bedding	At 52.8': R-Scale = R2-R3
			0		x x		
			0		x x	Sandstone At 54.9' - gray to very dark gray, soft to hard, fresh 54.9-55.6' - fine grained, 20 degree beds 55.6-57.0' - medium grained with 20% coarse grains in beds; some large grains appear mottled orange, trace red mottling	At 56.3': R-Scale = R2-R3
			0		x x		R12: 11:36-11:59
60 204.5	57.0 R12HQ 5 ft 98%	96	0		x x	57.0-59.8' - some fine to medium grained beds with rust colored mottling	At 58.3': R-Scale = R3
			0		x x	58.0-59.2' - medium to coarse grained	
			0		x x	59.2-59.8' - soft to hard, fine to medium grained, bedding at 20 degrees	
			2	61.2' - Fracture, horizontal, smooth, stepped, through a material that is almost slickensided in appearance (~30% of surface)	x x	Siltstone 59.8-60.0' - dark reddish brown, trace green mottling, soft, fresh, siltstone lens; very fine to fine grained; 15% very fine sand	At 61.3': R-Scale = R2
			0	61.8' - Fracture, horizontal, smooth, undulating	x x		At 61.5': R-Scale = R3
			0		x x	Sandstone 60.0-60.2' - dark reddish brown, trace green mottling, soft to hard, fresh, sandstone lens; fine to medium grained, abrupt contact at 20 degrees	R13: 12:18-12:52
			0		x x		At 62.8': R-Scale = R3
65 199.5	62.0 R13HQ 5 ft 103%	98	2		x x	Siltstone At 60.2' - dark reddish brown, trace green mottling, soft, fresh, siltstone lens; trace sand	At 63.7': R-Scale = R3
			1	64.9' - Fracture, 20 deg, smooth, planar, tight fit	x x		SC-3 collected 65.1-66.0'
			0	65.0' - Fracture, 20 deg, smooth, stepped	x x	60.2-60.4' - convoluted sand lenses	At 66.0': R-Scale = R2-R3
			0	65.7' - Fracture, horizontal, smooth, undulating, shiny appearance	x x		

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

WATER LEVEL: 1		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
70 194.5	67.0				XXXXXX 		

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57. HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

WATER LEVEL: 11		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
	87.0		2	86.2' - Fracture, 50 deg, white infilling, tightly healed					
			0	86.6' - Fracture, horizontal, rough, stepped, 0.0002' relief, tight			87.0-90.5' - grades into sandstone	R18: 10:37-11:00	
			0	86.6' - Fracture, horizontal and 5 deg, rough, stepped, microfracture pattern through out, tight fit, 0.0002' relief				At 88.1': R-Scale = R3-R4	
90	R18HQ 5 ft 99%	99	0					At 89.0': R-Scale = R2	
174.5			0						
			0						
	92.0		0				Sandstone 90.5-95.8' - dark reddish brown, trace green mottling, soft to hard, fresh, very thin to medium bedding 90.5-94.0' - 10-15% silt, decreases with depth	At 90.9': R-Scale = R3	
			0					R19: 12:32-12:52	
			0					At 93.1': R-Scale = R3 At 93.5': R-Scale = R3	
95	R19HQ 5 ft 100%	100	0				94.0-95.8' - grades to very fine to fine grained with 20% silt		
169.5			0				95.2-95.8' - fine to medium white sand grains to .08; silt/siltstone lenses, irregular and horizontal		
			0				Siltstone At 95.8' - dark reddish brown, trace purple and green mottling, soft, fresh, very fine to fine grained, trace to 10% very fine sand, laminated 96.7-97.0' - black mottling, trace hard white gravel and sand sized clasts; up to 15% fine to medium grained white sand 97.0-102.0' - trace yellow mottling, soft to hard, trace black laminations 97.0-98.0' - sandy lens; very fine to fine grained, trace very fine sand 98.0-102.0' - very fine sand increases with depth to 15% of matrix	At 96.6': R-Scale = R2 At 96.8': R-Scale = R3 R20: 13:06-13:39	
100	R20HQ 5 ft 100%	96	2	97.2' - Fracture, horizontal, smooth, undulating, possible fossilized organics					
164.5			0	97.6' - Fracture, horizontal, rough, undulating, 0.5 mm relief, lower surface is 50% smooth and planar					
			0	98.6-98.9' - Fracture, 80 deg, hairline fracture, does not extend through core.					
			0	101.3' - Fractures, through ~10% of core				At 100.6': R-Scale = R3 At 101.0': R-Scale = R3	
	102.0		0	101.8' - Fractures, 50 deg, through ~10% of core			102.0-107.0' - soft to hard	R21: 13:54-14:31	
			1	102.9' - Fracture, horizontal, smooth, planar			102.0-105.0' - 5-15% very fine sand increasing with depth	SC-6 collected 102.0-102.9'	
105	R21HQ 5 ft 100%	100	0					At 104.0': R-Scale = R3 At 104.45': R-Scale = R3	
159.5			0				105.0-108.7' - up to 20% very fine sand	At 106.0': R-Scale = R3	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 7 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
110 154.5	107.0		0	108.7' - Fracture, horizontal and 50 deg, slickensided, undulating, 40% slickensided 109.6' - Fracture, 50 deg, slickensided, 50% slickensided 109.8' - Fracture, horizontal, smooth, undulating 110.1' - Fractures (2), horizontal, slickensided, very smooth to slickensided 111.2' - Fracture, 30 deg, slickensided, slickensided may be fossilized organics 111.7' - Fracture, 20 deg, smooth, shiny appearance, looks like fossilized leaves 111.8-112.0' - Fractures (3), horizontal and 10 deg, <0.0001' thick, gray clay infilling, smooth, rough, slickensided 112.2-112.5' - Fractures, horizontal and 10 deg, bedrock fragments, coarse sand to fine gravel sized; 1/4 gray clay seam mixed in some slickensided pieces 112.8-112.9' - Fractures, horizontal and 5 deg, slickensided 113.9' - Fracture, 40 deg, smooth, undulating, ~20% slickensided 114.8' - Fracture, 40 deg, slickensided, undulating, ~60% slickensided 115.1' - Fracture, horizontal and 5 deg, smooth, undulating	108.7-110.2' - gray and green mottling, soft, very fine to fine grained with trace very fine sand	At 106.4': R-Scale = R3 R22: 14:57-15:32	
		0				At 107.7': R-Scale = R3 At 108.2': R-Scale = R3	
		1					
	R22HQ 5 ft 100%	81	2				
			2			SC-7 collected 110.1-111.2'	
			5				
	112.0		10+			R23: No time recorded At 112.4': R-Scale = R3 At 112.5': R-Scale = R3	
			1				
	R23HQ 4.2 ft 95%	64*	1			SC-8 collected 113.9-114.8'	
			1				
115 149.5	116.2		0	114.6-114.9' - fresh, white, light, and dark gray laminae; very fine grained 114.9-116.0' - fresh, trace very fine sand; becoming reddish brown at bottom Siltstone At 116.2' - dark reddish brown, mottled green, purple, yellow, and gray, very soft to soft, fresh, very fine to fine grained, trace very fine sand increases with depth 117.0-122.0' - soft, trace to 20% very fine sand	At 115.6': R-Scale = R3 R23A: Began at 08:47 on 12/12/06 At 116.7': R-Scale = R2-R3 R24: 09:12-09:46 At 117.7' R-Scale = R4		
	R23AHQ 0.8 ft 81%	81	0		At 119.0': R-Scale = R3		
			0				
			0				
	R24HQ 5 ft 101%	99	2				
			0				
			0		At 121.6': R-Scale = R3 R25: 10:05-10:30		
	122.0		0		At 123.0': R-Scale = R3		
			0				
			0				
125 139.5	R25HQ 5 ft 103%	100	0	120.8'- Fracture, horizontal, smooth, undulating, 1/2 relief, tight fit 120.9' - Fracture, horizontal, smooth, undulating	122.0-127.0' - trace dark gray and green mottling, very fine to fine grained, gray material a little finer grained than red; 0-5% very fine sand; transitions to very dark gray to very dark greenish gray	At 125.0': R-Scale = R3	
			1				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 8 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

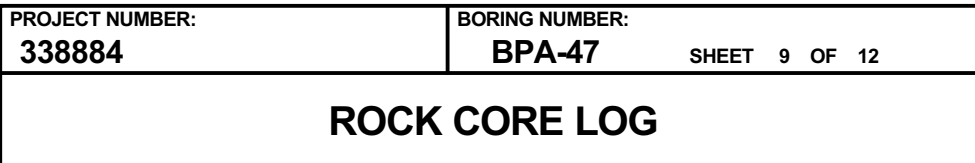
WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
130 134.5	R26HQ 5 ft 99%	91	0	125.8' - Fracture, 55 deg, slickensided, planar, <0.5mm gap, very thin, very soft on rock scale	x x	Siltstone 127.0-128.9' - very dark gray to very dark greenish gray, soft, very fine to fine grained with up to 20% very fine sand; faint banding at 0 degrees Sandstone At 128.9' - dark reddish gray, soft to hard, fresh, fine sand, laminated to medium bedding	At 126.4': R-Scale = R2-R3
			0		x x		R26: 10:49-11:14
			2	128.7' - Fracture, 10 deg, smooth, undulating	x x		At 127.3': R-Scale = R3
			0	128.9' - Fracture, horizontal, smooth, undulating, tight fit	x x		At 128.3': R-Scale = R3
			1		x x		
			0	130.6' - Fracture, 20 deg, smooth, undulating	x x		At 130.7': R-Scale = R3
135 129.5	R27HQ 5 ft 99%	99	0		.	131.6-131.6' - gray siltstone lens; abrupt contacts at 20 degrees 131.6-136.3' - fine to medium grained 132.0-136.3' - with lenses of 5-20% coarse grained material (up to several millimeters) 135.1-136.3' - medium sand to medium gravel, subrounded to subangular, some elongated pieces	R27: 11:33-11:53
			0		.		SC-9 collected
			0		.		132.0-133.1'
			0		.		At 133.1': R-Scale = R3
			0		.		At 134.0': R-Scale = R5
			0		.		
140 124.5	R28HQ 5 ft 100%	90	0		x x	Siltstone 136.3-137.0' - weak red, soft to hard, fresh, fine grained; 40% very fine to fine sand 136.9-137.0' - siltstone clasts and medium to coarse sand Sandstone 137.0-141.1' - dusky red to pale red, soft to hard, fresh, 70% very fine to fine sand, 30% medium to coarse sand; gradual increases to up to 60% medium to coarse sand with some grains up to 0.1'; begins gradual transition to siltstone at 140.7	R28: 13:00-13:26
			0		.		
			0		.		
			0		.		
			0	140.7-141.1' - Contact between siltstone and sandstone	.		At 140.3': R-Scale = R3
			5		x x		At 140.8': R-Scale = R5
145 119.5	R29HQ 5 ft 99%	92	5	141.6' - Fracture, 10 deg, smooth, undulating	x x	Siltstone At 141.1' - dark reddish brown, very soft to soft, fresh, very fine grained; trace of very fine sand; banded and laminated, horizontal bedding 142.0-147.0' - black and greenish gray mottling, up to 15% fine sand	R29: 14:00-14:37
			5	141.7' - Fracture, horizontal, rough, undulating	x x		Driller's Remark: For 1st 5 min. did not go down
			0	141.8' - Fracture, 10 deg, smooth, undulating	x x		
			0	141.9' - Fracture, horizontal, rough, undulating	x x		
			0	142.1' - Fracture, 30 deg, slickensided	x x		
			0	142.2' - Fracture, horizontal, rough, undulating	x x		
			0	142.2' - Fracture, horizontal, rough, undulating	x x		At 144.0': R-Scale = R4
			0	142.4' - horizontal, small cracks	x x		At 144.5': R-Scale = R5
			0	142.4' - Fracture, horizontal, smooth, undulating	x x		
			0	142.7' - Fracture, horizontal, smooth, undulating	x x		



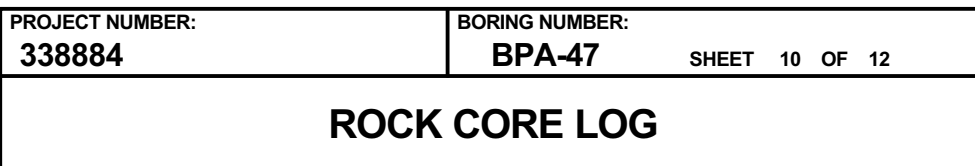
LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

ORIENTATION : Vertical

LOGGER : EM/JS

Rev. 0



LOGGER : EM/JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 11 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
190 74.5	187.0		0		183.3-185.1' - fine gravel, shaley/siltstone lenses up to 0.04' thick throughout 184.8-185.1' - shale clasts 185.1-186.8' - gradual change to more siltstone; faint banding of sand and silt bands ~0.02' thick; 50% sand at 185.1 to ~20% at 186.3 186.8-187.0' - small pebbles up to 0.02'; ~10% coarse sand/pebbles, 35% fine to medium, silty matrix thin lenses ~0.01' thick of very fine sand and siltstone/claystone; subangular grains 187.0-188.7' - gradual change from 70% fine to medium sand to ~25% fine sand 188.1-188.7' - faint banding 188.7-189.9' - silty matrix with 60% coarse grained sand 188.7' - large shaley siltstone clasts 189.1' - large shaley siltstone clasts 189.7' - large shaley siltstone clasts 189.8' - large shaley siltstone clasts Siltstone At 189.9' - dusky red, fresh, very fine to fine grained 189.9-192.0' - trace black mottling, soft to hard, ~10% very fine to fine sand; convoluted laminations of greater sand contact (up to 15%) 192.0-197.0' - hard, laminae of black, olive, and dark gray, ~15% fine sand with lighter colored bands having up to 25% 194.3-195.9' - increase in sand up to 35% 195.0-197.0' - very soft 195.9' - 0.01' thick sandstone lense with 75% fine to coarse sand and fine to medium gravel 196.0' - very fine; little to no sand, laminated 196.4' - dark gray, very fine possible shale-crumbles, fissile 196.7' - becomes multi-colored breaking into sheets around fractures 197.0-202.0' - olive, gray, dusky red, trace black mottling, very soft to soft, gradual increase in sand contact from 5-15% 202.0-205.3' - soft to hard, gradual increase in sand to ~35%; at 205.3' to up to 75% fine sand 203.5-205.3' - black, gray, and dusky red laminae	R38: 16:00-16:26	
		0		At 188.0': R-Scale = R5			
		0		At 189.0': R-Scale = R3			
		0					
		0					
		0					
		0					
		0					
		0					
		0					
195 69.5	192.0		0			R39: 07:38-08:04 on 12/14/06	
			0				
			0				
			3	194.2-194.3' - Fractures, horizontal, smooth, undulating 194.6' - Fracture, 10 deg, smooth, undulating			
			0				
			10+	196.4-196.6' - Fracture, horizontal and 10 deg, highly fractured, crumbled 196.8' - Fracture, 45 deg 196.5' - Fracture, 45 deg, slickensided, perpendicular to 196.8' 197.1' - Fracture, 45 deg and horizontal, smooth, undulating, partially slickensided 197.3' - Fracture, horizontal, rough, planar 197.4' - Fracture, horizontal, rough, planar			
			4				
			0				
			2				
			0				
200 64.5	197.0					SC-11 collected 196.6-196.8' R40: 08:25-09:07	
205 59.5	202.0					R41: 09:30-10:03	
						At 203.9': R-Scale = R3	
						At 204.5': R-Scale = R3	
				205.3' - Contact between siltstone and sandstone, sharp contact		At 205.5': R-Scale = R3	



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-47

SHEET 12 OF 12

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687003.1 N, 2012367.5 E)

ELEVATION : 264.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
	207.0		0			Sandstone 205.3-207.0' - dark gray, hard, fresh, fine to coarse grained; dusky red mottling; subangular grains, mostly feldspar, laminated bedding Bottom of Boring at 207.0 ft bgs on 12/14/06 10:03	R-Scale performed during rock core logging
210 54.5							
215 49.5							
220 44.5							
225 39.5							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 1 OF 11

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

DRILLING EQUIPMENT AND METHOD : B-57, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer

ORIENTATION : Vertical

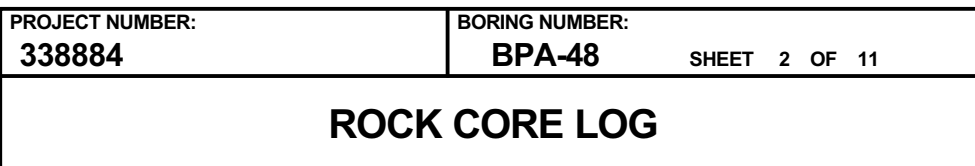
WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

WATER LEVELS:		START: 1/23/06 09:45		END: 1/27/06 14:00		LOGGERS: RUSSEW	
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
264.8	0.0				Organic Silt And Clays (OL) 0.0-0.4' - dark reddish brown, moist, low plasticity, roots		
		24.0	SS1SS	1-2-2-4 (4)	Fat Clay (CH) 0.4-0.7' - brownish yellow, moist, high plasticity		
	2.0				Silty Sand (SM) 0.7-1.7' - yellowish reddish, few gray mottles, moist, soft, nonplastic to low plasticity		
	2.5				Fat Clay (CH) 1.7-2.0' - red, dry, soft to stiff, nonplastic, fissile		
		4.0	SS2SS	50/4 (50/4")	Clay (CL) 2.5-3.1' - dark red, dry, very hard, medium to high plasticity		
	4.5						
5							
259.8	5.0				Clay (CL) 5.0-5.6' - dark red, moist, hard, medium to high plasticity		
		4.0	SS3SS	50/4 (50/4")			
	7.0						
	7.5				Clay (CL) 7.5-8.4' - dark red, mottled gray and greenish gray in clay fractures, moist, hard		
		10.8	SS4SS	4-27-50/3 (77/9")			
	9.5						
10							Soil sampling completed at 17:20 on 11/29/06
254.8	10.0	3.0	SS5SS	50/3 (50/3")	Clay (CL) 10.0-10.3' - dusky red, dry to moist, hard, medium to high plasticity (wet), laminated pieces with fissile structure Begin Rock Coring at 10.4 ft bgs See the next sheet for the rock core log		
	10.3						
15							
249.8							



LOGGER : RG/JS/EM

Rev. 0



PROJECT NUMBER:
338884

BORING NUMBER:
BPA-48

SHEET 4 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
55 209.8	52.0 R10HQ 5 ft 100%	100	0	57.7' - Fracture, horizontal, smooth, planar 58.6' - Fracture, 60 deg, rough, planar 60.1' - Fracture, horizontal, rough, planar	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
			0		x x x x		
			2		x x x x		
72.0			0		x x x x	72.0-72.4' - 30-40% sandy matrix, gradational contact	R14: 16:50-17:25
			0		x x x x	Sandstone	At 72.4-77.0': R-Scale = R3-R4
	R14HQ 5 ft 98%	88	1	74.0' - Fracture, horizontal, rough, planar, break along laminated sand and fine bedding	x x x x	72.4-77.0' - very fine sand to coarse sand, poorly sorted, fresh, interbedded siltstone	SC-5 collected 74.0-74.8'
75 189.8			1	75.3' - Fracture, horizontal, rough, planar	x x x x		
			1	76.2' - Fracture, horizontal, rough, planar	x x x x		
77.0			3	77.2' - Fracture, horizontal, rough, undulating	x x x x	Siltstone	R15: 10:13-10:54 on 12/1/06
			0	77.4' - Fracture, horizontal, rough, undulating	x x x x	At 77.0' - gray mottling, undulating laminations	
			2	77.6' - Fracture, horizontal, rough, undulating	x x x x	77.0-127.0' - fresh	
	R15HQ 5 ft 96%	80	1	79.5' - Fracture, horizontal, rough, stepped	x x x x	77.7-78.3' - undulating laminations	At 77.0-82.0': R-Scale = R3
80 184.8			1	80.0' - Fracture, horizontal, smooth, planar, breaks along areas contains rock clasts	x x x x	78.8' - gray mottling	
			1	80.4' - Fracture, horizontal, rough, stepped	x x x x	79.2-80.5' - 15-25% fine to coarse gravel sized clasts	
			1	81.4' - Fracture, horizontal, smooth, planar, break along siltstone laminations	x x x x	80.5-82.0' - few pockets of gray mottling	
82.0			0		x x x x	82.0-93.3' - dusky red, undulating laminations	R16: 11:25-12:10
			0		x x x x		At 82.0-87.0': R-Scale = R3
	R16HQ 5 ft 100%	100	0		x x x x		
85 179.8			0		x x x x		
			0		x x x x		
87.0			0		x x x x		R17: 14:00-14:30
			0		x x x x		At 87.0-92.0': R-Scale = R3
	R17HQ 5 ft 100%	100	0		x x x x		
90 174.8					x x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 7 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
115 149.8	R22HQ 5 ft 100%	100	0	115.8' - Fractures, microfractures with greenish gray infilling	111.0-112.0' - little to no greenish gray mottling, thin bedding, with 0.01-0.02' lenses of fine grained sand 112.0-117.0' - dark reddish brown, up to 5% greenish gray mottling, olive gray mottling 112.9-113.1' - dark reddish brown to black mottling, up to 0.02' thick throughout entire run, soft, very fine to fine grained	R22: 08:23-09:25		
			0					
			0					
			0					
			0					
			0					
120 144.8	R23HQ 5 ft 106%	100	0			121.0-122.0' - Fracture, 82 deg, closed (joint) fracture, up to 0.01' thick some sand grains infilling 122.0' - Fracture, microfractures filled with sand surrounded by greenish gray material	116.3' - large greenish gray mottle 117.0-127.0' - little to no black mottling, greenish gray mottles are mostly large up to 0.15' thick, <10% coverage of core, coarsens with depth, 0-25%, very fine to fine grained sand 117.8' 118.9'	R23: 09:59-10:45 and 11:00-11:25 At 117.8': R-Scale = R3 At 118.9': R-Scale = R3
			0					
			0					
			0					
			0					
			1					
125 139.8	R24HQ 5 ft 98%	97	0	125.5' - Fracture, horizontal and 5 deg, rough, undulating 126.2' - Fracture, horizontal, smooth, undulating 126.3' - Fracture, horizontal, smooth, undulating 126.6' - Fracture, horizontal, smooth, undulating, 0.01' thick clay infilling 126.7' - Fracture, microfractures filled with green gray material on it, brown clay 127.0-127.2' - Fracture zone, horizontal and 5 deg, stepped-laminated beds, but surfaces are smooth to slickensided and undulating	122.0-124.1' - up to 20% very fine sand 125.0' - dark reddish brown, multicolor mottling of olive gray, black, soft to hard, fine grained, laminations at 20 degree angle, some laminations up to 0.02' thick contain up to 30% very fine to fine sand Siltstone 127.0-136.5' - very dark gray, mottled yellow and red on core sides, trace very fine sand, some laminae in first 0.3', medium weak to medium strong 127.0-130.4' - slightly weathered			R24: 13:18-13:40 At 123.1': R-Scale = R2-R3 SC-6 collected 125.5-126.2'
			0					
			0					
			0					
			1					
			3					
130 134.8	R25HQ 5 ft 91%	50	10+					R25: 14:12-14:56 At 128.0': R-Scale = R3-R4 At 128.5': R-Scale = R3-R4 SC-7 collected 128.9-129.3'
			4					
			1					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 8 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
135 129.8	R26HQ 5 ft 90%	90	2	127.4-127.7' - Fracture zone, horizontal and 5 deg, stepped-laminated beds, but surfaces are smooth to slickensided and undulating, more fractures	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 9 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

END : 12/7/06 14:50

LOGGER : RG/JS/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
152.0			0	150.3-150.9' - Fracture, 75 deg and vertical, hairline fractures through part of core	x		At 150.7': R-Scale = R3
			2	151.1-151.3' - Fracture	x		
			0	151.6' - Fracture, horizontal, rough, planar, 0.0003' relief, tight fit	x	151.1-151.6' - soft to hard, 0.5 thick sand lens, up to 20% very fine to fine sand in matrix	R30: 29 minutes
			0	151.9' - Fracture, 1 deg, rough, planar, 0.0003' relief, tight fit, trace dark orange spots to 1mm	x	152.0-154.4' - soft to hard, up to 20-25% very fine to fine sand varies in matrix, 10% medium sand with several irregular lenses of medium sand to 30%, 1 thick	At 153.0': R-Scale = R3-R4
155	R30HQ 5 ft 99%	99	0		x		
109.8			0		x	154.4' - soft to hard, irregular shape; remainder of core is dark reddish gray, very fine to fine grained with 20% fines, red mottling to over 30%, material is irregularly banded with lighter and darker gray, grades to sandstone	At 156.3': R-Scale = R3
			0		x	155.0-155.2' - trace red mottling in a sandier zone	R31: 14:34-15:18
157.0			2	156.8' - Contact between siltstone and sandstone, horizontal, tightly healed	x	Sandstone	At 157.3': R-Scale = R2
			0		x	156.0-156.8' - reddish gray, soft to hard, fine sand to medium sand, fresh, brownish gray lenses and many coarser grains are light gray, thin bedding	At 158.3': R-Scale = R2
160	R31HQ 5 ft 100%	96	0		x	Siltstone	At 158.9': R-Scale = R2-R3
104.8			1		x	156.8-157.0' - dark gray, very soft, fresh, very fine grained, laminated	
			0		x	Siltstone	At 161.1': R-Scale = R3
			0		x	At 157.0' - dark reddish brown, green mottling, very soft to soft, fresh, very fine to fine grained	R32: 15:52-16:28
			0		x	157.9-159.3' - trace green mottles, soft, becomes more competent, 5-10% black mottling to 1/4	At 162.7': R-Scale = R2
			0		x	159.3-160.0' - green mottling, very fine to fine grained	
165	R32HQ 5 ft 100%	100	0		x	162.0-167.0' - trace green mottles to 1/4, soft to hard, very fine to fine grained	At 164.1': R-Scale = R2-R3
99.8			0		x	162.5-164.5' - soft, 10-15% very fine to fine sand with irregular 1 lenses of 20-25% sand	
			0		x	165.0-167.0' - very soft to soft	At 165.6-165.9': R-Scale = R2
			1		x	165.2-165.3' - patches of white clasts, to 1/4 in length, irregularly shaped	
			1	166.5' - Fracture, horizontal, rough, undulating, 0.001' relief	x	165.6-166.5' - white clasts increase to 15%	R33: Finished at 16:40
			1		x	166.5-167.0' - white clasts increase to 50% of area, harder than matrix	
			0		x	167.0-167.3' - trace to 10% greenish white inclusions or mottles, soft, very fine to fine grained, trace very fine to fine sand	At 168.7': R-Scale = R2
170	R33HQ 5 ft 102%	98	0		x	167.9-168.9' - trace to 10% greenish white inclusions or mottles	At 169.3': R-Scale = R3
94.8					x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686889.5 N, 2012456.7 E)

ELEVATION : 264.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Duggan, Trigon Engineering

CORING EQUIPMENT AND METHOD : B-57, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 09:46

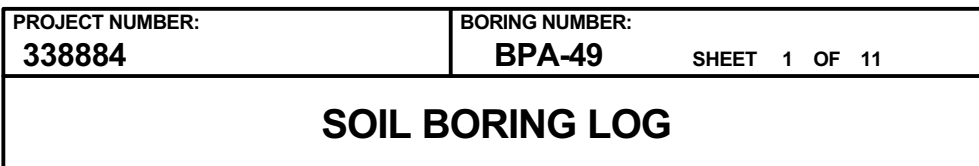
END : 12/7/06 14:50

LOGGER : RG/JS/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
175.89.8	R34HQ 5 ft 100%	100	0		x x x x		
172.0			1	171.5-172.1' - Fracture, long	x x x x		
				171.9' - Fracture, 80 deg, rough, undulating	x x x x	172.0-174.3' - scattered green mottling, soft to hard, very fine to fine grained, trace very fine to fine sand	R34: 07:50-08:17
			0		x x x x		At 172.8': R-Scale = R3
			0	173.0' - Little to few (<10%) microfractures with greenish gray mottling	x x x x		
			0		x x x x	174.3-175.6' - very fine to fine sand lenses up to 85%	At 174.1': R-Scale = R2-R3
			0		x x x x		
			0		x x x x	Sandstone At 175.6' - very dark gray, soft to hard, up to 50% fine sand	
			0		x x x x		
			0		x x x x	177.0-179.4' - gradual increase in grain size, with coarse grain sand (10%)	R35: 08:40-09:09
			0		x x x x	178.2-178.4' - gradual decrease in grain size	At 177.8': R-Scale = R3
180.84.8	R35HQ 5 ft 98%	83	0		x x x x		SC-8 collected 178.9-179.6'
			5	180.0' - Fracture, 50 deg, rough, undulating, over 50% whitish infilling	x x x x	179.4-179.9' - greater increase in grain size with 10% coarse sand and small pebbles and up to 40% fine to medium sand	
			0		x x x x	Siltstone At 179.9' - dark reddish gray, very soft to soft, very fine to fine grained, laminated	
			6	181.2' - Fracture, horizontal, smooth, undulating	x x x x		
				181.4-181.7' - Fractures (3), horizontal, rough, undulating, up to 0.01' thick clay infilling, easily crumbles, fissile	x x x x	180.2-181.0' - ~10% greenish gray, black mottling	R36: 09:30-10:45
			9	182.1' - Fracture, <5 deg, rough, undulating	x x x x	182.0-187.0' - greenish gray mottling, very soft to soft, very fine to fine grained, little to no sand, slight fissile laminations	
				182.5' - Fracture, <5 deg, rough, undulating	x x x x		
				182.7-187.0' - Microfractures with greenish gray infilling	x x x x		
			0	182.8' - Fracture, <5 deg, rough, undulating	x x x x		
				182.9' - Fracture, <5 deg, rough, undulating	x x x x		
				183.0' - Fracture, 60 deg, slickensided	x x x x		
			0	183.0' - Fracture, <5 deg, rough, undulating	x x x x		
				183.2' - Fracture, <5 deg, rough, undulating	x x x x		
				183.3' - Fracture, <5 deg, rough, undulating	x x x x		
				183.4' - Fracture, <5 deg, rough, undulating	x x x x		
			2	183.5' - Fracture, <5 deg, rough, undulating	x x x x		
				183.6' - Fractures (2), <5 deg, rough, undulating	x x x x	187.0-192.0' - soft	R37: 11:00-11:37
			0	183.6' - Fracture, <5 deg, rough, undulating	x x x x		
				183.7' - Fracture, <5 deg, rough, undulating	x x x x		
			0	183.9' - Fracture, 50 deg, slickensided	x x x x		
				186.6' - Fracture, horizontal, rough, undulating, rounded, slickensided	x x x x		
				186.7' - Fracture, horizontal, smooth, undulating to planar	x x x x		
190.74.8	R37HQ 5 ft 102%	97	0	187.3' - Fracture, horizontal, smooth, undulating	x x x x		

LOGGER : RG/JS/EM

WATER LEVEL		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
			0				At 190.5': R-Scale = R3
	192.0		0				At 191.5': R-Scale = R3-R4
			0			192.0-197.0' - dusky red, black mottling, soft to hard, gradual increase in grain size (sand content)	R38: 13:02-13:25
			0			192.0-193.0' - 10% sand	At 193.0': R-Scale = R3
			0				At 194.0': R-Scale = R3
195 69.8		R38HQ 5 ft 100%	100	0			
			0			196.0-197.0' - 50% sand	
	197.0		0			197.0-202.0' - gradually becomes finer grained	R39: 13:40-13:59
			0			197.0' - 50% fine to medium sand	
			0				
200 64.8		R39HQ 5 ft 96%	96	0			
			0				
	202.0		2		201.1' - Fracture, 65 deg, tight fit 201.2' - Fracture, 65 deg, rough, undulating 201.3' - Fracture, horizontal, rough, undulating	202.0-203.8' - soft to hard, 10% fine sand, 0.05' thick beds of finer gravel material	R40: 14:24-14:43
			0			202.0-203.0' - dark reddish gray, mottled black and faint dark purple, soft to hard, 10-20% very fine sand/coarse silt, faint bedding <.04 to .1 thick, trace medium grained white sand, more in last 0.2'	At 202.9': R-Scale = R3
			0				
205 59.8		R40HQ 3.7 ft 105%	100	0			At 204.5': R-Scale = R3
	205.7		1		205.4' - Fracture, horizontal, rough, undulating, 0.0003' relief, tight fit	Sandstone 203.8-205.7' - dark reddish gray, mottled white, gray, and green, hard, medium sand to coarse sand, fresh, siltstone interbeds and clasts - dark reddish brown, irregular, up to 15 thick, cover ~40% area, fine grained, soft Bottom of Boring at 205.7 ft bgs on 12/7/06 14:50	R-Scale performed during rock core logging.
210 54.8							



LOGGER : RG/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
20 241.9	R1NQ 1.9 ft 95%	83*	1	19.6' - Contact between siltstone and sandstone	X X		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 3 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40 221.9			1	39.0' - Fracture, rough, stepped, <0.002' clay infilling	x		
			0		x		
41.0			1		x		
			2		x		
	R6NQ 5 ft 100%	80	5	43.0' - Fracture, rough, stepped, <0.002' clay infilling	x		
			3	44.4-44.7' - Fractures (2)	x		
45 216.9			1		x		
46.0			3	45.9' - Fracture, rough, stepped, <3 mm relief 46.1-46.5' - Fractures (3), rough, undulating	x	46.0-49.4' - dark dusky red, 25-30 degree laminations	R6: 16:30-16:43 SC-2 collected 41.0-41.6'
			1		x		
	R7NQ 5 ft 100%	62	2	47.8' - Fracture, 30 deg, rough, planar, along laminations 48.0' - Fractures (2), 31 deg, rough, planar	x		
			10+	49.2' - Fracture, 30 deg, smooth, planar, along laminations 49.4-51.0' - Fractures, along laminations	x	49.1-49.4' - highly weathered Clay (CL) 49.4-50.2' - dark brown, highly weathered	
50 211.9			10+		x	Siltstone At 50.2' - dusky red, soft 50.2-51.0' - highly weathered 51.0-69.7' - slightly weathered	SC-4 collected 49.9-50.2'
			1	51.8' - Fracture, smooth, planar	x		
			0		x		
	R8NQ 5 ft 100%	59	10+	53.0-54.3' - Fractures	x		
			4	54.3-54.9' - Fractures (3), horizontal, rough, planar, <0.001' clay infilling, along laminations	x		
55 206.9			4	55.1-55.9' - Fractures (5), along laminations	x		
56.0			3		x		
			1	56.7-56.9' - Fractures (3), horizontal, rough, planar, <0.001' clay infilling, along laminations 57.0-57.3' - Fractures (2), 1 deg, rough, planar, along laminations	x	56.7-56.9' - very soft 57.0-57.3' - very soft	R9: 10:00-10:28 At 56.0-61.0': R-scale = R3-R4 At 56.7-56.9': R-Scale = R2 At 57.0-57.3': R-Scale = R2
	R9NQ 5 ft 100%	67	5	58.3-59.5' - Fractures (8), horizontal, rough, planar, <0.002' clay infilling, along laminations	x	58.3-58.9' - very soft	At 58.3-58.9': R-Scale = R2



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 4 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
60 201.9			4		x x x x	59.3-59.5' - very soft, friable areas	At 59.3-59.5': R-Scale = R2
			0		x x x x		At 60.3': R-Scale = R3-R4
61.0			1	61.2' - Fracture, smooth to rough, planar, <0.0007' clay infilling	x x x x		R10: 10:48-11:05
			1	62.1' - Fracture, smooth, planar	x x x x		
	R10NQ 5 ft 96%	90	1	63.1' - Fracture, smooth, planar	x x x x		
			0		x x x x	65.0' - Fracture, smooth, undulating, 9 mm relief 65.5' - Fracture, rough, planar	
65 196.9			2		x x x x		
66.0					x x x x		R11: 11:39-11:54
			0		x x x x		
			1		x x x x		
	R11NQ 5 ft 100%	82	1	67.8' - Fracture, rough, undulating 68.1' - Fracture	x x x x	69.7-82.5' - fresh	At 66.0-76.0': R-scale = R3-R4
			9	69.2-69.7' - Fractures (9), rough, planar, along laminations	x x x x		
70 191.9			0		x x x x		
71.0			0		x x x x		R12: 12:11-12:25 SC-6 collected 71.0-72.0'
			0		x x x x		
	R12NQ 5 ft 100%	100	0		x x x x	76.0-82.5' - reddish gray to weak red, 20-30% very fine to fine sand, well sorted	
			0		x x x x		
75 186.9			0		x x x x		
76.0			0		x x x x		R13: 12:42-12:54
			0		x x x x		
	R13NQ 5 ft 100%	100	0		x x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
80 181.9			0		x x x x		At 76.0-86.0': R-Scale = R3-R4
			0		x x x x		
81.0			0		x x x x		R14: 13:12-13:26
			2		x x x x		
	R14NQ 5 ft 100%	93	1	82.6' - Fracture, 40 deg, rough, planar 82.8' - Fracture, rough, planar	x x x x	Sandstone 82.5-84.0' - dark bluish gray, fresh, very fine to fine, well sorted, faint laminations (fines)	
85 176.9			1	83.9' - Fracture, 30 deg, rough, planar 84.0' - Fractures, along weak siltstone bedding	x x x x	Siltstone At 84.0' - reddish gray to weak red, soft, fresh, 20-30% very fine to fine sand, well sorted	
			0		x x x x		
86.0			0		x x x x	86.0-93.0' - fine gravel sized dark pink clasts	R15: 14:20-14:35
			0		x x x x		
			0		x x x x		
	R15NQ 5 ft 100%	100	0		x x x x		
			0		x x x x		
90 171.9			0		x x x x		At 86.0-96.0': R-Scale = R3-R4
			0		x x x x		
91.0			0		x x x x		R16: 14:49-14:59
			0		x x x x		
			0		x x x x		
	R16NQ 5 ft 100%	100	0		x x x x	Sandstone 93.0-99.6' - pale reds, soft, medium bedding, fresh, medium grained, well sorted	
95 166.9			0		x x x x		
			0		x x x x		
96.0			0		x x x x	96.0-98.0' - fine to medium grained	R17: 15:12-15:26
			0		x x x x		
			0		x x x x		
	R17NQ 5 ft 96%	90	2		x x x x	98.0-99.6' - bluish gray and black, medium sand to coarse sand, well sorted	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 6 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
100 161.9			2	99.6-99.8' - Fracture zone (3), rough, planar, <0.003' clay infilling, fractured siltstone	x	Siltstone At 99.6' - dusky red, soft, fresh	At 99.8-100.8': R-Scale = R3-R4 At 96.0-106.0': R-Scale = R3-R4 R18: 15:42-15:57
			1	100.1' - Fracture, rough, planar, <0.001' clay infilling	x		
	101.0	XXX	0		x	101.8-102.4' - 10-20% medium grained sand, well sorted	SC-9 collected 103.0-104.0'
			0		x		
	R18NQ 5 ft 100%	100	0		x		
			0		x		
105 156.9			0		x	106.0-111.0' - dusky red, soft, 20 degree laminations	R19: 08:38-08:52
			0		x		
	R19NQ 5 ft 100%	100	0		x		At 106.0-111.0': R-scale = R3-R4
			0		x		
110 151.9			0		x		R20: 09:13-09:32
			2	111.1' - Fracture, rough, stepped, ~5-10 mm relief	x		
			2		x	113.0-116.0' - 10-15% very fine	At 112.9': R-Scale = R2 At 113.4': R-Scale = R3-R4
	R20NQ 5 ft 100%	90	2	112.8' - Fracture, rough, planar, <0.003' clay infilling	x		
			0		x	116.0-121.0' - dusky red to weak red, soft	R21: 09:44-10:04
115 146.9			1	115.7' - Fracture, 15 deg, smooth, planar, break along bedding plane	x		
			0		x	117.6-118.2' - 20-30% fine to coarse grained sand	
			0		x		
	R21NQ 5 ft 100%	100	0		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 7 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
120 141.9			0	125.1' - Fracture, smooth to rough, planar, <0.001' clay infilling	x x x x x x x x x x	119.3-120.0' - 20-30% fine to coarse grained sand	At 119.0': R-Scale = R3-R4
			0		x x x x x x x x x x		R22: 10:43-10:50
121.0			0		x x x x x x x x x x		
			0		x x x x x x x x x x		
	R22NQ 5 ft 100%	98	0		x x x x x x x x x x	Sandstone 122.2-124.8' - soft, medium sand to coarse sand, fresh, 20 degree laminated bedding	At 122.1': R-Scale = R3-R4
			0		x x x x x x x x x x		
125 136.9			2		x x x x x x x x x x	124.3-124.8' - 5-10% up to 0.002' rock clasts Siltstone 124.8-125.3' - dusky red, fresh	At 124.8-125.3': R-Scale = R2
			0		x x x x x x x x x x	Sandstone At 125.3' - reddish gray, fresh, very fine to fine sand, thin to massive bedding	R23: 11:14-11:25
			0		x x x x x x x x x x	126.0-133.9' - light bluish gray to bluish gray, soft, medium to coarse grained sand, well sorted	At 127.4': R-Scale = R3-R4
	R23NQ 5 ft 100%	100	0		x x x x x x x x x x		
			0	x x x x x x x x x x			
130 131.9			0	136.8-140.4' - Fractures (5), 15 deg and 20 deg, rough, undulating, along laminations	x x x x x x x x x x		R24: 11:46-12:00
			0		x x x x x x x x x x		
			0		x x x x x x x x x x		
			0		x x x x x x x x x x		
	R24NQ 5 ft 100%	100	0		x x x x x x x x x x		
			0		x x x x x x x x x x		
			0		x x x x x x x x x x	Siltstone 133.9-138.8' - dusky red, soft, fresh, 5-10% red pinkish fine gravel sized clasts	At 133.9-136.0': R-Scale = R3-R4 At 134.0': R-Scale = R3-R4
			0		x x x x x x x x x x		
			0		x x x x x x x x x x	136.0-138.8' - dusky red to light bluish gray, soft, 30-40% very fine to fine grained sand, well sorted, 25 degree bedding	R25: 12:14-12:35 At 136.8': R-Scale = R3-R4 At 137.4': R-Scale = R3-R4
			0		x x x x x x x x x x		
	R25NQ 5 ft 100%	100	0	x x x x x x x x x x		At 138.8': R-Scale = R3-R4	



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 8 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
140 121.9			0			Sandstone At 138.8' - soft, fine sand to medium sand, fresh, poorly to well sorted, laminated to medium bedding, laminae are soft to hard and discontinuous 139.6-139.7' - siltstone lens 140.0-140.1' - siltstone lens 141.0-143.7' - very fine sand to fine sand, well sorted 143.7-146.0' - fine to medium sand, well sorted to poorly sorted, 5-15% <0.002' rock clasts 146.0-150.2' - light to dark gray 146.1-146.2' - dark gray, fine sand and silt 146.2-146.9' - very coarse sand to fine gravel 146.9-150.2' - coarse sand	At 139.4': R-Scale = R3-R4
	141.0		0				At 140.4': R-Scale = R3-R4
			0				R26: 12:58-13:10
			0				
	R26NQ 5 ft 100%	100	0				At 143.0': R-Scale = R3-R4
			0				At 143.7': R-Scale = R3-R4
145 116.9			0				
	146.0		0				
			0				R27: Finished at 08:40
	R27NQ 5 ft 100%	100	0				At 146.9': R-Scale = R3
			0			Siltstone 150.2-166.0' - very dark gray, mottled greenish gray, soft, fresh 158.0' - pale olive green, very soft to soft	At 148.2': R-Scale = R3
150 111.9			1	149.4' - Fracture, 30 deg, rough, undulating			SC-7 collected 149.5-150.2'
	151.0		0	150.2' - Contact between siltstone and sandstone, 10 deg, sharp contact			R28: 09:00-09:26
			0				
			0				
	R28NQ 5 ft 98%	98	0				
			0				
155 106.9			0				
	156.0		0				R29: 09:43-10:04
			0				
	R29NQ 5 ft 98%	88	0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687867.1 N, 2011965.5 E)

ELEVATION : 261.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

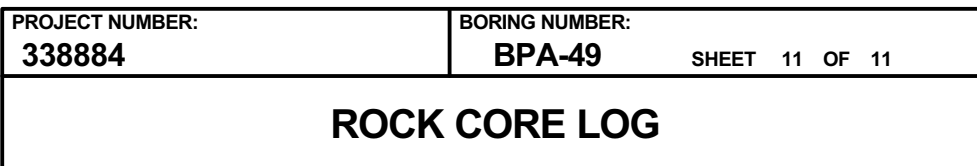
WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

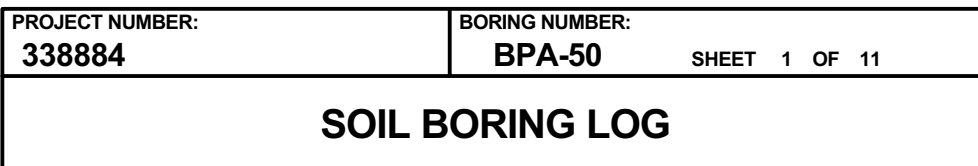
LOGGER : RG/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
180 81.9			0	180.6' - Fracture, 25 deg, smooth, undulating	x		R34: 13:39-13:52	
	181.0		1			Sandstone 179.6-186.0' - reddish gray to dark gray, fine sand to medium sand, fresh, gradational contact with overlying siltstone 181.0-186.0' - hard, coarse sand		
	R34NQ 5 ft 98%		0			182.3-182.9' - very coarse sand		
		0				183.4-184.2' - very coarse sand		
185 76.9		0						
		0				185.6-186.0' - very coarse sand		
186.0					x	Siltstone 186.0-203.0' - dark reddish brown, trace greenish gray mottling, soft, fresh, very fine to fine grained, little to no sand 187.0-188.2' - small white clasts 188.2-190.4' - large white clasts		R35: No time recorded SC-8 collected 186.0-186.8' At 187.0': R-Scale = R3 At 188.0': R-Scale = R3-R4
	R35NQ 5 ft 100%		0		190.4' - Fracture, horizontal, rough, undulating	x		
		0						
		0						
		0						
190 71.9	191.0		3			190.6' - 0.04' thick clay seam	R36: 14:55-15:14	
	R36NQ 5 ft 105%		0					
		0						
		0						
		0						
195 66.9	196.0					x	195.5' - up to 35% fine grained sand, soft to hard, faint laminations	R37: 15:33-15:50
	R37NQ 5 ft 100%		0		x			
		0			x	197.3-198.0' - up to 30% fine to medium sand		
		0			x		At 198.8': R-Scale = R3	



LOGGER : RG/EM

Rev. 0



LOGGER : RM/RG

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 2 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
20 253.0	15.2 R1HQ 1.4 ft 111%	0	10+		Sandstone At 15.2' - pale brown to brown, fine sand to medium sand, highly weathered, angular to subrounded, weakly cemented, micaceous, laminated to thick bedding	Rock coring began on 11/29/06 R1: 5 min 26 sec Cutting in 3rd gear At 15.2-16.5': R-Scale = R1 R2: 10 min 40 sec		
	16.5	0	10+				16.5-21.5' - Fracture zone, rough, planar 17.0-17.3' - Fracture, 60 deg, rough, planar, black stains	
	R2HQ 5 ft 100%	0	10+				20.5-21.5' - light reddish brown, highly weathered	At 20.5-21.5': R-scale = R1
		10+	21.5-25.4' - very pale to pale brown, soft, fine sand to medium sand, moderately weathered, moderately to poorly sorted, subangular to subrounded, laminated bedding				R3: 15 min 10 sec	
		10+						
		10+						
	21.5	R3HQ 5 ft 100%	0				24.4' - Fracture, horizontal, rough, undulating	At 24.8': R-Scale = R2
	0							
	1							
	3							
25 248.0	26.5	97*	3	25.0' - Fracture, rough, undulating 25.2' - Fracture, horizontal and 45 deg, rough, planar 25.5' - Fracture, horizontal, smooth, planar, 0.0003' greenish gray clay infilling	At 25.4-26.2': R-Scale = R1-R2			
			3					
			1	At 26.3-26.5': R-Scale = R0 At 26.5-27.4': R-Scale = R1 R4: 17 min 10 sec				
			10+	At 27.4-29.2': R-Scale = R2				
	R4HQ 5 ft 100%	71*	1	28.2' - Fracture, <30 deg, smooth, planar, slickensided over 30-40%	At 28.6': R-Scale = R2			
			1	29.2' - Fracture, horizontal, smooth, undulating	At 29.2-29.9': R-scale = R0 At 29.3' PP: 1.0 tsf SC-11 collected 29.3-29.8'			
			1	At 29.9-31.5': R-Scale = R2 At 30.4': R-Scale = R2 At 31.1': R-Scale = R2 R5: 21 min. 0 sec At 31.5-32.2': R-scale = R2/R3 At 31.9': R-Scale = R1 At 32.2-32.5': R-Scale = R0 At 32.3': R-Scale = R0 At 32.5-34.3': R-Scale = R2-R3 SC-12 collected 32.5-33.0'				
			0	At 32.9': R-Scale = R2-R3				
	31.5	R5HQ 5 ft 99%	80	2	31.3' - Fracture, horizontal, smooth, stepped, loose fit 31.4' - Fracture, 1 deg, smooth, stepped, loose fit			
	2			32.1' - Fracture, horizontal, smooth, stepped, loose fit 32.5' - Fracture, 30 deg, smooth, stepped, loose fit 33.3' - Fracture, <20 deg, smooth, planar, weakly slickensided, tight fit				
1								
3								

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

WATER LEVELS: 11.1		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS			
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION				ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS							
40 233.0	36.5		0	33.7' - Fracture, horizontal, smooth, stepped, loose fit 34.2' - Fracture, 30 deg, smooth, planar 34.4' - Fracture, 20 deg, smooth, stepped, inclined, loose fit 36.2' - Fracture, horizontal, smooth, stepped, loose fit		x	x	Siltstone At 34.3' - gray to dark greenish gray, mottled white, soft, fresh, coarse grained fragments 36.5-37.5' - greenish gray, mottled dark reddish brown, soft	At 34.3-34.5': R-Scale = R2-R3 At 34.9': R-Scale = R2-R3 At 35.5': R-Scale = R2-R3 R6: 12 min 59 sec At 36.5-37.5': R-scale = R2-R3		
	R6HQ 5 ft 100%	1	100	0	39.6' - Fracture, horizontal, rough, undulating, loose fit	x	x			Sandstone At 37.5' - dark greenish gray, fine sand to medium sand, poorly sorted, fresh	At 37.5': R-Scale = R2-R3 At 37.5-41.5': R-Scale = R2-R3 At 37.7': R-Scale = R2-R3 At 39.1': R-Scale = R2-R3
		0									
		0									
		1									
41.5		0							At 40.5': R-Scale = R2-R3 At 40.8': R-Scale = R2-R3		
45 228.0	R7HQ 5 ft 96%		0	93	42.9' - Fracture, 60 deg and 70 deg, rough, planar, inclined, loose fit 43.5' - Fracture, 30 deg and 40 deg, rough, stepped, <0.00003' greenish gray clay infilling	x	x	42.8-43.5' - greenish gray, mottled gray and white Siltstone At 43.5' - dark reddish brown, soft, fresh	At 43.4': R-Scale = R2		
		1									
		1									
		1									
		1									
46.5		0			45.3' - Fracture, horizontal, smooth, stepped, tight fit 46.2' - Fracture, horizontal, smooth, stepped, 0.0003' reddish brown clay infilling, loose fit	x	x	47.5-48.8' - mottled reddish brown, hard	At 44.8': R-Scale = R3 At 45.5-46.5': R-Scale = R2-R3 R8: 21 min 36 sec At 47.1': R-Scale = R2-R3 At 47.5-51.5': R-scale = R2-R3		
R8HQ 5 ft 100%	1	99	2	47.8' - Fracture, 70 deg, rough, planar, tight fit 48.6' - Fracture, horizontal, smooth, planar, loose fit 48.7' - Fracture, horizontal, rough, undulating, <0.00003' reddish brown clay infilling 49.4' - Fracture, horizontal, smooth, stepped, tight fit							
	0										
	0										
	1										
51.5		1			51.2' - Fracture, horizontal, smooth, planar, tight fit 51.9' - Fracture, horizontal, rough, undulating, tight fit 52.7' - Fracture, horizontal, smooth, planar 53.3' - Fracture, horizontal, rough, stepped, loose fit 54.1' - Fracture, horizontal, rough, stepped, loose fit	x	x		SC-1 collected 49.5-50.2' At 50.2': R-Scale = R2		
R9HQ 5 ft 100%	1	100	1								
	2										
	1										
	0										
55									At 54.7': R-Scale = R3		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 4 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
60 213.0	56.5		0	61.9' - Fracture, horizontal, rough, stepped, tight fit	x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 5 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
76.5			0		x		At 76.1': R-Scale = R3
			0		x	76.5-81.5' - dusky red to very dusky red, mottled greenish gray, soft	R14: 25 min 34 sec
			0		x		At 76.5-81.5': R-scale = R2-R3
			0		x		At 77.1': R-Scale = R2-R3
			0		x		At 78.2': R-Scale = R3
80	R14HQ 5 ft 100%	86	0	79.0' - Fracture, horizontal, smooth, stepped, tight fit	x	79.2' - clay seam, reddish brown, soft	
193.0			3	79.1' - Fracture, horizontal, smooth, planar, trace clay infilling, tight fit	x		
			0		x		SC-4 collected
81.5			2	81.2' - Fracture, horizontal, rough, stepped, loose fit	x	81.5-84.0' - dusky red, mottled greenish gray, laminated bedding, irregular bedding on 20 degree angle	80.7-81.2'
			0	81.5' - Fracture, horizontal, rough, stepped, tight fit	x		At 80.7': R-scale = R2-R3
			0	82.5' - Fracture, horizontal, rough, stepped, tight fit	x		R15: 24 min 19 sec
			1		x		At 82.1': R-Scale = R2-R3
			10+		x		At 82.4': R-Scale = R2-R3
85	R15HQ 5 ft 100%	93	1	84.0' - Fracture, 15 deg, rough, stepped, inclined, tight fit	x	84.0-86.5' - mottled greenish gray to dusky red, soft, laminated bedding, grades to fine grained sand	At 83.2': R-Scale = R2-R3
188.0			0	84.5-84.9' - Fracture zone (3), smooth, stepped, <0.0004" clay infilling, weakly slickensided	x	84.5-84.9' - very soft	At 84.0-86.5': R-scale = R2-R3
			0		x		At 84.5-84.9': R-Scale = R0
			1	86.6' - Fracture, horizontal, rough, undulating	x	Siltstone	At 85.4': R-Scale = R2-R3
			0		x	86.5-95.8' - very dark greenish gray, soft, fresh	At 85.8': R-Scale = R2-R3
			0		x		R16: 18 min 50 sec
			0		x		At 86.5-91.5': R-Scale = R2-R3
			0		x		At 87.1': R-Scale = R2-R3
			0		x		At 88.1': R-Scale = R2-R3
			0		x		At 88.7-88.9': R-Scale = R2
90	R16HQ 5 ft 100%	98	0		x	89.5-95.8' - reddish brown laminae alternating with dark greenish gray laminae	At 90.0': R-Scale = R2-R3
183.0			0		x		
			0		x		At 91.1': R-Scale = R2-R3
			0		x	91.5-95.8' - mottled reddish brown	R17: 18min 24 sec
			0		x		
			1	93.7' - Fracture, horizontal, smooth, planar, tight fit	x		At 92.8': R-Scale = R3
95	R17HQ 5 ft 96%	94	1		x		At 93.3': R-Scale = R3
			1		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 6 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel


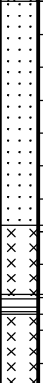

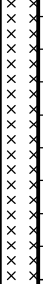
ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS		
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
100 173.0	96.5	R18HQ 5 ft 104%	100	1	94.6' - Fracture, 50 deg and 60 deg, rough, stepped, loose fit		Sandstone 95.8-96.0' - dark greenish gray, soft, fine sand, subangular to subrounded, fresh, moderately to poorly sorted Shale 96.0-96.5' - dark greenish gray, soft, fresh Siltstone 96.5-101.5' - very dark greenish gray, soft, fresh 101.0-101.5' - slightly coarser	At 95.2': R-Scale = R3		
				1	96.2' - Fracture, horizontal, smooth, planar, loose fit			R18: 16 min		
				0				At 97.3': R-Scale = R2		
				0	98.6' - Fracture, 20 deg, smooth, stepped, tight fit			At 98.1': R-Scale = R2		
				1						
	101.5	R19HQ 5 ft 100%	76	1	100.4' - Fracture, 20 deg and 80 deg, smooth, undulating, tight fit 100.9' - Fracture, 60 deg, rough, stepped				Sandstone 101.5-104.9' - weak to dusky red, soft, fine sand, subangular to subrounded, fresh, moderately to poorly sorted 102.6-103.1' - abundant siltstone clasts Siltstone 104.9-106.0' - dusky red, mottled reddish gray, soft, fresh Shale 106.0-106.3' - greenish black, soft, laminated bedding, fresh Siltstone 106.3-108.0' - dark reddish gray, soft, reddish brown laminae 106.3-107.1' - fresh 107.1-108.0' - slightly weathered to moderately weathered Gravelly Clay (CL) 108.0-108.9' - dark reddish brown to reddish gray, soft, slightly weathered to moderately weathered, abundant rock fragments Siltstone At 108.9' - dark reddish brown to reddish gray, soft 108.9-111.5' - slightly weathered to moderately weathered 111.5-116.5' - very thin bedding, fresh	At 101.4': R-Scale = R3 R19: 14 min 15 sec At 102.2': R-Scale = R3
				0						
				1	103.3' - Fracture, 50 deg and vertical, rough, stepped, ~1.1' long fracture					
				2	104.5' - Fracture, 60 deg and 60 deg, rough, undulating, tight fit 104.9' - Contact between siltstone and sandstone, sharp, undulating					SC-6 collected 106.0-106.3'
				2	106.0' - Fracture, <10 deg and 20 deg, smooth, planar, weakly slickensided, grayish clay on 10-15% surface, loose fit 106.0' - Fracture, 60 deg and 20 deg, rough, planar, trace white infilling 107.4' - Fracture, horizontal, rough, stepped, 0.0003' clay infilling, reddish brown stains 107.7' - Fracture zone, 45 deg and 60 deg, rough, stepped, horizontal to inclined, tight fit 108.4' - Fracture, horizontal, rough, stepped 108.9' - Fracture, horizontal, rough, stepped					At 105.5': R-Scale = R3 At 106.0-106.3': R-Scale = R0 At 106.4': R-Scale = R3 R20: 24 min 33 sec
105 168.0	106.5	R20HQ 5 ft 100%	62*	1				At 106.4': R-Scale = R3 R20: 24 min 33 sec		
				2						
				1				SC-7 collected 108.0-108.9'		
				0				At 108.3-108.6' PP: 1.0 tsf		
				5						
	111.5	R21HQ 5 ft 100%	86	3	110.7' - Fracture, horizontal, smooth, planar, <0.0002" clay infilling 110.8' - Fracture, 60 deg and 50 deg, rough, stepped, horizontal to inclined, loose fit 110.8' - Fracture, horizontal, rough, stepped 111.0' - Fracture, 1 deg, rough, stepped 111.1' - Fracture zone, rough, stepped 111.1' - Fracture, horizontal, smooth, stepped, loose fit			R21: 23 min 15 sec At 112.3': R-Scale = R3 At 113.4': R-Scale = R3		
				0						
				1						
				0						
				0						



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 7 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

WATER LEVEL (ft)		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
120 153.0	116.5	82	1	116.3' - Fracture, horizontal, rough, stepped	116.5-136.5' - brownish red, fresh 117.7-117.9' - mottled gray	At 115.5': R-Scale = R3 R22: 08:30-08:55 At 116.5-121.5': R-scale = R1-R2 At 117.3': R-Scale = R1-R2 At 117.8': R-Scale = R3 At 118.6-119.0': R-Scale = R0-R1		
	R22HQ 5 ft 98%		0	118.4' - Fracture, horizontal and 3 deg, rough, stepped, 0.001-0.003' relief 118.6' - Fracture, horizontal and 3 deg, rough, stepped 119.0' - Fracture, horizontal and 2 deg, rough, planar, (medium -hard), 0.07' thick laminated layering				
			2					
			5					
			2					
	121.5		0					
125 148.0	R23HQ 5 ft 92%	68	4	122.0' - Fracture, 60 deg, rough, planar 122.1' - Fracture, horizontal, rough, planar, laminated, platy bedding 122.3' - Fracture, 1 deg, rough, planar, laminated, platy bedding 122.4' - Fracture, 2 deg, rough, planar, laminated, platy bedding 122.5' - Fracture, 3 deg, rough, planar 123.5' - Fracture, 4 deg, rough, planar 124.5' - Fracture, horizontal, smooth, planar	R23: 09:18-09:44			
			2					
			1					
			1					
			3					
			126.5	3		125.7' - Fracture, 60 deg, smooth, planar, slickensided 126.1' - Fracture, 20 deg, slickensided, planar		
130 143.0	R24HQ 5 ft 100%	92	2	127.3' - Fracture, horizontal, rough, planar	R24: 10:18-10:35 At 126.5-131.5': R-scale = R3 SC-9 collected 126.5'			
			1					
			0					
			0					
			0					
			131.5	0				
135	R25HQ 5 ft 100%	100	0		R25: 10:59-11:18 SC-8 collected 132.4-133.2'			
			0					
			0					
			0					



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 10 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17

LOGGER : RM/RG

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
176.5			0				At 174.0-176.5': R-Scale = R3.5
			0			176.5-181.5' - dark reddish gray, soft, very fine sand, well sorted	At 174.5': R-Scale = R3-R3.5
			0				R34: 14:14-14:32
	R34HQ 5 ft 100%	100	0				At 177.9': R-Scale = R3.5
180 93.0			0				
			0				At 180.4': R-Scale = R3.5
181.5			0			181.0-181.5' - laminated bedding, fine sand to medium sand, 0.0003-0.0006' siltstone laminae, 40-50 degree bedding	R35: 15:03-15:23
			0			181.5-186.5' - light bluish gray, laminated bedding, fine sand to medium sand, well sorted	
			0			181.5-182.5' - laminae on 15 degree angle	
	R35HQ 5 ft 100%	100	0			183.7-184.9' - laminae on 25 degree angle	
185 88.0			0				
186.5			3	186.8' - Fracture, horizontal, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations		Siltstone	R36:15:43-16:07
			0	186.9' - Fracture, 1 deg, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations		186.5-198.7' - dusky red, soft, laminated bedding, fresh, 5-10% gravel sized clasts	At 186.5-191.5': R-scale = R3.5
			1	187.2' - Fracture, 2 deg, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations			
	R36HQ 5 ft 100%	91	1	189.3' - Fracture			
190 83.0			0	190.4' - Fracture			
			0				
191.5			0				R37: 16:28-16:51
			0				At 192.4': R-Scale = R4
			0				
	R37HQ 5 ft 97%	93	0				At 194.3': R-Scale = R4
195			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 11 OF 11

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687752.1 N, 2012057.2 E)

ELEVATION : 273.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : Whichard, Trigon Engineering

CORING EQUIPMENT AND METHOD : CME-55, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 11/28/06 14:20

END : 12/7/06 13:17




LOGGER : RM/RG

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
196.5			0		x x x x		SC-10 collected 195.5-196.2'
					x x x x	196.5-198.7' - very dusky red	At 195.5': R-scale = R4
			0		x x x x		R38: 08:57-09:11
			0		x x x x	198.0-198.7' - 30-40% very fine to fine sand, well sorted	
200	R38HQ 5 ft 100%	100	0		x x x x	Sandstone	At 198.8': R-Scale = R3.5
73.0			0		x x x x	198.7-203.8' - fine sand to coarse sand, fresh, 0.0003-0.004' fine sediment layers (10-20%), poorly sorted, 20-25 degree bedding	
			0		x x x x		
201.5			0		x x x x	201.5-203.8' - dark gray, very fine sand to coarse sand, 35 degree bedding	R39: 11:46-12:02
			0		x x x x		
			0		x x x x		
			0		x x x x		
205	R39HQ 5 ft 100%	100	0		x x x x	Sandstone	At 203.4': R-Scale = R3.5
68.0			0		x x x x	203.8-205.1' - very dark bluish gray, soft, fresh, 50% fines and sands (fine to medium grained, well sorted)	At 203.8-205.1': R-Scale = R3.5
			0		x x x x		At 204.3': R-Scale = R3.5
			0		x x x x	Sandstone	At 205.1': R-Scale = R3.5
			0		x x x x	At 205.1' - white and pink, laminated to medium bedding, fine sand, fresh, well sorted	
			0		x x x x	205.5-107.5' - 5-10% <0.001' clasts	R40: 12:29-12:46
			0		x x x x	207.5-209.3' - dark bluish gray, black laminae	
			0		x x x x		At 207.3': R-Scale = R3.5
			0		x x x x		At 207.5-209.3': R-Scale = R3.5
210	R40HQ 5 ft 100%	100	0		x x x x	209.3-211.2' - pinks, soft, fine sand to medium sand, well sorted	
63.0			0	209.3' - Fracture, 20 deg, smooth, planar, break along lamination	x x x x		
			0		x x x x		
			0		x x x x	211.2-212.5' - very dark bluish gray, soft, 10-20% fines	R41: 13:11-13:17
			0		x x x x		At 211.9': R-Scale = R3.5
			0		x x x x	212.5-213.3' - white, pink, red, soft, fine sand to coarse sand, poorly sorted	R-Scale performed during rock core logging.
			0		x x x x		
213.3	R41HQ 1.7 ft 100%	87	0		x x x x	Bottom of Boring at 213.3 ft bgs on 12/6/06 13:17	
					x x x x		
215					x x x x		



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BGA-1</div>
SHEET 1 OF 5	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686595.5 N, 2012465.3 E)
ELEVATION : 263.9 ft MSL (NGVD 29)	DRILLING CONTRACTOR : M. Mosely/A. Martin, S&ME
DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead	ORIENTATION : Vertical
WATER LEVELS : 7.1 ft bgs	START : 4/21/06 13:30 END : 4/24/06 15:45 LOGGER : JS/DT/JF

DEPTH BELOW EXISTING GRADE (ft)			STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS	
INTERVAL (ft)		RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
263.9	0.0				Clay (CL) 0.0-0.7' - reddish brown, mottled yellow and white, medium stiff, soft, trace very fine sand, scattered coarse sand, tip has medium sand, fill or reworked native material			
		8.0	SS1SS	8-5-6-8 (11)				
	2.0							
	2.5				Lean Clay (CL) 2.5-3.7' - reddish brown, moist, stiff, medium plasticity, no dilatancy, yellow mottling, scattered bedrock pieces to coarse sand sized			
		14.0	SS2SS	4-5-5-50/5 (10)				
4.5								
5								
258.9	5.0	1.0	SS3SS	50/1 (50/1")	Lean Clay (CL) 5.0-5.1' - reddish brown, moist, stiff, medium plasticity, no dilatancy, yellow staining, scattered bedrock pieces to coarse sand sized Begin Rock Coring at 5.6 ft bgs See the next sheet for the rock core log			Soil sampling completed at 14:10 on 4/21/06
	5.1							
	5.6							

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686595.5 N, 2012465.3 E)

ELEVATION : 263.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely/A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

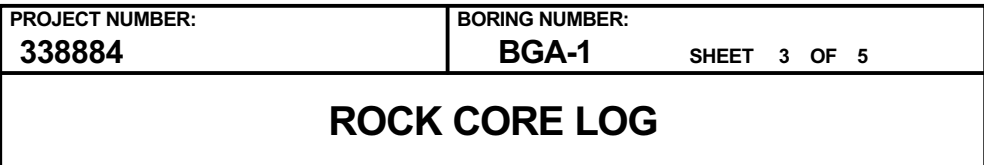
WATER LEVELS : 7.1 ft bgs

START : 4/21/06 13:30

END : 4/24/06 15:45

LOGGER : JS/DT/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
10 253.9	5.6	R1NQ 9.9 ft 99%	82*	1	6.5' - Fracture, horizontal, rough, undulating, tight fit	x 		



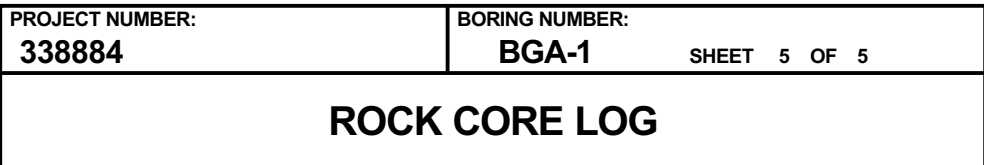
LOCATION : (NAD 27) (686595.5 N, 2012465.3 E)

DRILLING CONTRACTOR : M. Mosely/A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JS/DT/JF

Rev. 0



LOGGER : JS/DT/JF

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-2

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer



ORIENTATION : Vertical

WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS	
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
262.4	0.0	20.4	SS1SS	6-5-6-6 (11)	Clay (CL) 0.0-0.2' - very dark gray, dry, stiff, some roots and organics, topsoil Silty Gravel (GM) 0.2-0.4' - brown, dry, medium, some silt, little organics Clay (CL) 0.4-1.7' - reddish brown, black mottling, dry to moist, stiff, trace coarse sand and fine gravel; trace roots Clay (CL) 2.5-4.4' - brown, light greenish gray mottling, moist, hard, trace very fine sand		4.2	PP: friable
5	5.0	2.4	SS3SS	50/3 (50/3")	Clayey Sand (SC) 5.0-5.2' - very dusky red, moist to wet, very dense Begin Rock Coring at 5.5 ft bgs See the next sheet for the rock core log			Soil sampling completed at 14:20 on 6/1/06
257.4	5.2							
10								
252.4								
15								
247.4								
20								

338884

BORING NUMBER:

BGA-2

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


ORIENTATION : Vertical

WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
10 252.4	5.5	R1NQ 3.3 ft 30%	0	10+		Silty Gravel (GM) 5.5-6.5' - light gray and very dark gray, hard, highly weathered	Rock coring began at 15:25 on 6/1/06 R1: 15:25-15:32 on 06/01/06 At 8.0' bgs coring water turned from red to purple At 8.8-10.0': R-Scale = R1 R2: 16:03-16:16 R3: 16:22-16:30 At 12.5-16.1': R-Scale = R1		
	8.8					R2NQ 1.2 ft 71%		0	0	6.5-10.0' - highly weathered
	10.0	R3NQ 5 ft 98%	98*	0		10.0-17.3' - moderately weathered			
	0								
	0								
	0								
	0								
	0								
	15 247.4	15.0	R4NQ 5 ft 99%	73*		0		15.0-16.0' - banded in 45 degree angle opposite of fracture at 16'	R4: 16:36-16:43 At 16.6': R-Scale = R2 At 17.3-18.6': R-Scale = R0-R1
	16.0' - Fracture, 45 deg, rough, planar, hard tight fit	1							
0									
18.9' - Fracture, 45 deg, smooth, undulating	1								
0									
0									
20 242.4	20.0	R5NQ 5 ft 100%	85	1	20.3' - Fracture, horizontal, rough, undulating	R5: 16:53-17:04 At 20.7': R-Scale = R2 At 22.5': R-Scale = R3			
21.2' - Fracture, horizontal, smooth, undulating	8								
21.3' - Fracture, horizontal, smooth, undulating	0								
21.4' - Fracture, horizontal, smooth, undulating	0								
21.5' - Fracture, horizontal, smooth, undulating	2								
21.6' - Fracture, horizontal, smooth, undulating	0								
25 237.4	25.0			0	23.8' - Contact between siltstone and sandstone, sharp				



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-2

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
30 232.4	R6NQ 5 ft 97%	79	5	25.1' - Fracture, horizontal, rough, planar, edges rounded	x 				



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-2

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
50 212.4	R10NQ 5 ft 98%	83	0	46.7' - Fracture, 45 deg, tightly healed 47.0' - Fracture, horizontal, rough, planar 47.2-47.5' - Fracture zone, horizontal and vertical, rough, planar 47.5-50.0' - Trace microfractures with greenish gray infilling 47.9' - Fracture, 15 deg, smooth, undulating	----	45.0-45.7' - fine sand to medium sand, gray and white, soft 45.7-47.5' - soft to hard, fine sand to coarse sand, gray and white, grades to some fine gravel at bottom		At 46.0': R-Scale = R3	
			0						
			10+						
			0						
			0						
	55 207.4	R11NQ 5 ft 92%	70	10+	50.7-51.0' - Fracture zone, horizontal and 45 deg, vertical, rough, undulating 52.9' - Fracture, 45 deg, rough, undulating 53.9-54.8' - Fracture zone, horizontal and 45 deg, vertical, rough, undulating	----	47.5-57.9' - dark reddish brown, greenish gray mottling, very soft to soft, fresh, trace very fine sand throughout 47.5-50.0' - very soft, gravel sized clasts with no grains apparent, laminated beds; vugs <0.01' thick; linear vertical lines throughout 50.0-51.0' - gravel sized very fine clasts		R11: 11:00-11:17
				0					
				1					
				10+					
				10+					
60 202.4	R12NQ 5 ft 100%	76	1	54.9' - Fracture, horizontal, rough, undulating 55.0' - Fracture, horizontal, rough, undulating 56.0' - Fracture, horizontal, rough, undulating, tight fit 56.2' - Fracture, horizontal, rough, undulating, tight fit 59.3-59.7' - Fracture zone, horizontal and vertical, horizontal fractures are smooth, stepped, and friable; vertical fractures are smooth, slickensided and tight 60.0-60.2' - Fracture zone, horizontal, rough, planar 61.1' - Fracture, 45 deg, rough, undulating, greenish gray hard infilling	----	55.0-57.9' - becomes coarser with depth		R12: 11:38-11:49	
			1						
			0						
			0						
			10+						
65 197.4	R13NQ 5 ft 96%	92	10+	65.0-65.3' - Fracture, vertical, rough, planar	----	Sandstone 57.9-59.2' - dark gray, hard, fresh, dark reddish brown, medium bedding Siltstone 59.2-70.4' - dark reddish brown, very soft, fresh 59.2-60.0' - high clay content; laminated beds except in slickenside 60.0-61.2' - dark reddish brown and greenish gray, soft to hard, trace medium to coarse sand; becomes coarser with depth 61.2-65.0' - greenish gray mottling, very soft to soft, trace very fine sand throughout 61.2-63.4' - black coarse sand sized clasts		R13: 11:57-12:04 At 60.7': R-Scale = R3 At 63.5': R-Scale = R3-R4	
			1						
			0						
			0						
			0						



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-2

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.5 N, 2012218.4 E)

ELEVATION : 262.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

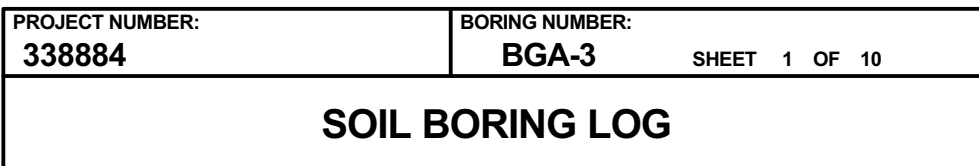
WATER LEVELS : 5.0 ft bgs

START : 6/1/06 13:48

END : 6/2/06 14:24

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
70 192.4	R14NQ 5 ft 100%	84	2	65.3' - Fracture, horizontal, smooth, planar, 0.001' clay infilling, black stains, tight fitted	x x	65.0-70.0' - greenish gray mottling, very soft to soft, trace very fine sand throughout	At 67.1': R-Scale = R3-R4
			1		x x	66.0-67.3' - 40% very fine sand	
			0	66.8' - Fracture, 45 deg, smooth, undulating, 0.005' clay infilling, tight fitted	x x	66.5-68.8' - beds seem to be on 45 degree angle	
			1	68.5-68.7' - Fracture, 45 deg, hard white infilling	x x	70.0-70.4' - greenish gray mottling, very soft to soft, trace very fine sand throughout; becomes coarser with depth	
			0	68.8' - Fracture, horizontal, rough, undulating	x x		
75 187.4	R15NQ 5 ft 100%	100	0	69.1' - Fracture, 30 deg, hard white infilling, tightly healed	x x	Sandstone 70.4-73.8' - dark reddish gray to dusky red, soft, very fine sand to fine sand, fresh, no clear contacts; grades from siltstone to sandstone and back	At 69.4': R-Scale = R3-R4 R15: 13:40-13:53
			0		x x		At 72.0': R-Scale = R3
			0		x x		
			0		x x		
			0		x x		
			0		x x		
80 182.4	R16NQ 5 ft 100%	88	0		x x	Siltstone 73.8-82.3' - dark reddish brown, greenish gray mottling, very soft to soft, trace very fine sand throughout	R16: 13:57-14:06
			0		x x	73.8-78.0' - fresh	At 76.3': R-Scale = R3-R4 SC-2 collected 75.0 - 76.0'
			0		x x	75.0-80.0' - trace greenish gray mottling	
			0		x x	75.0-77.6' - soft, laminated beds	
			5	78.1-78.4' - Fracture (2), 45 deg, rough, undulating, overlying a horizontal fracture with same characteristics	x x	77.6-80.0' - very soft, trace medium grained sand	
			1	78.6' - Fracture, horizontal, smooth, undulating	x x	78.0-82.3' - slightly weathered	
			3	78.7' - Fracture, horizontal, smooth, undulating	x x		R17: 14:12-14:24 At 81.8': R-Scale = R3-R4 First water level = 5.0' bgs taken 6/2/06 at 15:08; second water level = 7.9' bgs taken 6/5/06 at 10:05 R-Scale performed after drilling on stored samples
			0	79.0-79.4' - Fracture, 45 deg, tightly healed	x x	80.0-82.3' - very soft, laminated beds	
			1	79.5-79.6' - Fracture	x x		
			1	79.9-80.0' - Fractures (2), horizontal and vertical, horizontal are rough, planar and vertical are slickensided	x x		
			3	80.1-80.9' - Fracture zone, 60 deg and vertical, slickensided, undulating, very soft/smooth to the touch (rock is hard), cuts through laminated beds	x x		
	R17NQ 5 ft 100%	86	1	82.6' - Fracture, 10 deg, tightly healed	x x	Sandstone 82.3-85.0' - dusky red, soft to hard, very fine sand to fine sand, fresh, very thin to medium bedding	
			1	83.5' - Fracture, horizontal	x x	83.5-84.2' - rock seems to have more silt (in layers)	
			3	84.5' - Fracture, horizontal, rough, planar	x x		
				84.8' - Fracture, horizontal, rough, undulating	x x		
				85.0' - Fracture, horizontal, rough, undulating	x x		
85 177.4						Bottom of Boring at 85.0 ft bgs on 6/2/06 14:24	



LOGGER : JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 2 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15 244.9	10.1 R1HQ 5.4 ft 85%	83	1	10.5' - Fracture, 70 deg, rough, undulating, loose fit	x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 3 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 224.9	31.5		0	29.1-29.2' - Fracture zone, horizontal and 30 deg, smooth, undulating, loose	XXXXXX XXXXXX				

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 6 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
95 164.9	91.5		0	90.5' - Fracture, 80 deg, rough, undulating, thin quartz infilling, tight 90.7' - Fracture, horizontal, rough, undulating, plus several coarse gravel sized fragments, broken bedrock 91.4' - Fracture, horizontal, rough, stepped, tight	89.8-90.1' - transition to sandstone layer Sandstone 90.1-90.7' - dark gray, hard to thin, fine sand to medium sand, fresh, multi-colored grains Siltstone 90.7-126.3' - dark gray to dusky red, mottled yellow and green, soft, fresh, fine grained 91.5-101.5' - dark reddish brown, green mottling, soft to hard 91.5-94.4' - soft to hard, white, gray and green beds; not uniform and irregularly shaped; some swirled	R10: 08:10-08:55 on 4/25/06	
		3+					
		0					
		0					
		0					
		0					
		1					
		1					
		0					
		0					
		0					
		0					
100 159.9				96.1' - Fracture, 5 deg, smooth, undulating 96.9' - Fracture, horizontal, smooth, planar, tight fit			
105 154.9	101.5		0	101.5-111.5' - dusky red, white and gray mottling, soft to hard, fine sand mica particles 102.6-103.0' - medium to coarse sand throughout 102.8-102.9' - medium to coarse sand band at 20 degrees from horizontal 104.0-111.5' - dark reddish brown, scattered green and purple mottling, few fine gravel sized whitish inclusions; fine mica particles throughout	R11: 09:20-09:55		
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
110							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 7 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
115 144.9	R12HQ 10 ft 99%	96	0		x x x	109.3-111.5' - numerous white inclusions, coarse sand to fine gravel sized; same hardness as matrix	R12: Began at 10:45
			1	111.1' - Fracture, 60 deg, rough, planar to undulating, loose-tight	x x x		
			1	111.5-123.0' - Fine capillary microfracture pattern	x x x	111.5-121.5' - dark reddish brown, green mottling	
			0	111.8' - Fracture, horizontal, smooth to rough, planar to undulating	x x x		
			0		x x x		
			0		x x x		
			0		x x x	114.7-116.1' - scattered white and black sand, medium grained sand	
			0		x x x		
			0		x x x		
			0		x x x	117.7-120.4' - 25% fine to coarse sand particles scattered throughout	
120 139.9			0		x x x		SC-4 collected 115.6-116.6'
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
125 134.9	R13HQ 10 ft 95%	95	0		x x x	121.5-123.0' - dark reddish brown, mottled yellow, purple, red, and green	R13: Finished at 13:30
			1	123.3' - Fracture, 50 deg, smooth to rough and undulating, loose fit	x x x		
			0		x x x	123.0-126.3' - hard, fine sand increasing with depth; occasional medium sand	
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
130					x x x	Sandstone At 126.3' - very dark gray to black, hard, fine sand, fresh 126.3-131.5' - mottled black, bluish gray and red	



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 8 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel


ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

WATER LEVEL: 0.00		DISCONTINUITIES		LITHOLOGY		COMMENTS		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
135 124.9	R14HQ 10 ft 100%	98	0 0  0 0 0 1 0 0 0 1	131.5-135.7' - 20 degree bedding, black, blue-green, and yellow 133.6' - medium to coarse sand bed 135.3-135.7' - transition zone; medium sand with silt/clay lenses 135.6' - coarse sand 135.7-140.4' - gray, multi-colored particles, medium grained with bands of coarse grained			R14: 14:10-14:35	
140 119.9			1	140.4' - Fracture, 20 deg, smooth, stepped				
141.5			1	141.3' - Fracture, horizontal, smooth, undulating, loose 141.7' - Fracture, horizontal, smooth, undulating to planar, loose				
145 114.9	R15HQ 10 ft 99%	63	1 0 1 2 2 0 1 10+	143.6' - Fracture, horizontal, smooth, stepped to planar, loose 144.9' - Fracture, horizontal, smooth, stepped to planar, tight fit 145.0' - Fracture, horizontal, rough, stepped, loose fit 145.0' - Fracture, horizontal, smooth to rough, undulating, loose 146.2' - Fracture, horizontal, smooth, planar, loose fit 146.2' - Fracture, horizontal, rough, stepped, loose fit 148.0-154.8' - Fine microfractures 148.2' - Fracture, horizontal, smooth, undulating, loose fit, with some rough areas 149.0' - Fracture, horizontal, smooth, stepped, loose fit				R15: 14:51-15:45
150								



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 9 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
155 104.9	151.5	96	0	149.2' - Fracture, horizontal, smooth to rough, undulating, loose fit	X X		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-3

SHEET 10 OF 10

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687317.4 N, 2012132.9 E)

ELEVATION : 259.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin/R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, HQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.4 ft bgs

START : 4/19/06 10:15

END : 4/26/06 09:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
175 84.9				166.1' - Fracture, horizontal, smooth, undulating, loose fit			
180 79.9							
185 74.9							
190							

166.1' - Fracture, horizontal, smooth,
undulating, loose fit



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-4

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687537.9 N, 2012026.1 E)

ELEVATION : 275.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.5 ft bgs

START : 5/12/06 11:45

END : 5/26/06 13:05

LOGGER : DT/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
15.1	R1NQ 4.9 ft 106%	96	1	15.3' - Fracture, 5 deg, rough, undulating, tight, 0.05' relief	Sandstone At 15.1' - dark reddish brown, soft, very fine sand to fine sand, slightly weathered, thinly laminated bedding at 20 degrees 15.5-20.0' - slightly weathered 17.1-20.4' - reddish brown, fine sand to medium sand, subangular to angular 18.1' - pale red to reddish brown, red mottling 18.6' - thin black oxidized bands parallel/subparallel to bedding 0.03-0.2' apart 19.4' - gradational from fine to coarse sand, subangular grains 20.0-21.0' - highly weathered 20.4-20.5' - strong brown, more fine-grained sand strong brown with small scale (0.03-0.1') long perpendicular to bedding, dendritic pattern of thin black lines Claystone 21.0-21.6' - dark reddish brown, tan, and blue green, heavily mottled, very soft, highly weathered, very fine grained Siltstone At 21.6' - very dusky red, blue-green to light green mottling, very soft to soft, fine grained 21.6-25.0' - highly weathered 25.0-30.0' - very dusky red to dark reddish brown, blue-green mottling, slightly weathered 28.6-28.8' - fine sand	Rock coring began at 10:30 on 5/25/06	
			1	16.5' - Fracture, 40 deg, rough, undulating, black stains, 0.02' relief		R1: 10:30-10:40 and 12:45-13:10 on 5/25/06	
			0			At 16.2': R-Scale = R1	
			1	18.4' - Fracture, 40 deg and 50 deg, rough, undulating, black stains, tight, 0.02' relief, perpendicular to bedding			
			2	19.7' - Fracture, 20 deg, rough, undulating, tight			
20 255.0	R2NQ 5 ft 56%	0	2	19.8' - Fracture, 20 deg, rough, undulating, tight		R2: 13:15-13:30	
			10+	20.6' - Fracture, 20 deg, rough, undulating, tight, parallel to bedding			
			0	20.7' - Fracture, 70 deg, rough, undulating, black stains, perpendicular to parallel breaks		21.6-21.7' of recovery of 0.1' represents 1.2' of material as no other zone was crumbled	
				21.0' - Contact between siltstone and sandstone, 20 deg, rough, undulating, parallel to bedding		At 22.4': R-Scale = R1	
				21.6-21.7' - Fracture zone, heavily fractured rock/clay zone, crumbled		At 23.4': R-Scale = R1	
	R3NQ 5 ft 100%	100		23.7-24.6' - Horizontal hairlike fractures across bedding, bedding not readily visible			
25 250.0			0	25.0' - Fracture, small horizontal capillary fractures		R3: 13:35-13:50	
			0				
			0				
			0				
30 245.0	R4NQ 5 ft 100%	84	1	30.3' - Fracture, 30 deg, rough, undulating, black stains, tight, small (not full break)	R4: 14:10-14:35		
			0		At 31.0': R-Scale = R1		
			3	32.7-32.9' - Fracture zone, rough, ~10 pieces			
			0		33.1-33.8' - light reddish gray, soft to hard, fine sand to medium sand, subangular		
			0		33.8-35.9' - light pinkish gray, pinkish-red mottling, becoming more coarse		
35	35.0						



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-4

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687537.9 N, 2012026.1 E)

ELEVATION : 275.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 18.5 ft bgs

START : 5/12/06 11:45

END : 5/26/06 13:05

LOGGER : DT/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
40 235.0	40.0	R5NQ 5 ft 100%	100	1	35.9' - Fracture, 5 deg, rough, undulating, 0.05-0.07' cm relief, sharp contact 36.4' - Fracture, 5 deg, rough, undulating, 0.02' relief, small capillary fracture throughout siltstone	X X			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-4

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687537.9 N, 2012026.1 E)

ELEVATION : 275.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

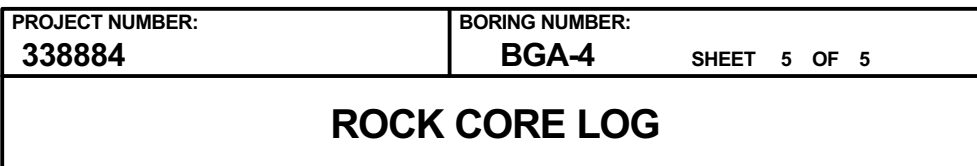
WATER LEVELS : 18.5 ft bgs

START : 5/12/06 11:45

END : 5/26/06 13:05

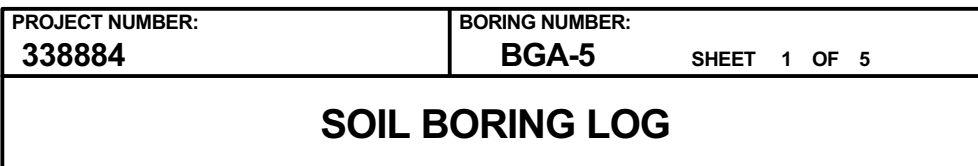
LOGGER : DT/JF

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
60 215.0	R9NQ 5 ft 100%	100	0	55.0' - Contact between sandstones, 30 deg, sharp contact	.....	55.0-55.9' - very dark gray, trace mottling, soft to hard	R9: 08:30-08:55 on 05/26/06
			0		.....	55.9-60.8' - dark gray, fine sand to medium sand	
			0		.....	56.0-56.3' - very dark gray, trace mottling, medium sand	At 57.3': R-Scale = R3
			0		.....	56.3-60.8' - light gray to gray, soft to hard, fine sand to coarse sand, subangular	
60.0			0		.....	
			0	60.0-65.0' - Small capillary microfractures in core (siltstone portion)	.....	60.0-60.8' - fine to medium sandstone, finer sandstone <30 deg bedding	R10: 09:00-09:30
			0		.....	
	R10NQ 5 ft 100%	100	0		xxxx	Siltstone 60.8-66.5' - dark reddish brown, blue-green mottling, very soft, fresh, fine grained	At 61.6': R-Scale = R3
			0		xxxx		
			0		xxxx		
65 210.0			0		xxxx		R11: 09:40-10:06
			0		xxxx	65.6-66.5' - fine sand increasing, gradational contact with sandstone	At 66.2': R-Scale = R3
			0		xxxx		
	R11NQ 5 ft 100%	100	0		.....	Sandstone 66.5-67.6' - reddish gray, blue-green mottling, soft to hard, fine sand, fresh	
			0		xxxx	Siltstone 67.6-81.9' - dark reddish brown, blue-green mottling, very soft to soft, fresh, fine grained, some very fine -fine sand to no sand at bottom	
			0		xxxx		
70 205.0			0		xxxx	70.0-75.0' - trace blue green mottling, very soft	R12: 10:10-10:45
			0		xxxx	70.8-71.1' - circular pink and white clay clasts	At 70.8': R-Scale = R3-R4
			0		xxxx	72.0-72.7' - circular pink and white clay clasts	
	R12NQ 5 ft 100%	100	0		xxxx	73.0-73.1' - circular pink and white clay clasts	
			0		xxxx		
75			0		xxxx		
75.0					xxxx		



LOGGER : DT/JF

Rev. 0



LOGGER : EM

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687151.7 N, 2011758.3 E)

ELEVATION : 268.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
15 253.4	12.6	95	0	17.0' - Fracture, 25 deg, smooth, undulating	Sandstone At 12.6' - dark reddish brown, mottled pale green and black, thin to medium bedding, slightly weathered to moderately weathered, fine to medium sand, 40% silt 14.1-14.5' - gray, little to no silt 14.5-15.0' - 40% silt 15.0-15.4' - soft 15.4-16.3' - 40% silt	Rock coring began at 11:45 on 7/26/06 R1: 11:45-11:55 on 07/26/06 SC-1 collected 12.5-13.4' At 15.4': R-Scale = R2-R3 (performed at later date)	
	R1NQ 3.7 ft 97%		0				
	0						
	0						
20 248.4	16.3	97	0				
	R2NQ 5 ft 97%		1		Siltstone 16.3-21.5' - dark reddish brown, pale green mottling, very soft to soft, fresh, 25% -50% fine to medium sand coarsening with depth to 21.5' 17.7-20.5' - laminated to very thin bedding, irregularly shaped sand pockets	R2: 12:53-13:10 At 18.2': R-Scale = R2-R3 (performed at later date)	
			0				
			0				
0							
25 243.4	21.3	90	0		21.9' - Fracture, 10 deg, smooth, undulating, black stains 22.8' - Fracture, 10 deg, rough, undulating	20.9-21.5' - grades to sandstone, laminated interbedded siltstone and sandstone Sandstone 21.5-26.5' - gray, black mottling, soft to hard, fine sand to coarse sand, poorly sorted 21.5-26.3' - fresh 21.5-23.0' - some laminated clay-siltstone beds at 20 degrees, mottled greenish gray	R3: 13:19-13:30 At 24.9': R-Scale = R1 (performed at later date)
	1						
	1						
	0						
30 238.4	26.3	98	0	25.8' - Fracture, 65 deg, rough, undulating, black stains 26.0' - Fracture, vertical, rough, undulating, black stains 26.3' - Fracture, 55 deg, black stains 26.5' - Contact between siltstone and sandstone, <5 deg 29.0' - Joint, 55 deg	26.3-26.5' - slightly weathered Siltstone 26.5-36.3' - dark reddish brown, mottled dark reddish gray and dark greenish gray, very soft to soft 26.5-31.3' - slightly weathered, 45-50% fine sand, fining with depth	R4: 14:00-14:20 At 27.0': R-Scale = R2 (performed at later date) At 28.9': R-Scale = R2 (performed at later date)	
	0						
	0						
	0						
	31.3		0			R5: 14:28-14:43	



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-5

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687151.7 N, 2011758.3 E)

ELEVATION : 268.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
35 233.4	R5NQ 5 ft 102%	95	2	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-5

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687151.7 N, 2011758.3 E)

ELEVATION : 268.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

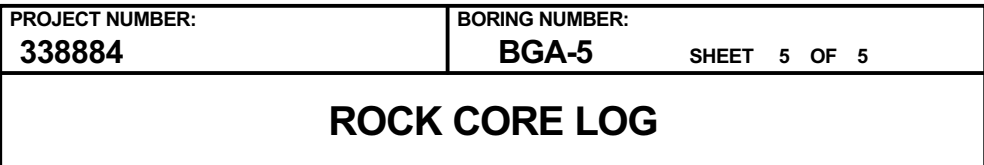
WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 213.4	R9NQ 5 ft 104%	100	0	56.4-56.7' - Fracture zone, horizontal and 10 deg, smooth, undulating 57.1' - Fracture, 5 deg, rough, undulating 57.2' - Fracture, 5 deg, rough, undulating 57.3' - Fracture, horizontal and 60 deg, smooth, undulating, 0.02' thick clay infilling 58.5-58.7' - Fracture zone, 5 deg, rough, undulating 59.0' - Fracture, 5 deg, smooth, undulating	XXXXXX XXXX			



LOGGER : EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	INTERVAL (ft)	RECOVERY (in)					
		#	TYPE				
275.2	0.0	11.0	SS1SS	2-2-3-4 (5)	Clayey Sand (SC) 0.0-0.5' - grayish brown, loose, fine to medium grained, medium plasticity, subrounded to subangular Clayey Sand (SC) 0.5-0.9' - brownish yellow, moist, loose, fine to medium grained, medium plasticity		
	2.0						
	2.5	17.0	SS2SS	2-3-5-7 (8)	Sandy Clay (CL) 2.5-3.9' - pale brown, gray mottling, moist, medium stiff, medium to high plasticity, slow to rapid dilatancy, yellow laminations, 15 to 20% fine to medium grained sand		
	4.5						
5							
270.2	5.0	17.0	SS3SS	21-30-30-50/2.75 (60)	Clay (CL) 5.0-6.4' - red, greenish gray mottling, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy, laminated		
	7.0						
	7.5	5.0	SS4SS	50/5 (50/5")	Clay (CL) 7.5-7.9' - red, 10% black staining, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy, laminated, <5% fine sand		
	9.5						
10							
265.2	10.0	9.5	SS5SS	37-50/3.5 (50/3.5")	Clay (CL) 10.0-10.8' - reddish brown, dry to moist, fine grained, medium to low plasticity, slow to rapid dilatancy, <10% very pale brown mottling, 10% black staining		
	12.0						
	12.5	3.5	SS6SS	50/3.5 (50/3.5")	Clay (CL) 12.5-12.7' - reddish brown, dry to moist, fine grained, medium to low plasticity, slow to rapid dilatancy, <10% very pale brown mottling, 10% black staining Clay (CL) 12.7-12.9' - light greenish gray, dry to moist, medium to low plasticity, rapid dilatancy, 20 to 25% fine sand, very hard		
	14.5						
15							
260.2	15.0	17.0	SS7SS	3-36-50/5 (86/11")	Silty Sand (SM) 15.0-16.3' - brownish yellow and greenish gray, moist, fine to medium grained, medium to low plasticity, rapid dilatancy, <10% clay, black staining at bottom of sample, soft, very hard, laminated		Driller Remark: Hit soft zone at 14.8' bgs; began losing water
	17.0						
	17.5	2.0	SS8SS	50/2 (50/2")	Silty Sand (SM) 17.5-17.7' - light gray, fine to coarse grained, low plasticity, rapid dilatancy, 10% clay, 10-15% very pale brown mottling, 10% coarse sand, some mica flakes, grains are subrounded to subangular Begin Rock Coring at 17.8 ft bgs See the next sheet for the rock core log		Soil sampling completed at 11:45 on 7/24/06 Driller Remark: Hit hard zone at 17.2' bgs; stopped losing water
	17.7						
20							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS			
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.				
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS							
20 255.2	17.8	R1NQ 3.7 ft 59%	0	0			Sandstone At 17.8' - light gray, mottled 20% very pale brown and 10% dark gray, very soft, medium to thick bedding, fine sand to coarse sand, subrounded, highly weathered	Rock coring began at 13:30 on 7/24/06 R1: 13:30-13:40 on 07/24/06 Driller Remark: Water loss of 30-35 gallons for entire core run At 17.8-21.5': R-Scale = R0-R1			
	0										
	21.5	R2NQ 5 ft 100%	0						21.5-29.5' - clay ripup clasts, increased coarse sand grains up to 0.01'	R2: 13:50-13:57 At 22.8': R-Scale = R1	
	25 250.2	R3NQ 5 ft 106%	40*	1					26.2' - Fracture, 50 deg, rough, undulating, black staining over 40% of fracture surface 26.9' - Fracture, <5 deg, rough, undulating 27.0' - Fracture, <5 deg, rough, undulating 27.4' - Fracture, 45 deg, rough, undulating 28.8' - Fracture, 10 deg, rough, undulating 29.0' - Fracture, 10 deg, rough, undulating 29.2' - Fracture, 10 deg, rough, undulating 29.4' - Fracture, 15 deg, smooth, undulating, black staining 29.7' - Fracture, 10 deg, smooth, undulating, 0.05' clay infilling 31.1' - Fracture, <5 deg, rough, undulating 31.7' - Fracture, <5 deg, smooth, undulating	29.5-31.5' - gray, fine sand to medium sand, clay ripup clasts ~10% throughout, coarser at 31.1 - 31.5' 29.5-36.5' - moderately weathered	R3: 14:15-14:25 SC-1 collected 27.4-28.3'
	0										
4											
1											
1											
30 245.2	R4NQ 5 ft 94%	90*	1	31.5-36.5' - gray, soft, laminated bedding, soft clay ripup clasts 33.2-36.5' - medium bedding, becomes coarser with small pebble sized grains, 20% increasing to 50% at bottom of run	At 31.1': R-Scale = R2 R4: 14:35-14:45 At 33.7': R-Scale = R1-R2						
35 240.2				36.5-41.5' - medium bedding, fine gravel to medium gravel, subrounded to subangular, poorly sorted, clay clasts	R5: 14:55-15:08						
36.5											
			1								



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

LOGGER : EM

WATER LEVEL: 10.7 R55		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
40 235.2	R5NQ 5 ft 100%	0	3	38.1' - Fracture, <5 deg, rough, undulating	.	36.5-42.2' - highly weathered		
			4	38.4' - Fracture, <5 deg, rough, undulating		38.4' - red		
				38.9' - Fracture, <5 deg, rough, undulating				
				39.2' - Fracture, 20 deg, rough, undulating				
				39.4' - Fracture, 20 deg, rough, undulating				
	41.5		3	39.6' - Fracture, 20 deg, rough, undulating				
				39.8' - Fracture, 70 deg and <5 deg, rough, undulating				
			3	39.9' - Fracture, 70 deg and <5 deg, rough, undulating				
				40.2' - Fracture, <5 deg, rough, undulating		41.5-42.2' - increased clay/siltstone clasts to 50%		
				40.8' - Fracture, <5 deg, rough, undulating		Siltstone		
45 230.2	R6NQ 5 ft 102%	48	10+	41.1' - Fracture, <5 deg, rough, undulating	x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687589.4 N, 2011550.8 E)

ELEVATION : 275.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

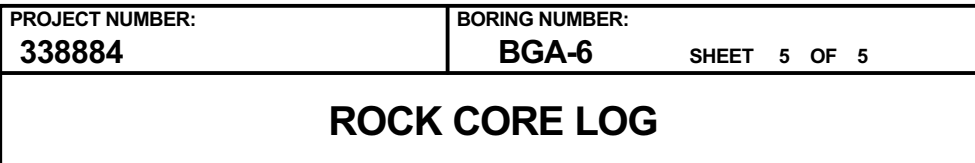
WATER LEVELS : 6.7 ft bgs

START : 7/24/06 09:40

END : 7/25/06 14:40

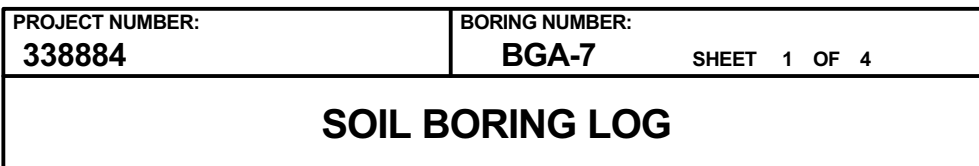
LOGGER : EM

WATER LEVELS: 0.7 RDS		DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	COMMENTS	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
60 215.2	R9NQ 5 ft 96%	74	10+	57.6-57.8' - Fracture zone, <5, 20, and 45 deg; smooth, undulating		XXXXXX XXXXXX			



LOGGER : EM

Rev. 0



LOGGER : JS

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-7

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

ELEVATION : 267.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/17/06 10:10

END : 5/18/06 11:30

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
15 252.8	12.6 R1NQ 2.5 ft 106%	0	0 10+ 10+	x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-7

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

ELEVATION : 267.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/17/06 10:10

END : 5/18/06 11:30

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
35 232.8	5 ft 102%	48	3	32.5' - Fracture, horizontal, rough, undulating 32.7' - Fracture, horizontal, rough, undulating 32.9' - Fracture, horizontal, rough, undulating 33.0' - Fracture, horizontal, rough, undulating 33.4' - Fracture, 10 deg, smooth, stepped 33.9-40.0' - Fractures (2), horizontal and 60 deg, smooth, undulating	...	Siltstone 33.0-37.8' - dark reddish brown, mottled green, very soft to soft, highly weathered, fine grained 34.4-34.5' - clay seam	R6: 16:05-16:17
			3		x x x		
			2		x x x		
			10+	35.1' - Fracture, horizontal, smooth, undulating 35.4-35.5' - Fractures (3) 35.5-37.8' - Clay seam, and fracture zone	x x x		
			10+		x x x		
	R6NQ 5 ft 104%	35	10+		x x x		
			0	37.9' - Fracture, 10 deg, smooth, undulating	x x x	Sandstone 37.8-39.5' - very dusky red, mottled green, soft to hard, very fine sand to fine sand 37.8-38.0' - highly weathered 38.0-39.5' - moderately weathered	
40 227.8	40.0		3	39.5' - Fracture, 10 deg, smooth, undulating 39.7' - Fracture, 10 deg, smooth, undulating 39.9' - Fracture, 10 deg, smooth, undulating 40.0' - Fracture, 11 deg, smooth, undulating	x x x	Siltstone 39.5-39.9' - very dusky red, mottled green, very soft, moderately weathered	R7: 08:40-08:51 on 5/18/2006
			0		...	Sandstone At 39.9' - gray, soft, very thin to thick bedding, fine sand 39.9-40.0' - moderately weathered 40.0-46.7' - gray to greenish gray, soft, fine sand, fresh, scattered irregularly shaped silt inclusions increase with depth	
	R7NQ 5 ft 100%	100	0		...		
			0		...		
45 222.8	45.0		0		...	45.0-46.7' - fine sand to medium sand	R8: 08:55-09:15
			0		...		
	R8NQ 5 ft 100%	100	0		...	Conglomerate 46.7-47.3' - dark reddish brown & green, very thin bedding, fine sand to medium sand, fresh, siltstone lenses	
			0		x x x	Sandstone 47.3-48.2' - gray to greenish gray, soft, fine sand, fresh, silt inclusions	
			0		x x x	Siltstone At 48.2' - dark reddish brown, mottled green, soft, fine grained 48.2-50.0' - fresh 49.9-50.0' - very soft	R9: 09:10-09:23
50 217.8	50.0		3	50.1' - Fracture, 60 deg, smooth, planar 50.7-50.9' - Fractures (3), 10 deg and 50 deg	x x x	50.0-55.0' - moderately weathered	
			2		x x x		
	R9NQ			51.9' - Fractures (2), 50 deg and horizontal, smooth, undulating	x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-7

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687886.0 N, 2011583.5 E)

ELEVATION : 267.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 5/17/06 10:10

END : 5/18/06 11:30

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
55 212.8	5 ft 100%	78	1	52.9' - Fracture, horizontal, smooth, stepped	x x x	51.7-56.6' - dusky red, mottled yellow and purple, very soft, mica particles, scattered green mottling	R10: 09:45-10:00
			1		x x x	53.6-53.8' - clay seam	
			1		x x x	54.0' - clay seam, 0.05' thick	
					x x x	54.3-55.0' - very soft to soft	
			0		x x x	55.0-56.0' - mottled black, fresh, 50% very fine to fine sand	First water level = 8.4' bgs taken 5/18/06 at 17:52; second water level = 8.4' bgs taken 5/19/06 at 18:08
			0		x x x	56.0-56.6' - mottled green, very soft to soft, fresh, much less sand	
	R10NQ 5 ft 102%	100	1	57.2' - Fracture, horizontal, rough, stepped	.....	Sandstone 56.6-60.0' - dusky red, mottled green, fine sand, fresh, 20% silt
			0		.....	57.2-57.5' - brown, mottled green, fine sand to medium sand
			0		58.3-58.5' - dark brown to gray, some green mottling	R-Scale not performed on rock core samples
					.....	59.0-59.9' - dark reddish brown, mottled black and green, very fine sand to fine sand
60 207.8	60.0				.....	59.9-60.0' - brown
						Bottom of Boring at 60.0 ft bgs on 5/18/06 11:30	
65 202.8							
70 197.8							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-8

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

LOGGER : JS

WATER LEVELS: 3.9' RGS		START: 5/15/06 10:00		END: 5/15/06 14:00		LOGGERS: 00	
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
263.6	0.0	19.0	SS1SS	2-2-3-4 (5)	Lean Clay (CL) 0.0-1.6' - brownish yellow, mottled dark orange, moist, medium stiff, low to medium plasticity, no to slow dilatancy, 10% fine sand		
	2.0						
	2.5	14.0	SS2SS	4-5-6-8 (11)	Lean Clay (CL) 2.5-3.2' - brownish yellow, mottled dark orange, moist, medium stiff, low to medium plasticity, no to slow dilatancy		
	4.5				Fat Clay (CH) 3.2-3.7' - reddish brown, mottled white and red, moist, medium to high plasticity, no dilatancy		
5							
258.6	5.0	15.0	SS3SS	7-8-12-20 (20)	Clay (CL) 5.0-6.3' - reddish brown, moist, very stiff, low to medium plasticity, slow dilatancy, greenish white lenses throughout		
	7.0						
	7.5	15.0	SS4SS	17-45-50/3 (95/9")	Clay (CL) 7.5-8.8' - reddish brown, mottled greenish white, black, moist, hard		
	9.5						
10							
253.6	10.0	6.0	SS5SS	30-50/3 (50/3")	Clay (CL) 10.0-10.5' - reddish brown, mottled greenish white and black, moist, very hard, low to medium plasticity, slow dilatancy		
	12.0						
	12.5	6.0	SS6SS	50/5 (50/5")	Clay (CL) 12.5-13.0' - reddish brown, mottled greenish white and black, moist, very hard, low to medium plasticity, slow dilatancy, scattered white lenses		
	14.5						
15							Soil sampling completed at 14:46 on 5/15/06
248.6	15.0	2.0	SS7SS	50/1.5 (50/1.5")	Clay (CL) 15.0-15.2' - reddish brown, mottled greenish white and black, moist, very hard, low to medium plasticity, slow dilatancy Begin Rock Coring at 15.2 ft bgs See the next sheet for the rock core log		
	15.2						



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-8

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
15.2	R1NQ 3.8 ft 94%	75	2	15.6' - Fracture, horizontal, smooth, undulating, tight fit	x	Siltstone 15.2-18.2' - dark reddish brown, mottled green and black, very soft, slightly weathered, fine grained 16.0-16.9' - soft 16.9-18.2' - very soft	Rock coring began at 15:30 on 5/15/06 R1: 15:30-15:43 on 05/15/06
			1	15.9' - Fracture, horizontal, smooth, undulating, tight fit	x		
			0	16.0' - Fracture, horizontal, smooth, undulating, tight fit	x		
			0	16.1' - Fracture, 30 deg, smooth, undulating	x		
19.0	R2NQ 5 ft 102%	100	0		x	Sandstone 18.2-19.9' - dark reddish brown, soft, very fine sand to fine sand, slightly weathered Siltstone At 19.9' - dark reddish brown, trace green mottling, very soft to soft 19.9-26.3' - slightly weathered	R2: 16:10-16:23
20			1	19.9' - Fracture, 10 deg, smooth, undulating, loose fit	x		
243.6			0		x		
			1	22.2' - Fracture, horizontal, smooth, undulating	x		
24.0	R3NQ 5 ft 100%	50	2	23.5' - Fractures, horizontal and 50 deg, smooth, undulating	x	24.0-26.3' - a few white inclusions 26.3-28.0' - highly weathered, clay seam, a few white inclusions 28.0-28.3' - mottled green, slightly weathered	R3: 16:29-16:42
			1	24.3' - Fracture, horizontal, smooth, undulating, tight fit	x		
25			0		x		
238.6			10+	26.3' - Fracture, horizontal, smooth, stepped	x		
	R4NQ 5 ft 94%	100	10+	26.6-26.9' - Fracture zone	x	Sandstone 28.3-28.5' - dark reddish brown, bedding, very fine sand to fine sand, slightly weathered Siltstone At 28.5' - dark reddish brown, mottled green, very soft 28.5-37.4' - slightly weathered 29.0-30.0' - scattered fine gravel sized inclusions, softer than rest of run 32.4-32.9' - soft, very fine to fine sand lens	R4: 09:00-09:14 on 05/16/06
			10+	27.2-27.4' - Fracture zone	x		
			2	28.3' - Fracture, horizontal, smooth, undulating, loose fit	x		
29.0			0	28.5' - Fracture, 60 deg, smooth, stepped, loose fit	x		
30			1	30.1' - Fracture, horizontal, smooth, undulating, tight fit	x	34.0-38.0' - mica particles	R5: 09:20-09:35
233.6			0		x		
			0	32.7' - Fracture, 40 deg, thin white infilling, partial fracture, tightly healed	x		
			0		x		
34.0			1		x		
35					x		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-8

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

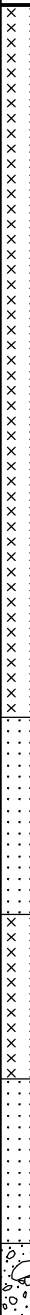
ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
40 223.6	R5NQ 4 ft 98%	82	0	39.4' - Fracture, horizontal, smooth, undulating, 0.1' clay infilling		37.4-41.0' - moderately weathered 37.4-37.9' - clay seam			
			0						
			10+						
	R6NQ 5 ft 98%	84	0			39.0-41.0' - very soft		40.3-41.0' - clay seam, 0.75' thick 41.0-45.2' - very soft to soft, fresh, coarse sand to fine gravel, scattered inclusions	
			1						
			10+						
			0						
			0						
	R7NQ 1 ft 120%	100	0			44.8' - Fracture, horizontal, smooth, undulating		45.2-46.0' - fresh, grades to very fine and fine sand	
			1						
R8NQ 5 ft 104%	100	0	47.4' - Fracture, 50 deg, smooth, undulating, thin quartz infilling	Sandstone 46.0-49.0' - dark reddish brown, mottled green, soft, very fine sand to fine sand, fresh 47.8-49.0' - grades to siltstone, soft					
		1							
		0							
		0							
		0							
R9NQ 5 ft 100%	96	0	53.9' - Fracture, 30 deg, smooth, undulating, black staining	Siltstone 49.0-51.5' - dark reddish brown, fresh, soft 49.8-51.5' - soft, begins picking up more sand and transitions in and out of siltstone and very fine to fine grained sandstone Sandstone At 51.5' - dark reddish brown, fine sand, fresh, soft to hard, laminae silt seam 53.6-53.8' - very dark gray, soft					
		0							
		0							
		1							
		0							
55			0						



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-8

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688088.7 N, 2011762.2 E)

ELEVATION : 263.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel


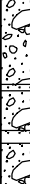
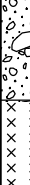
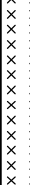
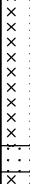
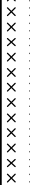
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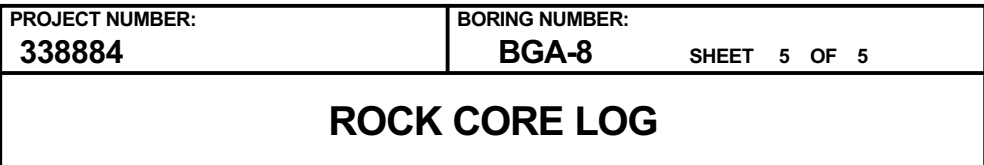
WATER LEVELS : 9.0 ft bgs

START : 5/15/06 13:35

END : 5/16/06 14:50

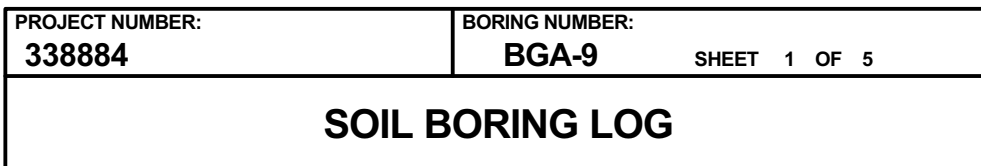
LOGGER : JS

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
60 203.6	R10NQ 5 ft 100%	100	0	57.1' - Fracture, 60 deg, smooth, stepped 57.8-58.0' - Clay seam, 40 deg, slickensided		53.8-54.0' - very dark greenish gray, very soft, 0.1' lens fine grained, 0.1' medium grained with multicolored grains Conglomerate 54.0-55.2' - dark greenish gray, soft to hard, fresh, multicolored grains, gray clay, coarse sand to fine gravel	R11: 12:45-12:57
			0				
			1				
			0				
	R11NQ 5 ft 100%	100	0	62.7' - Fracture, 20 deg, rough, undulating		55.2-58.0' - dark reddish gray, laminated to very thin bedding, fine sand to medium sand, fresh, with some coarser beds, multicolored grains 57.8-58.0' - clay seam Conglomerate 58.0-59.4' - dark greenish gray, soft to hard, fresh, multicolored grains, coarse sand, fewer fine gravel, less fines, (gray clay)	
			0				
			1				
			0				
	R12NQ 4.8 ft 100%	100	0	70.5' - Fracture, horizontal, smooth, undulating, loose fit 71.1-73.0' - Fracture zone, horizontal		Sandstone 59.4-59.5' - dark reddish gray, hard, very thin bedding, fine sand to medium sand, fresh Conglomerate 59.5-60.1' - dark reddish gray, soft, thin bedding, fresh, multicolored grains (red, white, gray) and staining, medium gravel	
			0				
0							
0							
65 198.6	R13NQ 4.2 ft 76%	55	0	73.5' - Fracture, horizontal, smooth, undulating, 0.1' clay infilling 73.7' - Fracture, 10 deg, smooth, undulating, tight fit 74.2' - Fracture, 20 deg, smooth, undulating		Sandstone 60.1-60.3' - dark reddish gray, hard, very thin bedding, fine sand to medium sand, fresh Conglomerate 60.3-62.7' - dark reddish gray, soft to hard, fresh, multicolored grains (red, white, gray) and staining, medium gravel Siltstone At 62.7' - dark reddish brown, black and green mottling, fresh, fine grained, soft 64.0-69.4' - no green mottling, fine grained	
			0				
			1				
			10+				
70 193.6	R14NQ 1 ft 100%	0	3	73.5' - Fracture, horizontal, smooth, undulating, 0.1' clay infilling 73.7' - Fracture, 10 deg, smooth, undulating, tight fit 74.2' - Fracture, 20 deg, smooth, undulating		Siltstone At 69.8' - dark greenish gray, very soft to soft 69.8-71.1' - fresh 70.4-73.0' - dark reddish gray, mottled dark red, green, gray, very soft, fine grained 71.1-74.3' - highly weathered 73.0-74.3' - dusky red, clay seams 73.1-73.3' - clay seam	
			0				
			1				
			1				
75			1			Sandstone 74.3-77.1' - greenish black, fresh	R14: 13:58-14:02 R15: 14:09-14:26



LOGGER : JS

Rev. 0



LOGGER : DT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-9

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

ELEVATION : 253.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

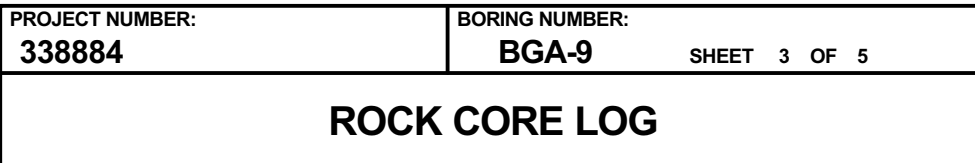
WATER LEVELS : 5.2 ft bgs

START : 5/15/06 12:40

END : 5/17/06 11:22

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
10 243.3	7.8 <						



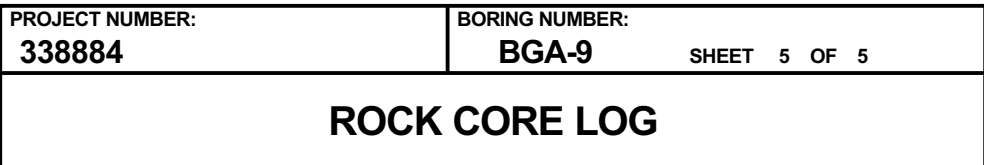
LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 0



LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-10

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

ELEVATION : 246.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24" Split Spoon, 140 lb. Hammer and Cathead












ORIENTATION : Vertical

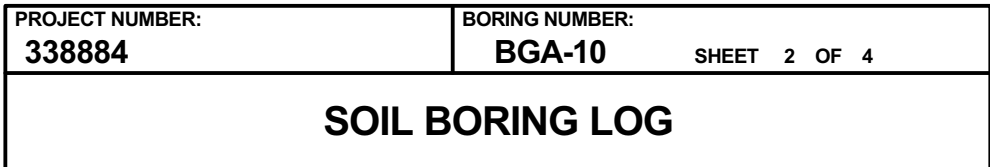
WATER LEVELS : 13.8 ft bgs

START : 5/17/06 14:05

END : 5/18/06 11:13

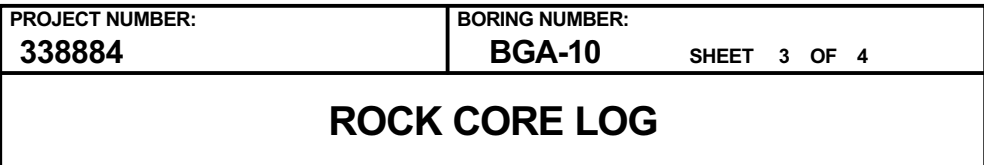
LOGGER : DT

WATER LEVELS: 15.0 REGS		START: 5/17/2014 14:00		END: 5/19/2014 17:10		LOGGERS: BT	
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
246.2	0.0				Fat Clay (CH) 0.0-0.5' - reddish brown, mottling, moist, medium stiff, high plasticity, organics		
		13.0	SS1SS	2-2-5-6 (7)	Sandy Clay (CL) 0.5-1.1' - olive yellow, moist, medium stiff, fine grained, medium plasticity		
	2.0						
		2.5					
			13.0	SS2SS	4-4-8-10 (12)	Sandy Clay (CL) 2.5-3.6' - brownish yellow and light greenish gray, mottling, stiff, fine to medium grained	
	4.5						
5							
241.2	5.0				Sandy Clay (CL) 5.0-6.3' - brownish yellow and light greenish gray, mottling, stiff, fine to medium grained		
		16.0	SS3SS	4-4-9-13 (13)			
	7.0						
		7.5					
			16.0	SS4SS	4-6-11-14 (17)	Sandy Clay (CL) 7.5-8.8' - brownish yellow and light greenish gray, moist, very stiff, fine to coarse grained	
	9.5						
10							
236.2	10.0				Sandy Clay (CL) 10.0-10.5' - brownish yellow and light greenish gray, moist, very stiff, fine to coarse grained		
		9.0	SS5SS	7-50/3 (50/3")	Clay (CL) 10.5-10.8' - reddish brown and light greenish gray, mottling, moist, hard, low plasticity, some fine sand, micaceous		
	12.0						
		12.5					
			14.0	SS6SS	12-29-50/2 (79/8")	Clay (CL) 12.5-13.5' - reddish brown and light greenish gray, mottling, moist, hard, low plasticity, some fine sand	
	14.5				Silty Sand (SM) 13.5-13.7' - light greenish gray, moist, hard, fine grained, micaceous		
15							
231.2	15.0				Clay (CL) 15.0-16.1' - light greenish gray and brownish yellow, mottling, moist, black oxide zones, laminated		
		13.5	SS7SS	12-27-50/1.5 (77/7.5")			
	17.0						
		17.5					
			2.0	SS8SS	50/2 (50/2")	Sandy Clay (CL) 17.5-17.7' - dark brown, moist, fine grained, medium plasticity, trace sandstone fragments, micaceous	
	19.5						
20							



LOGGER : DT

Rev. 0



LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-10

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

ELEVATION : 246.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 13.8 ft bgs

START : 5/17/06 14:05

END : 5/18/06 11:13

LOGGER : DT

WATER LEVEL: 13.8 bgs		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
45 201.2	44.5		0		44.5-45.8' - some fine to medium grained sand	R4: 10:54-11:14 and 11:17-11:35		
			0					
			0					
			0					
			0					
			0					
			0					
			0					
			0					
			0					
50 196.2		96	0					
			0					
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PROJECT NUMBER:
338884

BORING NUMBER:
BGA-11

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)

ELEVATION : 246.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 2-15/16 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 3.9 ft bgs

START : 8/8/06 13:45

END : 8/9/06 10:55

LOGGER : JS/AT

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
246.8	0.0	4.0	SS1SS	8-8-8-5 (16)	Top Soil 0.0-0.1' - dry Sandy Silt (ML) 0.1-0.3' - reddish brown, dry to moist, very stiff, very fine to medium grained, low plasticity, rapid dilatancy, micaceous		Soil sampling completed at 15:40 on 8/8/06
	2.0						
	2.5	14.0	SS2SS	6-9-12-34 (21)	Sandy Clay & Fat Clay With Sand (CH) 2.5-2.7' - yellowish brown, white mottling, moist, medium to high plasticity, 10-30% sand, fill Clay (CL) 2.7-3.7' - reddish brown to yellowish red, trace greenish white mottling, moist, very stiff, very fine grained, low to medium plasticity, rapid dilatancy		
5							
241.8	5.0	10.0	SS3SS	15-36-50/4 (86/10")	Lean Clay (CL) 5.0-5.8' - weak red to reddish brown, white mottling and black staining, moist, hard, medium plasticity, slow to rapid dilatancy		
	7.0						
	7.5	2.0	SS4SS	50/2 (50/2")	Clay (CL) 7.5-7.7' - reddish brown to yellowish red, white mottling, dry to moist, very hard, low plasticity, rapid dilatancy, 10-15% very fine sand Begin Rock Coring at 7.7 ft bgs See the next sheet for the rock core log		
	7.7						
10							
236.8							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-11

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)

ELEVATION : 246.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.9 ft bgs

START : 8/8/06 13:45

END : 8/9/06 10:55

LOGGER : JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
7.7	R1NQ 1.8 ft 92%	83	0		x x x	Siltstone 7.7-9.8' - dark reddish brown, reddish-black and trace greenish-gray mottling, soft to hard, moderately weathered, 35% very fine to fine sand	Rock coring began at 15:42 on 8/8/06 R1: 15:42-15:56 At 8.4': R-Scale = R2
9.5			0		x x x		
10			3	9.6' - Fracture, horizontal, smooth, planar	x x x	Sandstone At 9.8' - light brownish gray, soft, medium bedding, very fine sand to medium sand, multicolored sand	R2: 16:01-16:13
236.8			1	10.4' - Fracture, horizontal, smooth, undulating 10.5' - Fracture, 10 deg, smooth, undulating	x x x	9.8-10.8' - moderately weathered	
	R2NQ 5 ft 97%	83	0		x x x	Clay Seam 10.5-10.8' - slightly weathered	At 11.5': R-Scale = R2
			0		x x x	10.8-15.6' - dark reddish brown mottling	
			1		x x x	11.2-11.3' - gray, soft to hard, very fine sand to coarse sand, 20-25% silt	
14.5			2	14.4' - Fracture, 15 deg, rough, undulating 14.5-14.8' - Fracture, 60 deg, rough, undulating	x x x		R3: 16:51-17:03
15			2	14.8' - Fracture, 5 deg, rough, undulating 15.6' - Fracture, 20 deg, rough, undulating 15.7' - Fracture, 10 deg, smooth, undulating	x x x	Siltstone 15.6-22.0' - dark reddish brown, greenish gray mottling, soft	At 16.6': R-Scale = R2
231.8	R3NQ 5 ft 98%	88	0	17.3' - Fracture, 15 deg, rough, undulating	x x x	15.6-15.7' - slightly weathered	
			0		x x x	15.7-22.0' - fresh	
			1		x x x		
19.5			0		x x x		R4: 17:10-17:26
20			1	21.1' - Fracture, horizontal, smooth, planar	x x x	Sandstone 22.0-23.4' - dark gray, soft to hard, fresh, 60-70% very fine to fine sand	At 22.5': R-Scale = R3
226.8	R4NQ 5 ft 103%	97	0		x x x		
			0		x x x		
			1		x x x	Siltstone 23.4-33.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh	R5: 07:54-08:13 on 8/9/06
24.5			1	24.4' - Fracture, 20 deg, smooth, undulating 24.7' - Fracture, 15 deg, smooth, undulating 24.8' - Fracture, 45 deg, rough, undulating, tight fit	x x x		
25			0		x x x		
221.8	R5NQ 5 ft 95%	92	0		x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-11

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)

ELEVATION : 246.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.9 ft bgs

START : 8/8/06 13:45

END : 8/9/06 10:55

LOGGER : JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS			
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS				
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
30 216.8	R6NQ 5 ft 101%	100	0	31.2' - Fracture, 25 deg, smooth, undulating, white/greenish staining		Sandstone 30.6-30.8' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	R6: 08:19-08:34			
			0					Siltstone 30.8-31.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh		
			0						Sandstone 31.3-32.5' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	
			1							Siltstone 32.5-32.7' - dark reddish brown, greenish gray mottling, soft to hard, fresh
			0								Sandstone 32.7-33.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand
0	R7: 08:41-09:03									
0		Siltstone 33.0-33.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh								
0			Sandstone 33.3-34.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand							
1							Siltstone 33.5-34.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh			
4								Sandstone At 34.5' - dark greenish gray, soft, very fine sand to coarse sand, slightly weathered to moderately weathered, coarsens with depth 39.5-42.8' - soft to hard, large green coarse sand to fine gravel		
0	R8: 09:21-09:43									
0		Siltstone At 42.8' - dark reddish brown, green mottling, soft to hard 42.8-44.6' - slightly weathered to moderately weathered								
1			Sandstone 44.5-49.5' - greenish-gray and black mottling 44.6-58.3' - fresh							
2				Clay Seam 44.6' - <0.05' thick						
1										
35 211.8	R7NQ 5 ft 95%	78	0	36.6' - Fracture, 10 deg, rough, undulating 37.0' - Fracture, 15 deg, rough, undulating 37.8' - Fracture, horizontal, rough, undulating 38.6' - Fracture, 5 deg, rough, undulating 38.8' - Fracture, 5 deg, rough, undulating 38.9' - Fracture, 5 deg, rough, undulating 39.1' - Fracture, 60 deg, rough, undulating 40.0' - Fracture, horizontal, rough, undulating 41.3' - Fracture, horizontal, rough, undulating 41.7' - Fracture, 10 deg, rough, undulating 41.9' - Fracture, 5 deg, rough, undulating 42.8' - Fracture, 20 deg, smooth, undulating 42.8' - Fracture, 45 deg, smooth and slickensided, greenish-gray staining 42.9' - Fracture, 5 deg, smooth, undulating 43.0' - Fracture, 5 deg, smooth, undulating 44.7' - Fracture, horizontal, smooth, undulating 45.6' - Fracture, 5 deg, smooth, undulating 46.5' - Fracture, 5 deg, smooth, undulating 46.6' - Fracture, 20 deg, smooth, planar, tight fit		Sandstone 30.6-30.8' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	At 32.0': R-Scale = R3			
			0					Siltstone 30.8-31.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh		
			0						Sandstone 31.3-32.5' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	
			1							Siltstone 32.5-32.7' - dark reddish brown, greenish gray mottling, soft to hard, fresh
			0								Sandstone 32.7-33.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand
0	R7: 08:41-09:03									
0		Siltstone 33.0-33.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh								
0			Sandstone 33.3-34.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand							
1							Siltstone 33.5-34.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh			
4								Sandstone At 34.5' - dark greenish gray, soft, very fine sand to coarse sand, slightly weathered to moderately weathered, coarsens with depth 39.5-42.8' - soft to hard, large green coarse sand to fine gravel		
0	R8: 09:21-09:43									
0		Siltstone At 42.8' - dark reddish brown, green mottling, soft to hard 42.8-44.6' - slightly weathered to moderately weathered								
1			Sandstone 44.5-49.5' - greenish-gray and black mottling 44.6-58.3' - fresh							
2				Clay Seam 44.6' - <0.05' thick						
1										
40 206.8	R8NQ 5 ft 102%	83	1	36.6' - Fracture, 10 deg, rough, undulating 37.0' - Fracture, 15 deg, rough, undulating 37.8' - Fracture, horizontal, rough, undulating 38.6' - Fracture, 5 deg, rough, undulating 38.8' - Fracture, 5 deg, rough, undulating 38.9' - Fracture, 5 deg, rough, undulating 39.1' - Fracture, 60 deg, rough, undulating 40.0' - Fracture, horizontal, rough, undulating 41.3' - Fracture, horizontal, rough, undulating 41.7' - Fracture, 10 deg, rough, undulating 41.9' - Fracture, 5 deg, rough, undulating 42.8' - Fracture, 20 deg, smooth, undulating 42.8' - Fracture, 45 deg, smooth and slickensided, greenish-gray staining 42.9' - Fracture, 5 deg, smooth, undulating 43.0' - Fracture, 5 deg, smooth, undulating 44.7' - Fracture, horizontal, smooth, undulating 45.6' - Fracture, 5 deg, smooth, undulating 46.5' - Fracture, 5 deg, smooth, undulating 46.6' - Fracture, 20 deg, smooth, planar, tight fit		Sandstone 30.6-30.8' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	At 37.5': R-Scale = R2			
			1					Siltstone 30.8-31.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh		
			2						Sandstone 31.3-32.5' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	
			4							Siltstone 32.5-32.7' - dark reddish brown, greenish gray mottling, soft to hard, fresh
			0								Sandstone 32.7-33.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand
0	R7: 08:41-09:03									
0		Siltstone 33.0-33.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh								
0			Sandstone 33.3-34.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand							
1							Siltstone 33.5-34.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh			
4								Sandstone At 34.5' - dark greenish gray, soft, very fine sand to coarse sand, slightly weathered to moderately weathered, coarsens with depth 39.5-42.8' - soft to hard, large green coarse sand to fine gravel		
0	R8: 09:21-09:43									
0		Siltstone At 42.8' - dark reddish brown, green mottling, soft to hard 42.8-44.6' - slightly weathered to moderately weathered								
1			Sandstone 44.5-49.5' - greenish-gray and black mottling 44.6-58.3' - fresh							
2				Clay Seam 44.6' - <0.05' thick						
1										
45 201.8	R9NQ 5 ft 101%	91	1	36.6' - Fracture, 10 deg, rough, undulating 37.0' - Fracture, 15 deg, rough, undulating 37.8' - Fracture, horizontal, rough, undulating 38.6' - Fracture, 5 deg, rough, undulating 38.8' - Fracture, 5 deg, rough, undulating 38.9' - Fracture, 5 deg, rough, undulating 39.1' - Fracture, 60 deg, rough, undulating 40.0' - Fracture, horizontal, rough, undulating 41.3' - Fracture, horizontal, rough, undulating 41.7' - Fracture, 10 deg, rough, undulating 41.9' - Fracture, 5 deg, rough, undulating 42.8' - Fracture, 20 deg, smooth, undulating 42.8' - Fracture, 45 deg, smooth and slickensided, greenish-gray staining 42.9' - Fracture, 5 deg, smooth, undulating 43.0' - Fracture, 5 deg, smooth, undulating 44.7' - Fracture, horizontal, smooth, undulating 45.6' - Fracture, 5 deg, smooth, undulating 46.5' - Fracture, 5 deg, smooth, undulating 46.6' - Fracture, 20 deg, smooth, planar, tight fit		Sandstone 30.6-30.8' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	At 42.2': R-Scale = R2-R3			
			1					Siltstone 30.8-31.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh		
			2						Sandstone 31.3-32.5' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand	
			4							Siltstone 32.5-32.7' - dark reddish brown, greenish gray mottling, soft to hard, fresh
			0								Sandstone 32.7-33.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand
0	R7: 08:41-09:03									
0		Siltstone 33.0-33.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh								
0			Sandstone 33.3-34.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand							
1							Siltstone 33.5-34.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh			
4								Sandstone At 34.5' - dark greenish gray, soft, very fine sand to coarse sand, slightly weathered to moderately weathered, coarsens with depth 39.5-42.8' - soft to hard, large green coarse sand to fine gravel		
0	R8: 09:21-09:43									
0		Siltstone At 42.8' - dark reddish brown, green mottling, soft to hard 42.8-44.6' - slightly weathered to moderately weathered								
1			Sandstone 44.5-49.5' - greenish-gray and black mottling 44.6-58.3' - fresh							
2				Clay Seam 44.6' - <0.05' thick						
1										



PROJECT NUMBER: <div style="border: 1px solid black; padding: 2px; font-weight: bold;">338884</div>	BORING NUMBER: <div style="border: 1px solid black; padding: 2px; font-weight: bold;">BGA-11</div>
SHEET 4 OF 4	
<div style="border: 1px solid black; padding: 5px; font-size: 1.2em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687997.7 N, 2012441.8 E)
ELEVATION : 246.8 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 3.9 ft bgs	START : 8/8/06 13:45	END : 8/9/06 10:55	LOGGER : JS/AT
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
50 196.8	49.5		0	XXXXXX 			



PROJECT NUMBER:
338884

BORING NUMBER:
BGA-12

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687173.0 N, 2012923.7 E)

ELEVATION : 260.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 8.0 ft bgs

START : 4/17/06 09:50

END : 4/18/06 16:30

LOGGER : DT

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
260.9	0.0	24.0	SS1SS	2-4-8-9 (12)	Clay (CL) 0.0-2.0' - reddish brown, moist, stiff, fine grained, low plasticity, some mica, black oxide nodules		
	2.0						
	2.5	23.0	SS2SS	6-9-14-12 (23)	Clay (CL) 2.5-4.5' - reddish brown, moist, very stiff, low to medium plasticity, trace organic debris, gray bands		
	4.5						
5							
255.9	5.0	23.0	SS3SS	12-14-18-29 (32)	Clay (CL) 5.0-7.0' - reddish brown, moist, hard, fine grained, low to medium plasticity, some mica, trace fine to medium sand, black and gray oxide nodules		
	7.0						
	7.5	18.0	SS4SS	20-22-33-39 (55)	Clay (CL) 7.5-9.4' - reddish brown, moist, hard, fine grained, low to medium plasticity, some mica, trace fine to medium sand, black and gray oxide nodules		
	9.5						
10							
250.9	10.0	10.0	SS5SS	48-52/4 (52/4")	Clay (CL) 10.0-11.0' - reddish brown, moist, hard, fine grained, some mica, trace fine sand, black oxide nodules		Soil sampling completed at 11:37 on 4/17/06
	12.0						
	12.5	2.5	SS6SS	50/2.5 (50/2.5")	Clay (CL) 12.5-12.7' - reddish brown, hard, fine grained, mica, trace of fine sand Begin Rock Coring at 12.8 ft bgs See the next sheet for the rock core log		
	12.7						
15							
245.9							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-12

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687173.0 N, 2012923.7 E)

ELEVATION : 260.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : A. Martin, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

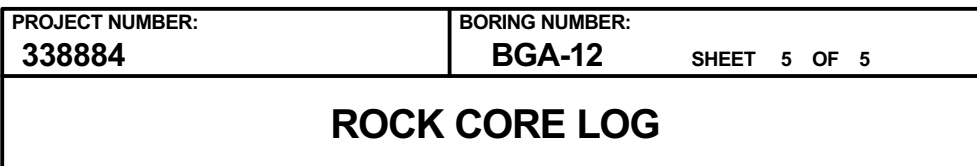
WATER LEVELS : 8.0 ft bgs

START : 4/17/06 09:50

END : 4/18/06 16:30

LOGGER : DT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT			
			DESCRIPTION			
			DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
12.8			NA		Silt (ML) 12.8-14.0' - reddish brown, mottled gray, highly weathered, hard	Rock coring began at 13:15 on 4/17/06 R1: 13:15-13:33
15			1		Siltstone At 14.0' - reddish brown, soft to hard, fresh, fine grained	Drillers Remark: Coring with recirculated water
245.9			0			
	R1/R2NQ 8.2 ft 99%	77	1			R2: 13:36-14:00
			0			
			1			
			1			
20			0			
240.9			0			
			4		21.0-30.0' - occasional greenish gray mottling	R3: 08:05-08:36 on 4/18/06
			0			
			0			
			0			
25			0			
235.9			0			
	R3/R4NQ 10 ft 100%	82.5	0			R4: 08:36-08:57
			0			
			0		26.8-27.3' - bioturbation channels filled with finer grained more uniform material that gives the appearance of pebbles in core	
			1			
30			10+			
230.9			2		Sandstone 30.2-30.6' - reddish brown to grayish red, fine sand to medium sand, poorly sorted, fresh, quartz, feldspar, mica grains, partly silty.	R5: 09:12-09:31
			0		Siltstone At 30.6' - reddish brown, soft to hard	



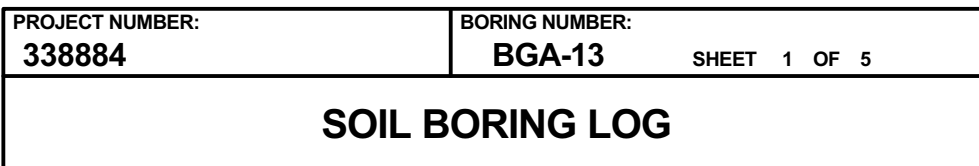
LOCATION : (NAD 27) (687173.0 N, 2012923.7 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 0



LOGGER : AT/LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-13

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686459.9 N, 2011681.2 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.2 ft bgs

START : 7/26/06 16:00

END : 7/27/06 12:20

LOGGER : AT/LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
29.2			2				
30			4	29.3' - Fracture, horizontal, smooth, undulating		29.0-39.0' - moderately weathered	At 28.5': R-Scale = R2
230.6			1	29.4' - Fracture, horizontal, smooth, undulating		29.2-34.2' - soft to hard, 40% very fine to fine sand	R6: No time recorded
			1	29.5' - Fracture, horizontal, smooth, undulating			
			1	30.0' - Fracture, 5 deg, smooth, undulating, 0.01' relief			At 30.5': R-Scale = R3-R4
			1	31.1' - Fracture, 15 deg, smooth, undulating			At 31.4': R-Scale = R3-R4
			0	31.6' - Fracture, horizontal, smooth, undulating			At 32.0': R-Scale = R2-R3
			2			32.7-34.2' - mottled green, soft	At 32.5': R-Scale = R3
34.2				33.5' - Fracture, 5 deg, smooth, undulating			At 33.2': PP: 1.0 tsf
			3				At 33.4': PP: 1.0 tsf
35			10+	34.9' - Fracture, horizontal, smooth, undulating		34.2-34.8' - mottled green, soft, <10% very fine to fine sand	R7: No time recorded
225.6			3	35.0' - Fracture, horizontal, smooth, undulating, 0.005' relief		35.0-35.5' - section was crushed in removal from rod	At 34.4': R-Scale = R2
			3	35.6' - Fracture, horizontal, smooth, undulating		35.5-36.2' - dark brown, very soft, clay rich layer, poorly bedded	
			1	35.8' - Fracture, horizontal, smooth, undulating		35.7' - clay layer	
			2	36.1' - Fracture, 5 deg, smooth, undulating, 0.01' relief		36.2-39.2' - mottled pale olive and reddish black, soft to hard, 25% gravel sized to coarse sand sized clasts	At 37.6': R-Scale = R3
			1	36.4' - Fracture, 5 deg, smooth, undulating, 0.01' relief			
			2	37.0-37.5' - Fractures (2), 80 deg, smooth, undulating, 0.01' relief			
39.2			1	38.3' - Fracture, horizontal, smooth, undulating		39.0-54.2' - fresh	At 39.0': R-Scale = R2
			0	38.6' - Fracture, horizontal, smooth, undulating		39.2-44.2' - large irregular shaped white clasts from <1/4 to 1, harder than matrix	R8: No time recorded
40			0				
220.6			0				
			0				At 42.9': R-Scale = R2
			0				At 43.8': R-Scale = R2
			0				R9: No time recorded
44.2			0				At 45.0': R-Scale = R3
45			0				
215.6			0				At 46.2': R-Scale = R3-R4
			1				



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-13

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686459.9 N, 2011681.2 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

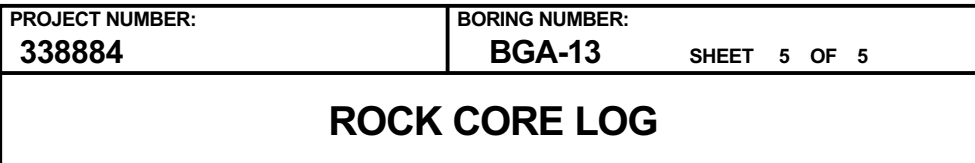
WATER LEVELS : 6.2 ft bgs

START : 7/26/06 16:00

END : 7/27/06 12:20

LOGGER : AT/LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
49.2			2		X		
50			X		X		
210.6			1		X		
			2		X		
	R10NQ 5 ft 100%	88	2	51.4' - Fracture zone, 70 deg and 45 deg, smooth, undulating	X		
			1	52.0' - Fracture zone, 25 deg, rough, undulating, tight fit	X		
			2	52.7' - Fracture, 60 deg, rough, undulating	X		
54.2					X		
55			2		X		
205.6			2		X		
	R11NQ 5 ft 103%	80	0		X		
			3	57.1' - Fracture, horizontal, smooth, undulating, 0.03 inch clay infilling	X		
			2	57.4' - Fracture, 5 deg, smooth, undulating, 0.03 inch clay infilling	X		
				57.5' - Fracture, 5 deg, smooth, undulating, 0.03 inch clay infilling	X		
59.2				57.6' - Fracture, horizontal, smooth, undulating, 0.02 inch clay infilling	X		
60			10+	59.2-59.3' - Fracture zone, horizontal, smooth, undulating	X		
200.6			1	59.5-60.1' - Fracture zone, horizontal, smooth, undulating, 0.02 inch clay infilling	X		
	R12NQ 5 ft 98%	75	1		X		
			0		X		
			0		X		
64.2					X		
65			1	64.4' - Fracture, vertical, rough, undulating	X		
195.6			0		X		
	R13NQ 5 ft 102%	94	0		X		
			0		X		



LOCATION : (NAD 27) (686459.9 N, 2011681.2 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : AT/LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-14

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)		6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE								
5	287.0	0.0	10.8	SS1SS A&B	9-8-5-5 (13)	Silty Gravel (GM) 0.0-0.7' - pinkish gray, dry, dense, well graded fine to coarse, angular gravel. 25% fine to coarse sand silt Clay (CL) 0.7-0.9' - pale brown, moist, soft, high plasticity				
		2.0								
		2.5	21.6	SS2SS	4-9-26-31 (35)	Clay (CL) 2.5-3.8' - pale brown, moist, soft, high plasticity, sharp contact between clay layers at 3.75' Sandy Silt (ML) 3.8-4.3' - brown, dry to moist, no plasticity, rapid dilatancy, 10-15% very fine to fine sand				
		4.5								
		5.0	18.0	SS3SS	17-39-50 (89)	Sandy Silt (ML) 5.0-5.5' - brown, dry to moist, no plasticity, rapid dilatancy, 10-15% very fine to fine sand Silty Sand (SM) 5.5-6.5' - pinkish gray, reddish yellow linear mottling, dry to moist, 70-75% very fine to fine sand				
10		7.0								
		7.5	15.6	SS4SS	44-36-50 (86)	Sandy Silt (ML) 7.5-8.9' - pinkish gray, reddish yellow linear mottling, dry to moist, very fine to fine grained, 70-75% very fine to fine sand				
		9.5								
		10.0	13.2	SS5SS	32-50 (50")	Sandy Silt (ML) 10.0-10.5' - pinkish gray, dark brown mottling, dry to moist, very fine to fine grained				
		12.0								
15		12.5	7.2	SS6SS	50 (50")	Sandy Silt (ML) 12.5-13.1' - pinkish gray, red and black mottling, dry to moist, very fine to fine grained, 70-75% very fine to fine sand				
		14.5								
		15.0	6.0	SS7SS	50/5 (50/5")	Sandy Silt (ML) 15.0-15.5' - pinkish gray, mottled red, black, very fine to fine grained, mottles <0.0002-0.0007, poorly graded sand, dark brown weathering stains, laminated				
		17.0								
		17.5	8.4	SS8SS	50 (50")	Sandy Silt (ML) 17.5-18.0' - pinkish gray, very soft, very fine to fine grained, mottles <0.0002-0.0007, poorly graded sand, dark brown weathering stains, laminated				
20		19.5								



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BGA-14</div>
SHEET 2 OF 5	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)
ELEVATION : 287.0 ft MSL (NGVD 29)	DRILLING CONTRACTOR : K. Canuel, S&ME
DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer	
ORIENTATION : Vertical	
WATER LEVELS : 15.4 ft bgs	
START : 7/31/06 13:10	END : 8/1/06 16:10
LOGGER : AT	

DEPTH BELOW EXISTING GRADE (ft)				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
INTERVAL (ft)			6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	RECOVERY (in)	#TYPE					
267.0	20.0	14.5	SS9SS	33-40-50/2 (90/8")	Clay (CL) 20.0-21.2' - dark reddish brown, mottled green, dry to moist, soft	Soil sampling completed at 15:20 on 7/31/06	
	22.0						
	22.5 22.7	1.8	SS10SS	50/1.5 (50/1.5")	Sandy Silt (ML) 22.5-22.7' - red, dry to moist, 20% sand Clay Seam 22.5-22.6' Begin Rock Coring at 22.7 ft bgs See the next sheet for the rock core log		
25 262.0							
30 257.0							
35 252.0							
40							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-14

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

WATER LEVEL: 10.4 PRESS		START: 15:00 10.0		END: 16:00 10.0		ELEVATION		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
25 262.0	R1NQ 4.8 ft 63%	0	2	<div>XXXXXX</div>	<div>XXXXXX</div>	Siltstone At 22.7' - dark reddish brown, mottled green, hard	Rock coring began at 16:02 on 7/31/06 R1: 16:02-16:18 on 7/31/2006 At 23.0': R-Scale = R3-R4 At 23.8': R-Scale = R3-R4	
			4					
			0					
			<div>XXXXXX</div>					
			<div>XXXXXX</div>					
30 257.0	R2NQ 5 ft 88%	0	1	<div>XXXXXX</div>	<div>XXXXXX</div>	27.5-32.5' - soft	R2: 16:30-17:08 At 29.0': R-Scale = R2 At 30.5': R-Scale = R2 At 31.0': R-Scale = R2	
			1					
			0					
			0					
			0					
35 252.0	R3NQ 5 ft 84%	70	0	<div>XXXXXX</div>	<div>XXXXXX</div>	31.9-32.0' - clay seam 32.5-35.0' - soft to hard	R3: 8:16-8:23 on 8/1/06 At 33.0': R-Scale = R2-R3 At 34.0': R-Scale = R2-R3 At 34.6': R-Scale = R2-R3	
			0					
			0					
			1					
			<div>XXXXXX</div>					
40 247.0	R4NQ 5 ft 100%	100	0	<div>XXXXXX</div>	<div>XXXXXX</div>	36.1-36.6' - clay seam 37.5-42.5' - dark reddish brown, green mottling, hard, 10%, <0.0002-0.0004' clasts 37.6-38.2' - large somewhat oval shaped, 3" long by 2" wide green clast, harder than matrix	R4: 8:38-8:51 At 37.8': R-Scale = R4 SC-1 collected 38.1-39.4 At 39.8': R-Scale = R4 At 41.0': R-Scale = R4 At 41.7': R-Scale = R4	
			0					
			0					
			0					
			0					
42.5				<div>XXXXXX</div>	<div>XXXXXX</div>			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-14

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
45 242.0	R5NQ 5 ft 100%	100	0	43.8' - Fracture, 85 deg, smooth, undulating, tight fit to tightly healed 44.6' - Fracture, 10 deg, smooth, undulating, fairly tight fit	x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-14

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687506.0 N, 2011204.9 E)

ELEVATION : 287.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

WATER LEVEL: 15.4 FGS		DISCONTINUITIES		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
65 222.0	R9NQ 5 ft 98%	98	2	63.0' - Fracture, 10 deg, smooth, planar, tight fit 63.3' - Fracture, 10 deg, smooth, planar, tight fit 63.6' - Contact between siltstone and sandstone	: : : : : x		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-15

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24" Split Spoon, and 140 lb. Automatic Hammer








ORIENTATION : Vertical

WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

LOGGER : EM/LH

WATER LEVELS:		START: 02/28/10:15		END: 04/06/12:17		LOGGERS: EMER	
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION		
266.6	0.0				Clay (CL) 0.0-1.2' - yellow, mottled dark red, moist, stiff, medium to high plasticity, rapid dilatancy		
	14.4	SS1SS	5-6-6-8 (12)				
	2.0						
	2.5				Lean Clay (CL) 2.5-3.8' - dark red & light gray, moist, stiff, medium to high plasticity, slow to rapid dilatancy		
	15.6	SS2SS	5-7-8-10 (15)				
4.5							
5							
261.6	5.0				Clay (CL) 5.0-6.4' - dark red, moist, hard, low to medium plasticity, slow to rapid dilatancy		
	16.8	SS3SS	9-15-23-30 (38)				
	7.0						
	7.5				Clay (CL) 7.5-9.0' - dark red, moist, hard, low to medium plasticity		
	18.0	SS4SS	17-22-33-44 (55)				
9.5							
10							
256.6	10.0				Clay (CL) 10.0-11.0' - dark red, mottled black & light olive brown, dry to moist, hard, low plasticity, rapid dilatancy		
	12.0	SS5SS	33-50/2 (50/2")				
	12.0						
	12.5				Clay (CL) 12.5-13.6' - dark red, mottled greenish gray, dry to moist, hard, low plasticity, slow to rapid dilatancy		
	13.2	SS6SS	10-50/5.5 (50/5.5")				
14.5							
15							
251.6	15.0	3.0	SS7SS		Clay (CL) 15.0-15.3' - dark red, dry to moist, hard, low plasticity, highly weathered, 15% fine sand		Soil sampling completed at 17:40 on 8/2/06
	15.3			50/3 (50/3")	Clay Seam 15.0' - very soft lower surface Begin Rock Coring at 15.4 ft bgs See the next sheet for the rock core log		
20							

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

LOGGER : EM/LH

WATER LEVELS		DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY		COMMENTS
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS				
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
20 246.6	15.4 16.0 0.6 ft 92%	R1NQ	0	1	19.1' - Fracture, horizontal and 5 deg, rough, undulating 20.7' - Fracture, horizontal and 5 deg, smooth, undulating 21.8' - Fracture, 60 deg, rough, undulating, black stains 21.9' - Fracture, 5 deg, smooth, undulating, 0.02 thick clay infilling 22.1' - Fracture, 45 deg, rough, undulating 23.0' - Fracture, 5 deg, smooth, undulating, 0.05 thick clay infilling 23.2' - Fracture, 45 deg, smooth, undulating, 0.03 thick clay infilling 23.7' - Fracture, horizontal and 5 deg, smooth, undulating 23.8' - Contact between siltstone and sandstone, 20 deg 24.1' - Fracture, 20 deg, smooth, planar 24.6' - Fracture, horizontal and 5 deg, rough, undulating 25.3' - Fracture, 5 deg, smooth, undulating 25.6' - Fracture, 5 deg, rough, undulating 28.9' - Fracture, horizontal and 5 deg, smooth, undulating 29.3' - Contact between siltstone and sandstone, 20 deg	Siltstone At 15.4' - dusky red, soft, 45-50% fine to medium sand 15.4-16.0' - highly weathered 16.0-17.9' - soft, laminated reddish black bedding 16.0-18.4' - slightly weathered 17.9-18.4' - clay seam Sandstone At 18.4' - light brownish gray, fine sand to coarse sand, <5% coarse sand in beds at 60 degree angles. overall fining upward sequence 18.4-21.0' - slightly weathered 20.6' - small pebbles (up to .003') for .2' thick band 20.8' - fine sand to medium sand, trace sand 21.0-23.8' - slightly weathered to moderately weathered, trace small pebbles, siltstone/clay clasts up to 0.1' size	Rock coring began at 08:58 on 8/3/06 R1: 08:58-09:04 R2: 09:15-09:28		
		1		At 17.3': R-Scale = R2					
		0							
		0		At 19.6': R-Scale = R2					
		0							
		1							
		1		At 21.0': R-Scale = R2 R3: 09:35-09:52 At 21.5': R-Scale = R2					
		2							
		3							
		2							
25 241.6				2		Siltstone 23.8-24.2' - gray, very soft, slightly weathered to moderately weathered, some fine sand to medium sand Sandstone At 24.2' - gray, very soft to soft, siltstone beds up to 0.6' thick 24.2-26.0' - slightly weathered to moderately weathered 26.0-28.0' - mottled reddish brown, laminated bedding, slightly weathered, reddish brown clasts 0.01' in size 28.0-29.3' - slightly weathered, coarser material	At 24.9': R-Scale = R2		
				2					
				0			R4: 10:32-10:52		
				0					
				1			At 27.9': R-Scale = R2		
				0					
				0					
				0			At 30.5': R-Scale = R2 R5: 11:00-11:15		
				1					
				0			At 32.9': R-Scale = R3		
35 231.6				0		33.5-36.0' - highly weathered			
				1					
				0					
				2			At 34.9': R-Scale = R1-R2		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-15

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

LOGGER : EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
40 226.6	36.0		2	x x			

338884

BORING NUMBER:

BGA-15

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688250.0 N, 2011676.9 E)

ELEVATION : 266.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

CORING EQUIPMENT AND METHOD : CME-750, NQ Double Barrel

ORIENTATION : Vertical

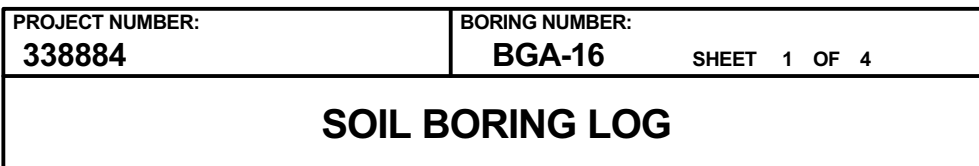
WATER LEVELS : ---

START : 8/2/06 15:10

END : 8/4/06 14:21

LOGGER : EM/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
60 206.6	56.0		0	57.7' - Contact between siltstone and sandstone 58.6' - Fracture, horizontal, rough, undulating 60.8' - Fracture, horizontal, rough, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	56.0-57.7' - fine sand	At 55.0': R-Scale = R3-R4 (performed at later date) R10: 13:33-13:52 At 59.6': R-Scale = R3-R4 (performed at later date) R11: 14:02-14:21 SC-1 collected 61.0-62.2' At 64.1': R-Scale = R3 (performed at later date) R-Scale performed during rock core logging	
		0						
	R10NQ 5 ft 103%	100	2					
			1					
			0					
			1					
	61.0		0			62.2-62.4' - trace medium to coarse grained sand 62.8-63.7' - trace medium to coarse grained sand		
	R11NQ 4.6 ft 100%	100	0					
			0					
			0					
0								
65.6		0						
65 201.6						Bottom of Boring at 65.6 ft bgs on 8/3/06 14:21		
70 196.6								
75 191.6								



LOGGER : EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-16

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687118.1 N, 2012814.9 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 7/17/06 09:50

END : 7/17/06 16:45

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
7.9	R1NQ 2.1 ft 100%	0	6	8.0-8.6' - Fracture zone (6), <5 deg and 40 deg, rough, undulating, black stains, higher angled fractures have slickensides	x x x	Siltstone At 7.9' - reddish brown, mottled light greenish gray and brownish yellow, very soft	Rock coring began at 10:40 on 7/17/06 R1: 10:40-10:50
10	10.0		1	8.9' - Fracture, 20 deg, rough, undulating, black stains, and slickensided	x x x	7.9-10.0' - highly weathered	
250.6			2	9.6' - Fracture, 40 deg, rough, undulating	x x x	8.6-9.2' - 0.01-0.04' thick white clasts	
			2	9.8' - Fracture, <5 deg, rough, undulating	x x x	10.0-15.0' - very soft to soft	R2: 10:58-11:12
			3	10.1' - Fracture, 10 deg, rough, undulating	x x x	10.0-15.2' - moderately weathered	
			0	10.8' - Fracture, <5 deg, rough, undulating	x x x	10.6-11.0' - ~50% very fine to fine grained sand; coarse sand size to fine gravel sized grains in siltstone and white clasts 0.01'-0.05' thick	SC-1 collected 12.2-12.45'
			2	11.1' - Fracture, <5 deg, rough, undulating	x x x		
			3	11.2' - Fracture, <5 deg, rough, undulating	x x x		
			0	11.8' - Fracture, <5 deg, rough, undulating	x x x		
15	15.0	72	2	13.0' - Fracture, <5 deg, rough, undulating, black stains	x x x	13.2-14.1' - soft to hard	
245.6			3	13.8' - Fracture, vertical, rough, undulating	x x x		
			0	14.1' - Fracture, 10 deg, smooth, undulating, black stains	x x x		
			10+	14.3' - Fracture, <5 deg, rough, undulating	x x x	15.0-20.0' - light greenish gray and reddish black mottling, black clasts 0.01-0.05' thick, or mottles - round to oblong	R3: 11:16-11:45
			1	14.7' - Fracture, 15 deg, rough, undulating, 0.1' thick clay infilling	x x x	15.0-18.5' - very soft	
			0	15.0-15.3' - Fracture zone, <5 deg, rough, undulating, 0.02 thick clay infilling, black stains	x x x	15.2-25.8' - fresh	
			0	16.8' - Fracture, <5 deg, rough, undulating	x x x		
			1	19.4' - Fracture, <5 deg, rough, undulating	x x x	18.5-20.0' - soft	
20	20.0	80	0		x x x	20.0-25.0' - light greenish gray and brownish yellow mottling, soft, mottling throughout core	R4: 11:50-12:10
240.6			0		x x x		
			0		x x x		
			1	22.5' - Fracture, <5 deg, rough, undulating	x x x		At 22.0': R-Scale = R3
			1	23.7' - Fracture, 60 deg, rough, undulating	x x x		
			0	23.8' - Joint, <0.01 thick clay infilling	x x x		
25	25.0	100	0		x x x	24.6' - white clasts	R5: 13:07-13:20
235.6			0		x x x	25.0-30.0' - light greenish gray and brownish yellow mottling, soft	
			0		x x x	25.8-29.3' - very soft, moderately weathered, white clasts up to 0.05'	At 26.0': R-Scale = R2
			10+		x x x	27.6-27.8' - clay seam, very soft	
					x x x		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-16

SHEET 3 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687118.1 N, 2012814.9 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 7/17/06 09:50

END : 7/17/06 16:45

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
30	98%		10+	27.9' - Fracture, 10 deg, rough, undulating, brownish yellow stains	x	28.0-28.3' - clay seam, very soft	
230.6			1	28.2' - Fracture, 5 deg, rough, undulating, black stains	x		
				28.4' - Fracture, 5 deg, rough, undulating	x	29.3-42.5' - fresh	
				29.3' - Fracture, 5 deg, rough, undulating, black and brownish yellow stains	x		
			0		x	30.0-35.0' - dark reddish brown, mottled yellowish brown, reddish black, and light greenish gray	R6: 13:25-13:42
			0		x	30.0-32.0' - 10% fine to medium sand	
			0		x		
			0		x	32.0-32.9' - soft to hard, subrounded, ~30-40% fine to medium grained sand; 10% coarse	At 32.8': R-Scale = R3
			0		x		
35			1	35.7' - Fracture, 5 deg, smooth, undulating	x	35.0-40.0' - mottled yellowish brown, reddish black, light greenish gray, soft to hard	R7: 13:50-14:13
225.6			1	36.6' - Fracture, 5 deg, smooth, undulating	x	35.0-35.2' - ~30-40% fine to medium sand	Drillers Remark: Final 0.3' slipped out, unable to retrieve
			0		x		At 37.2': R-Scale = R3
			1	38.1' - Fracture, 5 deg, smooth, undulating	x	38.1-38.7' - white to pink clay clasts up to 0.04' thick.	
			0		x		
40			0		x		R8: 14:20-14:35
220.6			3	41.1' - Fracture, <5 deg, smooth, undulating	x		
			1	41.4' - Fracture, vertical, rough, undulating	x		At 41.7': R-Scale = R2
			1	41.5' - Fracture, <5 deg, rough, undulating, 0.03' thick clay infilling	x	42.5-44.9' - moderately weathered, clay seams at bottom	At 42.2': R-Scale = R3
			0		x	42.8-44.9' - soft, white to pink clay clasts 0.01-0.04' thick	
			10+	43.4' - Fracture, <5 deg, smooth, undulating	x	43.0-45.0' - 50-60% black mottling	
				44.1-44.7' - Fracture zone, 0.01-0.02' thick clay infilling, highly fractured (crumbled)	x		
45			1	45.3' - Fracture, 15 deg, rough, undulating, 0.01' thick clay infilling, black stains	x	44.9-62.3' - fresh	R9: 14:40-15:04
215.6			0		x	44.9-49.9' - dark reddish brown, mottled yellowish brown, reddish black, and light greenish gray	SC-2 collected
			0		x	44.9-46.1' - 50-75% reddish black mottling; large white clasts up to 0.1' thick	45.3-45.8'
			0		x		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-16

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687118.1 N, 2012814.9 E)

ELEVATION : 260.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : ---

START : 7/17/06 09:50

END : 7/17/06 16:45

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
	100%		0		x x x	46.1-47.2' - soft to hard, subrounded to subangular, up to 20% fine to medium sand; trace coarse sand; grades into very fine grained siltstone	
50	50.0		0		x x x		
210.6			0		x x x	49.9-55.0' - dark reddish brown, mottled reddish black and greenish gray, soft	R10: 15:10-15:24
			0		x x x	50.1' - white clay clasts 0.02' thick	
	R10NQ 5 ft 100%	100	0		x x x	51.8-53.0' - coarse sand sized clast (white clay)	
			0		x x x		At 53.1': R-Scale = R2
55	55.0		0		x x x		
205.6			0		x x x	55.0-60.0' - dark reddish brown, mottled reddish black, greenish gray, and yellowish brown, soft	R11: 15:40-16:05
			0		x x x	56.3-60.0' - soft to hard	
	R11NQ 5 ft 100%	100	0		x x x	56.6-58.5' - 25% fine to medium sand	
			1	58.8' - Fracture, 10 deg, rough, undulating	x x x	56.6-56.9' - trace coarse sand	At 57.9': R-Scale = R2
60	60.0		0		x x x		
200.6			0		x x x	60.0-65.0' - dark reddish brown, mottled reddish black and greenish gray, 45-50% fine to medium sand	R12: 16:11-16:35 SC-3 collected 60.0-60.8'
			0		x x x	60.0-60.6' - 20-25% fine to medium sand	
	R12NQ 4.7 ft 100%	100	0		x x x		At 62.1': R-Scale = R2
			0		x x x		
65	64.7		0		x x x		R-Scale performed after drilling on stored samples
195.6						Bottom of Boring at 64.7 ft bgs on 7/17/06 16:45	



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-17

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE		6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		
261.6	0.0	24.0	SS1SS	3-4-8-10 (12)	Clay (CL) 0.0-2.0' - reddish brown, mottled black, dry to moist, stiff, low plasticity, medium dilatancy, trace wood and roots (at top 0.2')		
	2.0						
	2.5	21.6	SS2SS	5-6-12-14 (18)	Clay (CL) 2.5-4.3' - reddish brown, mottled black, dry, stiff, low plasticity, medium dilatancy 2.9-3.0' - reddish yellow, very stiff, fat clay pockets, nonlinear or horizontal black material (laminated) along fractures within clay at 60 degrees 3.3-3.5' - reddish yellow, very stiff, fat clay pockets, nonlinear or horizontal black material (laminated) along fractures within clay at 60 degrees		
5	4.5						
256.6	5.0	20.4	SS3SS	10-20-22-25 (42)	Clay (CL) 5.0-5.3' - reddish brown, mottled strong brown, moist, hard, low plasticity, medium dilatancy		
	7.0				Clay (CL) 5.3-6.0' - pale yellow, mottled black, moist, hard		
	7.5	16.8	SS4SS	5-7-10-12 (17)	Clay (CL) 6.0-6.8' - dark reddish brown, mottled black, moist, hard, black material is in chunks (sand to fine gravel sized)		
	9.5				Clay (CL) 7.5-7.9' - reddish brown, mottled black, very stiff, low plasticity, medium dilatancy, fat clay pocket, vertical at 7.6-6.9'		
10	10.0	22.8	SS5SS	4-6-10-12 (16)	Clay (CL) 7.9-8.1' - very dark gray, mottled yellowish red, moist, very stiff		
251.6	12.0				Clay (CL) 8.1-8.5' - pale yellow, mottled black, moist, hard		
	12.5	20.4	SS6SS	10-12-15-18 (27)	Clay (CL) 8.5-8.9' - very dark gray, mottled yellowish red and light gray, moist, very stiff		
	14.5				Clay (CL) 10.0-11.9' - light yellowish brown, mottled black (in fractures) and reddish yellow, moist, very stiff 11.3-11.9' - reddish yellow, clay pockets		
15	15.0				Clay (CL) 12.5-13.4' - light yellowish brown, mottled black (in fractures) and reddish yellow, moist, very stiff, darker at the top		
246.6	17.0	23.4	SS7SS	2-2-4-12 (6)	Clay (CL) 13.4-14.2' - olive yellow, yellow, black and gray, moist, very stiff, trace medium to coarse sand		
	17.5				Clay (CL) 15.0-17.0' - olive yellow, yellow, black and gray, moist, 24, trace medium to coarse sand		
	19.5	0.0	SS8SS	10-12-15-18 (27)	15.9' - coarse gravel sized piece of igneous rock from dike, discolored dark gray because of weathering		
20					Clay (CL) 17.5' - lost sample		Driller Remark: Didn't have catcher, lost sample.



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-17

SHEET 2 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		RECOVERY (in)		#TYPE		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG		COMMENTS	
								6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
241.6															
22.5		24.0		SS9SS		3-4-6-6 (10)				Clay (CL) 22.5-24.5' - olive yellow, yellow, black and gray, moist, stiff, at 22.5-23.5' more clay than rest of same material (<50%), trace medium to coarse sand					
24.5															
25															
236.6															
27.5		9.6		SS10SS		19-50/6 (50/6")				Clay (CL) 27.5-28.3' - dusky red, mottled black and pale yellow, moist, hard					
29.5															
30															
231.6															
32.5		3.0		SS11SS		50/3 (50/3")				Clay (CL) 32.5-32.8' - dusky red, moist, hard, very fine sand to gravel sized pieces of ground up siltstone. Bake zone Begin Rock Coring at 32.8 ft bgs See the next sheet for the rock core log					
32.8															
35															
226.6															
40															

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
35 226.6	R1NQ 4.7 ft 101%	41	4	32.9' - Fracture, 45 deg, rough, planar 32.9' - Fracture, 45 deg, rough, planar 33.2' - Fracture, 20 deg, rough, planar, dark gold/orange (hematite) and black stains 33.8-34.0' - Fracture, 70 deg, rough, undulating 34.3-34.8' - Fracture, vertical, rough, undulating 34.8-35.0' - Fracture zone, rough, undulating 35.5-35.8' - Fracture zone, rough, undulating, some black stains 36.2-36.5' - Fracture zone, rough, undulating, some black and hematite - dark gold/orange stains, sediment infilling 36.8-37.0' - Fracture zone, rough, undulating, hematite stains (dark gold/orange) 37.6-37.9' - Fracture, 60 deg, rough, undulating, linear features oriented up and down in fracture	Partially Metamorphosed Siltstone At 32.8' - dark reddish gray, hard 32.8-37.5' - slightly weathered	Rock coring began at 15:23 on 7/24/06 R1: 15:23-15:38 on 07/24/06 At 32.5-37.5': R-Scale = R5	
			2				
			10+				
			10+				
			10+				
37.5	R2NQ 1.5 ft 100%	80	1	37.5-39.0' - fresh	37.5-39.0' - fresh	R2: 08:58-09:03 on 07/25/06 At 37.5-39.0': R-Scale = R5	
39.0		0					
40 221.6	R3NQ 5.2 ft 96%	0	4	39.1' - Fracture, horizontal, rough, stepped, dark gold/orange stains 39.4' - Fracture, horizontal, smooth, stepped, linear features 39.6' - Fracture, 10 deg, rough, stepped, dark gold/orange stains 39.6-40.1' - Fracture, 80 deg, rough, undulating 40.1' - Fracture, 30 deg, rough, undulating 40.3-40.8' - Fracture zone, many different fractures deg, rough, undulating, black stains, slickensided (in two opposing directions, 55 deg and vertical 40.8-41.3' - Fracture, vertical, rough, undulating, black, yellow and dark gold/orange stains (40.75-40.9'), slickensided at 40.75-40.85' 41.3-41.6' - Fractures (3), horizontal and 45 deg, rough, undulating, black and dark gold/orange stains, 45, horizontal = slickensided, rough 41.6' - Fracture, 35 deg, rough, planar, black stains, possible foliation 41.8-41.9' - Fractures (2), 50 deg and horizontal, rough, undulating, black and dark gold/orange stains, white material in patches 41.9' - Fracture, 45 deg, rough, stepped, black stains, stepped/undulating, possible foliations 42.2-44.2' - Fracture zone, 10 deg, rough, undulating, black stains, rough and smooth, undulating, planar, and stepped, *slickensided at 43.8-44.2 44.2-45.3' - Fracture, smooth, stepped, dark gold/orange stains (iron oxide), microfractures have white material (hard) in them, tightly healed (most of core run) 44.7' - Fracture, horizontal, rough, undulating, black and dark gold/orange stains in one spot, foliated	Partially Metamorphosed Siltstone At 39.0' - reddish black, hard, linear features may be weak foliations 39.0-49.2' - slightly weathered 41.0-44.2' - trace fine to medium grained sand sized white crystals, vugs (<0.01-0.06' diameter) 41.2-41.5' - gravel sized white hard material in rock 44.2-44.6' - mottled gray and yellow orange 44.2-49.2' - gravel to coarse sand sized metamorphosed white clasts; foliated in some areas, linear features throughout. 44.2-83.4' - bluish black 44.2-45.0' - vugs (0.01-0.03' thick) and greenish gray inclusion material is soft in inclusions; vugs have yellowish silt in them 46.6-48.6' - Coarse sand sized white clasts in linear (vertical) feature	R3: 09:10-09:25 At 39.0-44.2': R-Scale = R5+	
			10+				
			10+				
			10+				
			10+				
44.2							
45 216.6	R4NQ 5 ft 100%	18	10+		44.2-49.2' - gravel to coarse sand sized metamorphosed white clasts; foliated in some areas, linear features throughout. 44.2-83.4' - bluish black 44.2-45.0' - vugs (0.01-0.03' thick) and greenish gray inclusion material is soft in inclusions; vugs have yellowish silt in them 46.6-48.6' - Coarse sand sized white clasts in linear (vertical) feature	R4: 09:38-10:10 Assuming full recovery, rock core is fractured so much that actually measuring it is impossible At 44.2-49.2': R-Scale = R5+	
			10+				
			10+				
			10+				
			10+				
49.2							
50 211.6	R5NQ 5 ft 100%	15	10+	49.2-54.2' - mottled weak red, gravel and coarse sized white clasts with vertical linear features throughout; foliated, almost slate 49.2-57.7' - fresh	49.2-54.2' - mottled weak red, gravel and coarse sized white clasts with vertical linear features throughout; foliated, almost slate 49.2-57.7' - fresh	R5: 10:19-10:40	
			10+				
			10+				



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-17

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

ELEVATION : 261.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

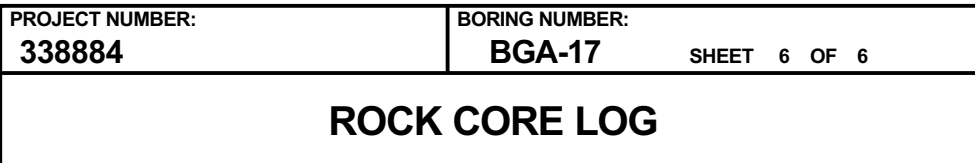
WATER LEVELS : 9.7 ft bgs

START : 7/24/06 10:59

END : 7/26/06 08:50

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
55 206.6	R6NQ 5 ft 100%	28	10+	45.2' - Fracture, 10 deg, rough, undulating, no stains, yellow, dark gold/orange and black stains, few foliations	x	54.2-56.4' - gravel sized white clasts	R6: 11:15-11:45 Driller Remark: Keep having to stop because of circulation problems. At 54.2-59.2': R-Scale = R5+
			10+	45.5' - Fracture, horizontal, smooth, stepped, yellow and dark gold/orange stains, foliated	x	54.2-57.5' - coarse sand sized white clasts in linear (vertical) feature	
			10+	45.7-46.1' - Fracture zone, rough, undulating, dark gold/orange, lime, yellow and black stains, undulating and stepped, gray, foliations	x	54.2-59.2' - gravel sized white clasts	
			3	46.1-46.5' - Fracture, vertical, rough, undulating, black, yellow and orange/gold stains	x	56.4-59.2' - very fine sand sized vugs appearing as darker spots	
			10+	46.5' - Fracture, rough, undulating, black and orange/gold stains, parabolic shaped	x	57.0' - trace weak red mottles	
			6	46.9' - Fracture, horizontal and vertical, rough, planar, greenish gray and black stains, foliations	x	Partially Metamorphosed Siltstone	
60 201.6	R7NQ 5 ft 84%	44	10+	47.3-48.0' - Fracture zone, rough, undulating, hard white infilling, black stains, foliations	x	At 57.7' - bluish black, very hard, fresh, no foliations or linear features present	At 57.5' water turns gray from brown Driller's Remark: Rock is getting harder with depth R7: 14:04-14:15 At 59.2-64.2': R-Scale = R5 Driller's Remark: At 61.6' bgs rod dropped and bit kicked out, began losing 8-10 gallons a minute. Lost 0.3' out of the end of the core barrel R8: 14:22-14:31 Drilling mud is red now At 64.2-69.2': R-Scale = R5 R9: 14:37-14:47
			10+	48.0-48.3' - Fracture, vertical, rough, undulating, hard greenish gray to white infilling, black, greenish gray and red stains	x	59.2-83.4' - vugs present	
			3	48.3' - Fracture, 10 deg, rough, undulating, hard white infilling, black stains	x		
			4	48.6' - Fracture, 35 deg, rough, undulating, hard white infilling	x		
			2	48.9' - Fracture, 45 deg, rough, undulating, hard white infilling	x		
			2	49.4-50.1' - Fracture zone, rough to planar, undulating to smooth, white, hard infilling, weak red stains, foliated	x		
65 196.6	R8NQ 5 ft 93%	85	2	50.9' - Fracture, horizontal, rough, stepped, hard white infilling	x		
			1	51.7' - Fracture, horizontal, rough, stepped, hard white infilling	x		
			1	51.9' - Fracture, horizontal, rough, undulating, hard white infilling, foliations	x		
			1	52.1' - Fracture, 45 deg and 45 deg, rough, planar, hard white infilling, weak red stains, opposing angles, foliations	x		
			3	52.4-53.8' - Fracture zone, rough, undulating, hard white infilling, rough and smooth, undulating and planar and stepped, foliations and linear features	x		
			3	53.8-54.0' - Fracture, vertical, rough, undulating, hard white infilling	x		
70 191.6	R9NQ 5 ft 100%	91	1	54.0' - Fracture, horizontal, rough, undulating, hard white infilling	x		
			1	54.2-54.5' - Fracture, vertical, rough, undulating, hard white infilling, foliated surface	x		
			3	54.5' - Fracture, 20 deg, smooth, stepped, hard white infilling, foliations	x		
			1	54.9-56.3' - microfractures, rough, undulating, tightly healed to loosely healed, white, hard infilling	x		
			1	54.9' - Fracture, 15 deg, rough, planar, hard white infilling, foliations	x		
			1	55.7-56.4' - Fracture, vertical, rough, undulating, hard white infilling, foliations and other linear features at 45 deg	x		
				56.4' - Fracture, horizontal, smooth, undulating, hard white infilling, foliations	x		



LOCATION : (NAD 27) (687204.0 N, 2012991.7 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-18

SHEET 1 OF 4

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			
				6"-6"-6"-6" (N)			
263.5	0.0	15.0	SS1SS	9-7-7-8 (14)	Topsoil 0.0-0.2' - grass, gravel Silty Gravel With Sand (GM) 0.2-0.4' - light brown sand, light gray gravel, moist, hard, loose, 60% fine - coarse angular gravel, fine to medium sand, 15-20% low plastic fines Clay (CL) 0.4-1.3' - reddish brown, some purple and white mottling, moist, stiff, low to medium plasticity, slow to rapid dilatancy, 1 thick irregular sandy lens, fine to medium sand Silt With Sand To Clay (CL) 2.5-3.5' - reddish brown, scattered yellow mottling in last few inches in irregular laminations, moist, stiff, low plasticity, rapid dilatancy, very fine to fine sand, content varies throughout Lean Clay (CL) 5.0-5.5' - reddish brown, mottled orange and white, moist, stiff, low to medium plasticity, slow dilatancy, up to 15% very fine to fine sand, friable Clay (CL) 5.5-6.3' - reddish brown, greenish white mottling, dry to moist, very hard, low plasticity, some bedrock pieces, friable Lean Clay (CL) 7.5-8.7' - reddish brown, mottled weak red, green, olive yellow, moist, very hard, medium to high plasticity, no to slow dilatancy, very friable		
5							
258.5	5.0	16.0	SS3SS	7-21-25-36 (46)			
	7.0						
	7.5	14.0	SS4SS	32-35-45-50/5 (80)			
	9.5						
10							
253.5	10.0	0.0	SS5SS	18-15-17-19 (32)	No Recovery 10.0-12.0'		
	12.0						
	12.5	3.0	SS6SS	50/3 (50/3")	Clay (CL) 12.5-12.8' - red, mottled purple and white, moist, very hard, low to medium plasticity, slow dilatancy Begin Rock Coring at 12.8 ft bgs See the next sheet for the rock core log		Soil sampling completed at 09:50 on 7/25/06 Drillers Remark: hard at 12.3' bgs
	12.8						
15							
248.5							



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-18

SHEET 2 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel


ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
15 248.5	12.8 R1NQ 2.6 ft 98%	86	0		Siltstone 12.8-16.0' - dark reddish brown, mottled purple, green and yellow, very soft 12.8-14.4' - fine grained with up to 15% sand or coarse silt 12.8-15.4' - moderately weathered 14.4-14.9' - clay seam, same color as rock 14.9-16.0' - very soft to soft, fine grained with up to 20-25% very fine to fine sand/coarse silt, 15.4-16.0' - fresh Sandstone At 16.0' - dark reddish brown, soft, angular, poorly sorted, 70-80% fine to coarse sand to fine gravel 16.0-20.4' - fresh 16.3' - mottled faint green, black, and yellow, very fine sand to fine sand, 30% silt, trace scattered coarser grains to 0.02 17.2' - becoming coarser with depth, picking up to 10-15% medium grained sand to .1 18.1' - soft to hard, fine sand to coarse sand, subrounded to subangular, well sorted, multicolored sand to 0.2, trace silt 20.4-20.7' - moderately weathered 20.4-20.7' - clay seam, very soft Siltstone At 20.7' - reddish brown, mottled black and green, very soft 20.7-25.4' - moderately weathered 22.5' - green mottling, very soft to soft, subrounded to subangular, 10-15% very fine sand / coarse silt and picking up medium sand, white and black 22.8' - less medium sand (<5%), trace rounded black clasts; becoming finer grained with depth 25.4-27.0' - dark reddish gray, mottled gray, purple, very soft, highly weathered, very fine grained, 20% fine to coarse rounded to subrounded gravel scattered throughout 27.0-27.4' - mottled dusky red, becomes a little harder 27.0-30.4' - moderately weathered 27.4-27.7' - clay seam and very soft bedrock 27.4-27.7' - clay seam, very weak bedrock 27.7-30.4' - reddish brown, mottled green and black, very fine to fine grained 27.7-28.6' - soft, becoming coarser with depth, fine grained by 28.8' with 15-20% very fine sand	Rock coring began at 10:00 on 7/25/06 R1: 10:21-10:28 on 07/25/06 At 13.8': R-Scale = R2 At 14.4': PP: 3.75 tsf	
	15.4		10+			At 15.2': R-Scale = R2 R2: 12:38-12:48	
	20 243.5		R2NQ 5 ft 83%			77	3
1							
0				At 18.8': R-Scale = R2			
25 238.5	20.4	70	2	19.5' - Fracture, horizontal, rough, undulating 19.6' - Fracture, horizontal, rough, undulating, 0.05' relief 19.6-20.4' - presume clay layer that was washed out 20.7-20.9' - Fractures (3), horizontal, smooth, undulating, 0.05' relief 21.2-21.4' - Fracture zone, horizontal, bedrock fragments	R3: 13:00-13:08 At 20.4': PP: 1.5 tsf Drillers Remark: Core from 20.4-22.4' very chewed up - due to water plugging up in hole At 22.6': R-Scale = R0-R1 At 23.3': R-Scale = R1-R2		
			10+	21.5' - Fracture, horizontal, smooth, planar, 0.5mm clay infilling 21.7' - Fracture, horizontal, smooth, planar 21.7' - Fracture, 40 deg, rough, stepped 21.9' - Fracture, horizontal, smooth, planar 22.4' - Fracture, horizontal, rough, undulating, black staining over ~30% of surface, 0.01' relief 22.5-25.4' - microfractures opening up as core dries		At 24.7': R-Scale = R1-R2	
			4			R4: 14:00-14:10	
30 233.5	R3NQ 5 ft 100%	52	0	23.8' - Fracture, 15 deg, rough, undulating, 0.05' relief 24.3' - Fracture, 10 deg, rough, undulating, 0.02' relief 25.4' - Fracture, horizontal, rough, planar, white and yellow staining over 50% of area, black spots <0.05' mm over entire face, 0.005' relief	At 27.4': PP: 1.25 tsf		
			2	27.4' - Fracture, horizontal, smooth, undulating 27.7' - Fracture, horizontal, rough, undulating, 0.005' relief, a few black stains on face 28.7-28.8' - Clay seam, horizontal, smooth, undulating	At 28.2': R-Scale = R1-R2		
			1	29.8' - Fracture, horizontal, smooth, undulating, 0.005' relief	At 29.3': R-Scale = R3-R4		
	R4NQ 5 ft 92%	52	1	31.1' - Fracture, 5 deg, rough, undulating	R5: 14:17-14:32 At 30.8': R-Scale = R2		
			2	31.6' - Fracture, 2 deg, smooth, undulating, 0.01' relief			
			1				
	R5NQ				At 32.3': R-Scale = R1		

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-18

SHEET 4 OF 4

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686565.5 N, 2012711.3 E)

ELEVATION : 263.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.4 ft bgs

START : 7/25/06 08:20

END : 7/26/06 09:38

LOGGER : JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
55 208.5	5 ft 101%	90	0	52.3-52.4' - Fracture, rough, undulating, circular break, 1/4 deep in to core, complete fracture	x	52.1-53.2' - soft to hard, increasing sand content with depth, up to 50-60% very fine to fine grained	At 52.7": R-Scale = R3-R4
			1	53.7-53.9' - Fracture, 45 deg, smooth, undulating	x	53.2-54.0' - 40% very fine to fine grained sand	
			0		x	53.8-53.9' - up to 50% green mottling around fracture	
			0		x	54.0-55.4' - green and purple mottling, 5-10% very fine to fine sand/coarse silt, est. 10% small up to 1/4 white clasts, harder than surrounding material	R10: No time recorded
			0		x	56.2-56.8' - scattered medium sand, 10-15% coarse sand to fine gravel	At 56.6": R-Scale = R3-R4
	R10NQ 5 ft 101%	100	0		x	56.8-57.2' - 40% fine to coarse sand	At 57.7": R-Scale = R3
			1		x	57.2-58.1' - trace green mottles in streaks to 1/2 in length, trace medium grained sand	At 58.5": R-Scale = R3-R4
60 203.5			0	59.3' - Fracture, 10 deg, rough, undulating, 0.03' relief	x	57.4-57.8' - sandy lens, up to 50% very fine to fine sand	SC-1 collected 59.3-60.4'
			1	60.4-60.8' - Fracture, 70 deg, rough, undulating, 0.02' relief, tight fit	x	58.1-58.8' - green mottling, 30-40% fine to coarse sand	
			0		x	58.8-60.4' - purple mottles to 1/2, green mottles (15%) in streaks with some white mottling, white clasts throughout, varies from 5 to 30%	R11: No time recorded
			1		x	59.3-59.5' - large, irregular shaped white clast	At 61.2": R-Scale = R2
	R11NQ 5 ft 94%	94	1	63.0-63.5' - Fracture, 70 deg, smooth, undulating, tight fit	x	60.4-65.4' - weak red, elongated green mottles (20-25%) up to 3 in length, trace purple mottles to 1, soft, very fine to fine sand, 5-10% sand	At 62.0": R-Scale = R2
			0		x	63.6-65.4' - trace green mottles, soft to hard, increasing sand content, up to 50%	At 64.4": R-Scale = R3
65 198.5			0		x	63.8-64.2' - trace small white clasts	First water level = 8.4' bgs taken 7/26/06 at 12:15; second water level = 8.1' bgs taken 7/27/06 at 10:35
					x		R-Scale performed during rock core logging
					x	Bottom of Boring at 65.4 ft bgs on 7/26/06 09:38	
70 193.5							



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-1

SHEET 1 OF 5

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 and 2-7/8 Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer




ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	PP (TSF)	COMMENTS
	INTERVAL (ft)	RECOVERY (in)						
		#	TYPE					
260.4	0.0	15.6	SS1SS	21-15-6-5 (21)	Asphalt 0.0-0.3' - asphalt mixed with fines Gravel With Sand (GM) 0.3-0.9' - gray, dry, loose, looks like a CA-6 fill Clay (CL) 0.9-1.2' - dark reddish brown, dry to moist, very stiff Silty Sand (SM) 1.2-1.3' - pale brown, dry to moist, medium dense, <5% clay Sandy Clay (CL) 2.5-3.4' - light greenish gray and very pale brown, moist, very stiff, little silt Silty Sand (SM) 3.4-4.5' - pale brown, dry to moist, medium dense, little silt, <5% clay Silty Sand (SM) 5.0-6.4' - very pale brown, light yellowish brown, and black, moist, very dense, very fine to coarse grained, laminations in black, well to poorly sorted, subangular to subrounded		3.5	PT-1 collected 2.0-4.0'
255.4	5.0	16.8	SS3SS	12-27-32-42 (59)	Gravelly Sand (SW-SM) 7.5-8.0' - pale brown, moist, dense, very fine grained, subangular to subrounded, little silt, poorly sorted Fine To Coarse Sand (SP-SM) 8.0-8.5' - light gray, moist, very dense, little silt, laminated Silt (ML) 8.5-9.4' - light gray and light brownish gray, moist, very dense, rapid dilatancy, laminations Silt (ML) 10.0-10.9' - light gray, moist, very dense, very fine to fine grained, trace to little very fine to fine sand, trace clay at 10.0-10.1' bgs			PT-2 collected 6.0-8.0' Offset: 19.9' S54W of BCTA-1 Lab Result USCS: SC
250.4	10.0	10.8	SS5SS	28-50/4 (50/4")	Clay (CL) 12.5-14.1' - reddish brown, mottled reddish black and light greenish gray, moist, hard, laminated			Soil sampling completed at 09:06 on 7/19/06
245.4	15.5				Begin Rock Coring at 15.5 ft bgs See the next sheet for the rock core log			
20								



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-1

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
20 240.4	15.5 R1NQ 1.5 ft 60%	0	3	15.8' - Fracture, 45 deg, smooth, planar 16.1' - Fracture, horizontal, smooth, planar	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Siltstone At 15.5' - dark reddish brown, mottled reddish black and greenish gray, very soft 15.7' - clay seam, very soft to medium stiff, friable material 15.5-17.0' - highly weathered 17.0-24.0' - slightly weathered	Rock coring began at 10:18 on 7/19/06 R1: 10:18-10:23 on 7/19/06 At 15.5-15.7': R-Scale = R0 R2: 10:30-10:34		
	17.0	87	0	19.0-19.1' - Fracture, 45 deg, rough, undulating, greenish gray and reddish black mottles in fracture 19.5' - Fracture, horizontal, rough, planar 19.7' - Fracture, horizontal, rough, planar 19.9' - Fracture, horizontal, rough, planar 20.1' - Fracture, horizontal, rough 20.3' - Fracture, horizontal, rough, planar 20.5' - Fracture, horizontal, rough, planar 20.7' - Fracture, horizontal, rough, undulating 20.9' - Fracture, 20 deg, rough, planar, black stains 21.3' - Fracture, 65 deg, rough, undulating 21.6' - Fracture, 10 deg, rough, planar 21.8' - Fracture, horizontal and 20 deg, rough, undulating 22.2' - Fracture, horizontal and vertical, rough, planar 22.9' - Fracture, horizontal, rough, planar 25.0' - Fracture, horizontal, rough, undulating 25.1' - Fracture, horizontal, rough, undulating 25.1' - Fracture, horizontal, rough, undulating 25.2' - Fracture, horizontal, rough, undulating 25.6-25.8' - Fracture, 65 deg, rough, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	19.3-24.3' - trace very fine sand, some laminated bedding	At 17.8': R-Scale = R1		
			0						
	19.3		1						
	25 235.4	R3NQ 5 ft 98%	56	5	29.4' - Fracture, horizontal, smooth, undulating 29.6' - Fracture, horizontal, smooth 29.7' - Fracture, horizontal, smooth, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	22.4-22.5' - 0.01-0.05' thick vugs 22.5-24.7' - gravel sized white clasts	R3: 11:18-11:27	
				4					
				3					
				1					
				0					
				0					
				0					
		24.3			24.0-85.3' - fresh 24.3-29.3' - very soft to soft	R4: 11:33-11:45			
		R4NQ 5 ft 103%	97	4	32.0-34.3' - coarse sand sized white clasts		At 26.3': R-Scale = R2-R3		
				1					
0									
0									
30 230.4	R5NQ 5 ft 97%	89	0	34.3-35.3' - 0-40% very fine sand	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	R5: 11:51-12:02			
			0						
			0						
			0						
			0						
34.3				R6: 12:07-12:15					
35 225.4									



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-1

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40 220.4	R6NQ 5 ft 101%	100	0		x	37.5-38.5' - coarse sand sized white clasts	At 35.6': R-Scale = R2
			0		x		
			0		x		
			0		x		
45 215.4	R7NQ 5 ft 95%	76	0		x	41.1-42.6' - trace <0.01 to 0.05' thick vugs	R7: 14:02-14:11 SC-1 collected 40.3-41.3'
			10+	41.8-42.1' - Fracture zone, rough, undulating	x		
			1	42.5' - Fracture, horizontal, rough, planar	x		
			6	43.4' - Fracture, horizontal, rough, planar 43.5' - Fracture, horizontal, rough, planar 43.7' - Fracture, horizontal, rough, planar 43.8' - Fracture, horizontal, rough, planar 44.3' - Fracture, horizontal, rough, planar 44.5' - Fracture, horizontal, rough, planar 44.6' - Fracture, horizontal, rough, planar 45.0' - Fracture, horizontal, rough, planar 45.1' - Fracture, horizontal, rough, planar 45.2-45.4' - Fracture zone, horizontal, rough, planar 45.7' - Fracture, horizontal, rough, planar 46.5' - Fracture, horizontal, rough, planar 47.9' - Fracture, horizontal, rough, planar 48.3' - Fracture, horizontal, rough, planar 48.7' - Fracture, horizontal, rough, planar 48.9' - Fracture, horizontal, rough, planar 49.4' - Fracture, horizontal, rough, planar	x		
50 210.4	R8NQ 5 ft 94%	67	10+		x	43.4-44.3' - very soft, laminated bedding 43.8-44.3' - siltstone is almost black 44.3-67.7' - soft	At 42.8': R-Scale = R2-R3 R8: 14:16-14:25
			3		x		
			1		x		
			0		x		
55 205.4	R9NQ 5 ft 94%	92	3		x	50.3' - Fracture, rough, planar 50.3' - Fracture, rough, planar 51.5' - Fracture, horizontal, smooth, undulating	At 47.1': R-Scale = R3 R9: 14:33-14:41
			0		x		
			1		x		
			0		x		
			0		x		At 51.7': R-Scale = R2
			1	54.4' - Fracture, horizontal, rough, planar	x		
					x		R10: 08:03-08:18 on 7/20/06



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-1

SHEET 4 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)

ELEVATION : 260.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 7/18/06 15:25

END : 7/20/06 10:15

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
60 200.4	R10NQ 5 ft 92%	90	0	56.8' - Fracture, 45 deg, rough, undulating	XXXXXX XXXXXX			



PROJECT NUMBER: <div style="border: 1px solid black; padding: 2px; font-weight: bold;">338884</div>	BORING NUMBER: <div style="border: 1px solid black; padding: 2px; font-weight: bold;">BCTA-1</div>
SHEET 5 OF 5	
<div style="border: 1px solid black; padding: 5px; font-size: 1.2em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687669.0 N, 2013139.4 E)
ELEVATION : 260.4 ft MSL (NGVD 29)	DRILLING CONTRACTOR : D. Hedges, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 5.2 ft bgs	START : 7/18/06 15:25	END : 7/20/06 10:15	LOGGER : LH
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WATER LEVEL: 5.2' bgs		START: 7/20/06 10:15		END: 7/20/06 10:15		LOGGERS: LHM	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
80 180.4	R14NQ 5 ft 100%	100	0	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-2

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer

ORIENTATION : Vertical

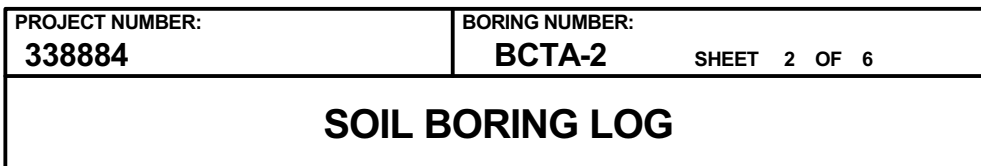
WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
	RECOVERY (in)	#TYPE		6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
261.0					Asphalt 0.0-0.3'			
	0.8				Base Gravel 0.3-0.8' - fill			
		16.8	SS1SS	2-3-5-7 (8)	Clay (CL) 0.8-2.2' - reddish brown, mottled yellow and light gray, moist, stiff, slow dilatancy, 10-15% fine to coarse sand, subrounded to subangular, pockets of fine to medium grained sand		PT-1 collected 2.0-4.0'	
	2.8							
	3.3				Sandy Clay & Clay (CL) 3.3-4.5' - olive yellow, mottled light gray and reddish brown, moist, stiff, up to 30% fine to medium sand			
5		21.6	SS2SS	5-5-7-10 (12)			3.0	
256.0	5.3				Clay (CL) 4.5-5.1' - reddish brown, mottled yellow and light gray, moist, stiff, slow dilatancy, 10-15% fine to coarse sand, subrounded to subangular, pockets of fine to medium grained sand			
	5.8				Clay (CL) 5.8-6.5' - reddish brown, mottled yellow and light gray, moist, very stiff, low to medium plasticity, slow dilatancy, 10-15% fine to coarse sand, subrounded to subangular grains, pockets of fine to medium grained sand, trace coarse sand			
		20.4	SS3SS	5-8-11-11 (19)				
	7.8							
	8.3				Lean Clay (CL) 8.3-9.8' - reddish brown and olive yellow, moist, stiff, medium plasticity, slow dilatancy, alternating laminated color change with top reddish brown becoming olive yellow, 10% fine to medium grained sand		1.5-2.5	PT-2 collected 8.0-10.0' Offset: 12.5' S38E of BCTA-2 Lab Results USCS: CH w/Sand
10		18.6	SS4SS	5-7-8-6 (15)				
251.0	10.3							
	10.8				Fat Clay (CH) 10.8-11.7' - olive yellow, mottled light gray and light red, dry to moist, very stiff, high plasticity, no dilatancy			
		22.2	SS5SS	3-6-14-20 (20)	Clay (CL) 11.7-12.6' - reddish brown, moist, very stiff, rapid dilatancy, trace (<5%) very fine and coarse sand		2.0-2.75	PT-3 collected 11.0-13.0'
	12.8							
	13.3				Clay (CL) 13.3-14.7' - reddish brown, moist, very stiff, slow to rapid dilatancy, trace (<5%) very fine and coarse sand, pockets of fat clay (CH) light gray		3.0	
15		16.8	SS6SS	11-19-50/4 (69/10")				
246.0	15.3							
	15.8				Clay (CL) 15.8-17.4' - reddish brown, black mottling, moist, hard, slow to rapid dilatancy, trace (<5%) very fine and coarse sand, pockets of light gray fat clay to 16.5'		5.0+	
		19.2	SS7SS	6-14-25-50/4 (39)				
	17.8							
	18.3				Clay (CL) 18.3-19.4' - red, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy, lessens with depth, trace very fine sand			
		11.0	SS8SS	35-50/5 (50/5")				
20								



LOGGER : LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-2

SHEET 3 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

WATER LEVEL: 236.0		START: 7/14/06 10:30		END: 7/18/06 12:17		LOSS: 1.0	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 236.0	23.8 R1NQ 0.3 ft 67%	0	0	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-2

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

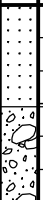
ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
45 216.0	44.5		1	44.1' - Fracture, horizontal, rough, planar		Sandstone 41.5-45.1' - white and very dark gray, soft to hard, laminated to thin bedding, subangular to subrounded, poorly sorted, very fine to coarse grained, trace fine to medium gravel in bands of coarser material 41.5-44.5' - fresh 44.5-45.1' - moderately weathered Conglomerate 45.5-46.6' - white, greenish gray, and very dark gray, hard, medium bedding, subangular to subrounded, poorly sorted, moderately weathered, very fine sand to coarse gravel 46.0-46.05' - clay seam, very soft, 40% sand, 0.03' thick	R7: 10:11-10:22	
		1	45.3' - Fracture, horizontal, rough, undulating	SC-1 collected 45.3-46.1'				
		1	46.1' - Fracture, 30 deg, rough, undulating					
	R7NQ 5 ft 104%	80	4	46.7' - Fracture, 10 deg, rough, undulating 46.7' - Fracture, horizontal, rough, undulating, parabolic shaped			At 47.7': R-Scale = R3-R4	
			4	46.9' - Fracture, horizontal, rough, planar 47.5' - Fracture, horizontal, rough, undulating 48.0' - Fracture, horizontal, smooth, planar				
			2	48.3' - Fracture, horizontal, smooth, planar 48.4' - Fracture, horizontal, smooth, planar				
50 211.0	49.5		48.6' - Fracture, horizontal, smooth, stepped 48.8' - Fracture, 35 deg, rough, undulating 49.4' - Fracture, 30 deg, smooth, planar, very dark gray stains, clay may be from laminated shale bed <0.01' thick of which the fracture is in the middle.		Sandstone At 46.6' - very dark gray and white, soft to hard, laminated to medium bedding 46.7-47.5' - very soft 46.7-49.5' - moderately weathered 47.5-59.2' - fresh 49.5-54.5' - soft to hard 49.5-50.1' - beds on 30 deg angle 52.0-54.5' - no gravel	R8: 10:28-10:36		
		0						
		0						
	R8NQ 5 ft 98%	98	0		At 51.6': R-Scale = R2-R3			
			0					
			0					
55 206.0	54.5						R9: 10:40-10:47	
		0						
		0						
	R9NQ 5 ft 105%	100	0		At 56.2': R-Scale = R2			
			0					
			0					
60 201.0	59.5				Shale 58.8-59.2' - black, laminated bedding, fresh	R10: 10:52-11:01		
		0						
		0						
	R10NQ 5 ft 100%	100	0		Sandstone 59.2-67.1' - dark gray, white, and reddish brown, soft, medium bedding, subrounded, poorly sorted, fresh, very fine to coarse grained sand	At 60.8': R-Scale = R3		
			0					
			0					



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-2

SHEET 5 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

ELEVATION : 261.0 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

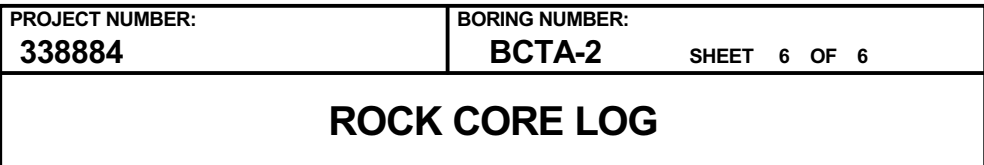
WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
65 196.0	64.5		0				
			0			64.5-67.1' - finer with depth.	R11: 11:03-11:13
			0				At 65.5': R-Scale = R2
	R11NQ 5 ft 99%	99	0	67.0-67.1' - Contact between siltstone and sandstone, 40 deg, tight fit			
			0			Siltstone At 67.1' - dark reddish brown, mottled greenish gray and reddish black, soft, fresh	At 68.2': R-Scale = R3.5-R4
			0				
70 191.0	69.5		0			69.5-79.5' - 0-20% very fine sand to fine sand	R12: 11:17-11:30
			0				
	R12NQ 5 ft 101%	100	0				
			0				At 72.7': R-Scale = R2
			0				
75 186.0	74.5		0				R13: 11:34-11:49
			1	75.9-76.1' - Fracture, 70 deg, rough, undulating			
	R13NQ 5 ft 91%	84	3	76.6' - Fracture, horizontal, rough, planar, greenish gray stains			
			1	76.9' - Fracture, horizontal, smooth, planar			At 77.4': R-Scale = R2-R3
			0	77.0' - Fracture, horizontal, smooth, planar			
			0				
80 181.0	79.5		0				R14: 11:57-12:08
			0				
	R14NQ 5 ft 105%	100	0				
			0				At 82.3': R-Scale = R3
			0				



LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-3

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687448.8 N, 2013227.8 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 & 2-15/16 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 12.4 ft bgs

START : 7/21/06 14:34

END : 7/21/06 17:36

LOGGER : LH

WATER LEVELS : 12.4 ft bgs			START : 7/21/06 14:34		END : 7/21/06 17:30		LOGGER : LIT	
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS	
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)					
260.3	0.0	24.0	SS1SS	2-3-5-5 (8)	Clay (CL) 0.0-2.0' - reddish brown, mottled white and reddish black, dry, stiff, trace gravel and roots		PT-1 collected 3.0-5.0'	
	2.0							
	2.5	21.6	SS2SS	5-8-12-13 (20)	Clay (CL) 2.5-4.3' - reddish brown, mottled white and reddish black, dry, very stiff, trace gravel and roots			
	4.5							
5								
255.3	5.0	18.0	SS3SS	3-6-8-9 (14)	Clay (CL) 5.0-6.5' - reddish brown, olive yellow mottling, dry, stiff, trace gravel and roots		PT-2 collected 6.0-8.0'	
	7.0							
	7.5	18.0	SS4SS	3-15-45-50/4 (60)	Clay (CL) 7.5-9.0' - reddish brown, mottled reddish black and light greenish gray mottling, moist, hard, laminated beds at 8.3-9.0' 7.6-7.8' - yellow Clay seam			
	9.5							
10								
250.3	10.0	3.0	SS5SS	50/3 (50/3")	Clay (CL) 10.0-10.3' - reddish brown, mottled reddish black and light greenish gray mottling, moist, hard, clay seam, trace very fine sand		Soil sampling completed at 15:40 on 7/21/06	
	10.3							
	13.6				Begin Rock Coring at 13.6 ft bgs See the next sheet for the rock core log			
15								
245.3								
20								



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-3

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687448.8 N, 2013227.8 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 12.4 ft bgs

START : 7/21/06 14:34

END : 7/21/06 17:36

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
15 245.3	13.6 R1NQ 0.8 ft 81%	50	2	13.8' - Fracture, horizontal, rough, undulating 14.1' - Fracture, horizontal, rough, undulating 14.6' - Fracture, horizontal, smooth, planar	X 				



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCTA-3</div>
SHEET 3 OF 3	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687448.8 N, 2013227.8 E)
ELEVATION : 260.3 ft MSL (NGVD 29)	DRILLING CONTRACTOR : D. Hedges, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 12.4 ft bgs	START : 7/21/06 14:34	END : 7/21/06 17:36	LOGGER : LH
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WATER LEVEL: 12.4' RGS		DISCONTINUITIES		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 225.3	34.4		0	36.6' - Contact between sandstone and siltstone, pieces of siltstone mixed in with sandstone above, tightly healed 37.0' - Fracture, 20 deg, rough, undulating 37.2' - Fracture, 20 deg, rough, planar 37.4' - Fracture, horizontal, smooth, planar 37.5' - Fracture, horizontal, rough, undulating 37.6' - Fracture, horizontal, rough, undulating 37.8' - Fracture, horizontal, smooth, planar 37.9' - Contact between sandstone and siltstone, horizontal, tightly healed	33.3-33.6' - laminated beds on 45 degree angle	R6: 17:19-17:26 At 35.6': R-Scale = R3 At 39.0': R-Scale = R3 R7: 17:33-17:36 First water level = 12.4' bgs taken at 7/22/06 at 17:17 SC-1 collected 39.4-40.5' R-Scale performed after drilling on stored samples	
		0					
	R6NQ 5 ft 102%	81	3				
		3					
		0					
		0					
40 220.3	39.4		0				
	R7NQ 1.1 ft 100%	100	0				
45 215.3	40.5					37.8-40.5' - light gray, dark gray, and dark greenish gray, soft, laminated to medium bedding, very fine sand to coarse sand, subangular to rounded, poorly sorted, fresh 38.6-39.1' - laminated beds on 35 degree angle Bottom of Boring at 40.5 ft bgs on 7/21/06 17:36	
50 210.3							



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-4

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687562.0 N, 2013436.5 E)

ELEVATION : 262.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : D. Hedges, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, 3-5/8 Tricone Bit, 24 Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

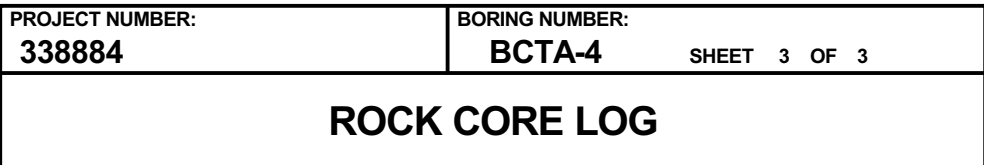
WATER LEVELS : 19.0 ft bgs

START : 7/20/06 14:30

END : 7/21/06 12:04

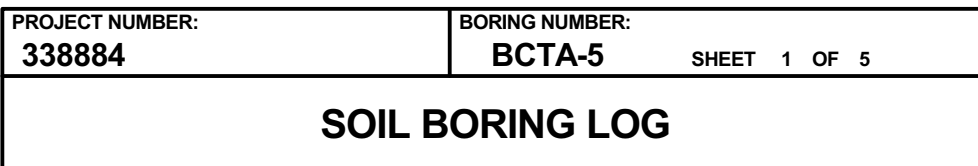
LOGGER : LH

WATER LEVELS : 19.0 ft bgs		START : 7/20/00 14:30		END : 7/27/00 2:04		LOGGER : LIT		
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	PP (TSF)	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)					
262.8	0.0	19.2	SS1SS	2-5-6-7 (11)	Topsoil 0.0-0.2' Clay (CL) 0.2-1.6' - reddish brown, mottled light greenish gray, white and brownish yellow, dry, trace roots 0.4' - black piece of vesicular rock with iron oxide on out side			PT-1 collected 3.0-5.0'
	2.0							
	2.5	18.0	SS2SS	3-4-8-10 (12)	Clay (CL) 2.5-4.0' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 2.9-3.3' - 0-40% very fine to fine sand 3.7-4.0' - 0-40% very fine to fine sand			
	4.5							
5								
257.8	5.0	21.0	SS3SS	4-7-14-16 (21)	Clay (CL) 5.0-6.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 5.3-5.4' - sand pocket 5.5-5.6' - sand pocket 5.6-5.7' - sand pocket 6.0' - sand pocket 6.2-6.4' - large gravel, siltstone			PT-2 collected 8.0-10.0'
	7.0							
	7.5	14.0	SS4SS	6-7-10-14 (17)	Clay (CL) 7.5-8.7' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, very stiff, trace roots			
	9.5							
10								
252.8	10.0	17.4	SS5SS	3-6-8-10 (14)	Clay (CL) 10.0-11.5' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 10.2-10.6' - dark gray and very pale brown, moist, soft			PT-3 collected 13.0-15.0' Offset: 9.6' N53W of BCTA-4 Lab Results USCS: CL
	12.0							
	12.5	19.2	SS6SS	5-8-10-11 (18)	Clay (CL) 12.5-13.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots		1.8	
	14.5				Fat Clay (CH) 13.8-14.1' - brownish yellow, red mottling, moist, stiff			
15								
247.8	15.0	21.0	SS7SS	5-9-16-18 (25)	Fat Clay (CH) 15.0-16.1' - yellowish red, yellow mottling, moist, soft to medium stiff, becomes clay with depth			2.2
	17.0				Clay (CL) 16.1-16.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots			
	17.5	20.4	SS8SS	8-10-12-20 (22)	Clay (CL) 17.5-19.2' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots 18.5-19.2' - black mottling			
	19.5							
20								



LOGGER : LH

Rev. 0



LOGGER : EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-5

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)

ELEVATION : 243.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.2 ft bgs

START : 7/31/06 09:35

END : 8/1/06 16:15

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
15 228.5	10.4	R1NQ 4 ft 103%	50	3	10.4' - Fracture, <5 deg, rough, undulating, black stains	X X		

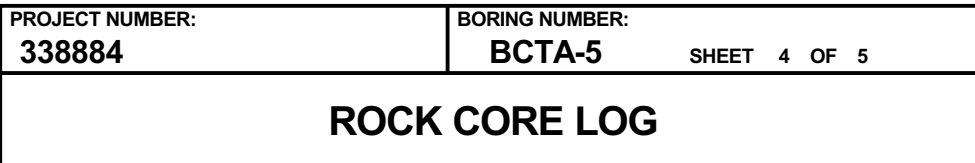


PROJECT NUMBER: 338884	BORING NUMBER: BCTA-5	SHEET 3 OF 5
ROCK CORE LOG		

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)
ELEVATION : 243.5 ft MSL (NGVD 29)	DRILLING CONTRACTOR : M. Mosely, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	ORIENTATION : Vertical

WATER LEVELS : 1.2 ft bgs	START : 7/31/06 09:35	END : 8/1/06 16:15	LOGGER : EM
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WATER LEVEL: 11.000		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 208.5	R5NQ 5 ft 98%	98	0	32.4' - Fracture, 5 deg, smooth, undulating	XXXXXX XXXXXX			



LOGGER : EM

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-5

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688529.9 N, 2012723.2 E)

ELEVATION : 243.5 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 1.2 ft bgs

START : 7/31/06 09:35

END : 8/1/06 16:15

LOGGER : EM

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
75 168.5	R13NQ 5 ft 104%	100	0	71.7' - Fracture, 5 deg, rough, undulating	71.8-72.0' - dark gray laminations on 20 degree angles	At 72.9': R-Scale = R3-R4	
			1					
			0					
			2					
	74.4	R14NQ 5 ft 102%	100	XXX	74.1' - Contact between siltstone and sandstone, 20 deg, smooth, undulating, <0.01' thick clay infilling 74.2' - Fracture, 20 deg, rough, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	73.8' - grain size decreases to fine to medium sand Siltstone At 74.1' - dusky red, mottled greenish gray, very soft to soft, fresh, very fine grained 74.4-84.1' - 0-10% fine sand 75.5-79.4' - mottled yellowish brown and black 75.5-84.1' - soft to hard	R14:15:30-15:43
	0							
	0							
	0							
	0							
	0							
79.4	R15NQ 4.7 ft 100%	94	XXX	79.9' - Fracture, 60 deg, smooth, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	SC-2 collected 78.5-79.4'		
0								
1								
0								
80 163.5	R16NQ 2.2 ft 100%	100	0	84.6' - Fracture, <5 deg, smooth, undulating to planar	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	R15: 15:50-16:02		
0								
0								
0								
84.1	R16NQ 2.2 ft 100%	100	1	84.6' - Fracture, <5 deg, smooth, undulating to planar	XXXXXX XXXXXX	R16: 16:08-16:15		
86.3			0					
85 158.5					XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Bottom of Boring at 86.3 ft bgs on 8/1/06 16:15	At 85.5' R-Scale = R3 (performed at a later date) R-Scale performed during rock core logging	
90 153.5								



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-6

SHEET 2 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

ELEVATION : 239.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel





ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 7/26/06 14:40

END : 7/27/06 15:46

LOGGER : JS/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
15 224.8	R1NQ 4.8 ft 100%	0	10+	12.9-14.5' - Sandy silt seam		Sandstone 10.2-10.7' - dusky red, very soft, very fine sand to fine sand, highly weathered, 35% fines (silt) Siltstone 10.7-12.0' - dusky red, trace green and black mottling, very soft, highly weathered, very fine grained 10.7-11.5' - clay seam Clay (CL) 12.0-12.6' - highly weathered, some bedrock pieces Siltstone 12.6-12.9' - dusky red, trace green and black mottling, very soft, highly weathered, very fine grained Sandy Silt (ML) 12.9-14.5' - highly weathered Sandstone 14.5-15.0' - dark gray, black mottling, soft, very fine sand to fine sand, highly weathered Siltstone At 15.0' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh	Rock coring began at 16:30 on 7/26/06 R1: 16:30-16:46 on 7/26/06 At 10.7-11.5': PP: 1.75-2.0 tsf At 10.7-11.5': R-Scale = R0 At 12.0-12.6': PP: 1.75 tsf At 12.0-12.6': R-Scale = R0 At 12.9-14.5': R-Scale = R0
			10+				
			10+				
			10+				
			10+				
	20 219.8	R2NQ 5 ft 90%	86	0	14.5' - Contact between siltstone and sandstone, 5 deg, rough and stepped, black mottling on 50% of surface 14.9' - Fracture, 20 deg, rough, undulating, 0.005' relief 16.1' - Fracture, 45 deg, rough, planar 16.2' - Fracture, horizontal, smooth, planar 17.2' - Fracture, horizontal, smooth, planar 17.5' - Fracture, horizontal, smooth, planar		R2: 08:10-08:23 on 7/27/06
				2			
				2			
				0			
				0			
25 214.8	R3NQ 5 ft 101%	100	0	23.9' - Fracture, 60 deg and 30 deg, rough, planar 24.2' - Fracture, 45 deg, rough, undulating		R3: 08:40-08:56 At 20.0-25.0': R-Scale = R2 (performed during rock core logging)	
			0				
			0				
			1				
			1				
30 210.8	R4NQ 5 ft 100%	100	0			R4: 09:03-09:17 At 25.0-30.0': R-Scale = R2	
			0				
			0				
			0				
			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-6

SHEET 3 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

ELEVATION : 239.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 9.0 ft bgs

START : 7/26/06 14:40

END : 7/27/06 15:46

LOGGER : JS/LH

WATER LEVEL: 30.00		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
35 204.8	R5NQ 5 ft 96%	72	2	30.4' - Fracture, 20 deg, rough, undulating	<div>29.8-30.0' - <10% medium to coarse sand</div> <div>Conglomerate</div> <div>30.0-30.3' - moderately weathered, on 45 degree bed, coarse sand and fine to medium gravel</div> <div>Sandstone</div> <div>At 30.3' - white, dark gray, and dark greenish gray, mottled dark reddish brown and greenish gray, soft, laminated to thin bedding, moderately weathered</div> <div>30.7-31.3' - 30-40% coarse sand to medium gravel</div> <div>31.6-32.0' - laminated to thin beds</div> <div>Siltstone</div> <div>At 32.3' - dark reddish brown, mottled greenish gray and reddish black, very soft, laminated bedding</div> <div>32.3-35.0' - moderately weathered</div> <div>33.3-33.4' - clay seam, 0.03' thick, friable, very soft, has siltstone in it</div> <div>33.4-33.8' - clay seam, 0.35' thick, very soft</div> <div>33.9-34.8' - <5% gravel and coarse sand sized white clasts</div> <div>35.0-40.0' - fresh</div> <div>35.0-55.0' - very soft to soft</div> <div>40.0-50.0' - moderately weathered</div> <div>41.4-41.6' - trace gravel sized white clasts</div> <div>43.0-45.0' - gravel sized white clasts</div> <div>47.3-47.8' - coarse sand and fine gravel sized white clasts</div> <div>48.1-48.3' - laminated bedding</div> <div>48.2-48.3' - clay seam, very soft, 0.08' thick, friable</div>	R5: 09:26-09:30 and 09:31-09:39		
			4	30.8' - Fracture, 10 deg, rough, undulating		At 33.3-33.4': R-Scale = R0 At 33.4-33.8': PP: 2.9 tsf At 33.4-33.8': R-Scale = R0		
			4	31.2' - Fracture, horizontal, rough, undulating 31.3-31.4' - Fractures (2), horizontal and 45 deg, rough, undulating				
			1	31.5' - Fracture, 45 deg, rough, planar 32.2' - Fracture, horizontal, rough, undulating 32.3' - Fracture, horizontal, rough, undulating 32.3' - Fracture, horizontal, rough, undulating, contact between sandstone and siltstone				
			1	33.0' - Fracture, horizontal, rough, undulating 33.9' - Fracture, 45 deg, rough, undulating				
	R6NQ 5 ft 93%	93	0	34.8' - Fracture, 45 deg, rough, undulating, 0.03' thick, very soft, friable		At 34.8-34.8': R-Scale = R0 R6: 09:50-10:05		
			0					
			0					
			0					
			0					
40 199.8	R7NQ 5 ft 103%	84	10+	40.3' - Fracture, horizontal, rough, planar 40.3-40.9' - Fracture zone, rough, undulating	R7: 11:57-12:08			
			1	41.7' - Fracture, horizontal, rough, undulating				
			0					
			0					
			0					
45 194.8	R8NQ 5 ft 103%	99	0		R8: 12:15-12:28			
			0					
			0					
			1	48.1' - Fracture, horizontal, rough, undulating	At 48.2-48.3': R-Scale = R0			
			0					
50	50.0							



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-6

SHEET 5 OF 5

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688618.1 N, 2012946.1 E)

ELEVATION : 239.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

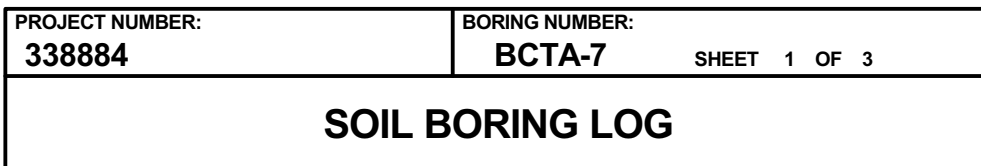
WATER LEVELS : 9.0 ft bgs

START : 7/26/06 14:40

END : 7/27/06 15:46

LOGGER : JS/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
75 164.8	R13NQ 5 ft 101%	100	0			68.9-69.4' - 20-50% silt 70.0-80.0' - very soft	R13: 15:12-15:19 At 71.0': R-Scale = R2 (performed during rock core logging)
			0				
			0				
			0				
			0				
80 159.8	R14NQ 5 ft 102%	100	0				R14: 15:26-15:31 First water level = 9.0' bgs taken 7/28/06 at 14:45
			0				
			0				
			0				
			0				
85 154.8	R15NQ 5 ft 102%	82	5			80.0-82.4' - slightly weathered 80.2' - 1/2 orange stained clast	R15: 15:37-15:46
			1				At 81.4': R-Scale = R2 (performed during rock core logging)
			2	82.4' - Fracture, horizontal, rough, undulating, 0.02' relief		81.8-82.0' - dark gray to black silty laminae	
			0	82.8' - Fracture, horizontal, smooth, undulating, 0.01' relief		82.1-82.4' - rust colored stains at 30 degrees, 1 mm thick	
			0			Siltstone	At 83.7': R-Scale = R2 (performed during rock core logging)
						82.4-85.0' - dark reddish brown, green mottling, soft, slightly weathered, very fine to fine grained, trace very fine sand, 20 degree bedding	R-Scale performed after drilling on stored samples unless otherwise specified
						Bottom of Boring at 85.0 ft bgs on 7/27/06 15:46	
90							



LOGGER : AT

Rev. 0

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688279.2 N, 2012780.6 E)

ELEVATION : 232.8 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 3.2 ft bgs

START : 8/2/06 10:32

END : 8/2/06 16:40

LOGGER : AT

WATER LEVELS : 0.2 RDS		START : 8/200 10.32		END : 8/200 10.40		LOGGER : AT	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
15 217.8	10.2	48	0	XXXXXX XXXXXX			

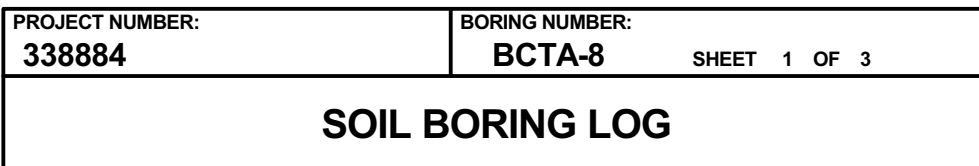


PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCTA-7</div>
SHEET 3 OF 3	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (688279.2 N, 2012780.6 E)
ELEVATION : 232.8 ft MSL (NGVD 29)	DRILLING CONTRACTOR : M. Mosely, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 3.2 ft bgs	START : 8/2/06 10:32	END : 8/2/06 16:40	LOGGER : AT
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
35 197.8	R5NQ 5 ft 93%	93	2	30.1' - Fracture, horizontal, smooth, undulating	x	30.0-35.0' - very dusky red, soft to hard	R5: 9:18-9:32
			1	30.9' - Fracture, horizontal, smooth, undulating	x		
			0	31.6' - Fracture, horizontal, smooth, undulating	x		
			0		x		
			0		x		
40 192.8	R6NQ 5 ft 99%	99	0		x	35.9-36.2' - laminated beds in matrix 36.8-40.0' - fining upwards sequence, well graded, very fine to coarse sand, multicolored, laminated beds	At 33.0': R-Scale = R2 R6: 9:41-9:55 At 37.7': R-Scale = R4-R5 First water level = 3.2' bgs taken 8/3/06 at 18:30; second water level = 3.6' bgs taken 8/4/06 at 15:46 R-Scale performed after drilling on stored samples
			1	36.2' - Fracture, 20 deg, rough, planar	x		
			0		x		
			0		x		
			1	39.0' - Fracture, 20 deg, rough, planar, greenish-gray stains	x		
45 187.8					.	Sandstone 38.8-40.0' - dark reddish brown, fresh, very fine to coarse sand, banded Bottom of Boring at 40.0 ft bgs on 8/2/06 16:40	
					.		
					.		
					.		
					.		
50							



LOGGER : AT

Rev. 0



PROJECT NUMBER: 338884	BORING NUMBER: BCTA-8	SHEET 2 OF 3
<h2 style="margin: 0;">ROCK CORE LOG</h2>		

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (688410.9 N, 2013044.2 E)
ELEVATION : 227.0 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 2.1 ft bgs	START : 8/10/06 08:23	END : 8/10/06 13:29	LOGGER : AT
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DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
20 207.0	15.1	R1NQ 4.4 ft 98%	93	1	16.1' - Fracture, 50 deg, rough, undulating, greenish white staining, 0.2' relief 17.7' - Fracture, 30 deg, rough, undulating, 0.05' relief 18.9' - Fracture, 16 deg, white infilling 18.9' - Clay seam, 16 deg, white infilling, 0.05' thick	x x		



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCTA-8</div>
SHEET 3 OF 3	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (688410.9 N, 2013044.2 E)
ELEVATION : 227.0 ft MSL (NGVD 29)	DRILLING CONTRACTOR : R. Norwood, S&ME
CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel	
ORIENTATION : Vertical	

WATER LEVELS : 2.1 ft bgs	START : 8/10/06 08:23	END : 8/10/06 13:29	LOGGER : AT
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WATER LEVEL: 21.4 bgs		START: 8/10/06 09:29		END: 8/10/06 10:29		LOGGER: JAT	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40 187.0 <							



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-1

SHEET 1 OF 6

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

DRILLING EQUIPMENT AND METHOD : BK-51, 2-15/16 Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead

ORIENTATION : Vertical

WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14






LOGGER : LH

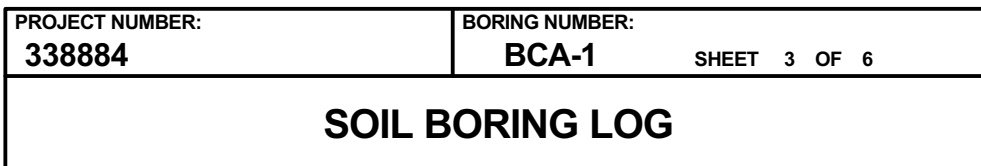
DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	PP (TSF)	COMMENTS	
		RECOVERY (in)		6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE									
256.2	0.0						Clay (CL) 0.0-1.5' - reddish brown, mottled yellow and reddish black, dry, stiff, medium to low plasticity, slow dilatancy			ST-1 collected 6.0-8.0'	
	2.0	18.0	SS1SS	6-9-10-10 (19)							
	2.5						Clay (CL) 2.5-3.6' - reddish brown, mottled yellow and light gray, dry, stiff, medium to low plasticity, fill				
	4.5	13.0	SS2SS	5-7-8-9 (15)							
5											
251.2	5.0						Clay (CL) 5.0-6.0' - olive brown, mottled reddish brown, light gray and yellow, moist, stiff, sand pockets and clay pockets				
	7.0	11.5	SS3SS	5-5-6-8 (11)							
	7.5						Clay (CL) 7.5-8.0' - light yellowish brown, mottled reddish brown, moist, trace organics and sand				
	9.5	6.5	SS4SS	3-3-5-5 (8)							
10											
246.2	10.0						Clay (CL) 10.0-10.7' - light yellowish brown, mottled reddish brown, moist, soft			ST-2 collected 11.0-13.0'	
	12.0	8.0	SS5SS	2-1-2-1 (3)							
	12.5						Clay (CL) 12.5-13.4' - light yellowish brown and reddish brown, moist, very soft, fill				
	14.5	10.0	SS6SS	2-1-1-2 (2)							
15											
241.2	15.0						Clay (CL) 15.0-15.9' - light yellowish brown and reddish brown, moist, soft, fill			ST-3 collected 18.0-20.0'	
	17.0	10.0	SS7SS	2-1-2-2 (3)							
	17.5						Clay (CL) 17.5-18.7' - reddish brown, light olive brown, and light yellowish brown, soft, mixture of all previous soils, fill				
	19.5	14.0	SS8SS	2-2-2-2 (4)							
20											



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCA-1</div>
SHEET 2 OF 6	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)
ELEVATION : 256.2 ft MSL (NGVD 29)	DRILLING CONTRACTOR : J. Little, S&ME
DRILLING EQUIPMENT AND METHOD : BK-51, 2-15/16 Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead	ORIENTATION : Vertical
WATER LEVELS : 26.6 ft bgs	START : 8/2/06 08:11 END : 8/3/06 09:14 LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS	
	INTERVAL (ft)	RECOVERY (in)	#TYPE				PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
236.2	20.0				Clay (CL) 20.0-21.2' - soft, mixture of all previous soils, fill		0.5	ST-4 collected 27.0-29.0'
	22.0	14.0	SS9SS	2-2-2-3 (4)				
25								
231.2	25.0				Clay (CL) 25.0-26.2' - medium stiff, mixture of all previous soils		0.9	
	27.0	14.0	SS10SS	2-3-3-3 (6)				
30								
226.2	30.0				No Recovery 30.0-32.0'			
	32.0	0.0	SS11SS	3-4-4-4 (8)				
35								
221.2	35.0				Clay (CL) 35.0-37.5' - dark reddish brown, moist, hard, low plasticity, slow dilatancy			
	37.0	9.0	SS12SS	11-24-26-36 (50)				
40	39.5							



LOGGER : LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-1

SHEET 4 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
45.3	R1NQ 5 ft 94%	34	10+	45.3' - Fracture zone, rough, undulating	...	Sandstone 45.3-46.4' - dark reddish gray, mottled reddish black and light greenish gray, very soft to soft, very fine sand, subangular to subrounded, well sorted, highly weathered Siltstone 46.4-69.5' - dark reddish brown, mottled reddish black and greenish gray, very soft to soft 46.4-46.7' - clay seam, very soft, friable 46.4-46.8' - highly weathered 46.8-50.3' - moderately weathered to highly weathered 48.5-48.7' - laminated 48.6-48.7' - laminated 47.8-47.9' - laminated 49.3-49.5' - laminated 49.4-49.9' - clay seams alternating with siltstone, very soft, friable, 0.01-0.02' thick each 49.8-50.0' - laminated 50.3-50.8' - laminated 50.3-61.3' - moderately weathered 51.8-51.9' - clay seams with siltstone, very soft, friable, 0.01' thick each 51.8-52.6' - laminated 53.3-55.3' - gravel sized white clasts	Rock coring began at 14:36 on 8/2/06
			10+	46.2-46.4' - Fracture zone, rough, undulating	x		R1: 14:36-14:46 on 8/2/06
			1	47.0' - Fracture, 45 deg and horizontal, smooth, undulating	x		
			1	47.8' - Fracture, horizontal, rough, undulating	x		At 48.2': R-Scale = R1
			1	48.6' - Fracture, horizontal, rough, undulating	x		
50 206.2	50.3		2	50.3' - Fracture, horizontal and 45 deg, rough, planar	x	57.5-58.0' - white clasts 59.2-59.7' - vugs 59.8-59.9' - clay seam, 0.07' thick, very soft, some siltstone in it 60.3-65.3' - soft 60.6-60.8' - clay seam, very soft, friable material, some siltstone within 61.3-69.5' - fresh 62.2-62.4' - 0.05' thick, 0.1' long vugs	R2: 14:57-15:05
	R2NQ 5 ft 98%	72	2		x		
			5		x		
			3	52.1' - Fracture, horizontal, smooth, planar, black stains	x		At 53.5': R-Scale = R3
			0	52.4' - Fracture, rough, planar, black stains	x		
			0	52.6' - Fracture, rough, planar, black stains	x		
55 201.2	55.3		0		x		R3: 15:12-15:21
	R3NQ 5 ft 101%	86	0		x		At 56.1': R-Scale = R3-R4
			0		x		
			2	57.2-57.8' - Series of vertical and angled fractures, some tightly healed, rough, undulating	x		
			0	58.4' - Fracture, 60 deg, slickensided, undulating, black stains	x		
			4	58.9' - Fracture, horizontal, rough, planar 59.2' - Fracture, horizontal, rough, planar, black stains	x		
60 196.2	60.3		8	59.7-59.8' - Fractures (2), horizontal, rough, planar, black stains	x		R4: 15:28-15:40
	R4NQ 5 ft 90%	68	3	60.3-60.6' - Fractures (4), horizontal, rough, planar, black stains	x		
			0	60.6' - Fracture (0), rough, planar, black stains	x		
			0	60.8-60.9' - Fractures (2), 45 deg, rough, planar, black stains	x		
			0	61.1-61.2' - Fractures (2), 40 deg, rough, planar, black stains	x		
			0	62.0-62.2' - Fractures (2), horizontal, rough, planar, black stains	x		
65 191.2	65.3		0		x		
					x		

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14

LOGGER : LH

DEPTH AND ELEVATION BELOW SURFACE (ft)		CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
			R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
70 186.2	70.3	R5NQ 5 ft 100%	100	0			65.3-69.5' - soft	R5: 15:47-15:57
				0				
				0				
				0				
				1				
75 181.2	75.3	R6NQ 5 ft 64%	44	0			Sandstone 69.5-72.9' - dark reddish brown, dark gray and white, soft to hard, very fine sand to coarse sand, subangular to rounded, poorly sorted, fresh 70.3-72.9' - soft to hard, very fine sand to coarse sand, subangular to rounded, poorly sorted	At 70.1': R-Scale = R5 R6: 16:28-16:35
				1				
				3				
80 176.2	80.3	R7NQ 5 ft 98%	92	2			75.3-80.3' - soft	R7: 08:00-08:08 on 8/3/06 At 75.8': R-Scale = R3
				3				
				0				
				0				
				1				
85 171.2	85.3	R8NQ 5 ft 100%	100	1			Sandstone At 80.3' - white, dark reddish gray, and dark greenish gray, soft to hard, very fine sand to coarse sand, subangular to subrounded, poorly sorted, fresh, trace fine gravel coarsens with depth	R8: 08:16-08:23
				0				
				0				
				1				
				0				



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-1

SHEET 6 OF 6

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (686832.1 N, 2014476.2 E)

ELEVATION : 256.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

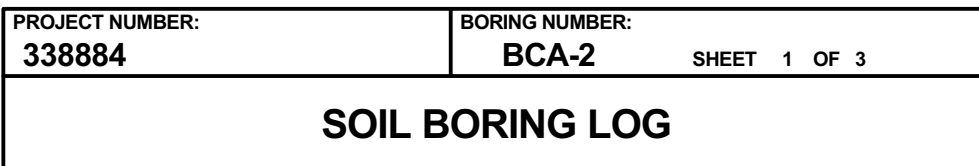
WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14

LOGGER : LH

WATER LEVEL: 20.6 RGS		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
90 166.2	R9NQ 5 ft 100%	100	0	86.0' - Fracture, horizontal, rough, undulating	.	85.3-90.3' - 0-20% gravel at 85.3-85.5', 87.2-87.6, 88.1-89.1, and 89.5-90.3'.as 80.3-85.3'	R9: 08:32-08:38
			1	87.2' - Fracture, 35 deg, rough, undulating, in shale pockets 87.7' - Fracture, horizontal, rough, planar			At 88.0': R-Scale = R3
			0				
			0				
			1	89.9' - Fracture, horizontal, rough, undulating 90.2' - Fracture, 10 deg, rough, planar 91.1' - Fracture, horizontal, rough, undulating 91.9' - Fracture zone, horizontal, rough, undulating 92.2' - Contact between siltstone and sandstone, horizontal, rough, planar 92.3' - Fractures (2), horizontal, rough, planar 92.8' - Fracture, 10 deg, rough, undulating 93.2-94.9' - Fractures (3) 94.5' - Fracture, horizontal, rough, undulating			90.3-92.2' - trace <0.01' thick vugs
	0						
	10+						
	0						
	0						
	95 161.2	R10NQ 5 ft 98%	96	0			x x



LOGGER : AT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-2

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688236.2 N, 2013338.7 E)

ELEVATION : 244.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : R. Norwood, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

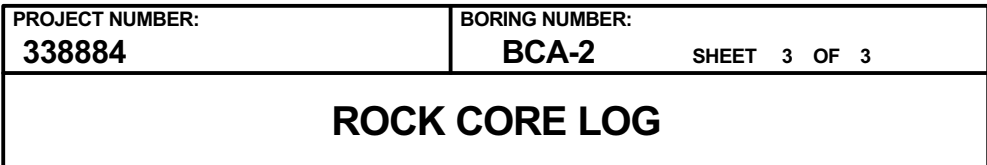
WATER LEVELS : 2.7 ft bgs

START : 8/10/06 14:48

END : 8/10/06 17:10

LOGGER : AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
10 234.4	7.8 R1NQ 1.7 ft 97%	68	0		Siltstone At 7.8' - reddish brown, soft, 30% very fine to fine sand, soil like appearance	Rock coring began at 15:52 on 8/10/06 R1: No time recorded	
	9.5		3		8.9' - Fracture, 60 deg, black stains 9.1' - Fracture, 60 deg, rough, planar, black stains 9.5' - Fracture, vertical, smooth, undulating 10.4' - Fracture, smooth, undulating	7.8-10.5' - moderately weathered	At 8.0': R-Scale = R1-R2 R2: No time recorded
	14.5		2		10.5-10.8' - highly weathered 10.5-10.7' - clay seam, 0.15' thick, brown 10.7-10.8' - white, highly plastic fat clay seam	At 10.7-10.8': PP: 1.0 tsf	
	15 229.4	R2NQ 5 ft 100%	1		12.7' - Fracture, 10 deg, rough, undulating 13.0-13.3' - Fracture, very soft sandstone crushed into soil 13.5' - Fracture, horizontal, smooth, undulating, 0.2' relief 14.0' - Fracture, 30 deg, rough, stepped, 0.3' relief 14.3' - Fracture, 30 deg, rough, undulating, 0.05' relief	Sandstone 10.8-11.5' - pale olive, very soft, very fine sand to fine sand, highly weathered 11.1-11.2' - clay seam, yellowish brown	
			0		16.1' - Fracture, 40 deg, rough, undulating, 0.3' relief 16.8' - Fracture, 15 deg, rough, undulating, brown stains 17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Siltstone 11.5-12.5' - reddish brown, soft, highly weathered, 30% very fine sand, soil-like appearance 11.5-11.8' - clay seam, brown	R3: No time recorded
			3		16.3' - Fracture, 40 deg, rough, undulating, 0.3' relief 16.8' - Fracture, 15 deg, rough, undulating, brown stains 17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Sandstone 12.5-14.5' - light olive gray, soft to hard, highly weathered, 70% very fine sand to coarse sand	At 16.5': R-Scale = R1
			2		17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Siltstone At 14.5' - dark reddish brown, very soft, intermittent clay seams, 30% very fine to fine sand, soil-like appearance 14.5-17.1' - highly weathered 14.8-15.1' - clay seam, brown stains 15.3-15.4' - clay seam, brown stains 15.5-17.5' - olive 15.6-15.7' - clay seam, brown stains 16.0' - clay seam, brown stains, 0.05' thick 16.3-16.4' - clay seam, olive, 0.15' thick 16.8-17.1' - clay seam, olive 17.1-17.5' - slightly weathered	At 17.9': R-Scale = R5
			4		17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Sandstone At 17.5' - light olive gray, soft to hard, slightly weathered, 70% very fine sand to coarse sand 17.9-19.5' - light gray, soft to hard, poorly sorted, 70-80% very fine to medium sand, well bedded	R4: No time recorded
			5		17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Siltstone 19.5-19.7' - reddish brown, soft, slightly weathered, 30% very fine to fine sand, soil-like appearance	At 20.8': R-Scale = R3-R4
			19.5		17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Sandstone At 17.5' - light olive gray, soft to hard, slightly weathered, 70% very fine sand to coarse sand 17.9-19.5' - light gray, soft to hard, poorly sorted, 70-80% very fine to medium sand, well bedded	At 22.0': R-Scale = R3-R4
20 224.4	R4NQ 5 ft 100%	81	1	17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Siltstone At 17.5' - light olive gray, soft to hard, slightly weathered, 70% very fine sand to coarse sand 17.9-19.5' - light gray, soft to hard, poorly sorted, 70-80% very fine to medium sand, well bedded	First water level = 2.7' bgs taken 8/10/06 at 18:22; second water level = 4.5' bgs taken 8/11/06 at 14:08	
24.5		0	17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Siltstone 19.5-19.7' - reddish brown, soft, slightly weathered, 30% very fine to fine sand, soil-like appearance	R5: No time recorded At 24.9': R-Scale = R3-R4 R-Scale performed during rock core logging.		
25 219.4		0	17.3' - Fracture, 5 deg, rough, undulating, olive stains, 0.2' relief 17.4' - Fracture, 45 deg, smooth, undulating 17.5' - Fracture, 5 deg, rough, undulating 17.8' - Fracture, 10 deg, smooth, undulating, strong brown stains, water stain 18.2' - Fracture, 10 deg, rough, undulating 18.4' - Fracture, 10 deg, rough, undulating, strong brown stains 18.7' - Fracture, 20 deg, smooth, undulating 19.7' - Fracture, horizontal, smooth, undulating 20.4' - Fracture, horizontal, rough, undulating 20.6' - Fracture, 20 deg, rough, undulating 21.3' - Fracture, 40 deg, rough, undulating, strong brown stains 21.5' - Fracture, 30 deg, rough, undulating 21.8' - Fracture, 85 deg, smooth, planar	Sandstone At 19.7' - light olive gray, soft to hard, very fine sand to coarse sand, trace gravel 19.7-20.5' - slightly weathered			
	25.5 R5NQ 1 ft 85%	60	2	25.1' - Fracture, 10 deg, 0.2' relief 25.3' - Fracture, 30 deg, 0.2' relief	Siltstone 19.5-19.7' - reddish brown, soft, slightly weathered, 30% very fine to fine sand, soil-like appearance		
					Sandstone At 19.7' - light olive gray, soft to hard, very fine sand to coarse sand, trace gravel 19.7-20.5' - slightly weathered		



LOCATION : (NAD 27) (688236.2 N, 2013338.7 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : AT

Rev. 0



PROJECT NUMBER: <div style="font-size: 1.2em; font-weight: bold;">338884</div>	BORING NUMBER: <div style="font-size: 1.2em; font-weight: bold;">BCA-3</div>
SHEET 1 OF 3	
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (687233.2 N, 2012525.3 E)
ELEVATION : 262.6 ft MSL (NGVD 29)	DRILLING CONTRACTOR : J. Little, S&ME
DRILLING EQUIPMENT AND METHOD : BK-51, 4-1/2 Tricone Bit, 24 Split Spoon, 140 lb. Hammer and Cathead	ORIENTATION : Vertical
WATER LEVELS : 6.6 ft bgs	START : 7/26/06 14:36 END : 7/27/06 09:00 LOGGER : LH/JS/AT

DEPTH BELOW EXISTING GRADE (ft)				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS	
INTERVAL (ft)		RECOVERY (in)	#TYPE		6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
262.6	0.0						Soil sampling completed at 14:46 on 7/26/06	
		15.6	SS1SS	9-16-9-20 (25)	Clayey Gravel With Little Sand (GC) 0.0-0.9' - dry, clay, gravel, and sand. dry, medium stiff, fill Clay (CL) 0.9-1.3' - reddish brown, dry, stiff, fine grained, trace coarse sand and fine gravel			
	2.0							
	2.5	3.0	SS2SS					
	2.8			50/3 (50/3")	Clay (CL) 2.5-2.8' - reddish brown, dry, hard, trace coarse sand and fine gravel Begin Rock Coring at 2.9 ft bgs See the next sheet for the rock core log			
5								
257.6								



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-3

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687233.2 N, 2012525.3 E)

ELEVATION : 262.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.6 ft bgs

START : 7/26/06 14:36

END : 7/27/06 09:00

LOGGER : LH/JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
5 257.6	2.9	R1NQ 2.4 ft 100%	75	10+	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div>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PROJECT NUMBER:

338884

BORING NUMBER:

BCA-3

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687233.2 N, 2012525.3 E)

ELEVATION : 262.6 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

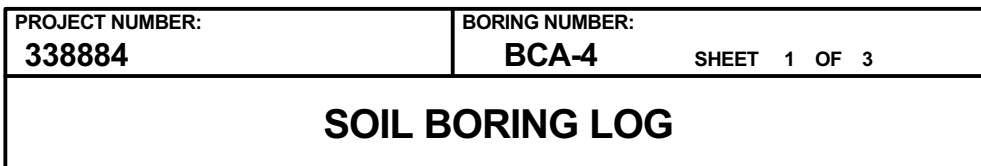
WATER LEVELS : 6.6 ft bgs

START : 7/26/06 14:36

END : 7/27/06 09:00

LOGGER : LH/JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
25 237.6	5 ft 101%	98	0	21.8' - Fracture, 20 deg, rough, undulating		21.6-21.7' - laminated bedding	
			1			Sandstone	
				24.1' - Fracture, 30 deg, rough, undulating		At 21.7' - white, dark gray, and dark greenish gray, soft, massive bedding, very fine sand to medium sand, angular to subrounded, fresh	
			1			21.7-22.4' - 20% coarse grained	
				24.9' - Fracture, rough, undulating		23.2-23.4' - 20% coarse grained	
			0			24.2-25.0' - greenish gray mottles	R6: No time recorded
			1			24.4-24.9' - 20% coarse grained	
						25.3-26.5' - mottled dark gray to dark brown, soft to hard, well sorted	
			2	27.2' - Fracture, 50 deg		26.5-27.1' - soft to hard, fine sand to coarse sand, rust colored mottling	At 26.8': R-Scale = R3-R4
			6	27.9' - Fracture, 60 deg, rough, undulating		27.4-28.2' - soft to hard, fine sand to medium sand, poorly graded	
				28.2' - Fracture, horizontal, rough, undulating		27.9-28.1' - rust colored mottling	
				28.4-28.6' - Fracture zone (3), smooth, undulating		28.2-28.2' - clay and sandstone pieces	
				28.7' - Fracture, 5 deg, rough, undulating, gray stains		28.3-28.6' - 5% irregular white clasts harder than matrix	
			0	28.8' - Fracture, horizontal, smooth, undulating			At 29.6': R-Scale = R2
				29.2' - Fracture, 5 deg, smooth, undulating			
			1			30.3-35.5' - green and purple mottling, very fine to fine grained, 10-15% mottles in scattered threads	R7: No time recorded on 07/27/06
			0	31.0' - Fracture, smooth to rough, stepped			
			1	32.4' - Fracture, 10 deg, some white infilling			At 34.0': R-Scale = R2
			1	33.5' - Fracture, horizontal, some white infilling			
			0				
			0			35.5-40.3' - mottled green, 25-30% fine sand, harder in sandy areas	R8: No time recorded
			0				First water level = 6.6' bgs taken 7/27/06 at 09:30; second water level = 8.3' bgs taken 7/28/06 at 13:05
							At 38.6': R-Scale = R3-R4
			0				R-Scale performed after drilling on stored samples
						Bottom of Boring at 40.3 ft bgs on 7/27/06 09:00	



LOGGER : JS/AT/LH

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-4

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687298.2 N, 2013040.6 E)

ELEVATION : 262.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 6.8 ft bgs

START : 7/28/06 11:00

END : 8/1/06 14:33

LOGGER : JS/AT/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
15.2 <								



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-4

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687298.2 N, 2013040.6 E)

ELEVATION : 262.9 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

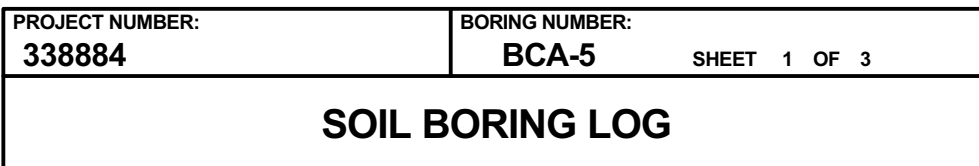
WATER LEVELS : 6.8 ft bgs

START : 7/28/06 11:00

END : 8/1/06 14:33

LOGGER : JS/AT/LH

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
40 222.9	40.2	90	2	34.4-34.6' - Fracture, 60 deg, rough, undulating	x x	35.6-35.9' - white clasts	R5: 14:25-14:33
			1	34.5' - Fracture, horizontal, rough, undulating	x x	35.9-36.2' - very soft, laminated bedding	
			2	36.0' - Fracture, 30 deg, rough, undulating	x x	36.2-37.7' - soft	
			2	36.2' - Fracture, horizontal, rough, undulating	x x		
			2	36.7' - Fracture, 30 deg, smooth, stepped	x x		
			0	38.3' - Fracture, horizontal, rough, undulating	x x	37.5-40.2' - trace medium to coarse sand	At 37.8-38.2': R-Scale = R0-R1
					x x	37.7-38.3' - very soft, laminated bedding	First water level = 6.8' bgs taken 8/1/06 at 16:14;
					x x	37.9-38.1' - clay seam, very soft, friable, 0.08' thick	second water level = 8.1' bgs taken 8/2/06 at 08:55
					x x	38.1-38.2' - clay seam, very soft, friable, 0.08' thick	
					x x	Bottom of Boring at 40.2 ft bgs on 8/1/06 14:33	R-Scale performed after drilling on stored samples
45 217.9							
50 212.9							
55							



LOGGER : JS/AT

Rev. 0



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-5

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687400.5 N, 2012819.7 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.8 ft bgs

START : 7/27/06 11:40

END : 7/28/2006

LOGGER : JS/AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
7.6	R1NQ 2.4 ft 102%	100	0	8.7' - Fracture, 5 deg, rough, undulating, black streaks	Siltstone At 7.6' - dark reddish brown, mottled green, purple, yellow, and black, very soft to soft, very fine to fine grained, up to 25% very fine to fine sand 7.6-19.0' - slightly weathered	Rock coring began at 13:20 on 7/27/06 R1: No time recorded on 7/27/06 At 9.0': R-Scale = R3	
10	10.0		0				
250.3	R2NQ 5 ft 98%	94	0	10.7' - Fracture, 5 deg, smooth, stepped	10.0-12.6' - trace very fine to fine sand, very fine grained	R2: Finished at 13:50	
0			11.3' - Fracture, 5 deg, smooth, undulating				
0			12.2' - Fracture, 60 deg, smooth to rough and undulating, ~10% of surface covered in white coating	12.6-13.2' - 15% very fine sand/silt			
0			13.0' - Fracture, horizontal, smooth to rough, white coating on surface (~40%)	13.2-15.0' - purple mottling, soft, 15% very fine sand/coarse silt	At 13.6': R-Scale = R3-R4		
0			14.8' - Fracture, 70 deg, rough, undulating, dark gray coating	14.0-14.7' - trace to 10% irregular shaped white clasts, harder than matrix			
15	15.0	94	3	15.3' - Fracture, horizontal, rough, undulating	15.0-16.8' - reddish brown, trace black, green mottling, fine grained with 20% very fine sand	R3: 13:53-14:05	
245.3	R3NQ 5 ft 102%		1	15.5' - Fracture, 60 deg, undulating, smooth to rough, black and orange staining (40% of surface)		At 16.0': R-Scale = R4	
			1	16.9-17.5' - Fracture, 85 deg, rough, undulating, orange stains, partial fracture	16.8-17.5' - 35-40% very fine to fine black and white sand grains		
			0	18.2' - Fracture, horizontal, rough, undulating, 0.05' relief	17.5-18.3' - fine grained with 20% very fine sand	At 17.6': R-Scale = R3	
			0		18.3-19.8' - fine grained with 5-10% very fine sand		
			0		19.0-22.0' - highly weathered		
20	20.0	60	10+	20.0-20.8' - clay seams, 20.0-20.4' washed out, clay-like bedrock	20.0-20.8' - clay seams, 20.0-20.4' washed out, clay-like bedrock	At 19.6-22.7': R-Scale = R0-R1 R4: 14:32-14:36	
240.3	R4NQ 5 ft 92%		1		20.4-20.9' - very soft, very fine to fine grained, trace very fine sand, too friable for PP		
			1	22.7' - Fracture, horizontal, smooth, undulating	20.9-21.3' - clay seam, same color as bedrock		
			0		22.0-25.0' - slightly weathered		
			0		22.7-25.0' - dusky red, trace green, purple mottles, soft, fine grained		
			0		22.7-23.1' - 15-20% very fine to fine grained sand		
25	25.0			23.1-24.7' - soft to hard, 40-50% very fine to fine sand	23.1-24.7' - soft to hard, 40-50% very fine to fine sand	At 24.5': R-Scale = R3-R4	
235.3	R5NQ		0		24.7-25.0' - soft, 10% very fine to fine sand	24.7-25.0' - soft, 10% very fine to fine sand	R5: 14:45-14:52
			0		24.9-25.0' - clay seam, very soft, friable, alternates siltstone, <0.02' thick each		
				27.1' - Fracture, horizontal, rough, stepped			



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-5

SHEET 3 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687400.5 N, 2012819.7 E)

ELEVATION : 260.3 ft MSL (NGVD 29)

DRILLING CONTRACTOR : J. Little, S&ME

CORING EQUIPMENT AND METHOD : BK-51, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 5.8 ft bgs

START : 7/27/06 11:40

END : 7/28/2006

LOGGER : JS/AT

WATER LEVEL: 6.8' RSG		START: 7/27/06 11:30		END: 7/28/06 11:30		LOGGERS: GJA/T			
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
30 230.3	5 ft 100%	100	1			x 			



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-6

SHEET 1 OF 3

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688172.3 N, 2012652.4 E)

ELEVATION : 245.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

DRILLING EQUIPMENT AND METHOD : CME-550, Tricone Bit, 24" Split Spoon, 140 lb. Hammer

ORIENTATION : Vertical

WATER LEVELS : 4.8 ft bgs

START : 8/3/06 12:45

END : 8/4/2006

LOGGER : AT

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)		6"-6"-6"-6" (N)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE								
245.4	0.0						Sandy Silt (ML) 0.0-0.2' - yellowish brown, dry to moist, hard, 30% very fine to fine sand, fine to coarse gravel			
	2.0	3.6	SS1SS	13-16-10-12 (26)						
	2.5						Sandy Silt (ML) 2.5-3.2' - yellowish brown, dry to moist, soft, 30% very fine to fine sand, fine to coarse gravel			
	4.5	8.4	SS2SS	5-5-6-8 (11)						
5										
240.4	5.0						Clay (CL) 5.0-6.1' - grayish brown, moist, low to medium plasticity, slow to rapid dilatancy, black organic layer, root casts		PT-1 collected 5.0-7.0'	
	7.0	13.2	SS3SS	2-2-4-6 (6)						
	7.5						Clay (CL) 7.5-7.9' - grayish brown, moist, low to medium plasticity, slow to rapid dilatancy, black organic layer, root casts			
	9.5	12.0	SS4SS	7-14-17-21 (31)			Clay (CL) 7.9-8.5' - reddish brown, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy			
10										
235.4	10.0						Clay (CL) 10.0-10.9' - reddish brown, moist, hard, low to medium plasticity, slow to rapid dilatancy		Soil sampling completed at 14:35 on 8/3/06	
	10.9	10.8	SS5SS	15-22-50/2 (72/8")						
	11.5						Begin Rock Coring at 11.5 ft bgs See the next sheet for the rock core log			



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-6

SHEET 2 OF 3

ROCK CORE LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (688172.3 N, 2012652.4 E)

ELEVATION : 245.4 ft MSL (NGVD 29)

DRILLING CONTRACTOR : M. Mosely, S&ME

CORING EQUIPMENT AND METHOD : CME-550, NQ Double Barrel

ORIENTATION : Vertical

WATER LEVELS : 4.8 ft bgs

START : 8/3/06 12:45

END : 8/4/2006

LOGGER : AT

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
15 230.4 <							



PROJECT NUMBER:

338884

BORING NUMBER:

BCA-7

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.9 N, 2013818.7 E)

ELEVATION : 263.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer

ORIENTATION :

WATER LEVELS : ---

START : 8/9/06 11:17

END : 8/9/06 16:07

LOGGER : LH

WATER LEVELS : —		START : 9/9/06 11:17		END : 9/9/06 10:07		LOGGER : LHT	
DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION		
263.2	0.0	14.0	SS1SS	5-8-9-11 (17)	Clay (CL) 0.0-1.2' - reddish brown, light greenish gray mottling, dry, very stiff, trace roots		Install NW surface casing to 10' bgs.
	2.0						
	2.5	15.0	SS2SS	6-5-11-14 (16)	Clay (CL) 2.5-3.8' - reddish brown, trace brown mottling, dry, very stiff, gray sand pockets very fine to medium grained 3.5-3.8' - trace gravel laminated beds		
	4.5						
5							
258.2	5.0	12.0	SS3SS	8-9-11-13 (20)	Clay (CL) 5.0-6.0' - reddish brown, trace brown mottling, dry, very stiff, gray and yellowish brown sand pockets very fine to medium grained		
	7.0						
	7.5	15.0	SS4SS	7-8-10-16 (18)	Clay (CL) 7.5-8.8' - reddish brown, trace brown mottling, dry, very stiff, brown clay pockets mottled light gray		
	9.5						
10							
253.2	10.0	7.0	SS5SS	34-50/6 (50/6")	Clay (CL) 10.0-10.6' - reddish brown, moist, hard, low plasticity, laminated		
	12.0						
	12.5	5.0	SS6SS	50/5 (50/5")	Clay (CL) 12.5-13.0' - reddish brown, moist, hard, low plasticity, reddish black linear mottles		
	14.5						
15							
248.2	15.0	11.0	SS7SS	39-50/6 (50/6")	Clay (CL) 15.0-16.0' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity		
	17.0						
	17.5	10.0	SS8SS	15-17-50/5 (67/11")	Clay (CL) 17.5-18.4' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity		
	19.5						
20							



PROJECT NUMBER:
338884

BORING NUMBER:
BCA-7

SHEET 2 OF 2

SOIL BORING LOG

PROJECT : PEC COLA, New Hill, NC

LOCATION : (NAD 27) (687127.9 N, 2013818.7 E)

ELEVATION : 263.2 ft MSL (NGVD 29)

DRILLING CONTRACTOR : K. Canuel, S&ME

DRILLING EQUIPMENT AND METHOD : CME-750, Tricone Bit, 24 Split Spoon, 140 lb. Automatic Hammer

ORIENTATION :

WATER LEVELS : ---

START : 8/9/06 11:17

END : 8/9/06 16:07

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)	DEPTH BELOW EXISTING GRADE (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL (ft)		#TYPE				
	RECOVERY (in)						
				6"-6"-6"-6" (N)			
243.2	20.0	5.0	SS9SS	50/5 (50/5")	Clay (CL) 20.0-20.5' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity		First water level = 7.4' bgs taken 8/10/06 at 20:02
	22.0						
25							
238.2	25.0	6.0	SS10SS	50/6 (50/6")	Silt (ML) 25.0-25.3' - light gray and pale red, moist, very dense Clay (CL) 25.3-25.5' - reddish brown, mottled reddish black and light greenish gray, moist, hard, low plasticity		
	27.0						
30							
233.2	30.0 30.2	2.0	SS11SS	50/2 (50/2")	Sand With Silt (SP-SM) 30.0-30.2' - light gray and pale red, moist, very dense, very fine to fine grained, subangular to subrounded, poorly sorted, 20% silt Bottom of Boring at 30.2 ft bgs on 8/9/06 16:07		
35							
228.2							
40							