

LOGGER : DT/JS

Rev. 1



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

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	R1NQ 7.7 ft 95%	92	1	13.1' - Fracture, horizontal and 40 deg, rough, undulating, loose fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	<b>Siltstone</b> 12.8-14.5' - reddish brown, scattered green mottling, soft, slightly weathered, fine grained	Rock coring began at 15:48 on 4/20/06	
			0					
			1	15.0' - Fracture, horizontal, rough, undulating, loose fit				<b>Sandstone</b> 14.5-14.6' - light gray, very thin bedding, fine sand to medium sand, slightly weathered, undulating bedding
			0					
			1	17.5' - Fracture, rough, undulating				
			1	18.25' - Fracture, 25 deg, smooth, undulating				
			0					
			0					
			0					
			0					
20 241.3	20.5		20.5-25.8' - Microfractures in capillary zones			R2: 16:25-16:50		
25 236.3	R2NQ 10 ft 95%	92.6	0					
			0					
			0					
			0					
			2	24.8' - Fracture, 40 deg, smooth, undulating, tight fit				
			0	25.2' - Fracture, 70 deg, smooth, undulating, green stains, loose fit				
			0					
			0					
			2					
			30 231.3	30.5		29.3' - Fracture, 70 deg and 70 deg, rough, undulating, loose fit 29.6' - Fracture, horizontal, smooth, stepped, loose fit		
		0		30.5' - grayish red to reddish brown, fresh, up to 10% fine to very fine sand, subangular, occasional round, gravel sized white clasts—becoming infrequent with depth				
		0						



PROJECT NUMBER:

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SHEET 3 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: 30.153		START: 4/29/06 10:19		END: 4/29/06 11:00		LOGGERS: D7100	
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			
35 226.3	R3NQ 10 ft 100%	94	1	32.7' - Fracture, horizontal, smooth, stepped, tight fit	x 		

PROJECT NUMBER: <b>338884</b>	BORING NUMBER: <b>BPA-1</b>	SHEET 4 OF 5
<b>ROCK CORE LOG</b>		

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

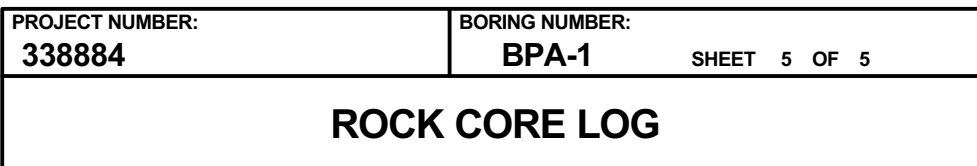
WATER LEVELS : 3.3 ft bgs

START : 4/20/06 13:29

END : 4/21/06 11:55

LOGGER : DT/JS

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			
55 206.3	R5NQ 10 ft 94%	92.5	0	55.5' - Fracture, horizontal, slickensided, slickensides not well developed, but present along bedding surfaces 55.7' - Fracture, horizontal, loose fit  57.4' - Fracture, horizontal, smooth, undulating, loose fit				
			0					
			1					
			1					
			1					
			0					
			0					
			1					
			60 201.3					60.5
0								
0								
1								
65 196.3	R6NQ 10 ft 100%	75	0					
			1					
			1					
			2					
			4					
			10+					
			1					
			10+					
			70 191.3	70.5	10+	69.0' - Fracture, 25 deg, rough, undulating, tight fit 70.0' - Fracture, horizontal and 45 deg, rough, undulating, loose to tight fit 70.5-80.5' - Microfracturing, capillary pattern	R7: No time recorded	
			0					



LOGGER : DT/JS

Rev. 1



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	COMMENTS	
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
259.7	0.0	14.0	SS1SS	2-4-5-9 (9)	<b>Silt (ML)</b> 0.0-0.7' - dark reddish brown, moist, medium dense, possibly reworked native material <b>Silty Sand (SM)</b> 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")	<b>Silty Sand (SM)</b> 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")	<b>Silty Sand (SM)</b> 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)	<b>Clay (CL)</b> 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")	<b>Silt (ML)</b> 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")	<b>Silt (ML)</b> 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")	<b>Silt (ML)</b> 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")	<b>Silt (ML)</b> 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								

# 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

[illegible]



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	92%			36.5' - Fracture, 40 deg, slickensided, undulating, opposite direction of above fractures	x x x		
219.7	40.0		2	38.0-38.3' - Fracture, 60 deg, slickensided, undulating, same direction as first few	x x x	38.5-38.9' - blue-green mottling, clay clasts	At 38.7': R-Scale = R1
			0	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	39.0-40.0' - trace very fine to fine sand	
					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		
	R6NQ 5 ft 108%	74	0		x x x		
			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		
45	45.0				x x x	45.0-45.6' - very soft to soft, grades to sandstone	R7: 13:45-14:25
214.7			0		x x x	<b>Sandstone</b>	
			3	46.0-46.4' - Fractures, 60 deg and horizontal, rough, undulating, to smooth and undulating	x x x	45.6-45.8' - white and very dark gray, soft to hard, very fine sand, fresh	
					x x x	<b>Siltstone</b>	
			1	47.0' - Fracture, horizontal, rough, undulating	x x x	45.8-47.2' - dark reddish brown, very soft to soft, fresh, fine grained	
	R7NQ 5 ft 100%	100	0	48.0' - Fracture, 10 deg, rough, undulating	x x x	<b>Sandstone</b>	At 48.5': R-Scale = R3
			0		x x x	47.2-48.0' - white and very dark gray, soft to hard, very fine sand, fresh	
					x x x	<b>Siltstone</b>	
					x x x	48.0-49.3' - dark reddish brown, very soft to soft, fresh	
50	50.0				x x x	<b>Sandstone</b>	R8: 14:37-15:03
209.7			1	50.7' - Fracture, 30 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	
			2	51.0-51.8' - Fracture (2), horizontal and vertical, rough, undulating, tightly healed at 51.45-51.75'	x x x	<b>Siltstone</b>	
			2	52.4' - Fracture, 15 deg, rough, slickensided	x x x	At 49.9' - dark reddish brown, soft	At 52.3': R-Scale = R2-R3
	R8NQ 5 ft 100%	88		52.7' - Fracture, 15 deg, rough, slickensided	x x x	49.9-71.0' - fresh	
			4	53.3-53.6' - Fracture (1), vertical, rough, undulating, slickensided, smooth	x x x	50.0-51.0' - trace medium sand	
			1		x x x	53.5-55.8' - bedding on 45 degree angle	
55	55.0			54.9' - Fracture, horizontal, rough, undulating	x x x		R9: 15:10-15:30
204.7			1	55.8' - Fracture, horizontal and 20 deg, rough, undulating	x x x	55.7-56.2' - trace medium to coarse sand	
			3	56.0-56.2' - Fracture (2), horizontal and 45 deg, slickensided, undulating	x x x		
				56.8' - Fracture, horizontal, slickensided, undulating, smooth	x x x	56.8' - large greenish gray mottle, 0.1' thick, throughout width of core	At 57.3': R-Scale = R3
	R9NQ 5 ft	72	0		x x x		



# 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

WATER LEVELS : 6.61 RDS		START : 0/30/00 13.23		END : 7/3/00 11.00		LOGGER : JF/ET	
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
	100%						
			4				
60 199.7	60.0		10+	58.7' - Fracture, horizontal, rough, undulating 59.3' - Fracture zone, 60 deg, rough, undulating			R10: 15:38-15:55
			0				
			0				
	R10NQ 5 ft 100%	100	0				At 61.6': R-Scale = R3
			0				
			0				
65 194.7	65.0		0				R11: 16:01-16:17
			0				
	R11NQ 5 ft 102%	100	0				
			0		68.0-69.7' - laminated beds on 45 degree angle		At 68.4': R-Scale = R3
			0				
70 189.7	70.0		3	70.1' - Fracture, 30 deg, smooth, undulating			R12: 16:34-16:48
			10+	70.6' - Fracture, slickensided, undulating, parabolic shaped		71.0-72.4' - moderately weathered	
			10+	70.8' - Fracture, 35 deg, rough, slickensided			
	R12NQ 5 ft 96%	43*	10+	71.0-71.8' - Fracture zone, rough, slickensided		71.8-72.0' - clay seam, very soft, friable material	
			1	72.0-72.1' - Fracture zone, rough, undulating		72.4-73.7' - fresh	At 72.7': R-Scale = R1
			2	72.2-72.4' - clay and siltstone alternating, friable material			
			2	72.4' - Fracture (2), horizontal and 45 deg, slickensided, undulating			
			2	73.7' - Fracture, 35 deg, slickensided, smooth			
75 184.7	75.0		0	74.2' - Fracture, 30 deg, slickensided, smooth			
			0	74.5' - Fracture, horizontal, rough, undulating			
			0				
	R13NQ 5 ft	94	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	<b>Siltstone</b> 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			0		x		R14: 08:50-09:12
			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		2	84.4-85.0' - Fracture, 70 deg and 80 deg, healed fracture, quartz infilling	x		
174.7			1	85.0-85.6' - Fracture, vertical, rough, undulating, trace white 1-2 mm speckles, clay seam	x		R15: 09:17-09:45
			1	85.4' - Fracture, vertical, rough, undulating, trace white 1-2 mm speckles	x		
	R15NQ 5 ft 100%	80	1	87.5-87.7' - Fracture, 60 deg, rough, undulating	x	85.0-96.8'	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	95.0		0		x		R17: 10:20-10:50
164.7			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	
			0		x		
			0		x		
	R17NQ 5 ft	100	0		x		At 98.7': R-Scale = R5

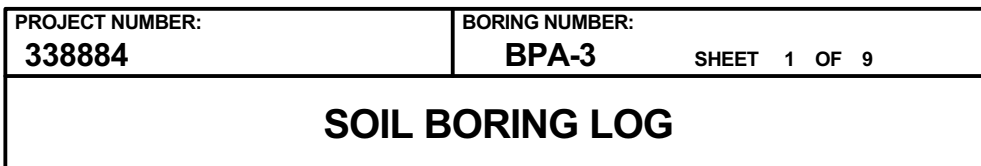


<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-2</div>
<b>SHEET 6 OF 6</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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
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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		
	104%					First water level = 8.6' bgs taken 7/6/06 at 13:50; second water level = 3.2' bgs taken 7/7/06 at 15:50 R-Scale performed after drilling on stored samples	
100 159.7	100.0		0		99.0-100.0' - trace very fine to fine sand		
			0				
	</						



LOGGER : LH

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 2 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			
5 255.6	2.9	R1NQ 1.3 ft 77%	38	2	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	<b>Siltstone</b> 2.9-4.2' - reddish brown, mottled light greenish gray, very soft, laminated bedding, slightly weathered  <b>Sandstone</b> 4.2-8.4' - dark reddish brown and light reddish brown, mottled greenish gray and reddish black, soft, very thin to medium bedding, very fine sand to coarse sand, angular to subrounded, poorly sorted, slightly weathered, finer and coarser grained beds		Rock coring began at 09:21 on 6/18/06 R1: 09:21-09:27 on 06/18/06. At 2.9-4.2' rock is so soft that it was washed away partially during coring. At 2.9-4.2': R-Scale = R0-R1 R2: 12:20-12:34 At 4.2-6.0': R-Scale = R3-R5 At 6.0-10.0': R-Scale = R3	
	4.2								
	R2NQ 5 ft 102%	80	0	5.6' - Fracture, 30 deg, smooth, undulating					
			1						
			0						
			2						
	10 250.6	9.2	R3NQ 5 ft 99%	66	1	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	<b>Siltstone</b> At 8.4' - dark reddish brown and light reddish brown, mottled greenish gray and reddish black, soft, slightly weathered 8.8' - large reddish black mottle, 0.05' thick, 0.1' long <b>Sandstone</b> 9.0-10.1' - dark reddish brown and light reddish brown, mottled greenish gray and reddish black, soft, very thin to medium bedding, very fine sand to coarse sand, angular to subrounded, poorly sorted, slightly weathered, finer and coarser grained beds  <b>Siltstone</b> At 10.1' - dark reddish brown, mottled greenish gray and reddish black, very soft, laminated bedding 10.1-10.2' - clay seam, very soft, friable material 10.1-12.5' - slightly weathered 12.5-15.4' - highly weathered 14.2-17.7' - very soft to soft, some laminated beds 15.4-17.7' - fresh  <b>Sandstone</b> 17.7-17.9' - fresh <b>Siltstone</b> 17.9-19.3' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds  <b>Sandstone</b> 19.3-20.3' - white and dark gray, mottled dark reddish brown, thin bedding, very fine sand to fine sand, subangular to subrounded, well sorted, fresh	SC-1 collected 8.4-9.2' R3: 13:20-13:27  At 10.1-12.5': R-Scale = R2  At 12.5-14.0': R-Scale = R0  At 14.0-14.6': R-Scale = R1 R4: 13:33-13:43  At 16.1': R-Scale = R3  R5: 13:47-13:58  At 20.3': R-Scale = R3  At 22.3': R-Scale = R3	
		2							
		0							
		0							
4									
15 245.6		14.2	R4NQ 5 ft 104%	76	3	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX			
		10+							
		3							
		0							
		0							
	R5NQ 5 ft 100%	100	0						
			0						
			0						
			0						
			0						



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 3 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	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 235.6	24.2		0		<b>Conglomeratic Sandstone</b> 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%	96	0				
			0				
			0				
			0				
30 230.6	29.2		2	<b>Siltstone</b> 28.5-29.2' - dark reddish brown, mottled greenish gray, very soft to soft, fresh <b>Conglomeratic Sandstone</b> 29.2-29.8' - white and dark gray, soft, fine sand to medium gravel, subangular to rounded, poorly sorted, fresh, coarsens with depth <b>Siltstone</b> 29.8-30.4' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds <b>Sandstone</b> 30.4-30.7' - fresh, on 45 degree angle, <0.07' thick <b>Siltstone</b> 30.7-31.1' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, some laminated beds <b>Sandstone</b> 31.1-31.2' - fresh, on 45 degree angle, <0.07' thick <b>Siltstone</b> At 31.2' - 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						
	4						
	10+						
	35 225.6	34.2				1	
40 220.6	R8NQ 5 ft 98%	86	1				
			1				
			10+				
			0				
			0				
40 220.6	R9NQ 5 ft 97%	97	0				
			0				
			0				
			0				
			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 4 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: 207.853		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.	
45 215.6	44.2		0			x x x x	34.8-35.8' - greenish gray mottles with reddish black encircling 39.2-49.2' - trace greenish gray mottles, soft	R10: 15:07-15:17	
			0			x x x x			
			0			x x x x			
		R10NQ 5 ft 102%	96*	0		x x x x			
			2			x x x x			
			10+			x x x x			
50 210.6	49.2		10+	48.1' - Fracture, horizontal, smooth, planar 48.6' - Fracture, horizontal, smooth, planar		x x x x	48.1-51.9' - moderately weathered	At 46.0': R-Scale = R3	
			10+	49.2' - Fracture zone, horizontal, rough, planar, undulating 49.6-49.8' - Fracture (5), horizontal, smooth, planar		x x x x			
			10+	50.9' - Fracture, horizontal, smooth, planar 50.9' - Fracture, horizontal, smooth, planar 51.0-51.9' - Fracture zone, horizontal, smooth, planar, fracture zone with 0.02-0.03' thick clay seams		x x x x			
		R11NQ 5 ft 95%	60*	10+		x x x x			
			0			x x x x			
			0			x x x x			
55 205.6	54.2		0			x x x x	51.9-53.6' - fresh  53.0-54.2' - soft	At 52.6': R-Scale = R3-R4	
			0			x x x x			
			0			x x x x			
		R12NQ 5 ft 100%	100	1	56.2' - Fracture, horizontal, rough, planar	x x x x			
			0			x x x x			
			0			x x x x			
60 200.6	59.2		0			x x x x	53.6-54.2' - dark reddish brown, mottled greenish gray and reddish black, soft, very fine sand to fine sand, subangular, well sorted, fresh, grades to sandstone and back to siltstone at bottom  <b>Siltstone</b> 54.2-58.1' - dark reddish brown, mottled greenish gray and trace reddish black, very soft, fresh	R12: 08:43-08:59  At 55.1': R-Scale = R3-R4  At 57.0': R-Scale = R3-R4	
			0			x x x x			
			0			x x x x			
			0			x x x x			
			1			x x x x			
			2			x x x x			
60 200.6			0			x x x x	58.1-62.7' - light reddish gray and dark reddish gray, soft to hard, very fine sand to coarse sand, subangular to rounded, fresh, well sorted to poorly sorted, trace gravel sized silt clasts 59.2-62.7' - white, dark greenish gray, dark reddish brown, and very dark gray, laminated to thin bedding	At 58.7': R-Scale = R4 R13: 09:03-09:16  All beds in R13 except last 0.2' are on 30 degree angle.  At 61.5': R-Scale = R3-R4	
			0			x x x x			
			0			x x x x			
			1			x x x x			
			2			x x x x			
		R13NQ 5 ft 100%	98	1	61.0' - Fracture, 30 deg, rough, planar	x x x x			





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

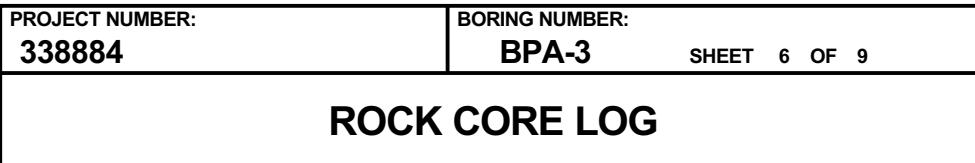
START : 6/18/06 08:30

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	
					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  65.7' - Fracture, horizontal, rough, undulating 66.3' - Fracture, horizontal, rough, undulating	X 	





LOGGER : LH

Rev. 1



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		0		XXXXXX XXXXXX			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-3

SHEET 8 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	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
125 135.6	124.2		0	123.1-123.4' - Fracture zone, 45 deg, rough, undulating	x 		



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

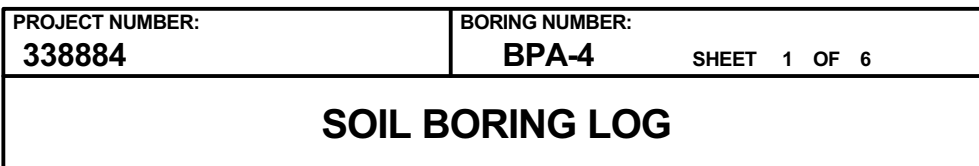
WATER LEVELS : 29.2 ft bgs

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		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.	
145 115.6	R30NQ 5 ft 100%	90	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><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><div>.....</div><d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LOGGER : JF/EM

Rev. 1



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: <b>338884</b>	BORING NUMBER: <b>BPA-4</b>	SHEET 3 OF 6
<b>ROCK CORE LOG</b>		

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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WATER LEVEL: 32.1 R55		START: 17:55 14.0		END: 17:55 13.9		LOSS: 0.757		
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				
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	R5: 16:10-16:21	
0			At 26.0': R-Scale = R1					
0								
1								
1								
30 229.6	R6NQ 5 ft 100%	78	0	.	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	R6: 16:25-16:42		
3								
4								
1								
1								
1								
35 224.6	R7NQ 5 ft 100%	84	1		.	35.0-55.0' - dark reddish brown, no mottling, fine grained	R7: 16:50-17:15	
1								
1								
1								
1								
1								
40 219.6	R8NQ 5 ft 100%	94	0	.		40.0-46.8' - trace very fine to fine sand	R8: 08:10-08:45 on 07/07/06 SC-2 collected 40.0-41.25'	
1								
0								
3								
2								
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

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.
214.6	R9NQ 5 ft 100%	96	0	44.1' - Fracture, 60 deg, rough, undulating	x x x	44.8-45.0' - clay clasts, 80%	R9: 08:50-09:05
			1		x x x		
			1	46.8-47.1' - Fracture, 70 deg, rough, undulating	x x x	46.8-47.3' - sand lense/ clay clasts; 30 degree bedding, mottling at bottom	
			1		x x x	47.3-48.7' - dark purple mottling	At 47.9': R-Scale = R4
			1	48.7' - Fracture, <5 deg, rough, undulating 49.1' - Fracture, <5 deg, rough, undulating	x x x	48.7-50.0' - clay clasts less than or equal to 0.4 48.7-49.3' - very soft zone	
50 209.6	R10NQ 5 ft 104%	100	0		x x x		R10: 09:10-09:30
			0		x x x	50.9-51.5' - 40-50% very fine to fine sand	
			0		x x x		
			1	53.2' - Fracture, <5 deg, rough, undulating	x x x	52.4-52.9' - 40-50% very fine to fine sand	At 52.5': R-Scale = R4
			0		x x x		
55 204.6	R11NQ 5 ft 100%	100	0		x x x	55.0-60.0' - very dusky red, trace mottling	R11: 09:35-09:55
			0		x x x		
			0		x x x	56.5-56.8' - trace very fine to fine sand	
			0		x x x	57.6-57.7' - trace very fine to fine sand	At 57.6': R-Scale = R2-R3
			0		x x x	57.8-58.0' - very fine to fine sand with clay clasts 58.4-59.2' - 80% fine sand with .04 to .4 clay clasts	
60 199.6	R12NQ 5 ft 90%	70	0		x x x		R12: 10:01-10:20
			0		x x x		
			0		x x x		
			3	63.4-63.7' - Fracture, 70 deg, rough, undulating	x x x		
			2	63.4' - Fracture, <5 deg, smooth, undulating, top truncation from above	x x x	64.0-64.1' - very soft, clay seam	At 63.8': R-Scale = R2
65				63.5' - Fracture	x x x	64.1-64.2' - competent but rough outer surface	





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.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
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 			



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

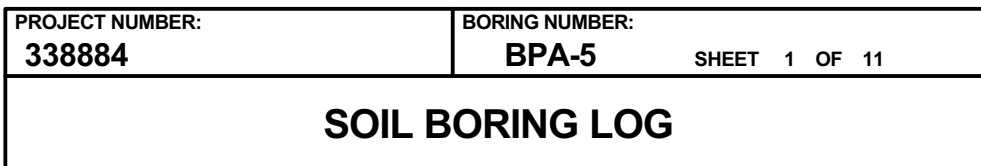
WATER LEVELS : 5.2 ft bgs

START : 7/6/06 14:07

END : 7/7/06 15:37

LOGGER : JF/EM

WATER LEVEL: 92.1 R53		DISCONTINUITIES		START: 7/7/06 14:00		END: 7/7/06 15:37		LOGGERS: SHAW	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)			DESCRIPTION		SYMBOLIC LOG	LITHOLOGY		COMMENTS
		R Q D (%)	FRACTURES PER FOOT	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 X			



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

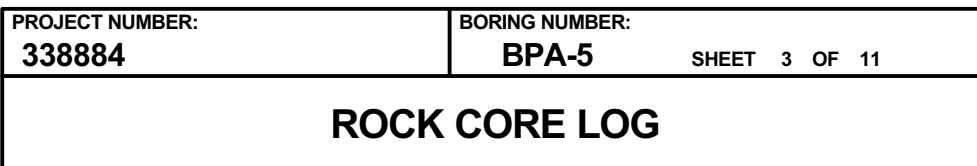
WATER LEVELS : 1.5 ft bgs

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			SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
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)		7.6-8.5' - weak red to very dusky red, soft, fresh, fine grained	Rock coring began at 13:15 on 4/25/06		
			1					8.5-8.7' - weak red to very dusky red, fresh	R1: 13:15-13:40 on 4/25/06
			0					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 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		9.0-9.3' - weak red to very dusky red, fresh	R2: 13:50-14:10		
			0					9.3-9.6' - weak red to very dusky red, soft, fresh, fine grained	
			1					9.6-11.2' - weak red to very dusky red, blue-green mottling, fresh	
			1					11.2-11.6' - weak red, fresh, pebbles at top, fining downward	
			1					11.6-12.1' - reddish brown, blue-green mottling, coarse sand, fresh	
			2					12.1-12.7' - weak red, fresh, pebbles at top, fining downward	
20 245.7	R3HQ 5 ft 100%	88	0	21.6-22.2' - Fracture, 65 deg, rough, undulating		At 12.7' - reddish brown, blue-green mottling, coarse sand, fresh 12.9' - conglomerate lens <0.1' 13.0' - conglomerate lens <0.1' 13.7' - conglomerate lens <0.1'	R3: 14:20-15:00		
			0					14.2-14.6' - weak red, fresh, coarse grained, pebbles at top, fining downward	
			0					14.6-15.5' - reddish brown, soft, fresh, fine grained	
			1					15.5-16.0' - fresh	
			0					16.0-16.8' - dark reddish brown, hard, coarse sand	
			0					16.0-16.6' - highly weathered	
25 240.7	R4HQ 5 ft 100%	100	0	26.0-31.0' - very dusky red		16.6-16.8' - fresh	R4: 15:05-15:30		
			0					At 16.8' - dark reddish brown, soft, fresh, fine grained	
			0					16.8-17.1' - white gray inclusions	
			0					21.0-39.8' - trace blue green mottling at relic fractures	
			0						
			0						



LOGGER : JS/JF

Rev. 1



# 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		
70 195.7	R13HQ 5 ft 102%	100	0				
			0				
			0				
71.0			1	71.1-72.1' - Fracture, 85 deg		69.5' - large, gray-white inclusion 69.8-70.3' - small (0.4) sized gray-white inclusions	R14: 14:30-15:05
			0				
75 190.7	R14HQ 5 ft 100%	100	0				
			0				
			0				
76.0			0				
			0				
			0				
80 185.7	R15HQ 5 ft 100%	100	0			76.7-77.1' - hard, sandstone lense, coarse	R15: 16:05-16:30
			0				
			0				
			0			78.2' - hard, sandstone lense, coarse	
81.0			0				
			0				
			0				
85 180.7	R16HQ 5 ft 100%	100	1	83.0-83.6' - Fracture, vertical			R16: 16:45-17:20
			1				
			0	85.0' - Fracture, <5 deg, rough, undulating			
86.0			1				
				86.8' - Fracture, <5 deg, planar, smooth to undulating, rough		86.0-91.0' - dark reddish brown	R17: Incorrect time recorded on 4/27/06

# 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	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				
90 175.7  91.0   95 170.7  96.0   100 165.7  101.0   105 160.7  106.0	R17HQ 5 ft 100%	100	0 0 0	<div>97.7-98.0' - Fracture, 60 deg, rough, undulating</div> <div>98.3' - Fracture, 0.01' wide, does not extend throughout core</div> <div>98.5' - Fracture, &lt;5 deg, rough to smooth, undulating</div> <div>98.8' - Fracture, &lt;5 deg, rough to smooth, undulating</div> <div>98.9' - Fracture, &lt;5 deg, rough, undulating</div> <div>99.0' - Fracture, &lt;5 deg, smooth and undulating to rough and planar</div> <div>99.2' - Fracture, &lt;5 deg, rough, undulating, ~0.05' wide, fractured pieces with clay</div> <div>99.4' - Fracture, &lt;5 deg, rough, undulating</div> <div>99.7' - Fracture, &lt;5 deg, smooth and undulating to rough and planar</div> <div>101.0-101.2' - Fractures (2), rough, undulating, 0.1' fractures</div> <div>102.3-102.5' - Fracture, 30 deg, rough, undulating</div> <div>102.6' - Fracture, 30 deg, rough, undulating</div> <div>103.1' - Fracture, &lt;5 deg, rough to smooth, undulating</div>	<div>Sandstone 93.7-95.7' - dark reddish brown, soft to hard, very fine sand to fine sand, fresh</div> <div>Siltstone 95.7-96.0' - dark reddish brown, trace blue-green mottling, soft, fresh</div> <div>Sandstone 96.0-96.8' - very dusky red, soft to hard, fine sand, fresh</div> <div>Shale 96.8-102.5' - multi-colored, fresh, blue-green/red-brown/tan-yellow, trace to little sand sized micas</div> <div>Siltstone 102.5-105.5' - dark reddish brown, soft, fresh, fine grained</div> <div>102.5-105.5' - blue-green mottling in relic fractures</div> <div>Sandstone 105.5-107.1' - very dusky red, hard, fresh</div>	R18: 08:20-08:45 on 4/28/06			
	R18HQ 5 ft 95%	95	0 0 0			R19: 09:00-09:30 SC-3 collected 96.0-97.1'			
		R19HQ 5 ft 98%	75				0 2 - - -		
			R20HQ 5 ft 99%				89	1 0 0	R20: 10:05-11:00
								0	
						0			
						0			
						0			





PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 7 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	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				
110 155.7  								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-5

SHEET 8 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

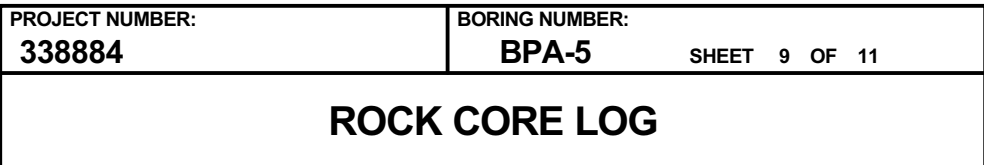
WATER LEVELS : 1.5 ft bgs

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		
130 135.7	R25HQ 5 ft 100%	98	0	128.5' - Fracture, 25 deg, rough, undulating	.	126.9-127.4' - conglomerate lense, multi-colored blue-green, reddish-brown, and gray-black, hard, coarse grained 128.0-128.2' - conglomerate lense, multi-colored blue-green, reddish-brown, and gray-black, hard, coarse grained <b>Siltstone</b> 129.0-151.0' - dark reddish brown, trace blue-green mottling at relic fractures, soft, fresh, fine grained	R26: 14:55-15:15
			1				
			0				
	0	133.5-135.3' - Microfractures, capillary pattern	x 				



LOGGER : JS/JF

Rev. 1



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	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.
170 95.7	R34HQ 5 ft 96%	71	4	167.4' - Fractures, <5 deg, rough, undulating	x x	167.7-167.9' - large mottles	R35: 12:00-12:50 on 5/1/06
			3	167.6' - Fractures, 40 deg and 60 deg, slickensided, undulating	x x		
			2	167.8' - Fractures, 40 deg and 60 deg, slickensided, undulating	x x		
			0	168.0' - Fracture, 40 deg and 60 deg, slickensided, undulating	x x		
			0	168.6-168.9' - Fractures, 40 deg and 60 deg, slickensided, undulating	x x		
171.0			0	169.7' - Fractures, 40 deg and 60 deg, slickensided, undulating	x x	<b>Sandstone</b> 176.4-176.6' - very dusky red, trace blue-green mottling, fresh <b>Siltstone</b> 176.6-178.6' - dark reddish brown, trace blue-green mottling, soft, fresh, fine grained <b>Sandstone</b> 178.6-178.7' - very dusky red, trace blue-green mottling, fresh <b>Siltstone</b> At 178.7' - very dusky red to blue-gray (banded), trace blue-green mottling, soft, fresh, fine grained	R36: 13:30-14:00
			0	170.1' - Fractures, 40 deg, slickensided, undulating	x x		
			0		x x		
			0		x x		
			0		x x		
175 90.7	R35HQ 5 ft 104%	100	0	174.0-176.0' - Trace capillary fractures	x x		
			0		x x		
			0		x x		
			0		x x		
			0		x x		
180 85.7	R36HQ 5 ft 100%	100	0		x x	186.0-191.0' - dark reddish brown	R37: 14:30-15:05
			0		x x		
			0		x x		
			0		x x		
			0		x x		
185 80.7	R37HQ 5 ft 100%	90	2	184.5' - Fractures, 45 deg, slickensided, undulating	x x	186.0-191.0' - dark reddish brown	R38: 15:15-15:45
			0	185.0' - Fractures, rough fractured pieces, undulating	x x		
			0		x x		
			0		x x		
			0		x x		
186.0			0		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

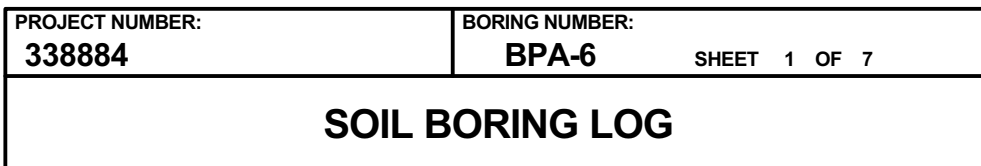
WATER LEVELS : 1.5 ft bgs

START : 4/19/06 08:40

END : 5/2/06 10:55

LOGGER : JS/JF

WATER LEVELS: 1.5' bgs		START: 4/19/06 08:45		END: 5/2/06 10:55		LOGGER: JJJ/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					
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							
	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	R39: 07:45-08:15 on 5/2/06
			0							
			0							
			0							
			0							
			0							
195 70.7	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							
	R41HQ 6 ft 100%	100	0			201.6-207.0' - dark reddish brown to very dusky red, trace blue-green mottling, soft, fresh, fine grained	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							
200 65.7	201.0		0					Bottom of Boring at 207.0 ft bgs on 5/2/06 10:55		SC-8 collected 202.8-204.15'
			0							
			0							
			0							
205 60.7	207.0		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	R-Scale not performed on rock core samples					
			0							
			0							
			0							



LOGGER : JF

Rev. 1



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	5.9-6.0' - Fracture, 60 deg, rough, undulating, black staining on edge, tight fit	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	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
25 239.3	25.0		0		24.9' - 0.1' thick 20 degree banding on relic bedding <b>Sandstone</b> 25.0-29.3' - reddish gray, medium bedding, slightly weathered to moderately weathered, very soft 25.0-27.0' - fine to medium grained 27.0-29.3' - medium to coarse grained	R6: 09:23-09:31	
	R6NQ 5 ft 100%	82*	0			At 25.7': R-Scale = R3	
			0			At 26.5-29.0': R-Scale = R2	
			0				
			1	28.5-28.7' - Fracture, 60 deg, rough, undulating		At 28.2': R-Scale = R3	
			2	29.0' - Fracture, <5 deg, rough, undulating 29.3-29.4' - Fracture, <5 deg, rough, undulating, shattered rock, stained 29.4-29.6' - Fracture, crack in core with discoloration along surface of break 30.5-31.8' - Fracture, 85 deg, slickensided, undulating			
30 234.3	30.0		1		<b>Siltstone</b> At 29.3' - dark purple and glue-green, very soft, slightly weathered 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 <b>Sandstone</b> At 31.8' - dark reddish brown, very hard, laminated to massive bedding, fine sand to medium sand, coarse at bottom 31.8-35.0' - slightly weathered 32.2-32.3' - clay seam 32.3-35.0' - very dusky red, blue-green mottling 35.0-40.0' - gray, soft to hard, fine sand to coarse sand 35.0-47.0' - fresh 35.3' - large piece on dark reddish brown sandstone (4) 36.0-36.4' - trace black mottling 37.2-37.3' - soft, trace dark reddish brown mottling	R7: 09:35-09:53 At 30.4': R-Scale = R3	
	R7NQ 5 ft 100%	72	1			At 32.5': R-Scale = R3	
			1	33.5-33.9' - Fracture, 60 deg, rough, undulating		At 34.2': R-Scale = R4	
			0				
			0				
35 229.3	35.0		2		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	R8: 10:00-10:08	
	R8NQ 5 ft 100%	94	0	35.5-35.6' - Fracture, 45 deg, rough, undulating, black staining 35.9-36.0' - Fracture, 45 deg, rough, undulating, black staining		At 36.4': R-Scale = R3	
			1	37.0-37.5' - Fracture, <5 deg, rough, undulating, trace yellow staining			
			0			At 39.3': R-Scale = R3-R4	
			0				
40 224.3	40.0		0			R9: 10:12-10:18	
	R9NQ 5 ft 100%	96	0	41.1' - Fracture, 60 deg, rough, undulating, light yellow staining		At 42.1': R-Scale = R3	
			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			R10: 10:30-10:40	
			0			At 46.1': R-Scale = R3		
			1			Siltstone 47.0-48.9' - dark reddish brown, mottled blue-green, very soft, fresh, fine grained, very soft, fine to medium sand (15%) more coarse at bottom	At 48.4': R-Scale = R3-R4	
			0					
			0			Sandstone At 48.9' - reddish brown, soft, medium to thick bedding, fine sand to medium sand, fresh, coarse grained (10%) 50.0-53.0' - dusky red, mottled blue-green and gray, progressively more fine sand more coarse grains at bottom (medium - 20%), blue-green coloring at contact with siltstone	R11: 13:00-13:20	
50 214.3	50.0		2	50.2' - Fracture, <5 deg, smooth, planar 50.4' - Fracture, 30 deg, smooth, planar, along bedding planes			At 51.2': R-Scale = R3-R4	
	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 52.7': R-Scale = R3	
			3					
			0			Siltstone At 53.0' - dark reddish brown, 15% blue-green mottling, very soft, fine grained 53.0-55.5' - fresh		
			0			55.0-60.0' - more fragile 55.5-57.0' - slightly weathered, large amount (35-40%) clay clasts up to 2, relic bedding at 20 degrees 57.0-64.7' - fresh	R12: 13:34-13:50	
						1	58.0' - Fracture, 20 deg, rough, undulating, along possible bedding plane 59.0' - Fracture, 20 deg, rough, undulating, along possible bedding plane	
55 209.3	55.0		2	60.4' - Fracture, <5 deg, rough, undulating 60.9' - Fracture, <5 deg, break, at clay seam 62.0-62.4' - Fracture, 65 deg, rough, undulating, trace dark purple staining			At 59.5': R-Scale = R3	
	R12NQ 5 ft 100%	80	2		60.0-65.0' - trace blue-green mottling	R13: 13:50-14:25		
			2					
			0					
			1					
			1					
60 204.3	60.0		2			At 62.0': R-Scale = R3		
	R13NQ 4.4 ft 100%	89	0			SC-4 collected 62.8-63.4		
			1					
			0					

# 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

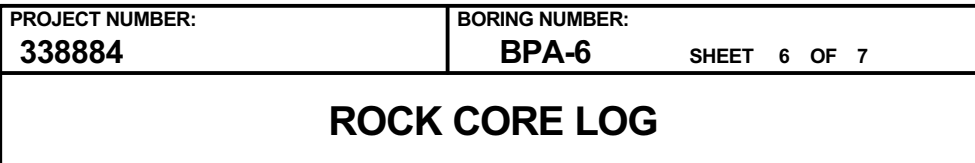
WATER LEVELS : 12.5 ft bgs

START : 6/28/06 16:02

END : 6/30/06 10:00

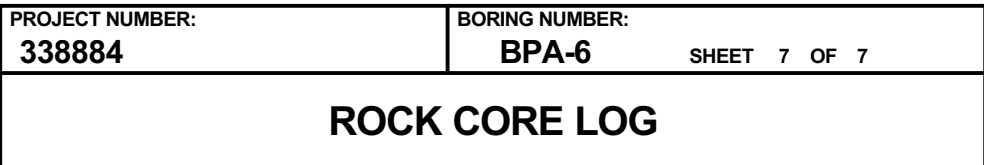
LOGGER : JF

WATER LEVELS: 12.0 ft		START: 0/20/00 10:07		END: 0/30/00 10:00		LOGGERS: 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 			



LOGGER : JF

Rev. 1



LOGGER : JF

Rev. 1





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	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
35 230.0	R5NQ 5 ft 100%	85	0	33.3-34.0' - Fractures (5), <5 deg, rough, undulating	x 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

WATER LEVEL: 10.0 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	LITHOLOGY	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.	
55 210.0	R9NQ 5 ft 100%	88	1	50.4' - Fracture, 65 deg, rough, undulating		x x			



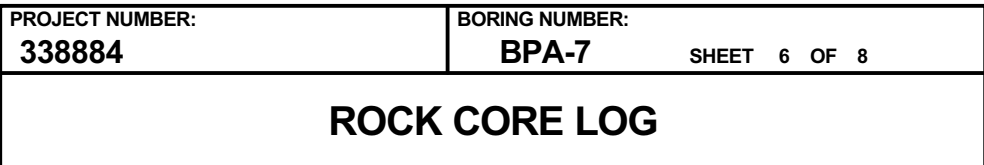


<b>PROJECT NUMBER:</b> <b>338884</b>	<b>BORING NUMBER:</b> <b>BPA-7</b>
<b>SHEET 5 OF 8</b>	
<h2 style="margin: 0;">ROCK CORE LOG</h2>	

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
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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					
75 190.0	R13NQ 5 ft 100%	100	0	72.3' - Fracture, 65 deg, rough, undulating, tight fit	x	70.8-70.9' - clay clasts	At 70.7': R-Scale = R3-R4			
			0		x					
			1		x					
			0		x					
			0		x					
75.0			1		75.0-85.0' - Small microfractures/capillary-like			x	75.0-85.0' - 10-15% very fine to fine sand	At 74.6': R-Scale = R3-R4 R14: 07:50-08:20 on 06/27/06
			0					x		
			0					x		
			0					x		
			0					x		
80 185.0	R14NQ 5 ft 100%	100	0	75.6' - Fracture, <5 deg, rough, undulating, tight fit		x	75.6-87.3' - trace blue-green mottling, very soft	At 77.0': R-Scale = R3		
			0			x				
			0			x				
			0			x				
			0			x				
80.0			0			x				At 78.7': R-Scale = R3
			0			x				
			0			x				
			0			x				
			0			x				
85 180.0	R15NQ 5 ft 100%	100	0			x	83.0-87.3' - faint dark purple mottling, 20 degree bedding and trace clay clasts	At 84.1': R-Scale = R3-R4		
			0			x				
			0			x				
			0			x				
			0			x				
85.0			0		85.0-87.3' - trace very fine to fine sand	x				R16: 09:00-09:20 At 85.8': R-Scale = R3-R4
			0			x				
			0			x				
			0			x				
			0			x				
85.0	R16NQ 5 ft 100%	98	0	87.3-90.0' - very dusky red, heavily mottled blue-green and dark purple, very soft to soft, few clay clasts at surface		x		At 87.9': R-Scale = R3-R4		
			0			x				
			0			x				
			2			x				
			0			x				
88.8 and 88.9' - Fractures (2), <5 deg, rough, undulating, staining on edges, slickensided			0			x				R17: 09:25-09:45
			0			x				
			0			x				
			0			x				
			0			x				



LOGGER : JF

Rev. 1



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 x		



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-7</div>
<b>SHEET 8 OF 8</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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
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WATER LEVEL: 10.0 RDS		START: 6/28/06 09:00		END: 6/28/06 15:10		LOSS: 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		
135 130.0	R25NQ 5 ft 100%	100	0	131.7 and 132.7' - Fractures (2), <5 deg, slickensided, undulating, tight fit	XXXXXX 		



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <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)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG		COMMENTS	
		RECOVERY (in)		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									
267.4	0.0						<b>Topsoil</b> 0.0-0.2'				
	13.2	SS1SS		1-50/5 (50/5")			<b>Clay (CL)</b> 0.2-1.1' - reddish brown, mottled reddish black and light greenish gray, dry, hard, laminated beds				
	2.0										
	2.5										
	2.8	3.0	SS2SS		50/3 (50/3")		<b>Clay (CL)</b> 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				Soil sampling completed at 16:26 on 6/27/06
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

WATER LEVEL: 12.0 ft bgs		START: 6/27/06 10:30		END: 6/29/06 10:30		LOGGER: ELEVEM	
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		
5 262.4	2.8	R1NQ 1.4 ft 131%	100	0	XXXXXX 		

# 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 LEVELS : 12.0 ft bgs				START : 8/27/99 10:33		END : 8/29/99 10:30		LOGGER : LHM						
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	R6NQ 5 ft 100%	100		0			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					
					0					R6: 09:11-09:19  At 25.1': R-Scale = R3-R4       At 28.4': R-Scale = R3-R4				
				XXXX										
				0										
				0										
				0										
				0										
				0										
	30 237.4			29.2	R7NQ 5 ft 100%				88			1	29.5' - Fracture, horizontal, rough, undulating 29.6' - Contact between siltstone and sandstone, horizontal, smooth, planar, tightly healed  32.1' - Fracture, horizontal, rough, undulating  33.9-34.0' - Fracture zone, rough, planar / undulating 34.9' - Fracture, horizontal, rough, undulating 35.7' - Fracture, 60 deg, rough, undulating  38.3-39.2' - Fracture zone, rough, undulating	29.2-29.6' - trace fine to medium gravel <b>Siltstone</b> At 29.6' - dark reddish brown, mottled greenish gray, soft, thin to medium bedding, fresh 30.5-31.5' - 30-40% very fine to coarse sand 31.9-32.2' - 30-40% very fine to coarse sand 32.3-32.7' - 0.03' thick white and greenish gray clasts 32.7-33.4' - 30-40% very fine to coarse sand  34.2-39.2' - very soft 34.9-36.4' - 30-40% very fine to coarse sand
											0			
		1												
		0												
		10+												
		1												
35 232.4	34.2	R8NQ 5 ft 100%	74		1	41.1' - Fracture, horizontal and 45 deg, rough, undulating	40.9-41.1' - trace white clasts 41.1-41.3' - laminated bedding  42.4-42.6' - trace white clasts	At 40.5': R-Scale = R3-R4						
					1									
					0									
					0									
					10+									
					0									
40 227.4	39.2	R9NQ 5 ft 100%	100		0									
					0									
					1									

# 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

[illegible]





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

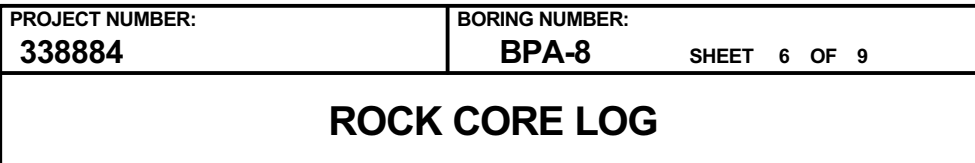
WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

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.	
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		XXXXXX XXXXXX			



LOGGER : LH/EM

Rev. 1

# 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



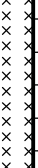

ORIENTATION : Vertical

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	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			
105 162.4	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						
			0						
			0						
			0						
			0						
110 157.4	109.2		0			110.4-110.5' - 0.03' thick greenish gray mottle	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'		
			1	110.4' - Fracture, horizontal, rough, planar					
			3	111.6-111.7' - Fractures (2), horizontal, rough, planar					
			3	111.8' - Fracture, horizontal, rough, planar 111.2' - Fracture, horizontal, smooth, planar 112.4' - Fracture, horizontal, smooth, planar 113.0' - Fracture, horizontal, smooth, planar					
			7	113.2-113.8' - Fracture zone, horizontal, smooth, slickensided, clay seams (50%), very soft clay					
			10+	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%)					
115 152.4	114.2		3			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	At 112.1': R-Scale = R3  R24: 16:20-16:47  At 115.4': R-Scale = R3  At 117.2': R-Scale = R3-R4		
			4						
			0						
			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		
			2						
			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	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				
125 142.4	R26NQ 5 ft 90%	90	0	122.1' - Fracture, horizontal, rough, undulating, 0.02' clay infilling	XXXXXX XXXXXX			



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

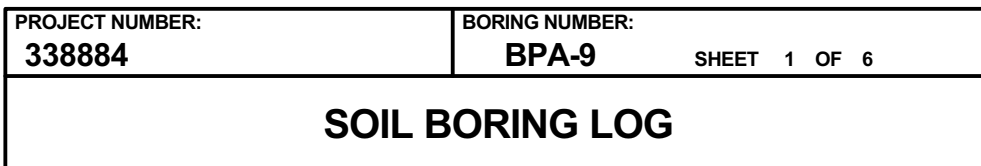
WATER LEVELS : 12.0 ft bgs

START : 6/27/06 16:13

END : 6/29/06 10:30

LOGGER : LH/EM

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 x		



LOGGER : EM/LH

Rev. 1



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 				





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					
							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	26.1' - Fracture, horizontal, smooth, undulating	<b>Sandstone</b> 26.0-26.3' - light greenish gray, soft, fine sand to medium sand, fresh							
			0			<b>Siltstone</b> 26.3-26.6' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh						
			1				<b>Sandstone</b> 26.6-26.9' - light greenish gray, soft, fine sand to medium sand, fresh, gradational contact					
			0					<b>Siltstone</b> 26.9-28.9' - dark reddish brown, mottled reddish black and greenish gray, soft, fresh				
29.3	R7NQ 5 ft 100%	99	1	29.4' - Fracture, horizontal, rough, undulating	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							
0			31.5' - Contact between siltstone and sandstone 31.6' - Fracture, 50 deg, rough, undulating 32.8' - Fracture, horizontal, smooth, undulating 32.8' - Fracture, 45 deg, smooth, undulating	<b>Siltstone</b> 31.5-33.0' - fresh, lens								
1					<b>Sandstone</b> 33.0-33.3' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh							
1						<b>Siltstone</b> 33.3-33.4' - fresh, lens						
0							<b>Sandstone</b> 33.4-33.6' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh					
34.3	78	1	37.0' - Fracture, horizontal, smooth, undulating 37.3' - Fracture, horizontal, smooth, undulating	<b>Siltstone</b> 33.6-33.7' - fresh, lens								
		0						<b>Sandstone</b> 33.7-34.6' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh				
		0			<b>Siltstone</b> 34.6-34.7' - fresh, lens							
		3				39.1' - Fracture, 85 deg, rough, undulating	<b>Sandstone</b> 34.7-35.3' - light gray, soft to hard, fine sand to coarse sand, angular to subangular, fresh					
		1	R8NQ 5 ft 92%	90	0			At 35.3' - dark reddish brown, mottled reddish black and greenish gray, soft 35.3-51.3' - fresh 35.7' - 0.2' thick mottles 36.1' - 0.2' thick mottles				
1	39.8' - Fracture, horizontal, undulating	At 36.4': R-Scale = R3										
0									40.3' - Fracture zone, 85 deg, rough, undulating, heavily fractured, crumbled 40.7' - Fracture, 50 deg, smooth, undulating	At 38.4': R-Scale = R3		
0						R9NQ 5 ft 98%	90				0	At 41.5': R-Scale = R3-R4
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			
				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 		

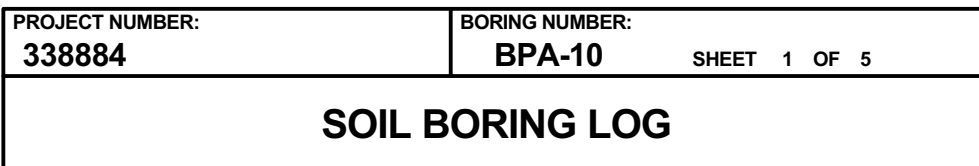


<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-9</div>
<b>SHEET 6 OF 6</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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: 166.8		START: 6/29/06 10:47		END: 6/30/06 10:51		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			
85 181.8	84.3		0	x 				



LOGGER : JF

Rev. 1



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

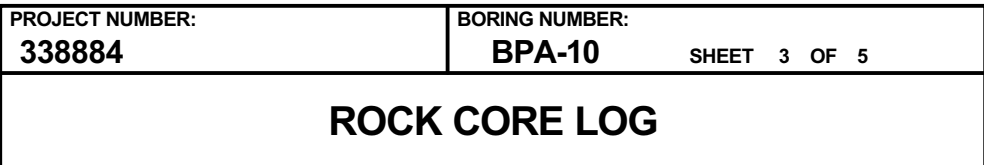
WATER LEVELS : 3.5 ft bgs

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		X X		



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

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JF

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-10

SHEET 4 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
		RQD (%)	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	5 ft 103%	100	0		x x x		
215.9			1		x x x		
			0		x x x		
			5	50.1' - Fracture, <5 deg, rough, undulating	x x x	<b>Sandstone</b>	
			0	50.2' - Fracture, <5 deg, rough, undulating	x x x	48.9-49.3' - light reddish gray, very fine to fine grained, fresh	R10: 10:55-11:20
			0	50.4' - Fracture, <5 deg, rough, undulating	x x x	<b>Siltstone</b>	
			1	50.5' - Fracture, <5 deg, rough, undulating	x x x	At 49.3' - dark reddish brown, heavy blue green with purple mottling, very soft, fresh	
			0	50.6' - Fracture, <5 deg, rough, undulating	x x x		
	R10NQ 5 ft 100%	89	1	52.2' - Fracture, <5 deg, rough, undulating	x x x	52.5-54.1' - 15% very fine to fine sand	At 52.9': R-Scale = R3-R4
			0		x x x		
			0		x x x	54.1-55.0' - 40% very fine to fine sand	
55	55.0		0		x x x	At 55.0' - heavy yellowish and dark purple mottling, very soft, fine grained, trace very fine to fine sand	R11: 11:25-11:35
210.9			0		x x x		
			0		x x x		
	R11NQ 5 ft 100%	100	0		x x x	<b>Sandstone</b>	At 57.3': R-Scale = R4
			0		x x x	At 57.4' - dark reddish gray, fine grained, soft to hard, thin to bedding, fresh	
			0		x x x	59.2-60.0' - fine to medium grained, gradually more coarse at the bottom	
60	60.0		0		x x x	At 60.0' - gray, medium to coarse grained, angular to subangular	R12: 12:30-13:00
205.9			0		x x x		At 60.7': R-Scale = R4
			0		x x x		SC-3 collected 60.0-61.2'
	R12NQ 5 ft 100%	100	0		x x x		
			0		x x x		
			0		x x x		
65	65.0		0		x x x		R13: 13:05-13:25
200.9			0		x x x		At 65.6': R-Scale = R3-R4
			0		x x x		
	R13NQ				x x x	<b>Siltstone</b>	
					x x x	At 66.4' - dusky red, blue-green mottling, very soft, fresh, fine grained	

# 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

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			
70 195.9	5 ft 100%	100	0	71.4' - Fracture, 15 deg, rough, undulating, some evidence of slickened edges at higher angle 71.6' - Fracture, 45 deg, slickensided, undulating, some dark staining	67.0-68.0' - heavy blue-green mottling, clay clasts	At 69.3': R-Scale = R3-R4	
			0		68.7-68.9' - small (1/4) pink-white clay clasts		R14: 13:30-13:45
			0		69.5-70.0' - dark rip up clasts		
75 190.9	R14NQ 5 ft 100%	100	0		70.0-70.5' - 2 small clay clasts to 0.3	72.0-75.0' - dark purple mottling	
			2		70.5-71.6' - slickened edge where observed has large quantity (50%) of clay clasts (.4 to .8)		
			0				
			0				
			0				
			0				
80 185.9	R15NQ 5 ft 94%	94	0		75.0-84.4' - dark reddish brown, blue-green and dark purple mottling		At 74.7': R-Scale = R3-R4 R15: 13:55-14:05
			0				
			0				
			0				
			0				
			0				
85 180.9	R16NQ 5 ft 104%	100	0	84.4-85.0' - trace very fine to fine sand with white speckles 85.0-85.6' - dusky red, continued white speckles 85.6-86.4' - trace very fine to fine sand and fine sand sized clay clasts 86.4-87.0' - 25% of clay clasts up to 0.6	Bottom of Boring at 87.0 ft bgs on 6/28/06 14:45	At 78.6': R-Scale = R3-R4  R16: 14:10-14:29  At 83.7': R-Scale = R3-R4 R17: 14:32-14:38 First water level = 3.5' bgs taken 6/28/06 at 19:00; second water level = 4.5' bgs taken 6/29/06 at 17:32  R-Scale performed after drilling on stored samples	
			0				
			0				
			0				
			0				
			0				
87.0	R17NQ 2 ft 100%	100	0				
			0				





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)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
264.3	0.0	19.2	SS1SS	4-4-6-8 (10)	<b>Sand (SP-SM)</b> 0.0-0.4' - very pale brown, dry, loose, very fine to coarse grained, little silt <b>Silt (ML)</b> 0.4-1.6' - red, dry, loose		Soil sampling completed at 15:05 on 6/5/06 Soil was friable throughout
2.0							
2.5		5.0	SS2SS	50/5 (50/5")	<b>Clayey Gravel (GC)</b> 2.5-2.6' - dark reddish brown, moist to just, very dense <b>Clay (CL)</b> 2.6-3.1' - dark reddish brown, moist, hard		
4.5							
5							
259.3	5.0	4.0	SS3SS	50/4 (50/4")	<b>Clay (CL)</b> 5.0-5.3' - dark reddish brown, dry to moist, hard, laminated beds		
7.0							
7.5	2.0	SS4SS	50/2 (50/2")	<b>Clay (CL)</b> 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			
7.7							
10							
254.3							
15							
249.3							
20							

# 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&amp;ME

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

ORIENTATION : Vertical

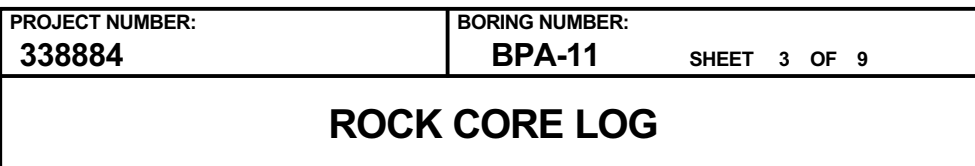
WATER LEVELS : 4.6 ft bgs

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					
10 254.3	7.7 R1NQ 2 ft 105%	0	3	8.1' - Fracture, horizontal, smooth, undulating, microfractures with greenish gray in fracture 8.4' - Fracture, horizontal, smooth, undulating 8.5' - Fracture, horizontal, smooth, planar 8.9-9.2' - Fracture, horizontal and 45 deg, rough and smooth, undulating 9.6' - Fracture, horizontal, rough, undulating 9.7-11.1' - Fracture, horizontal, smooth, undulating, microfractures throughout 11.1-11.9' - greenish gray in fractures	Siltstone At 7.7' - dark reddish brown, mottled greenish gray, very soft, laminated bedding 7.7-17.0' - highly weathered 8.9-9.0' - fine sand to coarse sand, sandstone lense, some clay, very soft 9.5' - trace medium sand 9.7-11.1' - very soft to soft	Rock coring began at 15:37 on 6/5/06 R1: 15:37-15:49 on 06/05/06 At 7.7-16.3': R-Scale = R0			
	4								
	R2NQ 4.4 ft 98%	0	2				12.4-13.6' - clay seam with very soft sandstone fragment, medium	R2: 16:08-16:16	
			2						
			10+						
			10+						
			1						
			10+						
	14.1	59*	10+				14.1-14.8' - Fracture, horizontal, smooth, undulating  15.3-16.0' - Microfractures throughout with greenish gray infrastructure 16.0-17.9' - Fracture, horizontal, smooth, undulating 16.3' - Fracture, horizontal, rough, undulating 16.7' - Fracture, horizontal, rough, undulating	14.0' - clay seam 14.6-14.7' - clay seam, medium 14.8-15.3' - clay seam, soft	R3: 16:20-16:29
	10+								
1									
10+									
10+									
19.0									
20 244.3	R4NQ 1.2 ft 100%	50*	4	19.0-20.2' - Fracture, horizontal, smooth, undulating	19.0-21.2' - dark reddish brown, soft	R4: 09:20-09:21 on 06/06/06 R5: 09:30-09:35 At 20.6-22.0': R-Scale = R0-R1			
R5NQ 4.8 ft 100%	54*	6	21.0' - Fracture, horizontal and 45 deg, smooth, undulating 21.9-25.0' - Fracture zone, horizontal, smooth, undulating, laminated	21.2-21.9' - clay seam with sandstone banded seams, very thin bedding 21.9-28.1' - dusky red, soft 22.0-28.5' - slightly weathered					
		10+							
		10+							
		10+							
		10+							
25 239.3	25.0	76	7	25.0-28.1' - Fractures, horizontal, smooth, undulating 25.1' - Fracture, horizontal, smooth, undulating 25.2' - Fracture, horizontal, smooth, undulating 25.4' - Fracture, horizontal, smooth, undulating 25.4' - Fracture, horizontal, smooth, undulating 25.9' - Fracture, horizontal, smooth, undulating 25.9' - Fracture, horizontal, smooth, undulating	R6: 10:50-10:57				
R6NQ 4.6 ft	3								
	2								
	2								
	2								



LOGGER : LH/MJ

Rev. 1

PROJECT NUMBER: <b>338884</b>	BORING NUMBER: <b>BPA-11</b>	SHEET 4 OF 9
<b>ROCK CORE LOG</b>		

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]





PROJECT NUMBER:

338884

BORING NUMBER:

BPA-11

SHEET 6 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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
89.1			0				
90			0				
174.3			0				
	R19NQ 5.2 ft 100%	100	0			89.1-94.2' - grades to very fine to fine sandstone	R19: 10:25-10:35
			0				At 90.1': R-Scale = R3-R4
			0				
			0				At 92.0': R-Scale = R3-R4
94.2			0				
95			0				
169.3			0				
	R20NQ 5.2 ft 100%	100	0			<b>Sandstone</b> 94.2-97.5' - dark reddish brown, trace greenish gray mottling, soft to hard, thick bedding, fine sand to medium sand, fresh, coarsens with depth, laminated beds are siltstone and just at the bottom of the unit	R20: 10:40-10:48
			0				SC-3 collected 95.6-96.6'
			0				At 96.3': R-Scale = R3
99.4			1	98.6' - Fracture, horizontal, smooth, undulating, top of clay seam			
100			10+	99.9-100.8' - Fracture zone, horizontal and 40-45 deg, rough, undulating, with clay seams, (0.02-0.2' thick)			R21: 10:55-11:05
164.3			4				
	R21NQ 5.1 ft 100%	83	0	101.5' - Fracture, horizontal, smooth, planar			At 101.2': R-Scale = R3-R4
			0				
			0				At 103.6': R-Scale = R3-R4
104.5			10+	104.5-105.4' - Fracture zone, smooth, planar, clay seams are <0.05' thick		104.5-109.4' - no black clasts	R22: 11:13-11:25
105			1	105.7' - Fracture, horizontal, smooth, undulating			
159.3			0			105.4-111.8' - fresh 105.5' - greenish gray laminated bed, 0.02' thick, not completely horizontal, convoluted	At 106.0': R-Scale = R3
	R22NQ 4.9 ft 100%	76	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 (&lt;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 &lt;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												
119.6	R25NQ 4.7 ft 98%	74	10+	<div>119.6-120.0' - Fracture zone, horizontal, rough, undulating, clay seams (&lt;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> <div>Siltstone</div> <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>	R25: 13:25-13:39						
0												
0												
0												
10+												
120 144.3			R26NQ 5.1 ft 100%				100	0		At 122.3': R-Scale = R3-R4		
0												
0												
0												
125 139.3												
0												
0												
0												
					At 126.0': R-Scale = R3-R4							



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


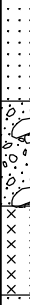

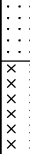
ORIENTATION : Vertical

WATER LEVELS : 4.6 ft bgs

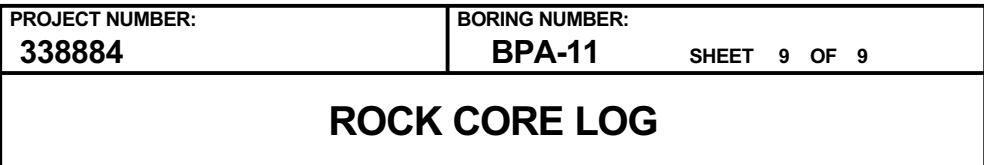
START : 6/5/06 14:15

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		
130 134.3	R27NQ 5.2 ft 99%	89	0	129.5-129.6' - Fracture zone, horizontal and vertical, smooth, undulating, and 45 deg		129.4-133.0' - light gray and greenish gray, soft to hard, laminated bedding	R27: 14:12-14:29  At 130.0': R-Scale = R3-R4
			0				
			10+				
			0				
			3				
			3				
135 129.3	R28NQ 5.1 ft 100%	100	0	136.1-137.7' - Contacts with sandstone and conglomerate and siltstone and conglomerate, sharp		133.0-133.9' - reddish brown, becomes coarser with depth  133.9-136.1' - black and white, hard, very fine sand to coarse sand, angular to subrounded, trace fine gravel 134.6-135.3' - becomes coarser with depth 135.3-136.1' - banded coarser and finer areas, lighter and darker areas (not related); discolored reddish brown <b>Conglomerate</b> 136.1-137.7' - black, white, very dark grayish green, and light reddish brown, soft, medium bedding, fresh, note that black color seems to be associated with mottles or stains surrounding grains	At 132.8-133.1': R-Scale = R0-R1  R28: 14:34-14:44  At 135.2': R-Scale = R3-R4
			0				
			0				
			0				
			0				
			0				
140 124.3	R29NQ 5 ft 100%	78*	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 <b>Sandstone</b> At 139.0' - dark reddish brown, black, greenish gray, and white, soft, fine sand to coarse sand, angular to subrounded, poorly sorted 139.0-144.0' - fresh 141.3-144.7' - soft to hard, laminated to thin bedding, very fine sand to fine sand, angular to subrounded, poorly sorted to well sorted 142.7-143.4' - coarser grained 144.0-144.7' - moderately weathered	At 139.0': R-Scale = R3-R4  R29: 14:52-15:01  At 141.9': R-Scale = R3-R4
			2				
			2				
			0				
			10+				
			10+				
145 119.3	R30NQ 5 ft 98%	54*	0	145.8-146.6' - Fracture zone, horizontal and vertical, slickensided / rough, undulating		144.7-145.4' - clayey material alternates with siltstone, laminated bedding 144.7-147.2' - moderately weathered	R30: 15:32-15:44 At 144.7-145.4': R-Scale = R0-R1
			10+				
			10+				





LOGGER : LH/MJ

Rev. 1



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 Begin Rock Coring at 12.7 ft bgs See the next sheet for the rock core log				
	12.6	1.0			SS6SS		50/1 (50/1")								
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		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.
12.7	R1/R2NQ 9.3 ft 89%	81*	0	15.8-17.0' - Fracture zone, 20 deg, rough, undulating	x x x	<b>Siltstone</b> 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
15			0		x x x		
248.9			0		x x x		
			10+		x x x		
			10+		x x x		
			0		x x x		
20	R3/R4NQ 10 ft 100%	92	0	21.0' - Fracture, 20 deg, undulating	x x x	<b>Sandstone</b> 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		
22.0			0		x x x		
			10+		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	<b>Conglomerate</b> 21.0-23.5' - grayish red, very fine sand to coarse gravel, subrounded, poorly sorted, fresh, <50% silt <b>Sandstone</b> 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		
			10+		x x x		
30	R3/R4NQ 10 ft 100%	92	0	30.5-31.0' - Fracture zone, 30 deg, rough, undulating	x x x	<b>Siltstone</b> 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		
			10+		x x x		
			0		x x x		
32.0			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		33.5' - sandstone lens, very fine to fine grained	R6: 11:34-12:04				
			0								
			0								
			1								
0											
0											
0											
0											
0											
0											
40 223.9	R7/R8NQ 10 ft 99%	73*	0	36.5-37.0' - Fracture, 45 deg		<b>Sandstone</b> 36.5-36.7' - light gray, very thin bedding, coarse sand, well sorted, fresh <b>Siltstone</b> 36.7-37.7' - grayish red, light gray mottling, hard, thin bedding, fresh <b>Sandstone</b> 37.7-37.8' - light gray, very thin bedding, coarse sand, well sorted, fresh, grayish red siltstone clasts caught up in sandstone filling <b>Siltstone</b> 37.8-38.0' - grayish red, light gray mottling, hard, thin bedding, fresh <b>Sandstone</b> At 38.0' - light gray, thin to medium bedding, very fine sand to coarse sand, well sorted, fresh, coarsening downward 39.0' - medium sand to coarse sand, 0.25 grayish red siltstone clasts 39.3' - becomes lighter with depth 39.7' - grades to finer grained grayish red silty sandstone 42.0-45.0' - fine sand to medium sand, subrounded, well sorted, few very thin layers of grayish red siltstone, up to 1 thick, coarsens with depth <b>Siltstone</b> 45.1-45.2' - grayish red, very thin bedding, fresh, irregularly bedded <b>Sandstone</b> 45.2-47.0' - light gray, very thin to medium bedding, medium sand to coarse gravel, subrounded to subangular, fresh, gravel is only 10% of volume 46.0' - grayish red, very thin bedding, irregularly bedded 46.5' - grayish red siltstone clasts in sandstone <b>Conglomerate</b> 47.0-48.3' - light gray, medium sand to coarse gravel 47.0-48.0' - fresh 48.0-48.3' - moderately weathered	R7: 13:10-13:30				
0											
0											
0											
2											
0											
0											
1											
0											
10+											
45 218.9	R7/R8NQ 10 ft 99%	73*	0	45.1' - Contact between siltstone and sandstone, sharp contact 45.2-45.7' - Fracture (2), 20 deg			R8: 13:33-14:10				
0											
0											
2											
0											
1											
0											
10+											
3											
50 213.9			R7/R8NQ 10 ft 99%	73*				0	48.0-48.7' - Fractures, 15 deg, undulating, silt infilling		
0											
10+											
3											
52.0	50.3-50.8' - Fracture zone, undulating, numerous joints/fractures										
0											
3											
51.5-52.0' - Fractures, 15 deg, planar to undulating											
2											
0											
0											
0											
0											
0											
0											
0											



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

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					
55 208.9	R9/R10NQ 10 ft 99%	92	0	52.5-53.0' - Fractures, 10 deg, undulating	XXXXXX 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

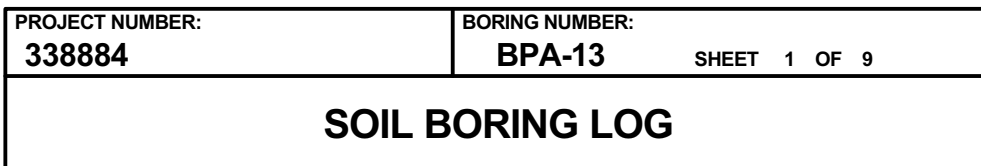
WATER LEVELS : ---

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	<b>Sandstone</b> 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	<b>Siltstone</b> 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. 1



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	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	19.1-23.3' - fresh 19.1-23.3' - very soft to soft 19.1-20.3' - white clasts	At 18.4-18.8': R-scale = R1	
				10+	16.7' - Fracture, horizontal, rough, undulating		R3: 09:18-09:30	
				3	17.5-17.9' - Fracture zone, horizontal, rough, undulating		At 19.8': R-Scale = R3-R4	
3				18.2' - Fracture, horizontal, rough, undulating	At 21.1': R-Scale = R3-R4			
3				18.7-18.9' - Fracture zone, horizontal, rough, undulating	At 23.0': R-Scale = R3			
25 238.7	R4NQ 5 ft 98%	98	10+	19.2' - Fracture, horizontal, rough, undulating	Sandstone 23.3-26.5' - weak red, soft to hard, thin to medium bedding, very fine sand to fine sand, subangular to rounded, well sorted, fresh 23.3-23.5' - clay seam, very soft, friable 24.1-26.5' - white, reddish gray, greenish gray, and dark gray, greenish gray mottling  Conglomerate 26.5-26.6' - soft to hard, fresh  Sandstone 26.6-28.0' - white, reddish gray, greenish gray, and dark gray, greenish gray mottling, thin to bedding, subangular to subrounded, fresh 27.1' - becomes coarser with depth 27.7-28.0' - dark reddish brown siltstone clasts	At 23.3-23.5': R-Scale = R0		
			10+	19.5' - Fracture, horizontal, rough, undulating		R4: 09:38-09:47		
			4	19.9' - Fracture, horizontal, rough, undulating		At 25.3': R-Scale = R3-R4		
			3	20.0' - Fracture, horizontal, rough, undulating				
			3	20.3' - Fracture, horizontal, rough, undulating				
			3	20.4' - Fracture, horizontal, rough, undulating				
29.1			0	20.5' - Fracture, horizontal, rough, undulating		At 28.5': R-Scale = R3		
			0	20.6' - Fracture, horizontal, rough, undulating		R5: 09:53-10:07		
			0	21.5-21.8' - Fracture zone, horizontal and vertical, rough, undulating				
			0	22.1-22.2' - Fracture zone, rough, undulating, clay seams (0.05' thick)				
30 233.7			0	22.6' - Fracture, horizontal, rough, undulating		At 30.5': R-Scale = R3-R4		
			0	23.6' - Contact between siltstone and sandstone, horizontal, rough, undulating				





PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 3 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		
35 228.7	R5NQ 5 ft 103%	100	0	x x			



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: 106.885		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 <b>Sandstone</b> 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		
	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		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 <b>Sandstone</b> 53.2-53.4' - greenish gray and white, soft, very thin to thin bedding, fine sand to medium sand, fresh <b>Siltstone</b> 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		
59.1				63.3-63.6' - Fracture, vertical and 60 deg, tightly healed		R11: 08:22-08:36 on 06/13/06 At 60.5': R-Scale = R3-R4 At 62.6': R-Scale = R3-R4		
65 198.7		R11NQ 5 ft 100%	100		65.8-66.0' - Fracture, vertical and 70 deg, tightly healed, very soft	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	R12: 09:12-09:26 At 67.6': R-Scale = R3-R4	
	64.1			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		
	70 193.7	R12NQ 5 ft 98%	98		69.1-71.7' - <0.03' thick white inclusions 70.0-75.6' - mottled reddish black			





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		END: 9/19/99 09:00		
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	SYMBOLIC LOG		LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT			ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS
	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	At 90.6-90.65': R-Scale = R0 At 90.9': R-Scale = R3 At 92.1': R-Scale = R3-R4	
			1	92.4-92.8' - Fracture, horizontal and 45 deg, rough, slickensided/undulating, 45 deg fracture with horizontal fractures through it		
			0			
94.1						
			1	94.7' - Fracture, horizontal, rough, undulating	R18: 11:25-11:37	
			0		At 95.3': R-Scale = R3-R4	
95 168.7						
	R18NQ 5 ft 103%	99	0	95.9-96.5' - 30-40% very fine sand		
			0			
			0	98.3-101.2' - 30-40% very fine sand		
99.1						
			0		R19: 11:44-11:56	
100 163.7			0		At 99.7': R-Scale value: R4	
			0			
	R19NQ 5 ft 103%	98	4	101.1' - Fracture, horizontal, rough, undulating 101.2' - Fracture, horizontal, rough, undulating, tightly healed 101.4-101.8' - Fracture, 45 deg, rough, undulating 102.0' - Fracture, horizontal, rough, undulating	At 102.3': R-Scale = R4	
			0			
			0		SC-3 collected 103.1-104.1'	
104.1					R20: 13:08-13:19	
			1			
105 158.7			4	105.0' - Fracture, horizontal, rough, undulating 105.3' - Fracture, horizontal, rough, undulating 105.4' - Fracture, horizontal, rough, undulating 105.6' - Fracture, horizontal, rough, undulating 105.8' - Fracture, horizontal, rough, undulating	Driller's Remark: Still losing ~20 gallons a run At 106.2': R-Scale = R3-R4	
	R20NQ 5 ft 98%	84	0			
			0			
			0		At 108.1': R-Scale = R3-R4	
109.1						
			3	109.2' - Fracture, horizontal, rough, undulating 109.3' - Fracture, horizontal, rough, undulating 109.4' - Fracture, horizontal, rough, undulating	R21: 13:26-13:38	
110 153.7			0			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-13

SHEET 7 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	
					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	x 		



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

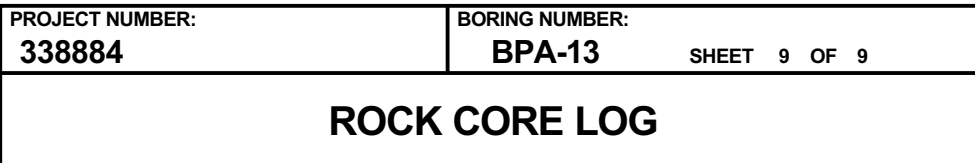
WATER LEVELS : 10.0 ft bgs

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			
					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			
	134.1	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	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	135.7-136.0' - clay seam, very soft, friable material
			10+					x	136.5-136.8' - clay seam, very soft, friable material
			1					x	137.5-137.9' - clay seam, soft, friable material
			10+					x	
			10+					x	
			10+					x	
140 123.7	R26NQ 5 ft 94%	32*	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	At 139.0': R-Scale = R4 R27: 15:38-15:49 At 139.6-139.8': R-Scale = R0		
			2		x				
			3		x				
			0		x	142.0-144.1' - coarsens a little, 30-40% very fine sand			
			2		x				
			2		x				
			2		x				
	144.1	76	1		x		At 141.3': R-Scale = R3		
			10+		x	145.0-147.3' - moderately weathered			
			10+		x				
10+				x					
2				x	147.3-149.1' - fresh				
2				x					
1				x					
145 118.7	R27NQ 5 ft 98%	76	10+		x		R28: 16:00-16:19 At 144.7': R-Scale = R4		
			10+		x				
			10+		x				
			2		x				
			2		x				
			1		x				
			1		x				
	149.1	59*	0		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				



LOGGER : LH

Rev. 1





<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <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

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)	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			<b>Topsoil (CL)</b> 0.0-0.2' - reddish brown, dry to moist, soft, trace gravel and organics		2.0	
	2.0	23.0	SS1SS	3-2-3-3 (5)			
	2.5			<b>Clay (CL)</b> 2.5-3.9' - reddish brown, mottled light greenish gray, moist, stiff		4.5	Soil sampling completed at 17:45 on 7/6/06
	3.8	15.0	SS2SS	8-10-50/3 (60/9")			
5				Begin Rock Coring at 3.9 ft bgs See the next sheet for the rock core log			
258.9							
10							
253.9							
15							
248.9							
20							





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															
DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS															
5	3.9 R1NQ 1.1 ft 64%	0	0	x x x	<b>Siltstone</b> At 3.9' - reddish brown to dark reddish brown, mottled light greenish gray, very soft	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									
258.9	5.0		3	x x x	3.9-6.7' - highly weathered										
			0	x x x	3.9-5.0' - clay-like material										
			0	x x x	5.0-5.9' - clay seam, horizontal breaks, very soft										
			0	x x x	5.9-9.6' - mottled light greenish gray and reddish black, laminated bedding										
			0	x x x	6.9-10.0' - moderately weathered										
			0	x x x	7.3-7.5' - trace gravel sized white clasts	At 3.9-8.8': R-scale = R0 - R1									
10	10.0		10+	x x x	9.6-10.0' - mottled reddish black, soft to hard										
253.9			10+	x x x	10.0-11.9' - clay-like material, very soft, 4 clay seams	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+	x x x	10.0-13.2' - highly weathered										
			0	x x x	11.6-11.9' - Fracture zone, rough, undulating, very soft clay-like material										
			0	x x x	11.9-13.3' - mottled reddish black										
			0	x x x	13.2-15.6' - fresh	At 12.8-15.0': R-Scale = R1-R2									
			1	x x x	13.3-15.0' - mottled reddish black, soft to hard										
15	15.0		1	x x x	14.6-14.6' - very soft, laminated bedding										
248.9			3	x x x	15.0-17.7' - no mottling, clay-like material	R4: 09:36-09:45 At 15.5': PP: 2.2 tsf SC-1 collected 15.0-15.7'									
			3	x x x	15.0-17.7' - clay seam, horizontal breaks, very soft	At 15.7-17.7': R-Scale = R0									
			3	x x x	15.6-17.6' - highly weathered	At 16.3': PP: 1.4 tsf									
			4	x x x	15.7-16.1' - friable material	At 16.7': PP: 1.2 tsf									
			3	x x x	17.3-17.7' - friable material	At 17.2': PP: 1.6 tsf									
			3	x x x	17.6-22.4' - slightly weathered										
			3	x x x	17.7-20.0' - mottled olive										
20	20.0		10+	x x x	19.0' - Fracture, horizontal, smooth, planar										
243.9			10+	x x x	19.1' - Fracture, rough, planar										
			10+	x x x	19.6' - Fracture, horizontal, rough, planar										
			10+	x x x	19.7' - Fracture, horizontal, rough, planar										
			10+	x x x	20.2' - Fracture, horizontal, smooth, planar	R5: 09:56-10:04 At 20.2-21.4': R-Scale = R0									
			10+	x x x	20.3' - Fracture, horizontal, smooth, planar										
			10+	x x x	20.4-20.6' - Fracture zone, horizontal, smooth, planar										
			10+	x x x	20.8' - Fracture, horizontal, rough, planar										
			10+	x x x	21.0-21.5' - Fracture, 60 deg, rough, undulating	At 21.8': R-Scale = R3-R4 At 22.0-23.0': R-Scale = R0 At 22.4': PP: 3.1 tsf									
			10+	x x x	22.3' - Fracture zone, horizontal, rough, planar, 0.05' thick	At 23.0': PP: 1.9 tsf									
			2	x x x	23.3' - Fracture, 10 deg, smooth, planar										



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	XXXX XXXX			





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	X X		



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

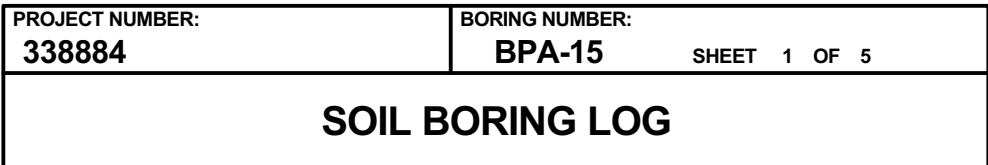
WATER LEVELS : 0.0 ft bgs

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 		



LOGGER : LH/EM

Rev. 1

# 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

WATER LEVELS: 1.51 RGS		START: 7/22/06 10:01		END: 7/24/06 08:45		LOGGER: EN/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 61%	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 			





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	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					
55 207.7	54.3		1	52.6' - Fracture, <5 deg, rough, undulating, 0.01' thick clay infilling 53.9' - Fracture, <5 deg, rough, undulating	XXXXXX XXXXXX				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-15

SHEET 5 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

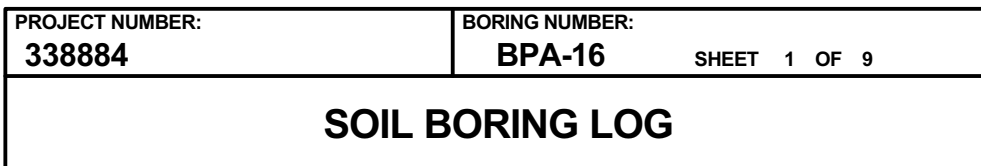
WATER LEVELS : 1.5 ft bgs

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
		RQD (%)	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.
75 187.7	74.3		0		x		
			1		x		R14: 08:15-08:24
			1	75.5' - Fracture, 45 deg, slickensided, undulating	x		
	R14NQ 5 ft 103%	100	0		x		At 76.9': R-Scale = R4
			0		x		
			0		x		
80 182.7	79.3		0		x	78.5-79.3' - coarse sand sized white clasts	At 80.2': R-Scale = R3
			0		x	79.2' - mottled green	R15: 08:33-08:43
	R15NQ 3 ft 110%	100	2		x		First water level = 1.5' bgs taken 7/24/06 at 18:15;
			0	81.1' - Fracture, horizontal, rough, planar 81.2' - Fracture, horizontal, rough, planar	x	81.2-81.3' - trace coarse sand sized white clasts	second water level = 2.2' bgs taken 7/25/06 at 16:00
	82.3				x		R-scale performed after drilling on stored samples
					x	Bottom of Boring at 82.3 ft bgs on 7/24/06 08:43	
85 177.7							
90 172.7							



LOGGER : LH/EM

Rev. 1



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	
					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		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
237.8	R5NQ 5 ft 102%	88	1	25.7' - Fracture, horizontal, rough, planar  27.4' - Fracture, horizontal, rough, planar 27.6' - Contact between siltstone and sandstone, horizontal, rough, planar	x x			



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	51.0' - Contact between siltstone and sandstone, mixed up; silt extends (in portions) into sandstone	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			0		x		
	R10NQ 5 ft 104%	100	0		x	49.3-50.4' - mottled greenish gray, soft, 0-30% very fine sand	R10: 08:06-08:12 on 6/21/2006
50			0		x		
212.8			0		x		
			0		x		
			0		x		
	R11NQ 5 ft 97%	97	0		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	At 50.0': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
54.3			0		x		
	R12NQ 5 ft 99%	85	0		x	53.8-54.1' - beds on 30 degree angle	R11: 08:17-08:24
55			0		x		
207.8			0		x		
			0		x		
			0		x		
	R13NQ 5 ft 99%	99	0		x	57.9-97.7' - fresh	At 55.7': R-Scale = R3
			0		x		
			0		x		
			0		x		
			0		x		
59.3			0		x	59.3-64.3' - mottled greenish gray and reddish black, very soft to soft	SC-2 collected 56.2' - 57.2'
	R14NQ 5 ft 99%	99	0		x		
			0		x		
			0		x		
			0		x		
60			0		x	59.3-62.3' - white clasts (0.01-0.05' thick)	R12: 08:30-08:37
202.8			0		x		
	R15NQ 5 ft 99%	99	0		x		
			0		x		
			0		x		
			0		x		
			0		x		
64.3			0		x		At 61.7': R-Scale = R3-R4
	R16NQ 5 ft 99%	99	0		x		
			0		x		
			0		x		
			0		x		
			0		x		
	R17NQ 5 ft 99%	99	0		x		At 63.5': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
	R18NQ 5 ft 99%	99	0		x		R13: 08:42-08:48
			0		x		
			0		x		
			0		x		
			0		x		



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-16</div>
<b>SHEET 5 OF 9</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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
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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		
197.8	R13NQ 5 ft 100%	100	0		x x		





PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 6 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

WATER LEVELS: 9.61 FGS		START: 6/29/99 11:11		END: 6/27/99 14:39		LOGGER: LIT/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		
177.8	R17NQ 5 ft 99%	99	0		x 		



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

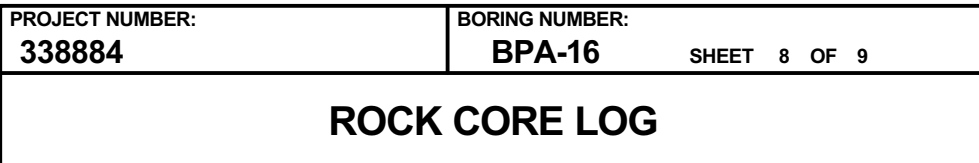
WATER LEVELS : 9.0 ft bgs

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 XXXXXX		



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

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-16

SHEET 9 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					
117.8   									



PROJECT NUMBER:

**338884**

BORING NUMBER:

**BPA-17**

SHEET 1 OF 4

## SOIL BORING 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

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)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
262.4	0.0	20.4	SS1SS	3-7-11-11 (18)	<div>Topsoil 0.0-0.1'</div> <div>Clay (CL) 0.1-0.7' - yellowish red, mottled black and gray, dry, medium stiff</div> <div>Clay (CL) 0.7-1.7' - reddish brown, dry, very stiff</div>	<div></div> <div></div> <div></div>	Soil sampling completed at 08:41 on 7/13/06
	2.0						
	2.5	19.2	SS2SS	5-5-20-26 (25)	<div>Clay (CL) 2.5-4.1' - reddish brown, mottled dark reddish gray, weak red, and light greenish gray, dry, very stiff</div>	<div></div>	
	4.5						
5							
257.4	5.0	1.0	SS3SS	50/1 (50/1")	<div>Clay (CL) 5.0-5.1' - reddish brown, mottled dark reddish gray, weak red, and light greenish gray, dry, very stiff</div> <div>Begin Rock Coring at 5.2 ft bgs</div> <div>See the next sheet for the rock core log</div>	<div></div>	
	5.1						
						</	



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

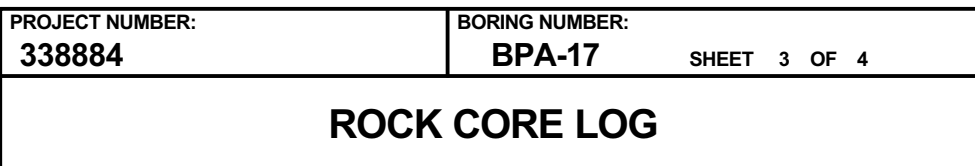
WATER LEVELS : 5.3 ft bgs

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	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			
10 252.4	5.2	R1NQ 4.8 ft 100%	0	6.2' - Fracture, horizontal and 30 deg, rough, undulating	x 			



LOGGER : LH

Rev. 1





PROJECT NUMBER:  
**338884**

BORING NUMBER:  
**BPA-17**

SHEET 4 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		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			
				44.0' - Contact between siltstone and sandstone, horizontal, rough, undulating, hummocky, tightly healed		<b>Siltstone</b> 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	
50 212.4							
55 207.4							
60 202.4							
65							

Rev. 1



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

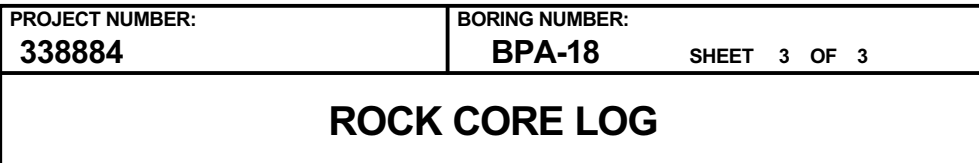
WATER LEVELS : 5.5 ft bgs

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+	12.9' - Fracture, 15 deg, rough, undulating, <0.0002' thick clay infilling 13.2' - Fracture, <5 deg, rough, undulating, <0.0002' thick clay infilling	XXXXXX XXXX		



LOGGER : JF

Rev. 1





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	<b>Siltstone</b> 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	<b>Sandstone</b> 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	<b>Siltstone</b> 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		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	<b>Sandstone</b> 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 30.7-32.7": R-Scale = R0
			10+	31.2-31.3' - Fracture zone, horizontal, rough, planar, 0.02' thick clay infilling	x x	<b>Siltstone</b> 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		

# 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&amp;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

WATER LEVELS : SURFACE				START : 7/7/06 14:09		END : 7/13/06 14:29		LOGGER : LHM	
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					
35 226.4	R6NQ 5 ft 97%	88	10+			x x x x	28.0-28.1' - clay seam, very soft, 0 - 10% very fine sand, friable material	R6: 09:11-09:15 on 7/12/06 Rig stopped in the middle of core run continued core run on 10:50-10:56 07/13/2006 At 35.6': R-Scale = R3	
			1	34.0' - Fracture, horizontal, rough, undulating	x x x x	<b>Sandstone</b> 28.1-29.0' - white, soft to hard, laminated to thin bedding, very fine sand to coarse sand, subrounded, well sorted, moderately weathered			
			5	35.0' - Fracture, horizontal, rough, planar 35.1' - Fracture, horizontal, rough, planar 35.2' - Fractures (2), horizontal, rough, planar 35.3' - Fracture, horizontal, rough, planar 36.1' - Fracture, horizontal, rough, planar	x x x x	28.6' - siltstone lens 28.7-28.8' - siltstone lens			
			1		x x x x	<b>Siltstone</b> At 29.0' - dark reddish brown, mottled greenish gray, very soft			
			2	37.0' - Fracture, horizontal, rough, planar	x x x x	29.2-29.4' - clay seam, firm to stiff, friable material			
			2	37.6' - Fracture, horizontal, rough, planar	x x x x	29.0-30.7' - moderately weathered 29.6-34.4' - laminated bedding			
			0	38.5' - Fracture, horizontal, rough, planar 38.6' - Fracture, horizontal, rough, planar	x x x x	29.8' - 0.04' thick, 0.03' long white clast			
			0		x x x x	30.7-34.0' - highly weathered 34.0-38.6' - slightly weathered			
			0		x x x x	34.4-34.6' - soft			
			0		x x x x	37.2-37.6' - soft			
40 221.4	R7NQ 5 ft 104%	100	0			x x x x	37.2-37.6' - some laminated beds, trace fine sand	R7: 11:04-11:14	
			0		x x x x	38.6-49.6' - fresh			
			0		x x x x	38.8-39.3' - soft			
			0		x x x x	39.6-44.6' - mottled reddish black, soft, 0-20% very fine sand			
			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				
45 216.4	R8NQ 5 ft 98%	92	0			x x x x	44.6-49.6' - mottled trace reddish black and greenish gray, soft, 0-30% very fine sand, coarsens with depth	R8: 11:18-11:28	
			0		x x x x				
			1	46.5' - Fracture, horizontal, rough, planar	x x x x				
			2	47.7' - Fracture, horizontal, rough, planar 48.0' - Fracture, horizontal, rough, undulating	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				
			0		x x x x				
50 211.4	R9NQ 5 ft 99%	99	0			.	<b>Sandstone</b> 49.6-55.4' - dark reddish brown, very dark greenish gray, and white to light gray, soft to hard, very thin to medium bedding, very fine sand to coarse sand, subangular to subrounded, well sorted, fresh, lighter and darker bands	R9: 11:33-11:43	
			0		.	49.6-50.0' - gradational zone, grades from siltstone to sandstone			
			0		.				
			0		.				
			0		.				





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			
				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.
55 206.4	54.6		1	51.1' - Fracture, horizontal, rough, undulating			At 53.6': R-Scale = R4
			0				R10: 11:46-12:02
			2	55.4' - Contact between siltstone and sandstone, horizontal, rough, undulating, black and greenish gray stains	x x x	<b>Siltstone</b> At 55.4' - dark reddish brown, mottled greenish gray, soft	
			3	55.4' - Fracture, horizontal, rough, undulating, black and greenish gray stains	x x x	55.4-58.6' - slightly weathered	
	R10NQ 5 ft 103%	92	2	55.8' - Fracture, horizontal, smooth, undulating	x x x	55.4-57.6' - gravel sized white clasts	
			2	55.9' - Fracture, horizontal, smooth, undulating	x x x	56.1-58.6' - very soft, laminated bedding	At 57.4': R-Scale = R4
			2	56.5' - Fracture, horizontal, rough, undulating	x x x		
			0	56.6' - Fracture, horizontal, rough, undulating, black and greenish gray stains	x x x	58.6-67.5' - fresh	
60 201.4	59.6		0	56.6' - Fracture, horizontal, rough, undulating, black and greenish gray stains	x x x		R11: 13:03-13:15
			1	56.7' - Fracture, horizontal, rough, undulating, black and greenish gray stains	x x x		
			0	56.8' - Fracture, horizontal, rough, undulating, black and greenish gray stains	x x x		
	R11NQ 5 ft 100%	94	0	57.6' - Fracture, horizontal, rough, undulating, black and greenish gray stains	x x x		At 62.0': R-Scale = R3-R4
			0	61.5' - Fracture, horizontal, rough, undulating	x x x		
			0		x x x		
65 196.4	64.6		0		x x x	64.6-67.5' - very soft to soft	R12: 13:29-13:39
			0		x x x		
	R12NQ 5 ft 98%	98	0		x x x		At 66.3': R-Scale = R3-R4
			0	67.5' - Contact between siltstone and sandstone, horizontal, rough, undulating	x x x	<b>Sandstone</b> 67.5-69.2' - very dark gray and light gray, soft to hard, medium bedding, fresh	SC-2 collected 67.5-68.3'
			0		x x x		
70 191.4	69.6		0	70.2' - Contact between siltstone and sandstone	x x x	<b>Siltstone</b> 69.2-70.2' - dark reddish brown, mottled trace greenish gray reddish black, soft, fresh, 0-30% very fine sand, contact is gradual, but abrupt	R13: 13:45-13:54
			0		x x x	69.6-70.2' - 15% very fine to fine sand	
	R13NQ 5 ft 102%	100	0		x x x	<b>Sandstone</b> 70.2-74.8' - very dark gray and light gray, soft to hard, medium bedding, fine sand to medium sand, fresh	

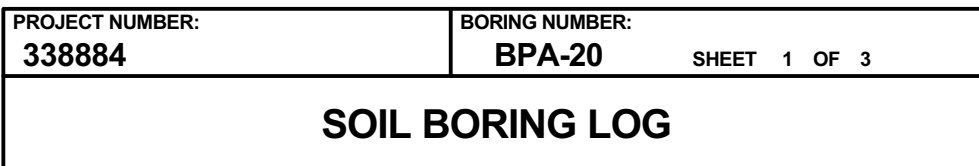


<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-19</div>
<b>SHEET 5 OF 5</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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
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WATER LEVEL: SURFACE		START: 7/13/06 14:09		END: 7/13/06 14:25		EASER: ELEM		
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			
75 186.4	74.6	R14NQ 5 ft 98%	92	0	74.8-75.0' - Contact between siltstone and sandstone, 60 deg, rough, undulating, tightly healed, sharp, some mixing of materials 75.0-75.1' - Fracture zone (3), horizontal, rough, undulating  76.8' - Fracture, horizontal, rough, undulating 77.25' - Fracture, horizontal, rough, planar 77.6' - Fracture, horizontal, rough, planar 77.7' - Fracture, horizontal, rough, planar 78.0' - Fracture, horizontal, rough, planar	71.6-74.8' - medium sand to coarse sand, alternates with fine to medium grained bed	At 73.7': R-Scale = R3  R14: 13:59-14:14 SC-3 collected 75.1-76.1'	
				0				
				3				
				0				
				3				
				2				
				0				
				0				
				0				
				0				
80 181.4	79.6	R15NQ 2.5 ft 96%	96	0	79.6-82.1' - very soft to soft	Bottom of Boring at 82.1 ft bgs on 7/13/06 14:25	At 78.6': R-Scale = R3-R4 At 81.2': R-Scale = R3-R4  R15: 14:19-14:25 First water level = 9.6' bgs taken on 7/13/06; second water level = 3.2' bgs taken on 7/14/06  R-scale performed after drilling on stored samples	
				0				
				0				
85 176.4				0				
90 171.4								



LOGGER : LH

Rev. 1



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		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.
8.2	R1NQ 1.4 ft 111%	0	0	8.7' - Fracture, horizontal, rough, planar	x x x	<b>Siltstone</b> 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	SC-1 collected 18.4-19.0'
			0		x x x	17.1-19.6' - clay seam, stiff	At 18.4': PP: 2.9 tsf
			0		x x x		At 18.9': PP: 4.5 tsf
19.6					x x x	19.6-21.0' - very soft, laminated bedding	R4: 09:03-09:12 and 09:20-09:23
20			0	21.0' - Fracture, horizontal, rough, planar	x x x	19.6-20.3' - clay seam, soft	At 19.8': PP: 3.0 tsf
241.5			3	21.4' - Fracture, horizontal, rough, planar	x x x	19.6-19.9' - trace medium sand	
			0	21.5' - Fracture, horizontal, rough, planar	x x x	21.0-24.6' - fresh	
	R4NQ 5 ft 101%	71	0		x x x		
			0		x x x	23.1-24.0' - trace medium sand	At 23.6': R-Scale = R3-R4
			0		x x x		
24.6			9	24.8-25.0' - Fractures (7), horizontal, rough, planar	x x x	24.2-24.6' - very soft, laminated bedding	R5: 09:27-09:40
25			3	25.1-25.2' - Fractures (2), horizontal, rough, planar	x x x	24.6-33.8' - slightly weathered	
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	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	81	0	27.4-27.5' - Fracture (3), horizontal, rough, planar	x	29.4-29.6' - very soft, laminated bedding	R6: 09:45-09:54
			2	29.0' - Fracture, 20 deg, rough, planar	x		
			1	29.5' - Fracture, rough, undulating, parabolic shaped	x		
			0	29.8' - Fracture, horizontal, rough, planar	x		
			0		x		
			0		x		
35 226.5	34.6	76	5	33.8-34.2' - Fracture (4), horizontal, rough, planar	x	31.4-32.6' - very soft, laminated bedding	At 32.3': R-Scale = R2
			10+	34.4' - Fracture, horizontal, rough	x		
			3	34.7-35.0' - Fracture (6), horizontal, rough, planar	x		
			0	35.3' - Fracture, 30 deg, rough, undulating	x		
			0	35.5-35.6' - Fracture zone, horizontal, rough, undulating	x		
			0	35.7' - Fracture, 30 deg, rough, undulating	x		
40 221.5	39.6	0	0	35.8' - Fracture, 30 deg, rough, undulating	x	33.2-34.6' - very soft, laminated bedding 33.8-35.8' - moderately weathered	R7: 09:59-10:08
			0	36.3' - Fracture, horizontal, rough, planar	x		
			2	40.0' - Fracture, horizontal, rough, undulating	x		
			0	40.2-40.4' - Clay seam, horizontal, rough, undulating, with fractures at top, very soft	x		
			0		x		
			0		x		
45 216.5	41.2	0	2		x	34.7-37.4' - very soft, laminated bedding	At 37.0': R-Scale = R3-R4 At 40.0': R-Scale = R2 At 40.3' PP: 0.75 tsf R8: 10:16-10:20 First water level = 5.25' bgs taken 7/11/06 at 13:58; second water level = 5.5' bgs taken 7/12/06 at 12:10
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x	35.8-39.6' - slightly weathered 35.9-36.1' - white clasts	R-scale performed after drilling on stored samples
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x	39.2-41.2' - very soft, laminated bedding 39.6-41.2' - highly weathered	
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x	40.9-41.0' - clay seam, very soft, friable material Bottom of Boring at 41.2 ft bgs on 7/11/06 10:20	
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		



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)	<b>Sandy Silt (ML)</b> 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)	<b>Sandy Silt (ML)</b> 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)	<b>Sandy Silt (ML)</b> 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)	<b>Sandy Silt (ML)</b> 7.5-8.9' - light brown, loose, very fine to fine grained	1.5-		
	9.5				<b>Sandy Silt (ML)</b> 8.0-8.5' - light and dark brown, medium stiff, fine grained	3.5	PT-3 collected 9.0-11.0' Offset: 1.9' S41W of BPA-21 Lab Results USCS: CL	
					<b>Sandy Silt (ML)</b> 8.5-9.2' - dark brown, medium stiff, fine grained			
10								
251.5	10.0	8.5	SS5SS	41-50/2.5 (50/2.5")	<b>Sandy Silt (ML)</b> 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")	<b>Sandy Silt (ML)</b> 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")	<b>Sandy Silt (ML)</b> 15.0-15.9' - very dark brown, trace mottling, hard, fine grained, mica fragments, black layers at 15.67' and 15.92'	3.5		
	17.0							
	17.5	8.0	SS8SS	12-20-50/2 (70/8")	<b>Sandy Silt (ML)</b> 17.5-18.3' - dark brown, trace mottling, hard, fine to medium grained, mica fragments	1.5-		
	19.5					3.0	Soil sampling completed at 11:00 on 7/20/06	
20								

Soil sampling completed at 11:00 on 7/20/06



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-21</div> <div style="text-align: right; font-size: 0.8em;">SHEET 2 OF 6</div>
<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)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		COMMENTS	
	20.0	RECOVERY (in)		6"-6"-6"-6" (N)		SYMBOLIC LOG	PP (TSF)
		#TYPE					
241.5	20.0	3.0	SS9SS	50/3 (50/3")	<b>Silty Sand (SM)</b> 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	11.3	
	20.3						
25							
236.5							
30							
231.5							
35							
226.5							
40							



# 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		
25 236.5	20.3	R1NQ 1.3 ft 72%	0	1		<b>Siltstone</b> 20.3-24.3' - dark reddish brown, mottled greenish gray and black, very soft, highly weathered 20.6' - clay seam, 0.01' thick	Rock coring began at 11:35 on 7/20/06  R1: 11:35-11:45 on 07/20/06 R2: 11:52-12:05	
	21.6	R2NQ 5.5 ft 100%	0	0		24.2' - clay seam, 0.05' thick	R3: 12:10-12:30  At 29.5': R-Scale = R3-R4  At 30.9': R-Scale = R3  R4: 12:35-12:55	
	0		0	<b>Sandstone</b> 24.3-25.1' - light reddish brown, fine sand to medium sand, highly weathered, mica fragments 24.8' - black bands				
	0		0					
	0		0					
	27.1		R3NQ 4.9 ft 104%	61		0		26.8' - Fracture, smooth 27.2' - Fracture, smooth, undulating 27.8' - Fracture, 50 deg, smooth, undulating
	0	1		28.8' - Fracture, 40 deg, smooth, undulating				
	0	0		<b>Siltstone</b> 25.1-25.6' - dark reddish brown, mottled greenish gray and black, highly weathered <b>Sandstone</b> 25.6-26.1' - light reddish brown, mottled greenish gray, highly weathered, mica fragments <b>Siltstone</b> 26.1-27.1' - dark reddish brown, mottled throughout, highly weathered 26.1' - clay seam, 0.2' thick <b>Sandstone</b> At 27.1' - light reddish brown, mottled greenish gray and black, soft, slightly weathered, mica fragments 27.3-27.5' - mottling 28.5' - mottling				
	0	1						
	0	1						
35 226.5	32.0	R4NQ 5 ft 90%	82	1	32.1' - Fractures, multiple, at top of run	SC-1 collected 35.2-36.35'  R5: 13:11-13:32  At 38.9': R-Scale = R3-R4		
	0		1	34.5' - Fracture, 70 deg, rough				
	0		1	35.2' - Fracture, rough				
	0		1	36.3' - Fracture, 20 deg, rough				
	37.0		R5NQ 5.2 ft 104%	92	0		37.4' - Fracture, horizontal, smooth, undulating	
0	0	40.0' - Fracture, smooth, undulating						
0	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 100%	100	1	40.1' - Fracture, 40 deg, smooth, undulating, multiple fractures along one long fracture 40.3' - Fracture, 35 deg, rough	<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 <b>Siltstone</b> 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 <b>Sandstone</b> 52.9-53.4' - pinkish gray, mottled, fine sand, fresh <b>Siltstone</b> 53.4-54.1' - reddish brown, mottling throughout, fresh, very fine grained <b>Sandstone</b> 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	
			0	0	43.7-44.5' - Microfractures		At 43.1': R-Scale = R3-R4	
			0	0				
			0	0				
			0	0				
			0	0				
			0	0				
	50 211.5	47.1	R7NQ 5 ft 100%	97	1		47.1' - Fracture, at top of run	R7: 08:15-08:30 on 07/21/06 At 47.8': R-Scale = R3
				0	0			
				0	0			At 49.8': R-Scale = R3
0				0				
0				0				
55 206.5	52.1	R8NQ 5.4 ft 100%	94	0	54.1' - Fractures (2), 35 deg and 40 deg, smooth, undulating, contact between siltstone and sandstone	R8: 08:37-08:52		
			0	0				
			2	0				
			0	0				
			0	0				
60 201.5	57.5	R9NQ 4.6 ft 100%	100	0	59.8' - Fracture, horizontal, rough	At 56.9': R-Scale = R4		
			0	0		R9: 09:05-09:20		
			0	0		SC-2 collected 58.6-59.6'		
			1	0				
			0	0				



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

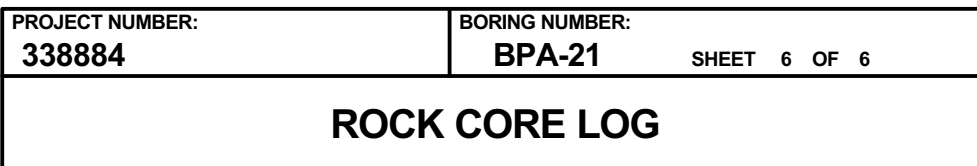
WATER LEVELS : 7.8 ft bgs

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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
62.1			0			58.9' - 0.03' thick rust clast	
			1			59.1' - very fine sand to fine sand, transitions to siltstone; white, pink, gray grains	
			1	62.2' - Fracture, horizontal, smooth		<b>Siltstone</b>	At 61.6': R-Scale = R3-R4
			0	62.8' - Fracture, horizontal and 40 deg, smooth, undulating		59.1-59.9' - dark reddish brown, fine sand	R10: 09:25-09:40
			1	64.4' - Fracture, horizontal, smooth, undulating		59.4-59.9' - mottling and gray clasts	
65	R10NQ 5.4 ft 100%	100	0			<b>Sandstone</b>	
196.5			1	66.3' - Fracture, horizontal, smooth, undulating		At 59.9' - pinkish gray, fine sand to coarse sand, white, gray, pink, and rust colored grains	At 64.8': R-Scale = R3-R4
			0			61.0-61.7' - rust specks are clustered	
			1			61.7-61.9' - white specks are clustered	
			0			62.5-64.3' - gray, pink, rust colored grains	
			0			64.3-66.1' - reddish brown, mottled throughout, sandstone with silt	
			0			66.1-66.3' - fine sand	
			0			66.3-67.5' - sandstone with silt; gray, pink, rust grains	
70	R11NQ 5 ft 104%	100	0			67.7' - 0.01' thick rust colored band, 140 degrees	R11: 09:50-10:05
191.5			0			68.6' - 0.05' greenish gray clast	
			0			69.1-69.2' - rust colored mottling clustered	
			0			70.2-70.5' - rust colored mottling clustered	
			0			70.7' - soft, grains become coarser	
			0			71.3' - white inclusion	At 71.7': R-Scale = R4
			0			72.1-76.1' - coarse sand, pink, white, gray, rust colored grains	R12: 10:10-10:30
			0			72.4' - coarse grains, mostly pink, white, gray	
			0			73.0' - 0.01' thick inclusions	
			0			73.7' - 0.02' thick greenish gray mottling inclusion	Run R12NQ RQD of 100% includes extra recovery from previous run.
			0			73.9-74.4' - rust colored mottling	
75	R12NQ 5 ft 96%	100	0			<b>Siltstone</b>	
186.5			1			At 76.1' - reddish brown, green mottling throughout, soft, fine sand, fresh	At 76.4': R-Scale = R3-R4
			0			77.7' - greenish gray clasts	R13: 10:40-11:00
			0			77.8' - greenish gray clasts	
			0			78.0' - greenish gray clasts	
			0	78.2' - Fracture, rough, undulating		<b>Sandstone</b>	At 78.7': R-Scale = R5
			0	78.4' - Fracture, rough, undulating		78.2-78.4' - sandstone band, pinkish gray, pink white, fine to medium grained	First water level = 7.8' bgs taken 7/21/06 at 18:30;
			0	79.0' - Fracture, 30 deg, smooth, undulating			second water level = 7.6' bgs taken 7/22/06 at 17:06
80	R13NQ 5.2 ft	95	0				
181.5							



LOGGER : MJ

Rev. 1



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					
6"-6"-6"-6" (N)								
262.1	0.0	12.0	SS1SS	3-2-4-5 (6)	<b>Sandy Silt (ML)</b> 0.0-0.4' - brown, moist, loose, low plasticity, 25% very fine to medium sand <b>Clay (CL)</b> 0.4-1.0' - red, moist, low plasticity, slow dilatancy, color increasing in intensity with depth			
	2.0							
	2.5	14.0	SS2SS	3-7-16-21 (23)	<b>Fat Clay (CH)</b> 2.5-2.9' - reddish brown, mottled white, moist, stiff, medium to high plasticity, no dilatancy <b>Lean Clay (CL)</b> 2.9-3.7' - reddish brown, mottled purple, black, white, moist, very stiff, medium plasticity, slow dilatancy		2.5	
5								
257.1	5.0	16.0	SS3SS	8-10-12-20 (22)	<b>Lean Clay (CL)</b> 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-1 collected 5.0-7.0'
	7.0							
	7.5	22.0	SS4SS	24-26-42-50/4.5 (68)	<b>Silt With Sand (ML)</b> 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 <b>Sandy Silt (ML)</b> 8.7-9.3' - light gray, mottled yellow and red, moist, dense, low plasticity, 30% very fine to fine sand, mica			
10								
252.1	10.0	21.0	SS5SS	20-28-36-50/5 (64)	<b>Silt With Sand (ML)</b> 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			PT-2 collected 10.0-12.0'
	12.0							
	12.5	13.0	SS6SS	12-21-30-27 (51)	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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							Soil sampling completed at 09:50 on 5/19/06
20								



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <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")	<b>Clay (CL)</b> 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								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-22

SHEET 3 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
20.3  <							





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	<b>Sandstone</b> 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

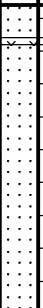
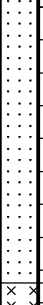
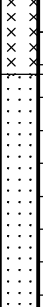

ORIENTATION : Vertical

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		<b>Siltstone</b> 57.9-58.0' - dark reddish brown, mottled greenish gray, soft, fresh <b>Sandstone</b> 58.0-60.8' - gray, soft to hard, very fine sand to fine sand, fresh, pink mottling 58.4' - 10% coarse grains scattered throughout, 5% scattered silt inclusions to coarse sands size 58.5' - rhomboidal shaped feature, yellow and red with white; hard 60.7' - light gray, medium sand to coarse sand	
			0				
			0				
			0				
			0				
70 192.1	R10NQ 5 ft 100%	98	0	69.9' - Fracture, 15 deg, smooth, undulating, not as loose fit		<b>Siltstone</b> 60.8-60.9' - dark reddish brown, soft to hard, fresh <b>Sandstone</b> At 60.9' - light reddish brown, hard, fine sand to medium sand, fresh 60.9-64.7' - banded in finer and coarser grained beds, trace silt inclusions 64.7-65.0' - soft to hard 65.0-66.4' - pinkish gray 65.0-67.4' - fine to medium grained with some coarse sand grains 67.4-68.7' - medium grained with 25% coarse grained material in bands 67.8-69.2' - pinkish gray 68.7-69.2' - more coarse sized material, to 1/4 size, some silt inclusions	R10: 09:20-09:36 on 05/22/2006
			0				
			0				
			1				
			0				
75 187.1	R11NQ 5 ft 100%	98	0	72.1' - Fracture, 5 deg, rough, planar, in siltstone seam, tight 72.3' - Fracture, 10 deg, rough, undulating, loose fit		<b>Siltstone</b> At 69.2' - dark reddish brown, mottled trace greenish gray, soft, fresh, fine grained 69.8-70.0' - trace very fine sand 70.5-71.0' - siltstone and sandstone beds alternating <b>Sandstone</b> 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 71.0-71.6' - fine sand to medium sand 71.6-72.8' - fine grained, up to 20% medium grained, laminae siltstone lenses, some irregularly shaped 72.8' - becomes lighter colored, gray to dark gray with greenish tint 72.9-73.3' - medium to coarse grained, trace fine gravel 73.3-74.3' - fine grained, fine to medium grained, and medium grained, convoluted laminae to thin bedding	R11: 09:49-10:02
			2				
			0				
			0				
			0				
80 182.1	R12NQ 5 ft 99%	99	0	76.3' - Fracture, horizontal, rough, undulating, in fine grained material			R12: 10:27-10:39
			1				
			0				
			0				
			0				
							R13: 10:50-11:08

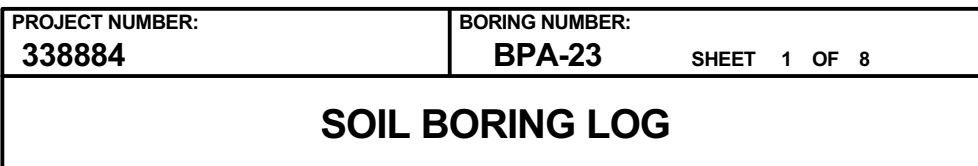


<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-22</div>
<b>SHEET 6 OF 6</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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
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
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WATER LEVEL : 8.4' bgs		START : 5/22/06 11:30		END : 5/23/06 11:15		LOGGER : JG	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		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>.....</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> <div>xxxxxx</div> 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LOGGER : MJ/JS/JF/DT

Rev. 1



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	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
15 244.7	12.8 R1NQ 1.2 ft 107%	0	1	15.6' - Fracture, 70 deg, smooth, undulating, black staining	x x		



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


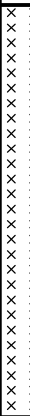
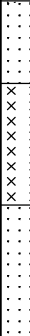


ORIENTATION : Vertical

WATER LEVELS : 5.3 ft bgs

START : 6/9/2006

END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

WATER LEVEL: 33.153		START: 03/20/00		END: 03/20/00		EQUATOR: 1000000.00				
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						
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		33.1-34.0' - becomes coarser with depth, up to 40% very fine sand 33.6-35.3' - mottled purple	Logged as if clayey seam is lost (assuming full recovery); At 32.0': R-Scale = R2 R6: 10:20-10:38 At 34.5' R-Scale = R3-R4		
	R6NQ 5 ft 100%	84	5							
			0							
			0							
			4							
			5							
39.0				37.8' - Fracture, horizontal, rough, undulating, some small bedrock fragments and some clay		36.2-36.5' - very dark gray, mottled dark green and yellow, soft 36.5-37.4' - soft, very fine to fine sandy lenses 37.4-39.0' - very dark gray, mottled green, yellow, trace to 10% very fine sand, grades to sandstone	At 36.5' R-Scale = R3-R4			
40 219.7	44.0	R7NQ 5 ft 102%	76*	0			<b>Sandstone</b> 39.0-40.3' - dark gray with white and gray grains, soft to hard, slightly weathered, fine to medium sand, most bedding on 20 degree angle <b>Siltstone</b> At 40.3' - very dark gray, mottled green, very soft, fine sand, moderately weathered 40.5-41.1' - mottled green, soft, clay seams 40.9-41.1' - clay seam 41.1-42.1' - mottled green 42.0-42.1' - fresh <b>Sandstone</b> 42.1-44.7' - dark reddish brown to very dark gray, mottled green, soft to hard, fresh, coarsens with depth, gradational contact with siltstone below <b>Siltstone</b> At 44.7' - dark reddish brown, mottled green, very soft to soft, fresh, some medium to coarse sand 45.1-45.5' - mottled green, very fine sand, irregularly shaped siltstone clasts 45.5-49.4' - up to 40% very fine sand	R7: 11:00-11:19 At 39.5': R-Scale = R4 At 40.5': R-Scale = R1 At 42.2': R-Scale = R4 R8: 11:32-11:59 At 45.5': R-Scale = R4 At 48.0': R-Scale = R3-R4		
				10+						
				3						
				1						
				0						
				5						
45 214.7	49.0			5	44.6-44.9' - Fractures (5), horizontal, to 5 deg, smooth, undulating 45.1' - Fracture, 20 deg, smooth, undulating		49.4-50.9' - fine sand, coarsens with depth, up to 60% fine white and black sand 50.9-54.8' - mottled green and purple, up to 10% very fine grained sand	R9: 13:02-13:24		
50 209.7	R8NQ 5 ft 99%	88	1							
			0							
			0							
			0							
50 209.7	R9NQ 5 ft 96%	89	0							
			0							
			0							
				2				SC-3 collected 51.1-52.2'		



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 4 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	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
55 204.7	54.0		1	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-23

SHEET 5 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					
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS						
75 184.7	73.5		0	85.4' - Contact between siltstone and sandstone, sharp	x	73.5-74.5' - very fine to fine sand	R14: 11:20-11:40				
	R14NQ 5 ft 100%	100	0		x	74.5-76.4' - with thin light blue to purple mottles, gradational contact to sandstone	At 75.0': R-Scale = R4				
			0		x	<b>Sandstone</b> At 76.4' - reddish gray, soft, fresh, very fine to fine, some rip up clasts 76.5-78.5' - interbedded siltstone lenses (4) 0.1 to 0.2' thick, dark reddish brown to blue-gray 78.5-82.8' - multicolored—black/white, pink/tan, blue/gray, hard, fine sand to coarse sand, trace rip up clasts, quartzitic	At 78.0': R-Scale = R4 R15: 12:00-12:30				
			0		x						
			0		x						
			78.5			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 <b>Siltstone</b> 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	At 81.0': R-Scale = R4  R16: 12:35-13:00 At 84.0': R-Scale = R3 At 85.0': R-Scale = R4  SC-4 collected 85.6-86.8'		
	R15NQ 5 ft 100%	100	0		x						
			0		x						
			0		x						
			0		x						
80 179.7	83.5		0	85.4' - Contact between siltstone and sandstone, sharp	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	R17: 13:10-13:35 At 88.0': R-Scale = R3  At 91.0': R-Scale = R3				
	R16NQ 4.3 ft 100%	100	0		x						
			0		x						
			0		x						
			0		x						
			0		x						
	85 174.7	87.8			0			85.4' - Contact between siltstone and sandstone, sharp	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	R17: 13:10-13:35 At 88.0': R-Scale = R3  At 91.0': R-Scale = R3
		R17NQ 5 ft 100%	100		0				x		
					0				x		
					0				x		
0				x							
0				x							
90 169.7		92.8		0	85.4' - Contact between siltstone and sandstone, sharp	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		R17: 13:10-13:35 At 88.0': R-Scale = R3  At 91.0': R-Scale = R3		
		R17NQ 5 ft 100%	100	0		x					
				0		x					
				0		x					
	0			x							
	0			x							

85.4' - Contact between siltstone and sandstone, sharp





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

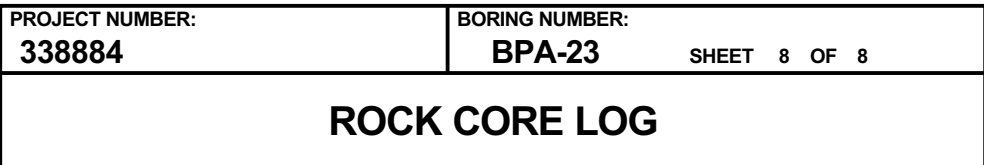
END : 6/19/06 11:00

LOGGER : MJ/JS/JF/DT

WATER LEVEL: 30.153		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.	
95 164.7	R18NQ 1.2 ft 100%	100	0	97.4' - Fracture, 25 deg, smooth, planar, very tight slickensided surfaces on MB's (upper portion) 97.5' - Fracture, 25 deg, smooth, planar, very tight		x 			

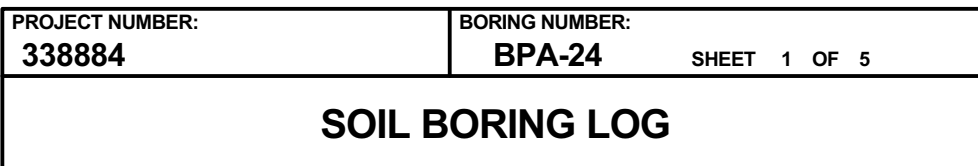






LOGGER : MJ/JS/JF/DT

Rev. 1



LOGGER : JS

Rev. 1



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 RSD		START: 07:55:00		END: 08:35:10		LOGGERS: JG	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		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		



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%		1	32.6' - Fracture, horizontal, rough, undulating, bedrock fragments, coarse sand sized	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 LEVEL: 7.0 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.	
55 204.0	100%		0	55.3' - Fracture, horizontal, smooth, undulating, bedrock flakes; likely in weak lens 55.9-56.2' - Fractures, horizontal, smooth, undulating, <0.05' clay infilling, bedrock fragments		XXXXXX XXXXXX			



PROJECT NUMBER:  
**338884**

BORING NUMBER:  
**BPA-24**

SHEET 5 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			
75 184.0	100%				x x		





PROJECT NUMBER:

**338884**

BORING NUMBER:

**BPA-25**

SHEET 1 OF 11

# SOIL BORING 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

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





ORIENTATION : Vertical

WATER LEVELS : 17.7 ft bgs

START : 4/28/06 14:15

END : 5/3/06 11:05

LOGGER : JS/JF

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									
266.4	0.0	13.0	SS1SS	2-3-3-5 (6)	Lean Clay (CL) 0.0-1.1' - yellow, mottled, moist, medium stiff, medium plasticity, 15% scattered fine sand, becomes red				Drilling became hard at 4.5' Driller missed sample at 5'. Rock likely at 5' +  Soil sampling completed at 15:00 on 4/28/06		
	2.0										
	2.5	15.0	SS2SS	3-3-22-50 (25)	Lean Clay (CL) 2.5-3.2' - reddish yellow, heavily mottled with multiple colors, moist, medium stiff to stiff, low to medium plasticity						
	4.5				Fat Clay (CH) 3.2-3.5' - heavily mottled white and red, moist, stiff, high plasticity, no dilatancy, laminated						
5					Clay (CL) 3.5-3.8' - weak red, moist, stiff to hard, fine sand and mica particles, weathered bedrock in shoe						
261.4											
	7.5	1.5	SS3SS	50/1.5 (50/1.5")	Clay (CL) 7.5-7.6' - reddish brown, hard						
	7.6				Begin Rock Coring at 8.0 ft bgs						
	8.0				See the next sheet for the rock core log						
10											
256.4											



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



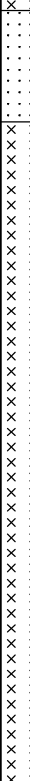
ORIENTATION : Vertical

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		<b>Sandstone</b> 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				<b>Claystone</b> 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 <b>Siltstone</b> 16.0-16.2' - dark reddish brown, very soft, highly weathered to completely weathered, with mica particles, fine grained <b>Sandstone</b> 16.2-17.9' - brown, mottled red, white, black, very soft, highly weathered to completely weathered, fine sand, abundant silt/clay <b>Siltstone</b> 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'	
16.0			1	16.2' - Contact between siltstone and sandstone, horizontal, smooth, undulating				
			1	17.0' - Fracture, 30 deg, smooth, stepped, tight fit, sand on joint				
			1	18.5' - Fracture, horizontal, smooth, undulating, loose fit				
			0					
			10+	20.2' - Fracture, 60 deg, rough, planar, black stains, tight fit 20.8-20.9' - Fracture zone, horizontal and 50 deg, rough, undulating, loose fit, loose sand and clay				
			0					
			2	22.6' - Fracture, 60 deg, rough, stepped, tight fit				
			0	22.9' - Fracture, 40 deg, smooth, undulating, orange stains, loose fit				
			1	24.1' - Fracture, horizontal, smooth, undulating, loose fit				
20			0					
246.4			0					
			10+					
25							0	
25	0							
241.4	10+							
26.0			0				R3: 16:55-17:10 and 17:15-17:30	
			10+					



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

WATER LEVEL: 17.7 REG		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			
30 236.4	R3HQ 10 ft 97%	75	10+	27.7-27.9' - Fracture zone, smooth, undulating, loose fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	28.3-28.9' - clay seams 28.5-28.9' - slightly weathered <b>Sandstone</b> At 28.9' - dark reddish brown, green mottling, soft to hard, slightly weathered, fair amount of silt, fine grained 29.7-33.3' - weak red, hard, less silt  33.3-36.0' - dark gray  34.3-34.9' - hard to very hard, medium sand to coarse sand 34.9-36.0' - fine to medium sand		
			0	28.9' - Fracture, 40 deg, smooth, undulating, loose				
			1					
			0	30.8' - Fracture, 50 deg, smooth, stepped, tight fit				
			2	32.2 and 32.4' - Fractures (2), 70 deg and 30 deg, smooth, undulating, loose fit				
			2	33.3' - Fracture, horizontal, smooth, stepped, loose fit				
			3	33.9' - Fracture, horizontal, smooth, undulating, loose fit				
			1	34.2 and 34.3' - Fractures (2), 20 deg, smooth, stepped, loose fit				
			1	34.9 and 35.6' - Fractures (2), horizontal, rough, planar, loose fit				
			1	36.0-38.0' - Microfractures				
35 231.4	36.0		0		XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	<b>Siltstone</b> 36.0-38.0' - dusky red, mottled red/yellow, soft, slightly weathered, fine grained  <b>Sandstone</b> 38.0-40.7' - dark reddish gray, hard, slightly weathered, fine to medium sand, some coarse sand  <b>Siltstone</b> At 40.7' - very dark gray, very soft, slightly weathered, slightly weathered 41.8-42.2' - clay seam 41.8-42.7' - highly weathered  <b>Siltstone</b> At 42.7' - dusky red, soft, fresh, some fine sand	R4: 17:35-18:50	
			2	37.1' - Fracture, 10 deg, smooth, stepped, tight fit				
			1	37.6' - Fracture, horizontal, rough, undulating, tight fit				
			3	38.0' - Fracture, 10 deg, smooth, undulating				
			3	39.1' - Fracture, 10 deg, rough to smooth, stepped, tight fit				
			10+	39.7' - Fracture, 20 deg, smooth, stepped, tight fit				
			10+	39.9' - Fracture, horizontal, smooth, stepped, loose fit				
			1	40.1-40.6' - Fracture zone, rough, fine to coarse gravel size				
			10+	41.8' - Fracture, 10 deg, smooth, planar				
			10+	42.2-42.7' - Fracture zone, coarse sand to fine gravel-sized bedrock				
40 226.4	R4HQ 10 ft 96%	71	0		XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX			
			2					
			1					
			3					
			10+					
			1					
			10+					
			0					
			0					
			0					
45 221.4	46.0		3		XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	46.0-46.7' - dark reddish brown, mottled green <b>Sandstone</b> 46.7-47.7' - dark reddish brown, fine sand to medium sand, fresh, some coarse grains	R5: 08:36-09:39	
			0					
			0					
			0					
			0					
			0					
			0					
			0					
			0					
			0					



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			
50 216.4	R5HQ 10 ft 94%	84	2	48.3' - Fracture, horizontal, smooth, undulating, tight fit	x	<b>Siltstone</b> 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	SC-2 collected 53.35-54.65'
			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		
			0		x		
			1		x		
			0		x		
			0		x		
			1	56.3' - Fracture, horizontal, rough, planar	x		
			10+		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		
60 206.4	R6HQ 10 ft 100%	85	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		
			1	64.4' - Fracture, horizontal, smooth, planar	x		
			0		x		
			0		x		
			0		x		
65 201.4	R6HQ 10 ft 100%	85	0		x		
			0		x		
			0		x		
			0		x		R7: 11:08-11:52
			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 RESS		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			
70 196.4   <								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-25

SHEET 6 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.
90 176.4	R9HQ 10 ft 99%	99	0	90.6' - Fracture, horizontal, smooth, planar	x	90.2-91.5' - scattered white medium sand	SC-3 collected 93.0-94.1'
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
95 171.4	R10HQ 10 ft 100%	100	0	98.0-99.0' - Horizontal joints, very soft 98.4' - Fracture, 10 deg, smooth, undulating, loose fit	x	96.0-102.0' - mottled green, soft to very soft, scattered coarse sand	R10: 08:30-09:10 on 5/1/06
			0		x		
			1		x		
			0		x		
			1		x		
			1		x		
			2		x		
			0		x		
			0		x		
			0		x		
100 166.4	R10HQ 10 ft 100%	100	0	100.0-102.0' - Horizontal joints, very soft 100.5' - Fracture, horizontal, smooth, undulating, loose fit	x	Sandstone At 102.0' - dark reddish gray, mottled red and green, hard, fine sand to medium sand, fresh, scattered white medium sand	R11: 09:33-09:48 and 09:51-10:10
			1		x		
			1		x		
			2		x		
			0		x		
			0		x		
105 161.4	R10HQ 10 ft 100%	100	0	101.6' - Fracture, 10 deg, smooth, undulating, loose fit 102.3' - Fracture, horizontal, smooth, stepped 102.9' - Fracture, 20 deg, smooth, stepped	x	106.0-107.8' - brown, mottled light/dark gray in beds, multicolored grains	
			0		x		
106.0			0		x		
			0		x		
			0		x		
			0		x		



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			
			0			
115 151.4	R12HQ 10 ft 97%	97	0		112.9' - fine to medium sand, banded	R12: 10:20-10:52 and 11:10-11:39
			0			
			0		115.1' - medium sand to coarse sand	
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
120 146.4			1		<b>Siltstone</b> 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			
			0			
			0			
			0			
			0			
125 141.4			0		123.1' - soft to hard, fine sand	
			0			
			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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
130 136.4	R13HQ 10 ft 98%	97.5	0		x x x	128.4' - grading to sandstone	Rig begins to chatter at 129.0' bgs
			1	129.3' - Fracture, 30 deg, smooth, undulating	x x x		
			2	130.3' - Fracture, 20 deg, smooth, undulating, loose fit	x x x	129.9' - gray	
			1	130.8' - Fracture, 10 deg, smooth, planar, loose fit	x x x	<b>Sandstone</b> At 130.3' - very dark gray, soft to hard, very fine sand to fine sand, fresh, laminated, 30 deg beds	
			1	131.2' - Fracture, 5 deg, smooth to rough, undulating, tight fit	x x x		
			1	132.0' - Fracture, 20 deg, smooth, undulating, loose fit	x x x		
			2	133.1' - Fracture, 10 deg, smooth, stepped, loose fit	x x x		
135 131.4	R14HQ 5.1 ft 100%	100	1	133.9' - Fracture, 10 deg, smooth to rough, stepped, loose fit	x x x	133.9-136.0' - gray, hard to very hard, medium sand to coarse sand, multicolored grains	R14: 13:28-13:50
			1	134.6' - Fracture, 5 deg, rough, undulating, loose fit, in fine grained band	x x x		
			1	135.4' - Fracture, 15 deg, rough, undulating, loose fit	x x x	135.4' - siltstone clasts	
			0		x x x	136.0-138.6' - reddish gray, hard to very hard, medium sand to coarse sand, multicolored grains, siltstone clasts	
			0		x x x		
			1	138.6' - Fracture, horizontal, smooth, undulating	x x x	<b>Siltstone</b> 138.6-142.7' - dark reddish brown, mottled green, soft to hard, fresh, very fine to fine sand throughout	
			0		x x x		
140 126.4	R15HQ 4.9 ft 100%	96	0		x x x		Pull 5' core at 14:10 due to rig chatter
			1	142.7' - Contact between siltstone and sandstone, 10 deg, rough, undulating, loose fit	x x x	<b>Sandstone</b> 142.7-144.5' - very dark gray, hard to very hard, medium sand to coarse sand, fresh, multicolored grains	
			0		x x x		
			2	144.5' - Contact between siltstone and sandstone, horizontal, smooth, undulating, loose fit	x x x	<b>Siltstone</b> At 144.5' - dark reddish brown, mottled green and dark gray, very soft to soft	
			0	144.6' - Fracture, horizontal, smooth, stepped, tight fit	x x x	144.5-146.0' - fresh	
			6	146.0-149.0' - Fracture zone, horizontal, smooth, stepped	x x x	146.0-149.0' - moderately weathered to highly weathered	
			5		x x x		
145 121.4					x x x		R15: 14:15-14:49
					x x x		SC-5 collected 141.4-142.4'
					x x x		R16: 16:00-16:48 and 16:57-17:30





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

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 76.4	5.9 ft 96%	100	1	188.8' - Fracture, <5 deg, rough, undulating	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					
		0					
	191.0		0				
	R21HQ 5 ft 100%	100	0	192.8' - Fracture, <5 deg, smooth, undulating	194.3-196.6' - fine to medium sand	R22: 09:20-10:05	
			1				
			0				
		195 71.4		1			194.3 and 195.5' - Fractures (2), <5 deg, rough, undulating
			1				
	196.0						
200 66.4	R22HQ 5 ft 100%	88	5	196.6-197.0' - Fractures (4), <5 deg, rough, undulating	<b>Siltstone</b> 196.6-206.0' - dark reddish brown, mottled blue-green, soft, fresh	R23: 10:20-11:05  SC-7 collected 203.9-204.9'  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  R-scale not performed on rock core samples	
			0				
			1	198.7' - Fracture, <5 deg, smooth, planar			
			0				
			0				
			201.0				
205 61.4	R23HQ 5 ft 100%	100	1	201.9-203.2' - Fractures (3), <5 deg, rough, undulating	Bottom of Boring at 206.0 ft bgs on 5/3/06 11:05		
			1				
			2	203.9' - Fracture, <5 deg, rough, undulating			
			1				
			2				
			206.0				205.9' - Fracture, <5 deg, rough, undulating

Rev. 1



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


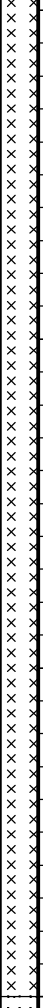



ORIENTATION : Vertical

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	R1NQ 4.7 ft 105%	0	10+	15.6' - Contact between siltstone and sandstone, horizontal, clay seam (15.4-15.6')		Siltstone 15.3-15.4' - dusky red, mottled dark green and yellow, very soft, highly weathered, fine grained Clay (CL) 15.4-15.6' - dusky red, mottled heavy whitish-green, highly weathered Sandstone 15.6-16.1' - dusky red, heavy green, black, and rust colored mottling, soft, very fine sand, highly weathered, 40% silt Clay (CL) 16.1-16.9' - dark reddish brown, whitish-green mottling, very soft, highly weathered, very fine grained, clay-like bedrock Siltstone 16.9-18.9' - light greenish gray, mottled yellow, black, and dark reddish brown, very soft, highly weathered, fine grained, more lithified with depth Siltstone At 18.9' - dark reddish gray, mottled heavy green, white, purple, and yellow, very fine grained, very soft 18.9-25.0' - highly weathered 19.6-20.0' - very soft to soft 20.0-22.6' - reddish brown, mottled very heavy green, yellow, and purple 22.6-25.0' - dark reddish brown, mottled green and purple 25.0-25.7' - dusky red, mottled green and purple, fine grained 25.0-33.3' - slightly weathered 25.7-26.4' - scattered medium sand, 10-15% 28.4-30.0' - 30% very fine to medium sand 30.0-35.0' - green mottling, 50% very fine sand with trace medium sand 33.3-33.8' - highly weathered 33.8-35.0' - slightly weathered	Rock coring began at 15:58 on 6/1/06 R1: 15:58-16:12 on 06/01/06 At 15.9': R-Scale = R3 At 16.1-19.4': R-scale = R0	
			10+	15.9' - Fracture, 60 deg, undulating, partial fracture				
			0	16.1' - Fracture, horizontal, smooth, undulating, contact with clay zone				
			10+	16.9' - Fracture, horizontal, clay seam				
20	20.0	0	10+	18.9-19.1' - Fracture zone, 30 deg and 30 deg, several rock pieces, clay-like		At 19.4-20.0': R-Scale = R2 R2: 16:32-16:47 At 20.0-22.6': R-scale = R0		
10+	21.0' - Fracture, horizontal, in clay-like material							
0	21.9' - Fracture, 20 deg, smooth, stepped, bedrock chunks-medium to coarse sand							
1	22.5' - Fracture, 20 deg, smooth, undulating							
25	25.0	0	1	23.8' - Fracture, 30 deg, smooth, undulating, rock is very soft		At 22.6-23.3': R-Scale = R1		
1	24.4' - Fracture, 10 deg, smooth, undulating and stepped							
3	27.2-27.4' - Fracture, 20 deg and 70 deg, smooth to rough, undulating, 0.05' thick clay seam, some rock pieces							
0								
30	30.0	90	0			R3: 08:40-08:48 on 6/02/06 At 25.5': R-Scale = R3-R4 SC-1 collected 26.2-27.2'		
0								
5								
0								
35	35.0	92	0	33.3-33.5' - Fracture, horizontal, smooth, undulating, 0.05' thick clay infilling		R4: 09:00-09:08 At 31.6': R-Scale = R3-R4 At 34.2': R-Scale = R4		
0	33.6-33.8' - Fracture zone, horizontal and 50 deg, several bedrock pieces, clay and bedrock fragments, in zone of breakage							
0								
0								



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><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</div><div>Siltstone 36.9-38.6' - dark reddish brown, faint green mottling, very soft to soft, slightly weathered, fine grained, 20% sand/coarse silt</div></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><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</div><div>Siltstone 39.7-39.8' - very dark gray to very dark greenish gray, very soft, slightly weathered, fine grained</div><div>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></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><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</div><div>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></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				
				0				At 52.5': R-Scale = R3
				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

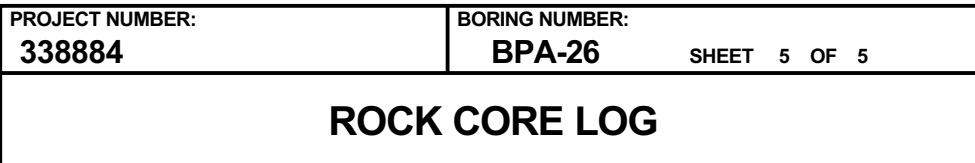
WATER LEVELS : 2.0 ft bgs

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			



LOGGER : JS

Rev. 1

# SOIL BORING 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

DRILLING EQUIPMENT AND METHOD : BK-51/CME-750, 3-5/8 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

[illegible]



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			
				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.
33.0							
35	R3NQ 5 ft 100%	84	1	33.5' - Fracture, 45 deg, rough, undulating	x x x x	30.5' - mottled greenish gray	R3: 14:16-14:30
223.3			2	34.6' - Fracture, horizontal, rough	x x x x	32.3' - mottled greenish gray	At 33.0-34.0': R-Scale = R3
			2	35.4' - Fracture, horizontal, rough	x x x x	33.0-38.0' - mottled greenish gray, soft	At 34.0-36.0': R-Scale = R2
			0		x x x x	35.0-35.2' - clay with siltstone	
			0		x x x x		At 36.5': R-Scale = R4
38.0							
40	R4NQ 5 ft 100%	66	3	38.5' - Fracture, 30 deg, smooth, undulating	x x x x	38.0-43.0' - light reddish brown, mottled greenish gray, soft to very soft, very thin bedding, fresh, angular bedding	R4: 14:45-15:15
218.3			2	38.8' - Fracture, 30 deg, smooth, undulating	x x x x		At 39.2-39.8': R-Scale = R2
			0	38.9' - Fracture, horizontal, undulating	x x x x	39.7' - very soft	At 39.6': R-Scale = R3-R4
			0	39.0' - Fracture, horizontal, undulating	x x x x		At 40.0': R-Scale = R3-R4
			2	39.7' - Microfractures	x x x x		
				39.9' - Fracture, horizontal, smooth, undulating	x x x x		
43.0							
45	R5NQ 5 ft 100%	96	1		x x x x	41.5-41.9' - clay, greenish gray and brown, very soft, some siltstone fragments	At 41.5-41.9': R-Scale = R0
213.3			0		x x x x	42.1-42.4' - very soft	At 41.9-42.3': R-Scale = R1
			0		x x x x	42.7-42.8' - clay, greenish gray and brown, very soft, some siltstone fragments	At 42.5': R-Scale = R3-R4
			1		x x x x	<b>Sandstone</b>	R5: 15:30-15:50
			0	46.9' - Fracture, 60 deg, smooth, undulating	x x x x	43.0-48.0' - light reddish brown, mottled greenish gray, soft, fine sand, fresh, fragile	At 43.5': R-Scale = R4
							At 44.5': R-Scale = R3-R4
48.0							
50	R6NQ 5 ft 94%	94	0		x x x x	47.0-48.0' - grain size increase, white particles to the bottom	At 47.5': R-Scale = R3-R4
208.3			1		x x x x	<b>Siltstone</b>	R6: 16:43-17:10
			1		x x x x	48.0-50.2' - light reddish brown, mottled greenish gray, soft, fresh	At 49.0': R-Scale = R3-R4
			0		x x x x	<b>Sandstone</b>	
			0		x x x x	50.2-53.0' - light reddish brown, soft, fine sand, fresh	At 52.0': R-Scale = R3



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

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	0	56.9' - Contact between siltstone and sandstone, smooth, undulating 57.5' - Fracture, horizontal, smooth, undulating 57.6' - Fracture, horizontal, smooth, undulating 57.7' - Fracture, horizontal, smooth, undulating 58.1' - Fracture, 30 deg, rough, undulating 58.2' - Fracture, 30 deg, rough, undulating	<b>Siltstone</b> 53.0-56.9' - light reddish brown, mottled greenish gray, laminated bedding, fresh, coarse grained	R7: 08:57-09:20 on 06/08/06	
			0			At 54.5': R-Scale = R3-R4	
			0				
			0				
			0				
60 198.3	R8NQ 5 ft 90%	68	1	61.2' - Fracture, 40 deg, smooth 61.3' - Fracture, 40 deg, smooth 61.4' - Fracture, 40 deg, smooth	<b>Sandstone</b> 56.9-57.5' - soft, fresh  <b>Siltstone</b> At 57.5' - light reddish brown, mottled greenish gray, soft, laminated bedding, fresh   60.5' - fine grains become more visible	SC-1 collected 55.8-56.4'	
			4			At 57.2': R-Scale = R3-R4 R8: 09:43-10:05	
			0			At 59.0': R-Scale = R4	
			0				
			2			SC-2 collected 60.2-61.1'	
			62.5			At 61.4': R-Scale = R3-R4 At 61.8': R-Scale = R0-R1	
65 193.3	R9NQ 6 ft 100%	100	3	63.4' - Fracture, horizontal, smooth, undulating	61.8' - very soft 61.8-62.2' - clay seam, rock particles and multiple fractures 62.5' - mottled greenish gray and black	R9: 10:22-10:48	
			1			At 62.8': R-Scale = R4	
			0			At 64.0': R-Scale = R3-R4	
			0				
			0			At 66.2': R-Scale = R3-R4	
			0				
70 188.3	R10NQ 4 ft 100%	100	0	71.8' - grains are larger (0.01) pink and white	<b>Sandstone</b> At 67.9' - pinkish gray, soft to hard, fresh, transitions to sandstone  69.5' - grains become larger, more coarse, white and gray	R10: 12:30-12:42	
			0			At 69.2': R-Scale = R3-R4	
			0			At 70.9': R-Scale = R4	
			0				
72.5							



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-27

SHEET 5 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	
						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									
75 183.3	R11NQ 5.5 ft 100%	100	0		XXXXXX XXXX				





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	xx	<b>Siltstone</b> 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%		0			<b>Sandstone</b> 93.4-108.4' - light reddish brown, mottled greenish gray, soft, laminated bedding, fine sand to coarse sand, fresh	
			0			93.6' - greenish gray band 20 degree	
			0			94.3' - 0.02' thick greenish gray band	
			0			94.6-95.5' - medium sand	
100 158.3	98.3		0	98.4' - Fracture, horizontal, smooth, undulating		95.5' - soft to hard, white, black, rust colored, fine to medium grained	At 95.8': R-Scale = R3-R4
	R16NQ 5 ft 100%		0			95.6' - rust colored band	
			0			97.4-98.2' - becomes coarser	
			0			97.9-98.2' - rust colored 0.05-0.1' thick bands	
			1			98.3-103.3' - fine sand to medium sand	
105 153.3	103.3		0	106.0' - Fracture, smooth, undulating  106.9' - Fracture, 10 deg, fissure along core		98.5' - rust colored mottling, coarse sand, siltstone inclusions	At 100.1': R-Scale = R4
	R17NQ 5.1 ft 100%		0			98.9' - rust color mottling, black band around core, white and gray grains	
			0			99.4-99.6' - rust colored bands at 20 degree angle	
			0			99.8-101.6' - greenish gray band at 10 degree angle	
			0			101.6' - rust colored band	
110 148.3	108.4		0			101.6' - rust colored siltstone inclusion, 0.05' thick, fine grained, smooth around inclusion	At 102.3': R-Scale = R3-R4
	R18NQ 5.1 ft 100%		0			102.3' - siltstone inclusions	
			0			102.8-103.5' - medium sand to coarse sand, white, black, light reddish brown, greenish gray grains are 0.05' thick	
			0			103.0' - mottled, rust band at 103'	
			0			103.3-108.4' - pinkish white, mottled, white, gray, black, pink fine to medium grains	
			0			106.0' - mottling through to end of core, very soft, sandstone/siltstone mixture	SC-4 collected 106.0-106.5'
			0			106.5-106.7' - gray, reddish brown, alternating bands	At 107.4': R-Scale = R3-R4
			0			106.7' - clay seam, 0.01' thick	
			0			106.8' - clay seam, 0.01' thick	
			0			107.0' - very soft, very fine sand, clay seams, reddish brown	R18: 09:15-09:40
			0			107.0-108.4' - dark mottling, larger grains observed	
			0			108.1-109.3' - dark mottling	
			0			<b>Siltstone</b> At 108.4' - dusky red, mottled greenish gray, soft, fresh	
			0			109.0-109.7' - larger inclusions	
			0			110.0' - soft to hard, coarsens with depth	At 111.6': R-Scale = R3-R4
			0			111.0' - 0.05' inclusion	

# 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

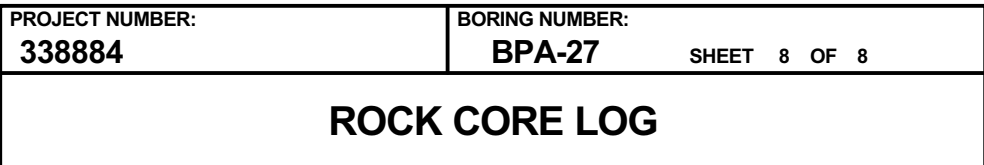
WATER LEVELS : 8.5 ft bgs

START : 6/2/06 08:20

END : 6/12/06 10:45

LOGGER : JF/JS/MJ

[illegible]



LOGGER : JF/JS/MJ

Rev. 1



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 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)					PP (TSF)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
		#TYPE	6"-6"-6"-6" (N)					
272.7	0.0	8.0	SS1SS	3-3-4-5 (7)	<b>Clayey Sand (SC)</b> 0.0-0.3' - yellow brown, moist, medium dense, organics <b>Clay (CL)</b> 0.3-0.7' - yellow red, mottled, moist, medium stiff, organics		PT-1 collected 2.0-4.0'	
	2.0							
	2.5	13.0	SS2SS	5-7-12-14 (19)	<b>Clay (CL)</b> 2.5-3.6' - reddish brown, mottled, moist, medium stiff			
	4.5							
5								
267.7	5.0	17.0	SS3SS	8-12-28-25 (40)	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 7.5-8.5' - reddish brown, mottled, dry to moist, stiff			
	9.5							
10								
262.7	10.0	3.0	SS5SS	50/3 (50/3")	<b>Clay (CL)</b> 10.0-10.3' - reddish brown, mottled, dry to moist, stiff to hard		4.5+	
	12.0							
	12.5	4.5	SS6SS	50/4.5 (50/4.5")	<b>Clay (CL)</b> 12.5-12.9' - reddish brown, mottled, dry to moist, stiff to hard			
	14.5							
15								
257.7	15.0	4.5	SS7SS	50/4.5 (50/4.5")	<b>Clay (CL)</b> 15.0-15.4' - reddish brown, mottled, dry to moist, stiff to hard		4.5+	
	17.0							
	17.5	3.0	SS8SS	50/3 (50/3")	<b>Clay (CL)</b> 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								

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

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

# 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&amp;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 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 x 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 x x		
			0	39.2-45.5' - Microfractures	x x x		
	40.5		0		x x x	40.5-41.8' - some blue green mottling	At 39.4': R-Scale = R2
45 227.7		98	0		x x x	40.5-47.0' - fresh	R5: 15:00-15:25
			0		x x x	41.8-45.5' - very dusky red, soft, fine grained, some sand	
			0		x x x	41.8-43.8' - mottled blue green	At 42.7': R-Scale = R3
	45.5		2		x x 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 x x		R6: 15:30-15:55
			0		x x x		
			1	48.5' - Fracture, 60 deg and vertical, rough, undulating	x x x	<b>Sandstone</b> 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 x x	<b>Siltstone</b> 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 x x	<b>Sandstone</b> 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 x 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 x x	52.2-55.5' - heavily mottled, disturbed bedding, and iron staining	
	55.5		0		x x x		At 54.6': R-Scale = R3-R4
			0		x x 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 x x	55.9-56.3' - no staining	
			0		x x 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

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.					
60 212.7	60.5	R8NQ 5 ft 100%	100	0			56.8-60.5' - bluish-gray, soft to hard, fine sand to medium sand, angular to subangular, bedding at 30 becoming massive at bottom (59.5-60.5')	At 59.2': R-Scale = R3-R4						
			0											
			0											
	65.5	R9NQ 5 ft 100%	100	0					60.5-67.2' - very dark bluish gray, fine grained with trace of very fine sand, soft, micaceous	R9: 08:55-09:20				
			0											
			0											
	65.5	R10NQ 5 ft 100%	94	0							63.5-64.4' - very dark bluish gray, mottled reddish brown, thin (0.04') silt lens at 64.25' with red brown staining around it 64.4-66.2' - dark reddish-brown, mottled blue gray, thin (<0.01') siltstone to fine sandstone lens at 65.2'	At 64.7': R-Scale = R3		
			0											
			0											
	70.5	R11NQ 5 ft 100%	71	3									65.8' - Fracture, 60 deg, rough, undulating, tight fit  66.2-67.2' - dark reddish-brown, fine sand  67.2-73.0' - dark greenish gray, soft to hard, fine sand to medium sand, coarser at bottom, remnant 30 deg bedding plane 67.7-71.2' - reddish brown	R10: 09:25-09:45
			10+											
			0											
75.5		0	0	70.5-71.2' - becoming coarse grained, 30 deg bedding plane with clasts at bottom (70.9-71') <b>Siltstone</b> 71.2-73.0' - multi-colored (yellow-tan, bluish-gray, red brown), mottled, very soft, fresh, fine grained, gradational, banded, 30 deg bedding plane <b>Siltstone</b> 73.0-74.0' - multi-colored (yellow-tan, bluish-gray, red brown), mottled, very soft, highly weathered, fine grained, soil-like characteristics <b>Siltstone</b> 74.0-74.3' - multi-colored (yellow-tan, bluish-gray, red brown), mottled, fresh, lithified, transitional stage between pale soil horizon and bedrock	SC-2 collected 69.25-70.2' R11: 09:50-10:10									
		0												
		0												
		0	0			72.6-73.0' - Fracture zone (2), 5 deg, rough, undulating, tight fit 73.0-74.0' - Clay seam, heavily fractured/chipped rock fragments with clay, highly weathered soil-like fragments are slickensided  75.5-80.5' - Microfractures	At 72.0': R-Scale = R2							
		0												
		0												
		0	0					75.5-80.5' - Microfractures	At 73.0-73.9': R-Scale = R0					
		0												
		0												
		0	0							75.5-80.5' - Microfractures	At 74.3': R-Scale = R3-R4			
		0												
		0												
		0	0	75.5-80.5' - Microfractures	R12: 10:15-10:40									
		0												
		0												
		0	0			75.5-80.5' - Microfractures	At 77.0': R-Scale = R3-R4							
		0												
		0												



# 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&amp;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

WATER LEVEL: 212.10 DGS		START: 3/5/99 10:03		END: 3/7/99 11:30		LOGGER: 3/7/99	
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		
80 192.7	R12NQ 5 ft 100%	100	0	82.3' - Fracture, 60 deg, rough, undulating	XXXX 		

# 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

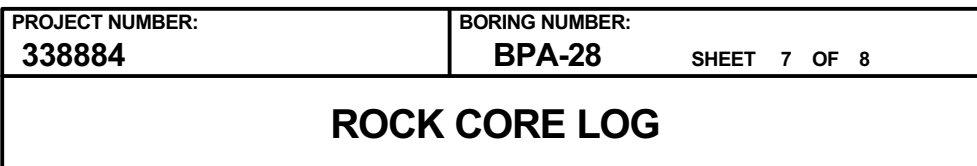
WATER LEVELS : 21.2 ft bgs

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			
100 172.7	100.5	R16NQ 5 ft 100%	100	0				At 98.3': R-Scale = R3-R4	
			0						
			0						
	105.5	R17NQ 5 ft 100%	100	0				100.5-103.5' - dark reddish brown, very soft to soft	R17: 14:30-15:00
			0	101.9-102.9' - mottled blue-green-gray				At 102.2': R-Scale = R3-R4 SC-3 collected 102.6-103.5'	
			0	102.9-103.5' - no medium sand					
			0	103.5-105.5' - heavily mottled blue green, soft					
			0						
			0						
	110.5	R18NQ 5 ft 100%	100	0				<b>Sandstone</b> 105.5-106.4' - dark reddish gray, soft to hard, fine sand, fresh, medium bedding at bottom <b>Siltstone</b> 106.4-109.5' - dark reddish gray, mottled blue-green-gray, soft, fresh, fine grained  109.0-109.5' - fine sand	R18: 15:05-15:30
			0	At 106.5': R-Scale = R3-R4					
			0						
0									
0									
0									
115.5	R19NQ 5 ft 100%	100	0	<b>Sandstone</b> 109.5-110.5' - dark reddish gray, soft to hard, fine sand, fresh, no disturbed bedding <b>Siltstone</b> At 110.5' - dark reddish brown, mottled blue-green-gray, very soft to soft, fresh, fine grained, trace medium sand  113.9-115.5' - more fine sand at bottom, gradual fining upward	R19: 15:35-16:05				
		0							
		0							
		0							
		0							
		0							
			0	115.5-125.5' - Microfractures	R20: 16:05-16:45				
			0	At 116.2': R-Scale = R3-R4					



LOGGER : JF/JS

Rev. 1



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	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		
140 132.7	R24NQ 5 ft 100%	100	0			137.4-150.7' - light gray to reddish gray, medium sand to coarse sand	At 139.2': R-Scale = R3-R4
			0				R25: 10:50-11:05
			0				
	140.5		0				
			0				
			0				
			0				
			0				
			0				
			0				
145 127.7	R25NQ 5 ft 100%	100	0			146.6-147.2' - light yellow-orange surface staining on core	At 144.0': R-Scale = R4
			0				R26: 11:10-11:20
			0				SC-4 collected 145.5-146.4'
			0				
	145.5		0				
			0				
			0				
			0				
			0				
			0				
150 122.7	R26NQ 5 ft 100%	100	0			147.9-148.0' - very faint 30 degree bedding plane 148.0-148.5' - coarse sand 148.6-150.5' - fine to medium grained gravel sized dark reddish brown siltstone clasts < 1% throughout core (147.45 to 150.5')	At 148.6': R-Scale = R3-R4
			0				R27: 11:25-11:50
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
155 117.7	R27NQ 5 ft 100%	100	0			<b>Siltstone</b> 150.7-155.5' - dark reddish brown, very soft, fresh, fine grained  152.0-154.2' - mottled blue-green, fine to medium gravel sized pink-white clay clasts	First water level = 21.2' bgs taken 6/13/06 at 09:57
			0				At 154.2': R-Scale = R3-R4
			0				R-scale performed after drilling on stored samples
			0				
			0				
			0				
			0				
			0				
			0				
			0				
						Bottom of Boring at 155.5 ft bgs on 6/1/06 11:50	



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)	#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		Soil sampling completed at 10:55 on 5/10/06
	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		
	17.7				Begin Rock Coring at 17.7 ft bgs See the next sheet for the rock core log		
20							

# 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



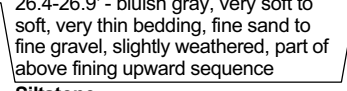

ORIENTATION : Vertical

WATER LEVELS : 19.1 ft bqs

START : 5/10/06 09:15

END : 5/11/06 10:10

LOGGER : DT

WATER LEVEL: 19.1 ft bgs		START: 5/10/00 09:13		END: 5/17/00 10:10		LOGGER: D1						
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		<b>Siltstone</b> 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	20.3' - Fracture, horizontal, rough, undulating, tight fit								
			0									
			0									
			0									
			0									
			0									
			25 251.4	25.5							<b>Sandstone</b> 23.0-26.4' - greenish gray, soft to hard, thick bedding, fine sand to medium sand, subangular, slightly weathered, fresh, fining upward sequence  <b>Conglomerate</b> 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  <b>Siltstone</b> 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
			30 246.4	94				0	26.7' - Fracture, 20 deg, rough, undulating, tight fit			
1												
0	29.0' - Fracture, 25 deg, smooth, undulating, loose fit											
1												
0	32.1' - Fracture, horizontal, smooth, undulating, tight fit 32.6-32.9' - Fracture, 60 deg, smooth, undulating, loose fit											
1												
0												
35 241.4	35.5						35.9-37.0' - white silt clasts	R3: 13:50-14:21 and 14:25-14:48				
		1	35.5-45.5' - Microfractures									
		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	<b>Sandstone</b> 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	<b>Siltstone</b> 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	<b>Sandstone</b> 48.8-55.5' - light gray, soft, massive bedding, fine sand to medium sand, fresh	
			0		x x x x		
			0		x x x x		
					x x x x	<b>Siltstone</b> At 55.5' - grayish red, soft, laminated bedding, fresh, thin, coarser grained zones up to very fine sandstone (lighter colored-greenish gray and light gray), harder at bottom	R5: 15:35-16:00 and 16:02-16:30





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	<b>Siltstone</b> 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	<b>Sandstone</b> 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

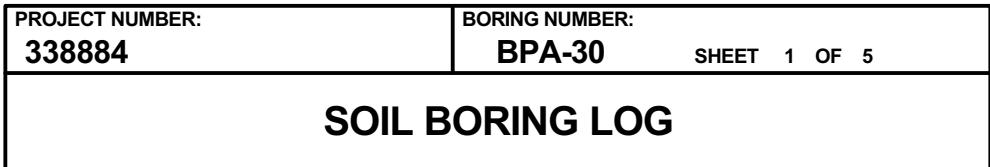
WATER LEVELS : 19.1 ft bgs

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			
				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.
80 196.4	R7NQ 10 ft 99%	93	1	77.9' - Fracture, 20 deg, smooth, undulating, tight fit			
			0				
			0				
			1	81.0' - Fracture, 70 deg, rough, undulating, tight fit			
			1	81.6' - Fracture, horizontal, rough, undulating, loose fit			
			0				
			0				
85 191.4	85.5		0				
	R8NQ 10 ft 100%	93	2	85.6' - Fracture, horizontal, rough, undulating, loose fit		<b>Siltstone</b> At 83.6' - grayish red to grayish green, mottled grayish green and grayish red and banded, soft, laminated to medium bedding, fresh, becomes redder with depth, grades to sandstone	R8: 09:20-09:41 and 09:45-10:03
			0				
			1				
			0	88.4' - Fracture, horizontal, smooth, undulating, loose fit			
			1				
90 186.4			2	90.6' - Fracture, 10 deg, smooth, undulating, loose fit		90.0-91.0' - interbedded with very fine sandstone stringers - light gray to grayish green	
			0	91.0' - Fracture, horizontal, smooth, planar, loose fit			
			1			<b>Sandstone</b> 91.0-95.1' - light gray, mottled grayish red, soft, medium to thick bedding, fine sand to medium sand, fresh, coarsens with depth	SC-2 collected 91.9-92.7' First water level = 19.1' bgs taken 5/11/06 at 17:38; second water level = 22.8' bgs taken 5/12/06 at 15:40
			0				
			1	93.1' - Fracture, 10 deg, rough, stepped, tight fit			
			0				
95 181.4	95.5		2	94.9' - Fracture, horizontal, smooth, undulating, loose fit		94.3-95.1' - medium to coarse grained sand, rip-up clay clasts	R-scale not performed on rock core samples
				95.3' - Fracture, 25 deg, slickensided, undulating, loose fit			
						<b>Siltstone</b> 95.1-95.5' - dark gray, very soft to soft, highly weathered, trace sand 95.2-95.3' - clay seam Bottom of Boring at 95.5 ft bgs on 5/11/06 10:10	



LOGGER : DT

Rev. 1



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			
				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.
20 249.2	15.5	0	1	15.9-16.2' - Fracture, 70 deg, smooth, undulating	x x x	<b>Siltstone</b> 15.5-17.0' - pale red, soft, highly weathered to completely weathered, weathered in part, fine grained, some sand	Rock coring began at 11:25 on 5/8/06  R1: 12:53-13:10 and 13:12-13:37 on 05/08/06
			2	16.6' - Fracture, horizontal, rough, undulating 16.9' - Fracture, horizontal, rough, undulating	x x x		
			1	17.7' - Fracture, horizontal, rough, undulating	x x x	<b>Sandstone</b> 17.0-20.2' - soft, medium bedding, fine sand to medium sand, subrounded to subangular, highly weathered to completely weathered, fresh, some silt, fine grained	
			2		x x x		
			1	19.2' - Fracture, horizontal, rough, undulating 19.4' - Fracture, horizontal, rough, undulating 19.7' - Fracture, 10 deg, rough, undulating	x x x		
			4	20.9' - Fracture, 55 deg, rough, undulating 21.0' - Fracture, horizontal, rough, undulating 21.3' - Fracture, 20 deg, rough, undulating	x x x	<b>Siltstone</b> At 20.2' - pale red, mottled reddish black, very soft, highly weathered to completely weathered, crumbles, soil-like	
			3	21.5' - Fracture, horizontal, rough, undulating 21.9' - Fracture, horizontal, rough, stepped	x x x		
			3	22.1' - Fracture, 20 deg, rough, undulating 22.3' - Fracture, slickensided, undulating 22.7' - Fracture, 10 deg, rough, undulating	x x x	23.0-25.5' - mottled light greenish gray	
			2	23.2' - Fracture, horizontal, rough, undulating 23.3' - Fracture, horizontal, rough, undulating 23.9' - Fracture, horizontal, rough, undulating	x x x		
			0	24.3' - Fracture, horizontal, rough, undulating	x x x	24.5-25.5' - light greenish gray portions are harder than reddish matrix	
25 244.2	25.5	90	0		x x x	25.5-28.5' - grayish red, mottled greenish gray, soft, grades to very fine grained sandstone, fresh surfaces are grayish red to blackish red	R2: 14:50-15:14 and 15:18-15:35
			0		x x x	25.5-30.5' - slightly weathered	
			2	27.6-27.8' - Fracture, 65 deg, rough, stepped 28.1-28.3' - Fracture, 70 deg, rough, stepped	x x x		
			3	28.6' - Fracture, horizontal, rough, undulating 28.9' - Fracture, horizontal, rough, undulating	x x x	28.5-28.9' - grayish red, very soft, clay-like soil zone 28.7-28.9' - clay seam	
			1	29.6' - Fracture, horizontal, rough, undulating	x x x	28.9-47.0' - grayish red, mottled greenish gray, soft, grades to very fine grained sandstone, fresh surfaces are grayish red to blackish red	
			0		x x x	30.5-44.0' - fresh	
			1	32.0-32.2' - Fracture, 60 deg, rough, undulating	x x x		
			0		x x x		
			0		x x x		
			0		x x x		
30 239.2					x x x		
35 234.2	35.5				x x 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

[illegible]



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

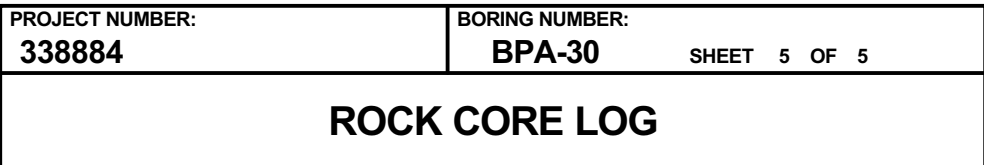
WATER LEVELS : 5.9 ft bgs

START : 5/8/06 09:30

END : 5/9/06 13:25

LOGGER : DT

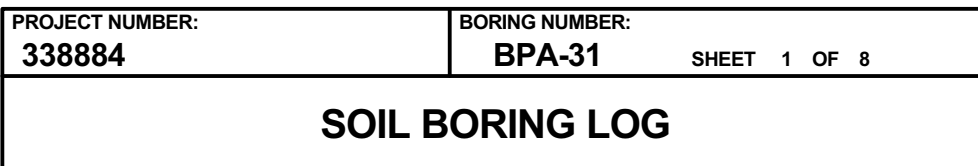
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
		R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS		SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
60 209.2	R5NQ 10 ft 100%	91	0	57.0' - Fracture, 30 deg, red stains	<div>XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX</div>	55.0-56.7' - becomes sandy	R5: 09:05-09:18 and 09:21-09:39	
			0					
			0					
			0					
			2					
			1					
			0					
			0					
			0					
			2					
65 204.2	65.5	81.5	1	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  67.1' - Fracture, horizontal, rough, undulating, loose fit    70.7' - Fracture, 5 deg, smooth, stepped, loose fit 71.2' - Fracture, 15 deg, smooth, planar, tight fit 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 72.2' - Fracture, 20 deg, smooth, undulating 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	<div>XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX</div>	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    67.8-70.7' - grayish red   <		



LOGGER : DT

Rev. 1





LOGGER : JS/DT/LH

Rev. 1



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	40.0	R5NQ 5 ft 100%	84	0	34.2' - Contact between siltstone and sandstone, sharp	x x			



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 4 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		
60 203.1	60.0	R9NQ 5 ft 100%	68	0	54.2' - Fracture, 5 deg, rough, undulating, tightly healed	xx xx		

# 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

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-31

SHEET 6 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			
100 163.1   <										

LOGGER : JS/DT/LH





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

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.
140 123.1	R25NQ 5 ft 99%	99	1	135.9' - Fracture, rough, undulating		134.6-139.5' - gray to white, very fine sand to coarse sand	R25: 15:15-15:27
			0	136.7' - Fracture, rough, undulating			
			0				At 137.3': R-Scale = R3
			0				SC-4 collected 139.0-140.0'
			0			139.7-144.0' - gravel sized siltstone clasts in sandstone	R26: 15:35-15:52
			0				At 141.6': R-Scale = R3
			0				At 143.6': R-Scale = R3-R4
			0				First water level = 16.8' bgs taken 5/31/06 at 16:55;
			0				second water level = 10.6' bgs taken 6/20/06 at 07:55
145 118.1	R26NQ 5 ft 100%	100	0			144.0-145.0' - becomes silty in layers	R-scale performed after drilling on stored samples
			0				
						Bottom of Boring at 145.0 ft bgs on 5/31/06 15:52	
150 113.1							
155							

Rev. 1



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

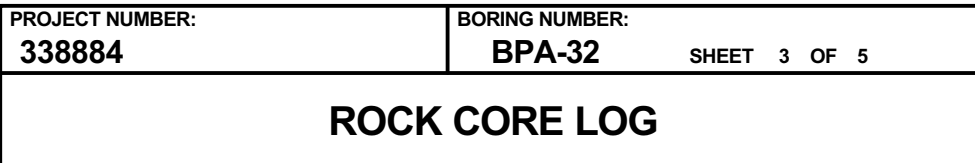
WATER LEVELS : 19.0 ft bgs

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	0	0		<b>Sandstone</b> 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		
	1		11.0' - Fracture, horizontal, smooth, undulating	At 12.1-18.3': R-Scale = R1				
	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	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	0	2	21.0' - Fracture, horizontal, rough, planar	<b>Siltstone</b> 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	100	0	26.1' - Fracture, 60 deg, smooth, undulating		R4: 15:05-15:19		
	1							
	0							
	0							
	0							



LOGGER : JS

Rev. 1



PROJECT NUMBER:

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

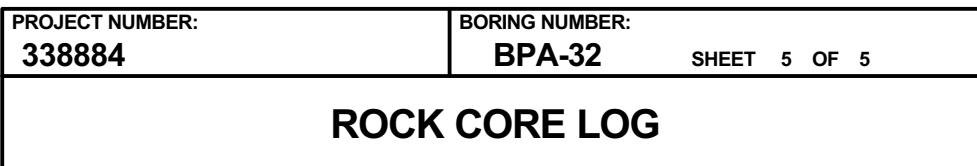
WATER LEVELS : 19.0 ft bgs

START : 5/8/06 11:00

END : 5/9/06 14:07

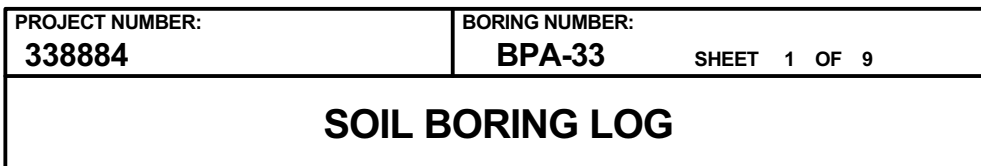
LOGGER : JS

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			
55 213.9	R10NQ 5 ft 99%	99	0		x	<b>Siltstone</b> At 48.8' - dark reddish brown, trace green mottling, very soft to soft, fresh, fine grained, scattered white and gray inclusions 50.0-55.0' - coarse sand to fine gravel sized	R10: 09:20-09:40
			0		x		
			0		x		At 52.0': R-Scale = R3
			0		x		
			2	54.0' - Fracture, horizontal, smooth, undulating	x		
				54.6' - Fracture, horizontal, smooth, undulating	x		
			0		x		R11: 09:50-10:06
			0		x		
			0		x		
			0		x		At 58.4': R-Scale = R3
			0		x		
60 208.9	R11NQ 5 ft 100%	100	0		x		R12: 10:20-10:36
			0		x		At 60.9': R-Scale = R3-R4
			1	61.7' - Fracture, 70 deg, smooth, undulating	x		
			0		x		
			1	63.5' - Fracture, 70 deg, smooth, undulating	x		
			0		x		R13: 10:43-11:00
65 203.9	R12NQ 5 ft 96%	96	0		x		
			0		x		At 66.3': R-Scale = R3
			0		x		
			0		x		
70	R13NQ 5 ft 98%	98	0		x		
			0		x		
			0		x		



LOGGER : JS

Rev. 1



LOGGER : DT/JS

Rev. 1





PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 2 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			
15 255.4	10.3  R1NQ 9.7 ft 101%	0	0			<b>Sandstone</b> 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	11.2' - Fracture, horizontal, rough, undulating, loose fit			
			1	11.3' - Fracture, horizontal, rough, undulating, loose fit			
			1	11.7' - Fracture, horizontal, rough, undulating, loose fit			
			1	12.5' - Fracture, 25 deg, rough, undulating, loose fit			
			1	13.1' - Fracture, horizontal, smooth, undulating, loose fit			
			1	14.7' - Fracture, 10 deg, rough, stepped, tight fit			
			0				
			0				
			1	17.8' - Fracture, horizontal, smooth, undulating, loose fit			
20 250.4	20.0  R2NQ 5 ft 82%	0	1	18.9' - Fracture, horizontal, rough, stepped, tight fit		<b>Sandstone</b> 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  23.5-23.9' - heavy pink and red mottling through soil mass, very soft, poorly sorted, fine to coarse sand	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	19.6' - Fracture, 10 deg, rough, undulating, loose fit			
			2	20.1' - Fracture, horizontal, rough, planar			
			2	20.4' - Fracture, horizontal, rough, planar			
			2	21.6' - Fracture, horizontal, rough, undulating, heavily stained			
			2	21.8' - Fracture, horizontal, rough, undulating			
			2	22.0' - Fracture, horizontal, smooth, undulating			
			2	22.5' - Fracture, horizontal, smooth, undulating			
			1	23.5' - Fractures (2), horizontal and 70 deg, smooth, undulating			
				24.1' - Fracture, horizontal, smooth, undulating			
25 245.4	25.0  R3NQ 5 ft 90%	0		25.0-25.8' - Fracture zone		<b>Sandstone</b> 25.8-26.8' - light brownish gray, mottled pink and red, clay in matrix 25.8-26.2' - very soft, very fine sand to fine sand, clay in matrix <b>Clay Seam (CL)</b> 26.8-28.3' - grayish brown, mottled greenish white, black, yellow, red, very stiff, highly weathered, fine grained <b>Siltstone</b> 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
			10+	25.8' - Fracture, 30 deg, smooth, undulating			
			1	26.8' - Fracture, horizontal, smooth, stepped			
			2	27.0' - Fracture, horizontal, smooth, undulating, black stains			
			2	27.2' - Fracture, horizontal, smooth, undulating, black stains			
			10+	28.3-28.4' - Fracture zone, horizontal			
			0	28.6' - Fracture, horizontal, smooth, undulating, black stains			
30 240.4	30.0			30.0-30.6' - Fracture zone, numerous fractures		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			
				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.
35 235.4	R4NQ 5 ft 107%	48	10+	30.6' - Fracture, horizontal and 10 deg, smooth, undulating	x x x	28.3-28.5' - very soft, clay to weathered bedrock	At 30.6-31.0': PP: 4.5+ tsf
			10+	30.8' - Fracture, horizontal and 10 deg, smooth, undulating	x x x	28.5-30.0' - very soft to soft	
			2	31.5' - Fracture, horizontal, smooth, planar, contact with clay seam	x x x	30.0-32.6' - mottled greenish gray, purple and yellow, very soft, clay seams, clay-like	At 31.5-31.9': PP: 1.5 tsf
			1	33.2' - Fracture, horizontal and vertical, smooth, undulating, 0.15' clay infilling	x x x	<b>Sandstone</b>	
			0		x x x	At 32.6' - very dark gray, mottled greenish gray and yellow, very soft, very fine sand, some silt, laminated to medium bedding	
35 235.4			2		x x x	32.6-32.6' - highly weathered	
			0		x x x	32.6-35.0' - dark brown, trace greenish gray mottles, very soft to soft, very fine to fine grained, coarser than above	R5: 10:35-10:44
			2	35.5' - Fracture, horizontal, smooth, undulating, brown and yellow stains	x x x	32.6-39.4' - slightly weathered	
			0	35.7' - Fracture, 20 deg, smooth, undulating, brown and yellow stains	x x x	35.0-35.7' - very dark gray, mottled brown and black, very soft, very fine grained, some silt in matrix	
	R5NQ 5 ft 102%	92	0		x x x	35.7-38.7' - gray, mottled pink; white black, green, yellow, orange grains, soft to hard, fine sand to coarse sand, poorly sorted, coarsens with depth	At 37.5': R-Scale = R3-R4
			3	38.2-38.4' - Fractures (2), horizontal and 40 deg, rough, undulating, black stains	x x x	38.7-39.5' - weak red, red, black, white, and gray grains, soft, medium sand to coarse sand, dark gray clay seams throughout, irregularly shaped, more abundant with depth	
40 230.4			2	38.9' - Fracture, horizontal, rough, undulating	x x x	39.4-47.4' - fresh	R6: 10:53-11:00
			0		x x x	39.5-39.6' - clay seam, joints on either side, undulating, dark gray with no bedding, firm	SC-1 collected 40.0 - 41.1
			0		x x x	39.6-40.0' - light gray, soft to hard, fine sand to coarse sand, poorly sorted	
			0		x x x	40.0-43.3' - gray, multicolored grains, white, green, gray, some black, orange, soft to hard, fine sand to medium sand, coarsens with depth and then begins fining with depth at 42.2'	
	R6NQ 5 ft 100%	100	1	43.0' - Fracture, 65 deg, smooth, undulating, 0.01' relief	x x x	42.8-43.0' - mottled red	At 44.3': R-Scale = R3-R4
45 225.4			0		x x x	43.3-44.0' - light gray and pale red, mottled dark red, hard, fine sand	R7: 11:05-11:23
			10+	46.3-46.6' - Fracture zone, horizontal and 80 deg, some orange and yellow stains	x x x	44.0-45.0' - mottled red, fine sand to coarse sand, poorly sorted, thin, discontinuous, black threadlike lenses, more abundant with depth, coarser in last 0.2' (30% coarse sand)	
			10+	47.3' - Fracture, horizontal, smooth, undulating, 0.01' relief	x x x	45.0-47.4' - light brownish gray, gray, white, yellow, and orange grains, soft, medium sand to coarse sand, poorly sorted, trace clay clasts, some finer zones	
			1	47.6' - Fracture, 5 deg, smooth, undulating, 0.01' relief	x x x	46.6-46.7' - fine grained zone	At 48.8': R-Scale = R2
			2	47.9' - Fracture, horizontal, smooth, undulating, 0.01' relief	x x x		
			2	48.3' - Fracture, horizontal, smooth, undulating, 0.01' relief	x x x		
50 220.4					x x x		R8: 11:34-11:57



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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
55	R8NQ 5 ft 93%	88	10+	50.5-50.8' - Fracture zone, horizontal, smooth, undulating, 0.01' relief	x x x x	<b>Siltstone</b> 47.4-48.0' - dark gray, mottled gray, yellow, purple, very soft, moderately weathered, very fine grained, clay seams	At 52.1': R-Scale = R2-R3
			0		x x x x	47.4-47.6' - clay seam, dark gray	
			1	52.6' - Fracture, horizontal, smooth, undulating, 0.01' relief	x x x x	47.7-47.8' - clay seam, dark gray	
			0		x x x x	48.0-48.3' - clay seam, laminated alternating siltstone and clay seams, contacts are horizontal, smooth, undulating	
55	55.0		0		x x x x	<b>Siltstone</b> 48.0-50.3' - dusky red, mottled gray and greenish gray, very soft	R9: 13:50-14:01
215.4			0		x x x x	48.0-48.3' - moderately weathered	
			0		x x x x	48.3-49.2' - fresh	
			1	57.6' - Fracture, horizontal, smooth, undulating	x x x x	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	
	R9NQ 5 ft 102%	100	0		x x x x	49.2-50.3' - brown and black, soft, laminated bedding, fresh, becomes coarser	At 56.3': R-Scale = R3
			0		x x x x	<b>Claystone</b> 50.3-50.9' - dark reddish gray, mottled yellowish brown, very soft, fresh, very fine grained, gradational contacts	
			0		x x x x	<b>Siltstone</b> At 50.9' - dark reddish brown, mottled greenish gray and yellow, very soft to soft, fresh, fine grained	
60	60.0		0		x x x x	53.1-55.0' - soft, coarser grained silt, 5-10% white medium to coarse grained sand	
210.4			0		x x x x	56.9-57.4' - transition zone from siltstone to underlying sandstone; interbedded	R10: Finished at 14:40 At 60.4': R-Scale = R3-R4
	R10NQ 5 ft 98%	92	2	62.3-62.5' - Fractures (2), horizontal and 60 deg, smooth, undulating, thin quartz infilling (~0.0002' thick)	x x x x	57.3-57.4' - fine black bedding at end of transition zone	
			0		x x x x	<b>Sandstone</b> At 57.4' - gray to light greenish gray, soft to hard, fine sand to medium sand, poorly sorted, fresh	
			0	63.6' - Contact between siltstone and sandstone, horizontal, smooth, undulating, in clay seam at contact, sharp	x x x x	57.6-58.3' - pale red lens	
65	65.0		0	63.7' - Fracture, 30 deg, smooth, undulating, small slickenside piece (1/2 sized)	x x x x	60.0-63.6' - medium sand, trace coarse sand sized clay clasts, well sorted	R11: 14:45-15:05 At 65.7': R-Scale = R3
205.4			0		x x x x	63.6-63.7' - clay seam, green gray, sand wraps around clay	
	R11NQ 5 ft 102%	98	10+	67.6-67.9' - Fracture zone	x x x x	<b>Siltstone</b> 63.7-65.0' - very dark gray, mottled brown, red, light gray, green, soft, fresh, fine grained	
			2	68.5-68.7' - Fractures (2), 70 deg, undulating, partial fractures	x x x x	<b>Siltstone</b> 65.0-73.4' - dark reddish brown, mottled greenish gray and black, soft, fresh, fine grained	
70	70.0		0		x x x x		At 68.2': R-Scale = R4
200.4					x x x x		
					x x x x		R12: Finished at 15:37



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-33

SHEET 5 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			
75 195.4	75.0	R12NQ 5 ft 102%	100	0		x x				



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	×	<b>Sandstone</b> 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	×	<b>Siltstone</b> 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  <b>Siltstone</b> 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			<b>Siltstone</b> 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			<b>Sandstone</b> 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	 1	120.0-122.8' - Microfractures		<b>Siltstone</b> 116.6-117.7' - very dark gray, mottled black, soft, fresh	R22: Finished at 14:20		
			0	120.8' - Fracture, 40 deg, slickensided, planar, not entire surface is slickensided, partial fractures at same angle opening up below this fracture		<b>Siltstone</b> At 117.7' - dark reddish gray, mottled red, soft, fresh			
			0			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		<b>Sandstone</b> 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		
			 6	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		<b>Siltstone</b> 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+	128.0' - Fracture, 20 deg, smooth to slickensided, undulating, tight fit		126.2-129.0' - fresh			
130 140.4			4	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	129.0-129.3' - highly weathered	At 129.3-130.0': R-Scale = R0			
						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

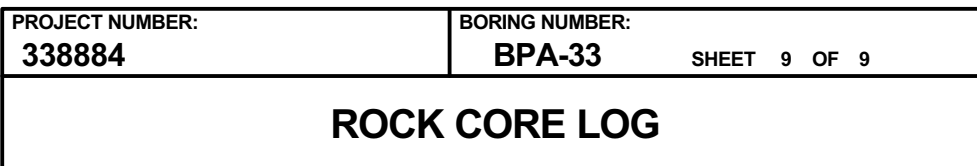
START : 5/12/06 10:00

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	135.0	R24NQ 5 ft 100%	80	6	128.7' - Fracture, 20 deg, slickensided, undulating, 90% of surfaces (both sides) irregularly shaped, very tight fit	<div>Clay Seam (CL) 129.3-130.0' - very soft, highly weathered, coarse sand sized bedrock pieces are flakes and small blocks, most upper slickensided and shiny on surfaces</div> <div>Siltstone 130.0-130.4' - very dark gray, mottled red, gray, yellow, and black, fresh, gradually transitions to dark reddish brown siltstone</div> <div>Siltstone At 130.4' - dark reddish brown, mottled yellow and green, very soft to soft, fresh</div> <div>133.5-135.0' - trace green mottling, fine grained, harder with depth, trace coarse sand in last 0.3' at 135.0'</div> <div>135.0-138.0' - scattered green mottling</div>	R24: 08:55-09:25	
				2	129.0-129.3' - Fractures (4), 20 deg, surface at 129.0 is slickensided and planar, remainder are shiny, some slickensided, bedrock flakes and small block-like pieces, gray clay seam between two surfaces		At 132.8': R-Scale = R3	
				4	130.0-130.3' - Fractures (3), horizontal, smooth, undulating, 0.02' relief			
				1	130.3' - Fracture, 40 deg, smooth to slickensided, undulating, 0.01' relief			
				0	130.7' - Fracture, horizontal, smooth, undulating, 0.02' relief			
	140 130.4	140.0	R25NQ 5 ft 102%	88	1		131.7-132.1' - Fractures (5), horizontal, smooth, undulating	R25: 09:30-09:52
					7		135.9' - Fracture, horizontal, smooth, undulating	At 136.8': R-Scale = R3-R4
					2		137.2-137.7' - Fractures (7), horizontal, smooth, undulating	
					2			
					0		139.0' - Fractures (2), horizontal, smooth, undulating	
145 125.4	145.0	R26NQ 5 ft 95%	68	6	140.0-140.6' - Fractures (6), horizontal, smooth to rough, undulating	139.0-140.0' - heavy dark yellow mottling, 5-10% rounded coarse sand	R26: 10:08-10:30	
				2	141.0' - Fracture, horizontal, smooth, undulating		At 141.9': R-Scale = R3-R4	
				0	141.7' - Fracture, 60 deg, rough, undulating			
				6	143.3-143.5' - Fractures (3), horizontal, smooth, undulating, small bedrock fragments			142.6-143.2' - little mottling, soft, 50% coarse silt, very fine sand, harder than above
				3	143.7' - Fracture, horizontal, smooth, undulating		143.2-143.6' - reddish brown, little mottling	
	150 120.4	150.0	R27NQ 5 ft 88%	75	0	143.9' - Fracture, 5 deg, rough, undulating, bedrock fragments	143.6-150.0' - heavy dark purple, green, dark yellow, and green mottles	R27: 10:39-11:06
					2	144.6-145.0' - Fractures (3), horizontal, smooth, undulating, some bedrock fragments		At 146.5': R-Scale = R4
					10+	146.9' - Fracture, 20 deg, smooth, undulating		
					4	147.5-147.6' - Fracture zone, horizontal, smooth and slickensided, undulating		
					0	147.8-148.1' - Fracture zone, horizontal and 50 deg, smooth, undulating, partially slickensided, bedrock fragments		147.8-150.0' - less mottling, faint yellow, green, and black mottling, a few coarse sand grains, medium sand, very little coarse silt/fine sand
					148.7' - Fracture, horizontal, smooth, undulating	At 149.4': R-scale = R3		
						R28: 16:15-16:35		

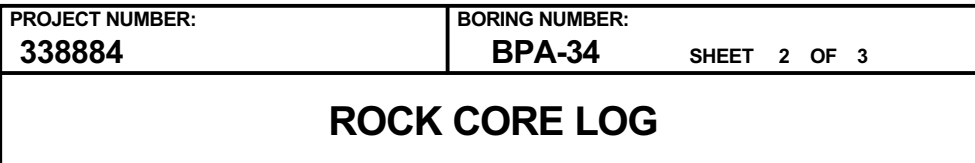




LOGGER : DT/JS

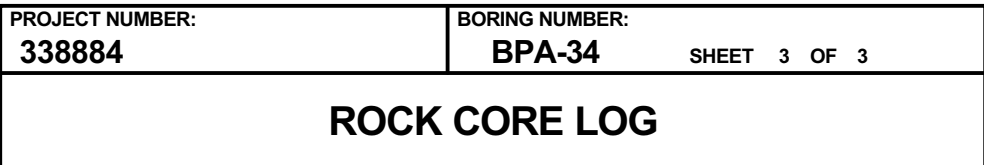
Rev. 1





LOGGER : JS

Rev. 1



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

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : JS

Rev. 1



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 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)	#	TYPE					
267.6	0.0	12.0	SS1SS	2-3-4-5 (7)	<b>Fat Clay (CH)</b> 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)	<b>Fat Clay (CH)</b> 2.5-2.8' - dark reddish brown, mottled orange, moist, medium stiff, fine to medium grained, medium to high plasticity <b>Silty Sand (SM)</b> 2.8-3.6' - strong brown, mottled orange, moist, medium stiff, fine to medium grained		0.5	
5								
262.6	5.0				<b>Silty Sand (SM)</b> 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)	<b>Fat Clay (CH)</b> 5.3-6.3' - light greenish gray, mottled red brown, moist, medium stiff		2.5	
	7.0							
	7.5				<b>Fat Clay (CH)</b> 7.5-8.2' - light greenish gray, mottled red brown, moist, medium stiff			4.0
		12.0	SS4SS	18-50 (50")	<b>Silt (ML)</b> 8.2-8.5' - brown, mottled greenish gray, dry to moist, medium dense			
	9.5							
10								
257.6	10.0				<b>Silt (ML)</b> 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)	<b>Fat Clay (CH)</b> 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				<b>Sandy-Silt (ML)</b> 12.5-13.0' - dark reddish brown, moist, hard, fine grained, low to non plasticity, platy, micaceous, some black staining along surfaces			
		4.0	SS6SS	50/4 (50/4")				
	14.5							
15								
252.6	15.0				<b>Sandy-Silt (ML)</b> 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			
		6.0	SS7SS	35-50/5 (50/5")				
	17.0							
	17.5	2.0	SS8SS	50/2 (50/2")	<b>Sandy-Silt (ML)</b> 17.5-17.7' - dark reddish brown, moist, hard, fine to medium grained, low to non plasticity, platy, micaceous, some black staining along surfaces			Soil sampling completed at 15:25 on 5/22/06
	17.7							
20					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	<b>Siltstone</b> 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	<b>Sandstone</b> 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	<b>Siltstone</b> 25.0-25.3' - dark reddish brown, slightly weathered 25.2' - very soft, soil-like characteristics	At 23.7': R-Scale = R1-R2
					0				
					0				
	28.2			0				At 26.1': R-Scale = R1	
				1	28.4' - Fracture, <5 deg, rough, undulating, orange stains 29.0' - Contact between sandstones		<b>Sandstone</b> 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	R2: 16:30-17:00	
				0					
30 237.6		R2NQ 10 ft 100%	100	1	31.2' - Fracture, <5 deg, rough, undulating, orange stains				
			0						
			1						
			0						
			0						
			0						
			1		34.4' - Fracture, 10 deg, rough, undulating, orange stains			At 33.6': R-Scale = R1 SC-1 collected 34.4-35.3'	
			0						
				0				At 35.9': R-Scale = R1-R2	
				0					
	38.2			0			36.0-36.2' - laminated bedding, reddish brown staining 36.4-36.5' - laminated bedding, reddish brown staining 37.3-37.7' - 10 degree laminated bedding		
				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	<b>Siltstone</b> 39.1-41.4' - very dark gray to black, very soft, slightly weathered, bedding 20-25 degrees alternating very dark gray to black 41.2' - some fine grained sand <b>Sandstone</b> 41.4-41.5' - gray, soft, fine sand to medium sand, fresh, small black oxidation cracks (<0.03')	At 40.8': R-Scale = R1	
0			41.4' - Contact between siltstone and sandstone, 25 deg, rough, undulating	x				
0				x				
0				x				
0				x				
45			1	44.6' - Fracture, 25 deg, rough, undulating	x	<b>Siltstone</b> 44.5-45.2' - gray, very soft, fresh, trace to little fine sand <b>Sandstone</b> At 45.2' - gray, soft, thin to medium bedding, fine sand to coarse sand, fresh, small black oxidation cracks (<0.03')	At 45.1': R-Scale = R1	
222.6			2	44.8' - Fracture, 25 deg, rough, undulating	x			
				45.0' - Fracture, <5 deg, rough, undulating	x			
				45.3' - Fracture, 10 deg, rough, undulating	x			
			0		x			
			0		x	48.0-49.0' - medium sand to coarse sand 49.0-50.8' - fine sand to medium sand  50.3-51.2' - gray, oxidized cracks (relic) 50.8-53.0' - medium sand to coarse sand	R4: 08:50-09:30	
48.2			0		x			
			0		x			
			1	51.0' - Fracture, 60 deg, rough, undulating	x			
			0		x			
50	R4NQ 9.3 ft 100%	100	0		x	<b>Siltstone</b> At 53.0' - dark reddish brown, very soft, fresh, very fine to fine grained 53.5-54.9' - mottled blue-green, small purple inclusions 54.9-57.5' - trace blue-green mottling, gravel sized pink inclusions  57.5-67.5' - mottled blue-green	At 51.9': R-Scale = R4	
217.6			1	53.0' - Contact between siltstone and sandstone, 40 deg, rough, undulating	x			
			1	54.9' - Fracture, <5 deg, rough, undulating	x			
			0		x			
			0		x			
55			1		x		At 56.1': R-Scale = R3-R4	
212.6			0		x			
			0		x			
			1		x			
			0		x			
57.5			1		x	R5: 09:55-10:55		
			0		x			
					x			
					x			
					x			
60			1		x	At 59.0': R-Scale = R2-R3		
			0		x			
					x			
					x			
					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			
				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.
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	R6NQ 10 ft 100%	100	0		x	61.5-61.9' - small (0.02') hard, white-pink rip up inclusions	At 66.5': R-Scale = R3-R4
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	R6: 11:20-12:15
			0		x		
			0		x		
			0		x		
			0		x		
70	R6NQ 10 ft 100%	100	0		x	67.5-68.0' - mottled blue-green, soft, some micaceous very fine sand	At 71.3': R-Scale = R3
197.6			0		x		
			0		x		
			0		x		
			0		x		
75	R6NQ 10 ft 100%	100	1	74.7' - Fracture, <5 deg, smooth to rough, undulating	x	77.5-87.5' - soft	At 76.1': R-Scale = R3
192.6			1	75.8' - Fracture, 60 deg, rough, undulating	x		
			0		x		
			0		x		
			0		x		
77.5	R6NQ 10 ft 100%	100	0		x	77.5-87.5' - soft	R7: 13:00-13:55
			1	79.3' - Fracture, 60 deg, rough, undulating	x		
			0		x		
			0		x		
			0		x		
80	R6NQ 10 ft 100%	100	0		x	At 79.3' - begins to coarsen with depth	
			1		x		
			0		x		
			0		x		
			0		x		



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-35</div>
<b>SHEET 5 OF 5</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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
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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			
187.6	R7NQ 10 ft 100%	81	0		x	79.8-80.1' - small rip up clasts	At 79.8': R-Scale = R3-R4
0			x				
0			x				
0			x				
0			x				
0			x				
0			x				
0			x				
85			0		x	81.4-81.6' - blue-green mottling	At 82.0': R-Scale = R2-R3 First water level = 4.5' bgs taken 5/23/06 at 18:00; second water level = 18.9' bgs taken 5/24/06 at 08:30  SC-2 collected 84.6-85.6'
182.6		0		x			
		0		x			
		0		x			
		0		x			
		0		x			
		0		x			
		0		x			
87.5					x	Bottom of Boring at 87.5 ft bgs on 5/23/06 13:55	
90							
177.6							

# SOIL BORING 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

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

ORIENTATION : Vertical

WATER LEVELS : 13.9 ft bgs

START : 6/19/06 15:55

END : 6/21/06 10:33

LOGGER : JV/JS

[illegible]



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	
					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.	
20 249.8	16.0	R1NQ 5 ft 56%	0	-		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
	-						
	0						
	1						
	0						
	21.0	R2NQ 5 ft 54%	0	1		19.7' - Fracture, 60 deg, smooth, undulating, 1/16" clay infilling, black stains	SC-1 collected 20.2-20.9' R2: 10:05-10:19
	2						
	1						
	1						
	1						
25 244.8	26.0	R3NQ 5 ft 100%	0	3		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	At 22.5': R-Scale = R0-R1
1							
2							
10+							
2							
30 239.8	31.0	R4NQ 5 ft 98%	26	2		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	R3: 10:45-11:04 At 27.1': R-Scale = R1
2							
4							
10+							
10+							
35 234.8	36.0			1		29.5' - Fracture, 15 deg, smooth, undulating, 1/16" clay infilling 29.7' - Fracture, 30 deg, smooth, planar, black stains 29.9' - Fracture, horizontal, smooth, undulating, 1/16" clay infilling 30.1' - Fracture, 50 deg, smooth, undulating 30.5' - Fracture, 65 deg, smooth, undulating 31.6' - Fracture, 15 deg, smooth, undulating 31.7' - Fracture, 20 deg, smooth, undulating 32.1' - Fracture, 5 deg, smooth, undulating, 1/8" clay infilling 32.3' - Fracture, horizontal, smooth, undulating 32.5' - Fracture, horizontal, smooth, undulating 35.2' - Fracture, horizontal and 65 deg, smooth, undulating	R4: 11:20-11:40 At 32.3-33.9': R-Scale = R0 At 32.6-34.8': PP: 4.0 tsf  SC-2 collected 33.9-34.4'  At 35.35': R-Scale = R3-R4



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-36

SHEET 3 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

WATER LEVEL: 13.6 RESS		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			
40 229.8	R5NQ 5 ft 98%	98	0	39.9' - Fracture, horizontal, smooth, undulating	<div>At 34.8' - dark reddish brown, heavy greenish gray mottling, very soft to soft, some linear up to 0.06' long, trace very fine sand 36.0-38.7' - mottled green, some dark purple mottling, very soft to soft</div>	<div>R5: 13:22-13:42</div>		
			0					
			0					
			1					
			0					
41.0								
45 224.8	R6NQ 5 ft 99%	99	0	42.5' - Contact between siltstone and sandstone, 20 deg, sharp	<div>38.7-39.9' - very dark gray, mottled muted green and yellow, trace dark red mottling with purple and yellow around the red mottling, 30% coarse silt, fine grained 39.9-40.9' - brown, mottled rust colored, heavy at 40.1-40.2', soft, 10% medium grained sand, becomes harder with depth 40.7-40.8' - very fine sand</div> <div>Sandstone</div> <div>At 40.9' - dark gray to brown, white, gray, and pink grains, some rust colored mottling, fine sand to medium sand, fresh, grains up to 0.0002' diameter 41.1-41.4' - rust colored mottling 41.4-42.4' - becomes gray to greenish gray, fine to medium grained to 0.0003' gray, white, pink gravel</div> <div>Siltstone</div> <div>42.4-42.5' - dark reddish gray, mottled red and gray, very soft, fresh, irregularly shaped at top contact</div>	<div>R6: 13:53-14:05</div>		
			0					
			0					
			0					
			0					
46.0								
50 219.8	R7NQ 5 ft 100%	100	0	49.0' - Fracture, 80 deg, rough, undulating	<div>42.5-47.2' - gray, hard, fine sand to coarse sand, fresh, gray siltstone lenses, irregular 45.5-46.8' - trace black mottling, soft to hard, fine sand to medium sand 45.7-45.8' - very fine sand to fine sand 46.8-47.2' - medium sand to coarse sand</div> <div>Siltstone</div> <div>47.2-47.6' - very dark greenish gray, fine black mottling, very soft, fresh, irregularly shaped, very fine grained, pink sandstone pockets, mixed with sand at upper contact, abrupt lower contact</div>	<div>R7: 14:20-14:31</div>		
			0					
			0					
			1					
			0					
51.0								
55 214.8	R8NQ 5 ft 100%	100	0	54.1' - Contact between siltstone and sandstone, 10 deg, smooth, undulating, gray silt/clay coating in contact 54.1-55.1' - Microfractures	<div>Sandstone</div> <div>At 47.6' - light gray, heavy pink mottling, soft, fresh, possibly some silt, some orange staining, gray zones in 0.6' after siltstone lens At 51.0' - medium grained 52.9-54.1' - a few light gray bands, thin thready dark gray lenses in last 1', soft to hard</div>	<div>R8: Began at 14:40</div>		
			0					
			0					
			0					
			1					
56.0								





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

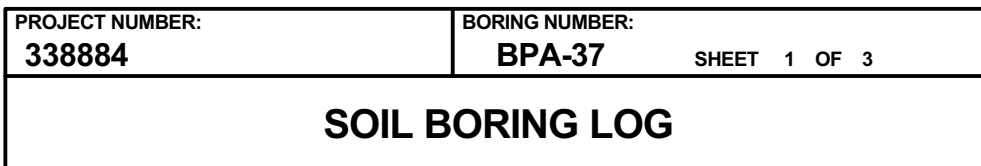
START : 6/19/06 15:55

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			
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	<b>Siltstone</b>	
			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. 1



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	10.3  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

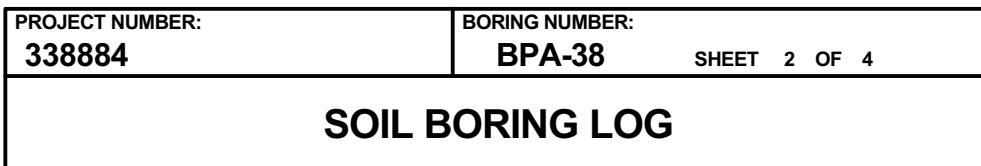
START : 5/19/06 08:40

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)	<b>Fat Clay (CH)</b> 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)	<b>Fat Clay (CH)</b> 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")	<b>Fat Clay (CH)</b> 5.0-6.3' - dark reddish brown, some mottling, moist, very stiff, medium to high plasticity, micaceous		
	6.5				<b>Clay (CL)</b> 6.3-6.4' - dark reddish brown, moist, hard, medium to high plasticity, micaceous		
	7.5	5.0	SS4SS	50/5 (50/5")	<b>Clay (CL)</b> 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")	<b>Sandy Silt (ML)</b> 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")	<b>Clay (CL)</b> 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")	<b>Sandy Silt (ML)</b> 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")	<b>Clay (CL)</b> 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. 1



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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
25 239.5	22.6  R1NQ 2.9 ft 97%	90	0		x x	<b>Siltstone</b> 22.6-25.5' - dark reddish brown, very soft to soft, some fine sand 22.6-23.0' - highly weathered 23.0-25.5' - fresh 24.2-25.5' - interbedded siltstone and sandstone, light brownish gray, very soft	Rock coring began at 12:20 on 5/19/06 R1: 12:20-12:35 on 05/19/06
	25.5		1	25.0' - Fracture, <5 deg, rough, undulating	x x		
			0		.	<b>Sandstone</b> At 25.5' - light brownish gray, soft, very thin to medium bedding, fine sand, fresh, micaceous 26.0-26.3' - medium sand to coarse sand 26.3-26.7' - fine sand to medium sand 26.7-27.5' - medium sand to coarse sand 27.5-28.8' - fine sand to coarse sand	R2: 12:45-13:30
			0		.		
			0		.		
			4	28.5-28.8' - Fracture, <5 deg, rough and undulating to smooth and planar	x x		
30 234.5	R2NQ 10 ft 99%	94	0		x x	<b>Siltstone</b> At 28.8' - dark reddish brown, very soft, fresh, micaceous, trace blue-green mottling, laminated to very thin bedding	SC-1 collected 26.1-27.2'
			0		x x		
			0		x x		
			2		x x		
			0	33.1' - Fracture, 45 deg, rough, undulating, parallel to 33.35'	x x	33.0-33.2' - fine sand lens	
			0	33.4' - Fracture, 45 deg, rough, undulating, parallel to 33.1'	x x		
35 229.5	35.5		1		x x	34.7-34.9' - fine sand lens	
			0	35.4' - Fracture, <5 deg, rough, undulating	x x	35.5-38.4' - fine gravel, thinly laminated and fine grained sand lenses	R3: 13:40-14:20
			4	36.8' - Fracture, 10 deg, rough, undulating 36.8' - Fracture, <5 deg, rough, undulating 37.2' - Fracture, 30 deg, smooth, undulating	x x		
			0		x x		
			0		.	<b>Sandstone</b> 38.4-40.0' - light gray, soft, fine sand to medium sand, fresh, quartzitic	
40 224.5	R3NQ 10 ft 100%	87	1	40.0' - Fracture, <5 deg, rough, undulating	x x		
			1		x x	<b>Siltstone</b> 40.0-41.4' - dark reddish brown/blue green, very soft, fresh, fine grained, fine sand at bottom	
			10+	41.4' - Fracture, <5 deg, rough, undulating 41.8' - Fracture, <5 deg, rough, undulating 41.8' - Fracture, <5 deg, rough, undulating	x x		



PROJECT NUMBER:  
**338884**

BORING NUMBER:  
**BPA-38**

SHEET 4 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	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					
45 219.5	45.5		0	41.9' - Fracture, <5 deg, rough, undulating 42.1-42.3' - Fracture zone, fractured rock fragments 42.4' - Fracture, 20 deg, rough, undulating 44.2' - Fracture, <5 deg, rough, undulating	x 				





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

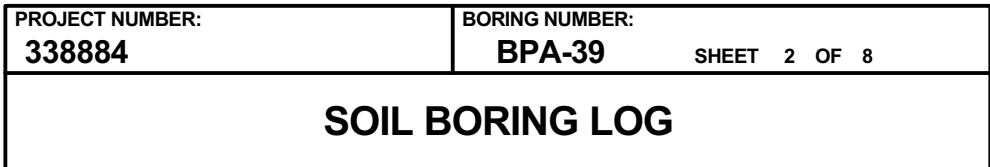
WATER LEVELS : 14.5 ft bgs

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  SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS
		RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)			
265.8	0.0	15.0	SS1SS	2-2-4-5 (6)	<b>Silty Sand (SM)</b> 0.0-0.6' - brown, moist, loose, fine to medium grained, low plasticity, rootlets, 25% fines <b>Lean Clay (CL)</b> 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)	<b>Lean Clay (CL)</b> 2.5-3.1' - reddish yellow, with orange-yellow mottling, moist, medium stiff, medium plasticity, no dilatancy, 15% fine to medium sand <b>Fat Clay (CH)</b> 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	4.5						
260.8	5.0	19.0	SS3SS	17-19-35-50/4 (54)	<b>Silty Sand (SM)</b> 3.7-3.9' - brown, moist, medium dense, low plasticity, 25% very fine to medium sand <b>Silty Sand (SM)</b> 5.0-5.8' - reddish yellow, moist, high, fine to medium grained, low plasticity, 25% fines <b>Sandy Clay (CL)</b> 5.8-6.1' - brown, some mottling, moist, very stiff, low plasticity, 35% fine to medium sand <b>Fat Clay (CH)</b> 6.2-6.5' - greenish gray, moist, stiff, very fine to fine grained, high plasticity, no dilatancy, 10% fine sand		Similar to sandstone in BPA-25 near surface
	7.0						
	7.5	5.0	SS4SS	50/5.5 (50/5.5")	<b>Silty Sand (SM)</b> 6.5-6.7' - pale red, moist, very dense, low plasticity, 15-20% fine to medium grained sand <b>Silty Sand (SM)</b> 7.5-8.0' - light gray, moist, very dense, fine to course grained, low plasticity <b>Silty Sand (SM)</b> 10.0-10.4' - light gray, moist, very dense, fine to course grained, low plasticity		
10	9.5						
255.8	10.0	5.0	SS5SS	50/5.5 (50/5.5")	<b>Clayey Sand (SC)</b> 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		
	12.0						
	12.5	7.0	SS6SS	25-50/5.5 (50/5.5")			
	14.5						
15	15.0	17.0	SS7SS	38-37-26-42 (63)	<b>Clayey Sand (SC)</b> 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		
250.8	17.0						
	17.5	5.0	SS8SS	50/5 (50/5")	<b>Lean Clay (CL)</b> 17.5-17.9' - reddish brown, moist, hard, low to medium plasticity, slow dilatancy		
	19.5						
20							



LOGGER : JS/JF

Rev. 1

LOGGER : JS/JF





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

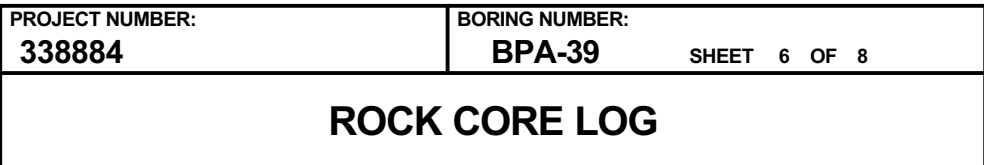
WATER LEVELS : 14.5 ft bgs

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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
65 200.8	R9HQ 5 ft 100%	83	0	62.3' - Fracture, <5 deg, rough to smooth, undulating 62.5-68.2' - Microfractures		<b>Sandstone</b> 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				
			0			66.0-68.2' - dark reddish brown, soft, fine sand	R11: 10:35-10:55
			0				
			0				
			0				
70 195.8	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	R12: 11:00-11:20
			0				
			0				
			0				
75 190.8	R11HQ 5 ft 100%	100	1	73.4' - Fracture, 50 deg, rough, undulating		70.6-73.4' - pinkish gray, soft to hard, medium sand 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	R13: 11:20-12:05
			0				
			0				
			0				
			0			75.6-77.4' - pinkish gray, soft to hard, medium sand to coarse sand	R14: 12:05-12:20
			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	
			0				
80 185.8	R12HQ 5 ft 100%	100	0				R15: 12:20-12:35
			0				
			1	81.0' - Fracture, <5 deg, rough and undulating to smooth and planar		80.6-81.2' - dark blue gray, fine sand	
			0			<b>Siltstone</b> 81.2-82.0' - dark blue gray, fresh, fine grained	



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

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : JS/JF

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-39

SHEET 7 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

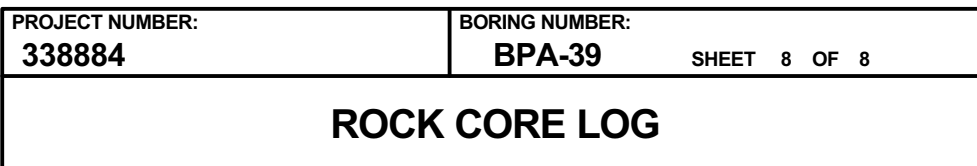
START : 5/3/06 09:34

END : 5/4/06 18:34

LOGGER : JS/JF

WATER LEVEL: 110.85		START: 09:55:00		END: 10:45:10.4		LOSS: 0.0%	
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			
105 160.8  							





LOGGER : JS/JF

Rev. 1



PROJECT NUMBER:

**338884**

BORING NUMBER:

**BPA-40**

SHEET 1 OF 3

## SOIL BORING 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

DRILLING EQUIPMENT AND METHOD : CME-750, 2-15/16 Tricone Bit, 24" Split Spoon and 140 lb. Automatic Hammer











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 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
259.2	0.0	20.4	SS1SS	1-0-1-2 (1)	<b>Top Soil</b> 0.0-0.2'		0.75	PT-1 collected 3.0-5.0' Offset: 1.6' S40W of BPA-40 Lab Results USCS: Sandy CL
	2.0				<b>Silt (MH)</b> 0.2-0.9' - pale olive, moist, medium dense, little very fine sand, trace to little clay, trace roots at top.			
	2.5	19.2	SS2SS	9-12-15-20 (27)	<b>Clay (CL)</b> 0.9-1.7' - olive yellow, moist, medium stiff			
	4.5				<b>Silt (ML)</b> 2.5-4.1' - reddish brown, with light greenish gray and reddish black mottling, dry to moist, stiff, trace clay, trace roots			
5								
254.2	5.0	15.6	SS3SS	14-16-21-50/3 (37)	<b>Silt (ML)</b> 5.0-6.3' - reddish brown, with light greenish gray and reddish black mottling, dry to moist, very stiff, trace fine to coarse sand			
	7.0							
	7.5	2.4	SS4SS	50/3 (50/3")	<b>Silt (ML)</b> 7.5-7.7' - reddish brown, dry to moist, very dense, trace to little fine grained sand			
	7.7				Begin Rock Coring at 7.7 ft bgs See the next sheet for the rock core log			
								
10								Soil sampling completed at 17:17 on 6/26/06
249.2								
15								
244.2								
20								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-40

SHEET 2 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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
10 249.2	7.7 R1NQ 3.7 ft 100%	95	0		x x	<b>Siltstone</b> 7.7-9.2' - dark reddish brown, very soft to soft, bedding, moderately weathered, fine grained, 25% fine sand, micaceous	Rock coring began at 08:28 on 6/27/06
			1	9.2' - Fracture, 5 deg, smooth, undulating, stained, loose fit	x x		R1: 08:28-09:25 on 06/27/06
			0		x x	<b>Sandstone</b> 9.2-9.6' - greenish gray, very soft to soft, fine sand to medium sand, moderately weathered, micaceous	At 8.5': R-Scale = R0-R1
			2	10.6' - Fracture, 5 deg, rough, stepped, stained, tight fit	x x		
11.4			1	10.6-11.4' - Fracture, vertical, black stains, tight fit	x x	<b>Siltstone</b> 9.6-12.6' - dark reddish brown, very soft to soft, moderately weathered, fine grained, micaceous, 20% fine sand, bioturbated	R2: 08:58-09:25
			2	11.4-11.9' - Fracture, vertical and 80 deg, rough, undulating, black stains, tight fit	x x		At 12.3': R-Scale = R1-R2
			0	12.6' - Fracture, 20 deg, smooth, planar, black stains, tight fit	x x		
			0	12.9' - Fracture, 25 deg, smooth, undulating, black stains, loose fit	x x		
15 244.2	15.4 R2NQ 4 ft 100%	83	1	14.6' - Fracture, 5 deg, rough, undulating, loose fit	x x		
			0		x x		R3: 09:40-10:00
			0		x x		
			0		x x	<b>Sandstone</b> 17.0-19.7' - dark reddish gray, fine sand, slightly weathered, 30% silt, micaceous, medium bedding, soft	At 18.7': R-Scale = R3
20 239.2	20.4 R3NQ 5 ft 100%	96	1	18.8-19.1' - Fracture, 65 deg, smooth, undulating, calcitic infilling, tight fit	x x		
			2	19.7' - Fracture, 10 deg, smooth, undulating, loose fit	x x	<b>Siltstone</b> 19.7-22.3' - dark reddish brown, slightly weathered, fine grained, micaceous, 15% fine sand, soft	R4: 10:10-10:21
			0	19.8' - Fracture, 5 deg, smooth, undulating, loose fit	x x		At 21.2': R-Scale = R2
			0		x x		
			0		x x	<b>Sandstone</b> At 22.3' - greenish gray, slightly weathered, micaceous, 20% silt, soft, fine sand	
25 234.2	R4NQ 5.7 ft 100%	100	2	23.4-24.1' - Fracture, 75 deg, rough, undulating, calcitic infilling, tight fit	x x		At 24.0': R-Scale = R1
			NA	24.1-24.7' - Fracture, 70 deg, rough, undulating, calcitic infilling, tight fit	x x		
			NA		x x		
			1	25.5-25.6' - coarse gravel, quartz, feldspar	x x		R5: No time recorded
				26.0-26.8' - light bluish gray, fine sand to medium sand, quartz mica, 5% medium gravel	x x		At 27.3': R-Scale = R2
				26.8' - Fracture, 5 deg, rough, undulating, tight fit	x x		



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	R5NQ 4.6 ft 100%	83	1	27.8' - Fracture, 25 deg, rough, stepped, tight fit	x x			



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)		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									
264.6	0.0						<b>Top Soil</b> 0.0-0.5'				
		24.0	SS1SS		2-3-4-5 (7)		<b>Clay &amp; Fine Sand (CL&amp;SP-SM)</b> 0.5-1.4' - reddish brown and light brown, moist, medium stiff, loose, trace roots, fill				
	2.0						<b>Fine Sand (SP-SM)</b> 1.4-2.0' - light brown, moist, loose, fill				
	2.5						<b>Clay (CL)</b> 2.5-4.0' - reddish brown, greenish gray mottling, moist, hard, laminated bedding, friable				
	4.5										
5											
259.6	5.0	3.0	SS3SS		50/3 (50/3")		<b>Clay (CL)</b> 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				



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			<b>Sandstone</b> 5.7-14.2' - reddish brown, white, and dark reddish gray, reddish black mottling, soft to hard, laminated to medium bedding, very fine sand to coarse sand, angular to subrounded, moderately weathered, becomes coarser with depth to 7.9' then gets finer and becomes coarser with depth to 9.2', well to poorly sorted 6.2' - clay seams, 0.05' thick, laminated beds, very soft, siltstone beds alternating with clay throughout, fracture at bottom 6.5-6.7' - clay seams, 0.15' thick, laminated beds, very soft, siltstone beds alternating with clay throughout, fracture in middle 9.2-12.0' - coarsens with depth 12.0-14.2' - mottled reddish black, olive, greenish gray, soft to hard, bedding, coarse sand, angular to subrounded, poorly sorted, banded lighter & darker 13.5-13.7' - clay seam, very soft, friable material	Rock coring began at 08:30 on 6/16/06 R1: 08:30-08:40 on 06/16/06 At 5.7-6.5': R-Scale = R1 At 6.2-6.7': R-Scale = R0 At 6.7-8.3': R-Scale = R1
			3	6.8' - Fracture, horizontal, rough, planar	At 8.7': R-Scale = R3 R2: 08:44-08:52		
			2	7.2' - Fracture, horizontal, rough, planar			
			2	7.6' - Fracture, horizontal, rough, planar			
			0	8.2' - Fracture, horizontal, rough, planar 8.3' - Fracture, horizontal, rough, planar			
	14.2	82*	1	9.4' - Fracture, horizontal, rough, undulating	At 11.1': R-Scale = R4  At 12.0-12.4': R-Scale = R1  At 13.3': R-Scale = R3-R4		
			0				
			1	12.0' - Fracture, horizontal, rough, undulating			
			2	12.5' - Fracture, 45 deg, rough, undulating 12.7-12.9' - Fracture, horizontal, rough, undulating, fracture (top) and clay seam, laminated beds			
			1				
15 249.6	R3NQ 5 ft 102%	100*	1	14.8' - Fracture, horizontal, smooth, planar	R3: 08:56-09:08  SC-1 collected 14.2-14.8' At 15.4': R-Scale = R3-R4		
			1	15.2' - Fracture, horizontal, smooth, planar			
			1	16.1' - Fracture, horizontal, rough, stepped, top of clay seam, soft, friable material			
			0				
			0				
20 244.6	R4NQ 5 ft 104%	100	0		At 18.1': R-Scale = R3-R4		
			0				
			0				
			0				
			0				
25 239.6	24.2		0		R4: 09:13-09:34 At 19.5': R-Scale = R3-R4  At 22.0': R-Scale = R3  R5: 09:39-09:48 At 24.8': R-Scale = R3-R4		
			0				
			0				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 3 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			
	R5NQ 5 ft 94%	94	0		x x x x	17.3-17.4' - clay seam, soft, friable material	
			0		x x x x	17.4-21.7' - fresh	
			0		x x x x	<b>Sandstone</b>	
			0		x x x x	21.7-22.1' - soft, very thin to thin bedding, well rounded to subrounded, well sorted, fresh, very fine to fine grained	At 27.4': R-Scale = R3-R4
			0		x x x x	<b>Siltstone</b>	
29.2			0		x x x x	22.1-29.4' - dark reddish brown, mottled greenish gray, white, and reddish black, soft, laminated bedding, fresh	R6: 09:51-10:09
30			0		x x x x	24.2-29.2' - trace medium to coarse sand	At 30.3': R-Scale = R4
234.6			0		x x x x	26.2-26.4' - 30-40% sand	
	R6NQ 5 ft 102%	100	0		x x x x	<b>Sandstone</b>	
			0		x x x x	At 29.4' - dark reddish brown, white, dark reddish gray, and gray, medium to thick bedding, very fine sand to fine sand, well rounded, well sorted, fresh	At 32.5': R-Scale = R3-R4
			0		x x x x		
34.2			0		x x x x	33.9-34.1' - trace medium sand	At 33.8': R-Scale = R4
35			0		x x x x	34.2-39.2' - dark gray, greenish gray, and white, medium to thick bedding, fine sand to coarse sand, angular to subrounded, poorly sorted	R7: 10:13-10:21
229.6			0		x x x x		
	R7NQ 5 ft 103%	100	0		x x x x		At 36.5': R-Scale = R4
			0		x x x x		
			0		x x x x	37.8' - trace gravel sized clasts of silt	
39.2			0		x x x x		At 38.8': R-Scale = R3-R4
40			0		x x x x	<b>Conglomerate</b>	R8: 10:36-10:46
224.6			4	40.5-40.8' - Fracture zone, horizontal, rough, undulating	x x x x	39.2-40.0' - dark gray, greenish gray, and white, soft to hard, thin bedding, fresh	
	R8NQ 5 ft 98%	92	0		x x x x	<b>Sandstone</b>	
			2	42.5-42.6' - Fractures (2), horizontal, rough, undulating, microfractures with greenish gray infilling throughout siltstone	x x x x	40.0-40.5' - dark gray, greenish gray, and white, laminated to very thin bedding, fine sand to coarse sand, angular to subrounded, poorly sorted, fresh	At 41.7': R-Scale = R3-R4
			0		x x x x	<b>Siltstone</b>	
			0		x x x x	At 40.5' - dark reddish brown, mottled greenish gray, white, and reddish black, very soft to soft, laminated bedding, fresh	
44.2			0		x x x x	44.2-49.2' - no mottling	R9: 10:51-11:05
45			0		x x x x		
219.6					x x x x		





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 XXXX		

# 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		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			
69.2 70 194.6	R13NQ 5 ft 104%	100	0			<b>Sandstone &amp; Siltstone</b> 64.8-71.5' - white, dark reddish gray, and very dark greenish gray, soft, laminated bedding, very fine sand, subrounded, well sorted, fresh, becomes more siltstone with depth. 66.6-71.5' - white and dark greenish gray mottling 66.9-71.5' - dark reddish brown & white, mottled greenish gray and reddish black 69.2-71.5' - trace medium grained sand	At 65.5': R-Scale = R3-R4	
			0					
			0					
			0					
	R14NQ 5 ft 100%	100	XXXX				71.5' - Contact between siltstone and sandstone, horizontal, rough, planar	XXXX XXXX



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-41

SHEET 6 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			
89.2   <								



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	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			
110 154.6	R21NQ 5 ft 98%	64	3	105.7' - Fracture, horizontal, rough, planar	x 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			
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	<b>Siltstone</b> 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	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	At 132.4': R-Scale = R3-R4
			0		x x x	<b>Sandstone</b> 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	<b>Siltstone</b> 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	<b>Siltstone</b> 139.2-143.8' - dark reddish brown, reddish black mottling, very soft to soft, laminated bedding, fresh	At 136.4': R-Scale = R3-R4
			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	<b>Sandstone</b> At 143.8' - dark reddish gray and light reddish gray, soft to hard, laminated to medium bedding, fine sand, subangular, well sorted, fresh	At 138.6': R-Scale = R3-R4
			0		x x x		
							R26: 11:09-11:26
							R27: 11:30-11:42
							R28: 11:48-12:01
							SC-5 collected 139.9-140.8'
							At 141.2': R-Scale = R4
							At 142.5': R-Scale = R3
							R29: 13:00-13:20
							At 145.0': R-Scale = R3-R4



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

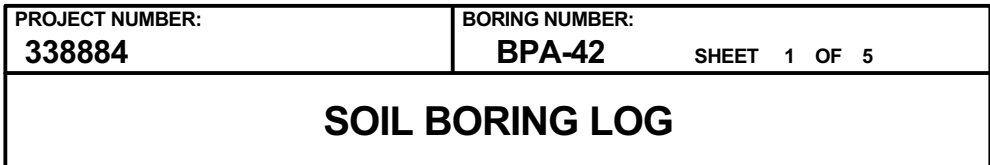
WATER LEVELS : 26.4 ft bgs

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				144.2-149.2' - reddish black and greenish gray mottling, very fine sand to medium sand, subangular to subrounded, poorly sorted to well sorted	At 147.0': R-Scale = R4	
			0						
			0						
			1						
155 109.6	R30NQ 5 ft 103%	94	0				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	R30: 13:35-13:53	
			3						
			0						
			4						
160 104.6	R31NQ 5 ft 102%	100	0	152.7' - Contact between siltstone and sandstone, horizontal, rough, undulating			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	At 151.0': R-Scale = R4	
			0	152.9' - Fracture, horizontal, rough, undulating					
			1	153.2-153.3' - Fracture zone, horizontal, rough, planar, clay seams (0.01-0.02' thick), very soft					
			0	154.9-155.1' - Fracture zone, horizontal and 30 deg, smooth, planar, planar					
165 99.6	R32NQ 5 ft 98%	98	0	158.1' - Fracture, horizontal, rough, planar			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	At 153.0': R-Scale = R4	
			0	158.2' - Contact between siltstone and sandstone, horizontal, planar, partially convoluted					
			0						
			0						
							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	R31: 14:04-14:20	
							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	At 155.5': R-Scale = R3-R4	
							150.7-151.5' - Conglomeratic material	At 158.0': R-Scale = R4	
							<b>Siltstone</b> At 152.7' - dark reddish brown, reddish black mottling, very soft to soft, laminated bedding, fresh	R32: 14:29-14:46	
							At 154.2' - soft		
							155.9-156.9' - 30-50% very fine sand coarsens with depth		
							156.9' - fines with depth		
							<b>Sandstone</b> 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	At 162.5': R-Scale = R3-R4	
							159.2-164.2' - trace greenish gray mottling	First water level = 26.4' bgs taken 6/17/06 at 15:38; second water level = 6.7' bgs taken 6/18/06 at 16:20	
							Bottom of Boring at 164.2 ft bgs on 6/17/06 14:46	R-Scale performed after drilling on stored samples	



LOGGER : JS/JF

Rev. 1





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: 2.1 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 			



# 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	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
						DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
50 214.3	50.0	5 ft 100%	100	0	XXXXXX XXXXXX			



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	68.0' - blue-green mottling	At 68.7': R-Scale = R3-R4
			0		x		
			0		x		
75 189.3	70.0				x	74.7-75.0' - small clay clasts (<.04) 75.0-80.0' - dusky red, heavily mottled olive, yellow, blue-green 75.1-77.4' - 25% <0.2 white clasts	R14: 08:36-08:56
					x		
					x		
	R14NQ 5 ft 98%	98	0		x	77.4-79.2' - trace very fine to fine sand	At 73.7': R-Scale = R3-R4
			0		x		
			0		x		
75 189.3	75.0				x	80.0-85.0' - dark reddish brown to very dusky red, trace blue-green mottling	At 74.7': R-Scale = R4 R15: 09:00-09:18
					x		
					x		
	R15NQ 5 ft 100%	100	0		x	83.5-85.0' - trace very fine to fine sand	At 77.6': R-Scale = R3-R4
			0		x		
			0		x		
80 184.3	80.0				x	Bottom of Boring at 85.0 ft bgs on 7/11/06 09:52	R16: 09:23-09:52
					x		
					x		
	R16NQ 5 ft 100%	100	0		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		
			0		x		
85 179.3	85.0				x		R-Scale performed after drilling on stored samples



PROJECT NUMBER:

**338884**

BORING NUMBER:

**BPA-43**

SHEET 1 OF 8

# SOIL BORING 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

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

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bgs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

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)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY				
269.7	0.0						<b>Topsoil</b> 0.0-0.3'			PT-1 collected 3.0-5.0'
	10.0	SS1SS	2-3-3-4 (6)		<b>Silty Sand (SM)</b> 0.3-1.0' - brownish yellow, mottled red to brown, moist to wet, medium dense, 60% sand					
	2.0				<b>Fat Clay (CH)</b> 1.0-1.3' - light gray, mottled reddish orange, moist, firm, high plasticity, root fragments					
	2.5				<b>Fat Clay (CH)</b> 2.5-2.9' - light brownish yellow, mottled orange and brown, wet, fine, high plasticity, 30% sand					
	22.0	SS2SS	13-22-24-38 (46)		<b>Clay (CL)</b> 2.9-3.4' - light gray, orange mottling, moist, very stiff, high plasticity, 30% sand					
5	4.5				<b>Silty Sand (SM)</b> 3.4-4.3' - pale yellow, moist, dense to very dense, very fine, 50% sand					
264.7	5.0				<b>Silty Sand (SM)</b> 5.0-6.0' - light gray, orange mottling, wet, dense, very fine, low to medium plasticity, 75% sand					
	12.5	SS3SS	41-50/5 (50/5")							
	7.0									
	7.5				<b>Clay (CL)</b> 7.5-9.2' - dark reddish brown, mottled greenish-gray, moist, stiff, low to medium plasticity, trace very fine sand; stained fracture, iron oxide stained root traces					
	20.0	SS4SS	7-32-34-31 (66)							
10	9.5									
259.7	10.0				<b>Clay (CL)</b> 10.0-10.3' - dark reddish brown, mottled greenish-gray, moist, stiff, low plasticity, trace very fine sand; stained fracture, iron oxide stained root traces					
	12.0	SS5SS	50/4 (50/4")							
	12.5				<b>Silt (ML)</b> 12.5-12.8' - dark reddish brown, mottled greenish-gray, moist, very stiff, low plasticity, trace clay and very fine sand, platy when broken					
	14.5	SS6SS	50/4 (50/4")							
15										
254.7	15.0	3.0	SS7SS	50/3 (50/3")	<b>Silt (ML)</b> 15.0-15.3' - dark reddish brown, mottled greenish-gray, moist, very stiff, low plasticity, trace clay and very fine sand, platy when broken Begin Rock Coring at 15.3 ft bgs See the next sheet for the rock core log					
	15.3									
						</				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-43

SHEET 2 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				
20 249.7	15.3     R1NQ 4.7 ft 111%	0	1	15.6' - Fracture, 25 deg, smooth, undulating 15.9-16.5' - Fracture, 15 deg, staining, healed	x 			



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

WATER LEVEL: 10.185		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			
40 229.7	R5NQ 5 ft 96%	88	1	34.8' - Fracture, horizontal and 25 deg, smooth, undulating	X 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 RDS		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 			



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

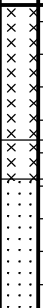


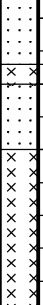

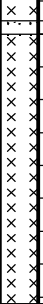


ORIENTATION : Vertical

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	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		
80 189.7	80.0	R13NQ 5 ft 106%	100	0		<b>Siltstone</b> 74.5-77.3' - very dark greenish gray, reddish brown mottling, very soft, fresh, 20% very fine sand 75.6-75.9' - pitted <1/4	R13: 08:25-08:43	
				1		76.4' - Fracture, 65 deg, smooth, undulating, cemented, silty		At 76.0': R-Scale = R3
				0				
				0				
				1		79.0' - Fracture, 55 deg, smooth, undulating		
85 184.7	85.0	R14NQ 5 ft 98%	98			<b>Siltstone</b> 77.3-77.9' - dark reddish brown, greenish gray mottling, very soft to soft, laminated to very thin bedding, fresh, fine grained with very fine sand, bedding on 30 degree angle	At 78.5': R-Scale = R3-R4	
				0				
				0				
				0				
				0				
85 184.7	85.0	R15NQ 5 ft 102%	60	1		<b>Sandstone</b> At 77.9' - very dark gray, mottled green and black, soft to hard, laminated to medium bedding, fresh, silty, very fine sand, bedding on 30 degree angle 80.0-85.7' - dark reddish brown, black mottling, soft to hard, very fine sand to fine sand, silty 81.5-84.2' - darker reddish brown stained clasts 1/4 to 1/2 long	R14: 08:54-09:13	
				0				
				0				
				0				
				0				
90 179.7	90.0	R16NQ 5 ft 94%	94			84.2' - banding at 30 degrees, 1/4 to 3/4 84.3' - very soft, fissile lithified clay, 1/8 thick 84.3-85.2' - greenish gray, banded along bedding, laminated at 30 degrees starting at 84.65', trace black clasts <1/4 85.1-85.2' - fine sand to medium sand, laminated	R15: 09:20-09:50	
				0				
				0				
				0				
				0				
95 174.7	95.0					<b>Siltstone</b> 85.7-86.0' - greenish gray and dark reddish brown, very soft, fresh, fine grained, banded, 0.05 wide bands, fissile, 30 degree bedding	At 85.5': R-Scale = R3-R4	
				0				
				0				
				0				
				0				



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

WATER LEVEL: 10.0 ft		START: 5/15/99 10:30		END: 5/15/99 10:40		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		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		
100 169.7	R17NQ 5 ft 103%	100	1	x x			

# 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&amp;ME

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

ORIENTATION : Vertical

WATER LEVELS : 18.6 ft bqs

START : 6/13/06 10:00

END : 6/19/06 13:10

LOGGER : JV

WATER LEVELS: 10.0 (bgs)		START: 07/19/00 10:00		END: 07/19/00 13:10		LOGGER: J.V.			
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	
120 149.7	R21NQ 5 ft 98%	98	0	118.4' - Contact between siltstone and sandstone, 30 deg, sharp 119.2' - Contact between siltstone and sandstone, sharp	<div>111.8-112.2' - sandy zone, very fine to fine 114.0' - thin (1/8) green sand, laminated, 60 degree bedding 114.7-115.0' - sand content increases to 50% <b>Sandstone</b> 116.3-118.4' - weak red, greenish gray mottling, hard, very fine sand to fine sand, fresh, medium bedding <b>Siltstone</b> 118.4-120.0' - greenish black, fresh, banded black and dark gray; very soft, 20-30% very fine sand, laminated bedding at 30 degrees <b>Sandstone</b> 120.0-121.1' - greenish gray, mottled white and greenish gray, soft, very fine sand to fine sand, fresh, red and green banding with silt, laminated to thin banding at 30 degrees <b>Siltstone</b> At 121.1' - very dark greenish gray, very soft, fresh, bed contact at 30 degrees 121.4' - reddish brown and yellowish brown 1/8 bands <b>Siltstone</b> 121.8-125.2' - dark reddish brown, green mottling, very soft, fresh 124.2' - sandy zone, very fine sand at 30 degrees 0.05' wide 124.5' - sandy zone, very fine sand at 30 degrees 0.05' wide 125.0-125.2' - dusky red, mottled black and green, soft, 20-30% very fine sand, black mottling, stained <b>Sandstone</b> 125.2-125.3' - dark greenish gray, fresh, very fine sandy lens <b>Siltstone</b> 125.3-130.0' - dusky red, mottled black and green, soft, fresh, 20-30% very fine sand, black mottling, stained 128.0-130.0' - increased sand content to 40% 129.8-130.0' - sandy zone <b>Sandstone</b> 130.0-135.9' - light greenish gray, hard, fine sand to medium sand, fresh 131.0-131.2' - dark reddish brown, fine grained silty lens, very soft to soft, very fine sand 131.4' - black sandy clast 1/4 diameter 131.6-133.2' - some staining 133.2-133.6' - 30 degree bedding, 0.04' thick greenish zone at bottom 134.0-134.6' - bedding at 30 degrees</div>	R21: 14:15-14:35			
			0			SC-5 collected 118.4-119.1'			
			0				At 119.5': R-Scale = R3-R4		
			1				R22: 14:55-15:15		
			0						
	R22NQ 5 ft 100%	100	0			At 122.0': R-Scale = R3			
			1						
			0						
			0						
			0						
125 144.7	R23NQ 5 ft 98%	92	0	127.2' - Fracture, 65 deg, smooth, undulating	<div>121.8-125.2' - dark reddish brown, green mottling, very soft, fresh 124.2' - sandy zone, very fine sand at 30 degrees 0.05' wide 124.5' - sandy zone, very fine sand at 30 degrees 0.05' wide 125.0-125.2' - dusky red, mottled black and green, soft, 20-30% very fine sand, black mottling, stained <b>Sandstone</b> 125.2-125.3' - dark greenish gray, fresh, very fine sandy lens <b>Siltstone</b> 125.3-130.0' - dusky red, mottled black and green, soft, fresh, 20-30% very fine sand, black mottling, stained 128.0-130.0' - increased sand content to 40% 129.8-130.0' - sandy zone <b>Sandstone</b> 130.0-135.9' - light greenish gray, hard, fine sand to medium sand, fresh 131.0-131.2' - dark reddish brown, fine grained silty lens, very soft to soft, very fine sand 131.4' - black sandy clast 1/4 diameter 131.6-133.2' - some staining 133.2-133.6' - 30 degree bedding, 0.04' thick greenish zone at bottom 134.0-134.6' - bedding at 30 degrees</div>	R23: No time recorded			
			0			At 127.0': R-Scale = R3-R4			
			0						
			1						
			0						
	R24NQ 5 ft 103%	100	0			At 129.0': R-Scale = R3-R4			
			0						
			0						
			0						
			0						
130 139.7	R24NQ 5 ft 103%	100	0	127.2' - Fracture, 65 deg, smooth, undulating	<div>121.8-125.2' - dark reddish brown, green mottling, very soft, fresh 124.2' - sandy zone, very fine sand at 30 degrees 0.05' wide 124.5' - sandy zone, very fine sand at 30 degrees 0.05' wide 125.0-125.2' - dusky red, mottled black and green, soft, 20-30% very fine sand, black mottling, stained <b>Sandstone</b> 125.2-125.3' - dark greenish gray, fresh, very fine sandy lens <b>Siltstone</b> 125.3-130.0' - dusky red, mottled black and green, soft, fresh, 20-30% very fine sand, black mottling, stained 128.0-130.0' - increased sand content to 40% 129.8-130.0' - sandy zone <b>Sandstone</b> 130.0-135.9' - light greenish gray, hard, fine sand to medium sand, fresh 131.0-131.2' - dark reddish brown, fine grained silty lens, very soft to soft, very fine sand 131.4' - black sandy clast 1/4 diameter 131.6-133.2' - some staining 133.2-133.6' - 30 degree bedding, 0.04' thick greenish zone at bottom 134.0-134.6' - bedding at 30 degrees</div>	R24: 08:30-08:45			
			0			At 131.0': R-Scale = R3-R4			
			0						
			0						
			0						
	135 134.7					0			At 133.0': R-Scale = R4
						0			



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	<b>Siltstone</b> 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
145	R26NQ 5 ft 105%	100	0		x	140.5-140.6' - mottled greenish gray	
124.7			0		x	142.0-142.4' - heavily mottled green	At 143.0': R-Scale = R4
			0		x		
			0		x		
145	R27NQ 5 ft 103%	100	0		x	144.8' - greenish gray linear feature 0.6' long at a 55 degree angle	R27: 12:35-13:18
124.7			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			0		x		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	149.6-150.0' - white fine to medium grained	R-Scale performed after drilling on stored samples
			0		x	Bottom of Boring at 150.0 ft bgs on 6/19/06 13:10	
155							
114.7							



PROJECT NUMBER:

**338884**

BORING NUMBER:

**BPA-44**

SHEET 1 OF 5

# SOIL BORING 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

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

ORIENTATION : Vertical

WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : 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"-6" (N)						
266.3	0.0	18.0	SS1SS	2-2-2-3 (4)	<b>Topsoil</b> 0.0-0.1' - Topsoil, grass					
	2.0				<b>Silty Sand (SM)</b> 0.1-0.7' - brown, moist, very loose, low to medium plasticity, 30-40% fines, fine to medium sand, more fines with depth					
	2.5				<b>Fat Clay (CH)</b> 0.7-1.5' - yellow, moist, high plasticity, none dilatancy, firmer with depth, 20-25% fine sand with depth					
		19.0	SS2SS	5-9-11-13 (20)	<b>Clay With Sand (CL)</b> 2.5-2.9' - reddish brown, some whitish mottling (1 zone), moist, stiff, low to medium plasticity, slow to rapid dilatancy, 25% very fine to fine sand, micaceous				PT-1 collected 3.0-5.0'	
5	5.0				<b>Sandy Lean Clay (CL)</b> 2.9-4.1' - reddish brown, orange mottling, moist, very stiff, medium plasticity, slow dilatancy, grayer in sandy lens at 3.17-3.33', medium dark, 30% clayey sand, 70% clay, up to 30% very fine to fine sand in clay; interfingered, gradational					
261.3		8.0	SS3SS	7-50/5.5 (50/5.5")	<b>Clay (CL)</b> 5.0-5.7' - reddish brown, thready greenish-white mottling, moist, stiff, low to medium plasticity, slow to rapid dilatancy, very hard in last 1, 15% very fine sand					
	7.0				<b>Clay (CL)</b> 7.5-7.9' - reddish brown, thready greenish-white mottling, moist, hard, low to medium plasticity, slow to rapid dilatancy, 15% very fine sand					
	7.5									
		5.0	SS4SS	50/3.5 (50/3.5")						
	9.5									
10									Drillers Remark: Drilled to 11.0' bgs before beginning rock coring	
256.3	10.0	3.0	SS5SS	50/2 (50/2")	<b>Clay (CL)</b> 10.0-10.2' - reddish brown, thready greenish-white mottling, moist, hard, low to medium plasticity, slow to rapid dilatancy, 15% very fine sand				Soil sampling completed at 10:00 on 6/20/06	
	10.2				Begin Rock Coring at 11.0 ft bgs					
	11.0				See the next sheet for the rock core log					
				</						





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   								





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			2	36.1' - Fracture, horizontal, undulating, tightly healed	x		R6: 13:30-13:50
			1	36.3' - Fracture, 50 deg, undulating, tightly healed	x		
			0	37.2' - Fracture, horizontal, undulating, long, tightly healed	x	37.3-41.0' - very fine grained with no to very little sand	At 38.1': R-Scale = R3
			0	37.5-41.0' - Fractures, capillary microfractures	x		
40 226.3	R6NQ 5 ft 100%	100	0		x		
			0		x	39.7-41.0' - scattered medium sand-sized clasts, rounded, dark purple; 5%; harder than matrix	
41.0			0		x		R7: 14:01-14:17
			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	At 42.0': R-Scale = R3-R4
			3	42.4-42.8' - Fracture zone, rough, stepped, some very hard white infilling, green and purple staining	x		
			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	R7NQ 5 ft 100%	80	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		
46.0			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
			1		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	R8NQ 5 ft 96%	80	1		x		At 49.6': R-Scale = R3-R4
			1		x	49.9-50.3' - green mottling, fine grained	
51.0			1		x		



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

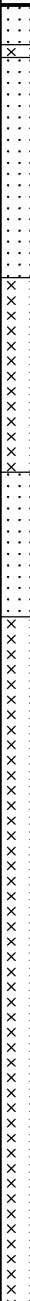
ORIENTATION : Vertical

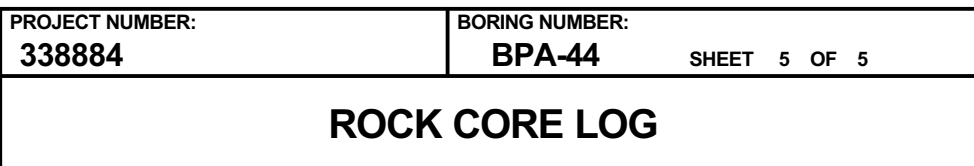
WATER LEVELS : 14.9 ft bgs

START : 6/28/06 08:46

END : 6/29/06 11:17

LOGGER : JS

WATER LEVEL: 110.00		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					
55 211.3	R9NQ 5 ft 100%	100	0	50.4' - Fracture, horizontal, smooth, undulating, 0.02' relief		<b>Sandstone</b> 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'	R9: 15:13-15:21		
			0				At 52.1': R-Scale = R3-R4		
			0			<b>Siltstone</b> 51.6-51.8' - dark reddish brown, green mottling, soft, fresh, fine grained	At 54.5': R-Scale = R3-R4		
			0			<b>Sandstone</b> 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	R10: 15:37-15:50		
			1	55.2' - Contact between sandstones, smooth to rough, undulating		<b>Siltstone</b> 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	At 57.7': R-Scale = R3-R4		
60 206.3	R10NQ 5 ft 100%	100	0			<b>Sandstone</b> 58.1-60.3' - dark reddish brown, little mottling, very fine sand to fine sand, fresh, up to 25% silt, coarser with depth	At 59.2': R-Scale = R3-R4		
			0						
			0		<b>Sandstone</b> 59.8-60.3' - soft to hard, 35% medium grained sand				
			0		<b>Siltstone</b> 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	R11: 08:08-08:29 on 06/29/06			
			1	60.3' - Contact between siltstone and sandstone, horizontal, rough, undulating	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'	At 63.6': R-Scale = R3-R4			
65 201.3	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			SC-4 collected 64.7-65.9'		
			1						
			0						
			0						
			0						
70 196.3	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		66.0-67.6' - dark yellow and faint green mottling, soft	R13: 08:44-09:05		
			2			67.6' - reddish brown, mottled green, purple and yellow, 25% very fine sand	At 68.3': R-Scale = R3-R4		
			0						
			0		69.2-69.8' - trace to no sand				
			0		69.8-71.0' - Trace medium white sand grains				



LOGGER : JS

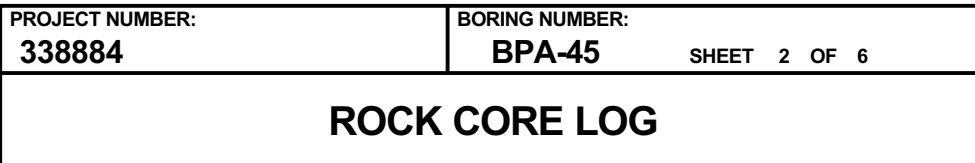
Rev. 1



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BPA-45</div> <div style="text-align: right; font-size: 0.8em;">SHEET 1 OF 6</div>
<div style="font-size: 1.5em; font-weight: bold;">SOIL BORING LOG</div>	

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
DRILLING EQUIPMENT AND METHOD : BK-51, Tricone Bit, 24 Split Spoon, and 140 lb. Automatic Hammer	ORIENTATION : Vertical
WATER LEVELS : 14.5 ft bgs	START : 8/3/06 13:12      END : 8/4/06 12:25      LOGGER : JS/LH

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)					
265.9	0.0				<div><div>Grass And Gravel</div><div>0.0-0.2' - fine to coarse gravel, angular</div><div>Sandy Lean Clay (CL)</div><div>0.2-0.7' - reddish brown, dry, very stiff, low to medium plasticity, slow dilatancy, 25-30% very fine to medium sand, reworked native</div><div>Lean Clay (CL)</div><div>0.7-0.8' - red, dry, hard, low to medium plasticity, slow dilatancy, 10-15% very fine to fine sand</div><div>Lean Clay (CL)</div><div>2.5-2.8' - red, dry, hard, low to medium plasticity, slow dilatancy, 10-15% very fine to fine sand</div><div>Begin Rock Coring at 2.8 ft bgs</div><div>See the next sheet for the rock core log</div></div>	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></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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LOCATION : (NAD 27) (686920.0 N, 2012313.3 E)

DRILLING CONTRACTOR : J. Little, S&ME

ORIENTATION : Vertical

LOGGER : JS/LH

Rev. 1



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

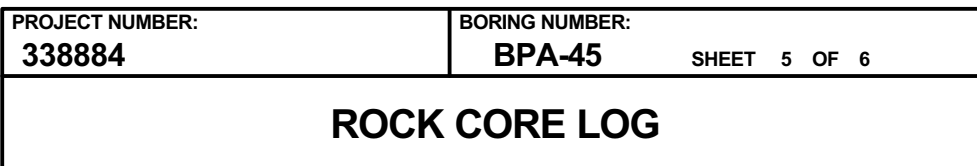
END : 8/4/06 12:25

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		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					
25 240.9  <									

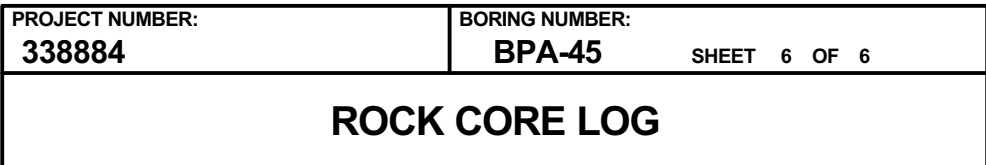






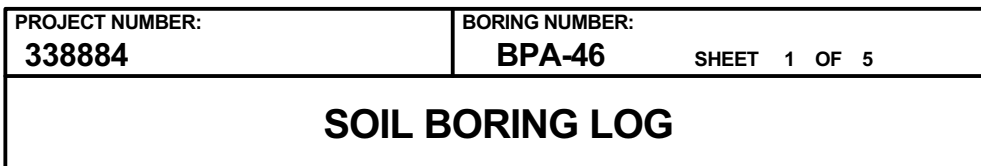
LOGGER : JS/LH

Rev. 1



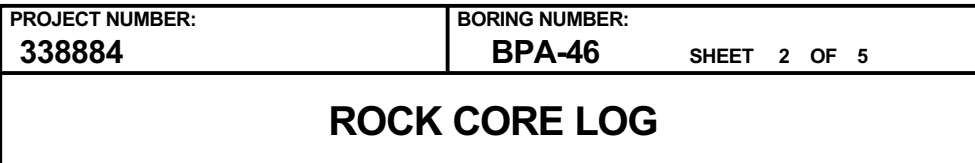
LOGGER : JS/LH

Rev. 1



LOGGER : AT/EM/LH

Rev. 1



LOGGER : AT/EM/LH

Rev. 1



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

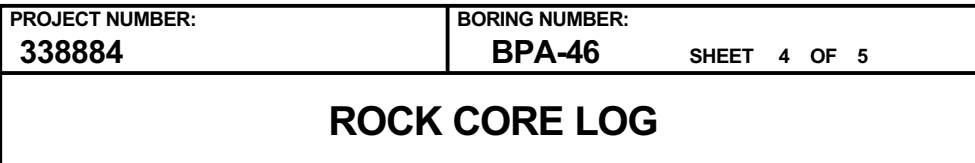
WATER LEVELS : 19.8 ft bgs

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 x		



LOGGER : AT/EM/LH

Rev. 1



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	76.1-76.5' - Fracture, 70 deg, rough, undulating	x	75.0-81.0' - soft	R13: 15:10-15:28
			0		x		
			0		x		
			1		x		At 77.6': R-Scale = R3
			1		x		
188.0				78.9' - Fracture, horizontal, rough, planar, few black stains 79.2' - Fracture, horizontal, rough, planar, few black stains	x		
			0	83.0-83.2' - Fracture, 60 deg, rough, undulating	x	81.0-81.6' - grades to sandstone	R14: 15:38-16:05
			0		x		
			1		x		
			0		x		
			0		x		
85	85.0	100		86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Sandstone</b> 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 81.6-85.0' - fresh 81.6-82.8' - stained dark reddish brown 83.3-84.8' - siltstone lense	At 82.4': R-Scale = R4
					x		
					x		
					x		
					x		
183.0				86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Siltstone</b> 85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered <b>Siltstone</b> 86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	R15: 16:16-16:24
					x		
					x		
					x		
					x		
				86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Siltstone</b> 85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered <b>Siltstone</b> 86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	First water level = 19.8' bgs taken 8/10/06 at 11:59
					x		
					x		
					x		
					x		
87.0				86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Siltstone</b> 85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered <b>Siltstone</b> 86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	R-Scale performed during rock core logging
					x		
					x		
					x		
					x		
90				86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Siltstone</b> 85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered <b>Siltstone</b> 86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	
					x		
					x		
					x		
					x		
178.0				86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Siltstone</b> 85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered <b>Siltstone</b> 86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	
					x		
					x		
					x		
					x		
95				86.3-86.4' - Fracture zone, smooth, undulating 86.6' - Fracture, 20 deg, rough, undulating	x	<b>Siltstone</b> 85.7-86.3' - dark greenish gray, very dark gray and gray, soft, moderately weathered <b>Siltstone</b> 86.3-87.0' - dark reddish brown, mottled greenish gray and olive, soft, moderately weathered Bottom of Boring at 87.0 ft bgs on 8/8/06 16:24	
					x		
					x		
					x		
					x		





PROJECT NUMBER:  
**338884**

BORING NUMBER:  
**BPA-47**

SHEET 1 OF 12

## SOIL BORING 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

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)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS	
		RECOVERY (in)	#TYPE		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
264.5								
5	3.8				<b>Sandy Silt (ML)</b> 3.8-4.2' - reddish brown, greenish gray mottling, dry to moist, hard, low to medium plasticity			
259.5		4.0	SS1SS	50/4 (50/4")				
	5.8						Soil sampling completed at 09:45 on 12/8/06	
	6.3							
	6.5	3.0	SS2SS	50/3 (50/3")	<b>Sandy Silt (ML)</b> 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			
10								
254.5								
15								
249.5								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 2 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		
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
6.5 7.0  <								



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)		<b>Siltstone</b> 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 <b>Sandstone</b> 25.1-26.7' - dusky red, hard, slightly weathered, very fine to fine grained, 10-20% silt <b>Siltstone</b> 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 <b>Conglomerate</b> 29.4-29.6' - soft, subrounded to rounded, moderately weathered, multicolored grains, siltstone matrix; 20-25% fine to coarse sand <b>Siltstone</b> 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			0	26.7-26.9' - Fractures (3), horizontal, smooth, undulating, little relief			
30			0	27.5' - Fractures, horizontal, smooth, undulating			
30			0	29.4' - Fracture, horizontal and 5 deg, loose fit			
30			0	30.0' - Fracture, horizontal, rough, undulating, 0.0009' relief, loose			
30			0	30.1' - Fracture, 10 deg, smooth, undulating, loose fit			
30			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	36.5' - Fracture, 70 deg, rough, undulating, tight fit			
35			1	36.7' - Fracture, horizontal and 5 deg, rough, undulating, tight fit			
35			1	37.0' - Fracture, horizontal and 5 deg, rough, undulating			
35			0	37.2' - Fracture, horizontal and 5 deg, rough, undulating			
35			0	37.8' - Fracture, horizontal, smooth, undulating			
35			0	38.8' - Fracture, horizontal and 5 deg, rough, undulating, tight fit			
35			0				
35			0				
35			0				
40	R8HQ 5 ft 100%	100	0				
40			0			42.0-47.0' - 20% very fine sand	
40			0				
40			0				
40			0				
40			0				
40			0				
40			0				
40			0				
40			0				
40			0				
45	R9HQ 5 ft 100%	70	3	43.4-43.4' - Fractures, horizontal, smooth, undulating			
45			3	43.7' - Fracture, horizontal, smooth, planar			
45			3	43.9' - Fracture, horizontal, smooth, undulating, slickensided, over 60% of surfaces			
45			3	44.1' - Fracture, horizontal, smooth, undulating, slickensided over 10% of surface			
45			3	44.3' - Fracture, horizontal, smooth, undulating			
45			3	44.5' - Fracture, horizontal, smooth, undulating			



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 At 52.8': 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	
			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
60 204.5	57.0 R12HQ 5 ft 98%	96	0		x x		R12: 11:36-11:59
			0		x x	57.0-59.8' - some fine to medium grained beds with rust colored mottling 58.0-59.2' - medium to coarse grained 59.2-59.8' - soft to hard, fine to medium grained, bedding at 20 degrees	At 58.3': R-Scale = R3
			0		x x		
			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 At 61.5': R-Scale = R3 R13: 12:18-12:52
			0	61.8' - Fracture, horizontal, smooth, undulating	x x		
			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	At 62.8': R-Scale = R3
			0		x x		At 63.7': 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 60.2-60.4' - convoluted sand lenses	SC-3 collected 65.1-66.0'
			1	64.9' - Fracture, 20 deg, smooth, planar, tight fit	x x		
			0	65.0' - Fracture, 20 deg, smooth, stepped	x x		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		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				
70 194.5	67.0				60.8-61.2' - filled with red-brown siltstone 62.0-67.0' - trace purple and green mottling, some with white centers, very fine to fine grained; trace very fine sand; trace white clasts harder than matrix 67.0-72.0' - massive appearance, trace to 10% very fine sand	At 66.6': R-Scale = R2-R3 R14: 13:03-13:27  At 68.0': R-Scale = R2-R3  At 69.2': R-Scale = R3-R4		
			0					
			0					
		R14HQ 5 ft 100%	100	0				
			0					
			0					
			0					
			0					
			0					
75 189.5	72.0				72.0-77.0' - soft to hard, fine grained, 15-20% very fine sand	R15: 08:43-09:03 on 12/11/06 Drillers Remark: last 1.5' drilled very fast, soft. SC-4 collected 72.5-73.2' At 73.8': R-Scale = R3 At 74.4': R-Scale = R3		
			0					
			0					
		R15HQ 5 ft 100%	88	0				
			2					
			2					
80 184.5	77.0				75.7-76.6' - Fracture zone, horizontal and 80 deg, rough, undulating, 0.0003' thick clay infilling, 0.0002' relief, hard white coating ~0.0002' thick on both surfaces,(100% coverage) 76.8-77.3' - Fracture, 80 deg, rough, undulating, 0.0002' relief  78.9-79.0' - Fractures, horizontal, along possible bedding 79.2' - Fracture, horizontal, rough, undulating, <0.0002' thick clay infilling, 1/2 relief <0.0002' 79.5' - Fracture, horizontal, smooth, undulating, shiny appearance - mica rich  81.2' - Fracture, horizontal, smooth, undulating	77.0-78.8' - trace to 10% clasts to 1/4 77.5' - soft to hard, becomes sandier, up to 60% fine to medium sand  78.7-78.9' - possible rip-up clast or infill of material in clayey lens 78.7-78.9' - clay seams, only through ~ 20% of core, irregular. mixed with weak rock seam 78.9-82.0' - very fine to fine grained; trace to 10% white clasts to 1/4, harder than matrix 79.1' - clay seam, 0.0002' thick		
			1					
			3					
		R16HQ 5 ft 101%	82	3				
			0					
			1					
85 179.5	82.0				82.0-83.0' - 20% very fine sand 83.0-84.5' - trace very fine sand  84.5-90.5' - 20-25% very fine sand and trace to 10% white fine to medium sand (scattered)	R17: 10:00-10:23  At 82.9': R-Scale = R3  At 83.5': R-Scale = R3		
			0					
			0					
		R17HQ 5 ft 98%	92	0				
			0					

# 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 : ---

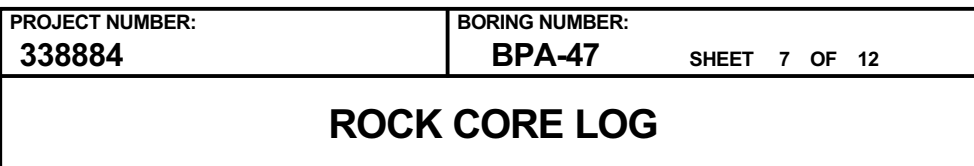
START : 12/8/06 08:20

END : 12/14/06 10:03

LOGGER : EM/JS

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LOGGER : EM/JS

Rev. 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	<b>Siltstone</b> 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  <b>Sandstone</b> 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	<b>Siltstone</b> 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  <b>Sandstone</b> 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	140.7-141.1' - Contact between siltstone and sandstone	.		At 140.3': R-Scale = R3
			5		x x		At 140.8': R-Scale = R5
			5	141.6' - Fracture, 10 deg, smooth, undulating	x x		
145 119.5	R29HQ 5 ft 99%	92	5	141.7' - Fracture, horizontal, rough, undulating	x x	<b>Siltstone</b> 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
			0	141.9' - Fracture, horizontal, rough, undulating	x x		Driller's Remark: For 1st 5 min. did not go down
			0	142.1' - Fracture, 30 deg, slickensided	x x		
			0	142.2' - Fracture, horizontal, rough, undulating	x x		
			0	142.4' - horizontal, small cracks	x x		At 144.0': R-Scale = R4
			0	142.4' - Fracture, horizontal, smooth, undulating	x x		At 144.5': R-Scale = R5
			0	142.7' - Fracture, horizontal, smooth, undulating	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

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		
147.0			0				
150	R30HQ 5 ft 104%	86	0			147.0-152.0' - black and greenish gray mottling, fine grained sand contact gradually decreases from 25% to trace after 149.6'	R30: 14:56-15:31
114.5			0				At 148.0': R-Scale = R5
			0				
			0				
			7			150.0' - Fracture, horizontal, rough, undulating 150.1' - Fracture, horizontal, rough, undulating 150.3' - Fracture, horizontal, rough, undulating 150.3' - Fracture, horizontal, rough, undulating 150.5' - Fracture, horizontal, rough, undulating 150.8' - Fracture, horizontal, rough, undulating 150.9' - Fracture, horizontal, rough, undulating	
			0				At 151.5': R-Scale = R3-R4
152.0			0			152.0-157.0' - black and greenish gray mottling, soft, 15% fine grained sand; little to no mottling	R31: 15:54-16:22
			0				At 153.0': R-Scale = R3
			0			153.6-154.3' - up to 25% fine sand	At 154.0': R-Scale = R5
155	R31HQ 5 ft 96%	96	0				
109.5			0				
			0				
			0				
157.0			0			157.0-162.0' - dusky red, soft to hard, little to no sand	R32: 07:48-08:09 on 12/13/06
			0				At 158.0': R-Scale = R3-R4
			0			158.4-159.3' - gradually increase in sand content with up to 10% sand	At 159.0': R-Scale = R5
			0			159.3-162.0' - fine sand increases to 25%	
160	R32HQ 5 ft 102%	100	0				
104.5			0				
			0				
			0			161.5-161.6' - decrease in sand (10%) and band at 15 degrees 161.8-161.9' - 20% coarse sand with siltstone matrix	R33: 08:30-08:55
162.0			0				At 163.0': R-Scale = R5
			0			<b>Sandstone</b> 162.6-164.2' - dusky red, hard, fresh, gradual increase in fine to medium grained sand up to 70% with 5-10% coarse grained sand	At 164.0': R-Scale = R3
	R33HQ 5 ft 90%	70	1			<b>Siltstone</b> At 164.2' - dusky red, mottled greenish gray and trace black, very fine to fine grained, trace to no sand 164.2-170.5' - fresh	SC-10 collected 164.1-164.9'
165			3				
99.5			1				



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-47

SHEET 10 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												
170 94.5	167.0	R34HQ 5 ft 106%	85		165.5' - Fracture, horizontal, smooth, undulating	169.4-170.1' - very soft to soft, up to 15% very fine to fine sand	170.5-171.3' - moderately weathered	171.3-182.9' - fresh	R34: 09:12-09:50									
	3			165.8' - Fracture, horizontal, smooth, undulating														
	0			166.4' - Fracture, horizontal, rough, undulating														
	0			167.0-167.2' - Fracture zone, rough, undulating, crumbled in to 4 pieces, multiple angles.														
	0			167.4' - Fracture, 40 deg, slickensided														
	7			167.6' - Fracture, horizontal, rough, planar														
	175 89.5	172.0	R35HQ 5 ft 100%	100	2					170.5' - Fracture, horizontal, rough, planar	172.0-177.0' - very soft to soft, up to 15% very fine to fine sand	171.3-182.9' - moderately weathered	171.3-182.9' - fresh	R35: 10:21-10:51				
		1			170.6' - Fracture, 35 deg, smooth, undulating, rounded slickenside, 1/2 broken horizontal													
		1			170.9' - Fracture, 10 deg, rough, undulating, 1/2 slicken													
		0			171.0' - Fracture, rough, undulating, top 1/2 as 167.55'													
0		171.2' - Fracture, rough, undulating, top 1/2 as 167.55'																
0		171.3' - Fracture, horizontal, smooth, undulating																
180 84.5		177.0	R36HQ 5 ft 95%	95	0	171.9' - Fracture, horizontal, rough, planar	178.8' - 0.1' thick bands of siltstone with ~25% fine sand	179.0' - 0.1' thick bands of siltstone with ~25% fine sand	179.1' - 0.1' thick bands of siltstone with ~25% fine sand	180.2' - 0.1' thick bands of siltstone with ~25% fine sand					180.3-182.0' - soft, up to 25% fine sand; no greenish gray mottling	R36: 13:31-14:01		
		1			172.7' - Fracture, horizontal, smooth, undulating													
		0			173.5' - Fracture, horizontal, smooth, undulating													
		0			178.4' - Fracture, 5 deg, smooth, undulating, 1 slicken 0.05' long													
	1	181.1' - Fracture, horizontal, smooth, undulating																
	0	182.3' - Fracture, horizontal, smooth, undulating																
	185 79.5	182.0	R37HQ 5 ft 103%	97	1	182.9' - Contact between siltstone and sandstone, sharp					182.7' - 0.05' thick bands of 25% sand	182.8' - 0.05' thick bands of 25% sand	182.9-189.9' - dark gray and dark reddish brown, hard, fresh, thin to medium bedding	182.9-183.3' - 0.01-0.03' thick siltstone lenses (35% medium sand, 50% fine sand)			At 184.0': R-Scale = R4	At 184.6': R-Scale = R3
		0																
		0																
		0																
0																		

# 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

[illegible]



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		...	<b>Sandstone</b> 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							

# 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

[illegible]



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 2 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

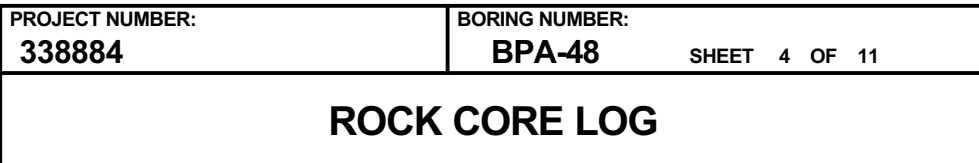
END : 12/7/06 14:50

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.	
10.4	R1HQ 1.6 ft 88%	70	0		x x x	<b>Siltstone</b> 10.4-36.6' - red, some black mottling (1/16-3/16"), fresh, fine grained, silts with some clays, 0.2 to 1.3 rock clasts over 5-10% core 12.0-17.0' - at 14.4' very fine sand (5-10%) matrix increasing to coarse sands at base (20-35%); laminated bedding	Rock coring began at 09:46 on 11/29/06 R1: 09:46-10:13 on 11/29/06 At 10.4-11.4': R-Scale = R3 R2: 10:45-11:27	
12.0			0		x x x			
			1	12.3' - Fracture, natural break along laminated bedding	x x x			
			3	13.3' - Fracture, horizontal	x x x			
			1	13.9' - Fracture, 1 deg and 2 deg, smooth, undulating	x x x			
			2	14.4' - Fracture, 5 deg, smooth, planar	x x x			
			2	15.1' - Fracture, 5 deg, smooth, planar	x x x			
			2	15.7' - Fracture, 5 deg, smooth, undulating	x x x			
			2	16.3' - Fracture, 10 deg, smooth, planar	x x x			
			2	16.5' - Fracture, horizontal, smooth, planar	x x x			
15 249.8	R2HQ 5 ft 100%	90	2	17.5-17.6' - Fracture, horizontal, smooth, planar, along laminated bedding	x x x	18.5-19.1' - light gray, increased sand matrix  20.1-20.7' - light gray, increased sand matrix	R3: 12:11-12:52	
			0		x x x			
			2	19.2' - Fracture, horizontal, smooth, planar, along laminated bedding	x x x			
			2	19.5' - Fracture, horizontal, smooth, planar, along laminated bedding	x x x			
			2	20.1' - Fracture, horizontal, smooth, planar, along laminated bedding	x x x			
			0	20.3' - Fracture, horizontal, smooth, planar, along laminated bedding	x x x			
20 244.8	R3HQ 5 ft 92%	80	1	22.3' - Fracture, rough, stepped, ~0.002' relief	x x x		R4: 13:36-14:27	
			0		x x x			
			1	24.6' - Fracture, horizontal, rough, planar	x x x			
			2	25.3' - Fracture, 60 deg, rough, planar	x x x			
			1	25.8' - Fracture, horizontal, rough, planar	x x x			
			1	26.4' - Fracture, horizontal, rough, planar	x x x			
25 239.8	R4HQ 5 ft 100%	100	0		x x x	25.4-26.2' - 15-20% medium to coarse grain sand matrix  27.0-36.6' - dusky red		
			0		x x x			
			1	29.3' - Fracture, rough, stepped, ~0.0003-0.001' relief	x x x	SC-2 collected 23.6-24.7'  R5: 15:18-16:06		
			1		x x x			
			1		x x x			
			1		x x x			
			1		x x x			
			1		x x x			
			1		x x x			
			1		x x x			
			1		x x x			
30 234.8	R5HQ 5 ft 100%	100	1		x x x			







LOGGER : RG/JS/EM

Rev. 1



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															
72.0			0	x x x x											
			2	x x x x											
75	R14HQ 5 ft 96%	88	0	x x x x	72.0-72.4' - 30-40% sandy matrix, gradational contact	R14: 16:50-17:25									
189.8			0	x x x x	<b>Sandstone</b>	At 72.4-77.0': R-Scale = R3-R4									
			1	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'									
			1	x x x x											
			1	x x x x											
77.0			3	x x x x	<b>Siltstone</b>	R15: 10:13-10:54 on 12/1/06									
			0	x x x x	At 77.0' - gray mottling, undulating laminations										
			2	x x x x	77.0-127.0' - fresh										
80	R15HQ 5 ft 96%	80	1	x x x x	77.7-78.3' - undulating laminations	At 77.0-82.0': R-Scale = R3									
184.8			1	x x x x	78.8' - gray mottling										
			1	x x x x	79.2-80.5' - 15-25% fine to coarse gravel sized clasts										
			1	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									
			0	x x x x											
85	R16HQ 5 ft 100%	100	0	x x x x											
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									
			0	x x x x											
90	R17HQ 5 ft 100%	100	0	x x x x											
174.8				x x x x											



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-48

SHEET 6 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

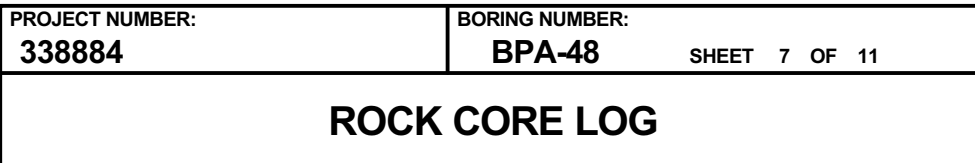
WATER LEVELS : ---

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		
95 169.8	R18HQ 5 ft 100%	95	0	93.2' - Fracture, horizontal, rough, planar, breaks along laminated bedding  94.0' - Fracture, horizontal, rough, planar, breaks along laminated bedding	x 		



LOGGER : RG/JS/EM

Rev. 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			
				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.
135 129.8	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	130.3-131.5' - 30% very fine to fine sand 130.4-156.0' - fresh	At 131.0': R-Scale = R3
			0		x		
			0		x		
			0	127.8' - Fracture, horizontal, smooth, undulating	x	132.0-136.5' - very fine to fine sand content varies from 5-10% to 30-35%, gradational contact with underlying siltstone	R26: 15:36-16:30
			0		x		
			0		x		
			0	136.5-136.9' - Fracture zone, highly fractured crumbled held together with clay infilling up to 0.01' thick fracture surface	x	<b>Siltstone</b> At 136.5' - dark reddish brown, soft, very fine to fine grained, black mottling up to 15% throughout core 0.02' thick 136.5-137.4' - some greenish gray mottling	At 133.7': R-Scale = R3-R4
			0		x		
			0		x		
			0	141.5' - Fracture, 10 deg, smooth, undulating	x	142.0-147.0' - reddish brown, mottled dark reddish black and greenish gray, soft, very fine to fine grained	R27: 10:24-11:00
140 124.8	R27HQ 5 ft 106%	96	1		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
145 119.8	R28HQ 5 ft 102%	100	0	147.0-147.6' - soft	x	147.6-152.0' - dark reddish brown, trace purple (to 1/4) and green mottling with a black thready center, soft, sand content varies; 20% very fine to fine sand with lenses of medium grained sand ~1 thick	At 140.2': R-Scale = R3
			0		x		
			0		x		
			0	147.0-147.6' - soft	x	147.6-152.0' - dark reddish brown, trace purple (to 1/4) and green mottling with a black thready center, soft, sand content varies; 20% very fine to fine sand with lenses of medium grained sand ~1 thick	At 141.0': R-Scale = R3
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
150 114.8	R29HQ 5 ft 99%	92	0		x		R28: 11:50-12:22 At 142.2': R-Scale = R5
			0		x		
			0		x		
			0		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	<b>Sandstone</b>	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	<b>Siltstone</b>	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	<b>Siltstone</b>	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	At 164.1': R-Scale = R2-R3
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	
99.8			0		x	162.5-164.5' - soft, 10-15% very fine to fine sand with irregular 1 lenses of 20-25% sand	At 165.6-165.9': R-Scale = R2
			0		x	165.0-167.0' - very soft to soft	
			1		x	165.2-165.3' - patches of white clasts, to 1/4 in length, irregularly shaped	R33: Finished at 16:40
			0		x	165.6-166.5' - white clasts increase to 15%	At 168.7': R-Scale = R2
170	R33HQ 5 ft 102%	98	0	166.5' - Fracture, horizontal, rough, undulating, 0.001' relief	x	166.5-167.0' - white clasts increase to 50% of area, harder than matrix	At 169.3': R-Scale = R3
94.8			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	
			0		x	167.9-168.9' - trace to 10% greenish white inclusions or mottles	





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

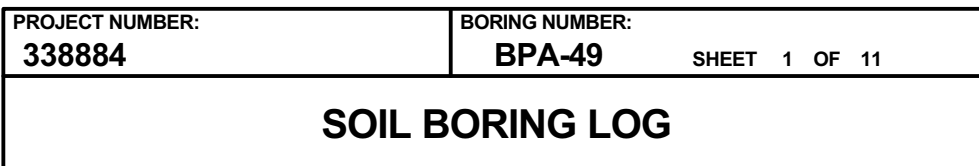
END : 12/7/06 14:50

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	<b>Sandstone</b> 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	179.4-179.9' - greater increase in grain size with 10% coarse sand and small pebbles and up to 40% fine to medium sand	SC-8 collected 178.9-179.6'
			5	180.0' - Fracture, 50 deg, rough, undulating, over 50% whitish infilling	x x x x		
			0		x x x x	<b>Siltstone</b> 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

[illegible]



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

DRILLING CONTRACTOR : Whichard, Trigon Engineering

DRILLING EQUIPMENT AND METHOD : CME-55, Tricone Bit, 24" Split Spoon, 140 lb. Automatic Hammer

ORIENTATION : Vertical

WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

LOGGER : RG/EM

2BB-313



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		<b>Siltstone</b> 19.1-19.6' - dark red, soft, moderately weathered	Rock coring began at 14:04 on 12/7/06 R1: 14:04-14:10 At 19.0-19.6': R-Scale = R3-R4 At 19.6': R-Scale = R0-R1 At 20.3': R-Scale = R3-R4
21.0			0	19.6' - Fracture, smooth, undulating, 0.002' clay infilling, at siltstone-sandstone contract		<b>Sandstone</b> 19.6-25.7' - white to pink, very soft, laminated bedding, fine sand to medium sand, moderately weathered, well sorted, moderately cemented, 30-40 degree laminations	
25 236.9	R2NQ 5 ft 100%	98*	2				R2: 14:40-14:52  At 23.1': R-Scale = R3-R4
			0				
			0				
			0				
26.0			4	26.0' - Fractures (5), rough, stepped		<b>Shale</b> 25.7-26.0' - dark bluish gray, very soft, moderately weathered, fissile, micaceous, weak cementation	At 25.7-26.0': R-Scale = R2 R3: 15:02-15:17
30 231.9	R3NQ 5 ft 100%	58*	5	27.1' - Fracture, horizontal, smooth, planar, 0.1' clay infilling		<b>Siltstone</b> 26.0-28.5' - laminated bedding, moderately weathered, bedding on 20-30 degree angle	SC-3 collected 27.1-27.2'
			3	27.4' - Fracture, rough, stepped, 0.05' clay infilling		<b>Clay (CL)</b> 28.5-29.0' - light to dark gray, moderately weathered	At 29.0-29.5': R-Scale = R1-R2
			0	28.9' - Fracture, 30 deg, rough, planar 29.0' - Fracture, horizontal, rough, planar, <0.002' clay infilling			
			31.0			2	31.0' - Fracture
35 226.9	R4NQ 5 ft 66%	38*	1			<b>Siltstone</b> 32.2-36.3' - dusky red, 30-40% very fine to fine sand, well sorted	R5: 15:55-16:15 At 36.3-37.3': R-Scale = R1  At 37.3-41.0': R-Scale = R3-R4
			5			<b>Siltstone</b> 36.3-37.3' - gray, very soft, slightly weathered	
			1			<b>Siltstone</b> 37.3-49.4' - dusky red, 30-40% very fine to fine sand, well sorted	
			4			<b>Siltstone</b> 37.3-49.1' - slightly weathered	
36.0			1	36.0' - Fracture, rough, stepped			
	R5NQ 5 ft 100%	88	2				
			0				



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 : ---

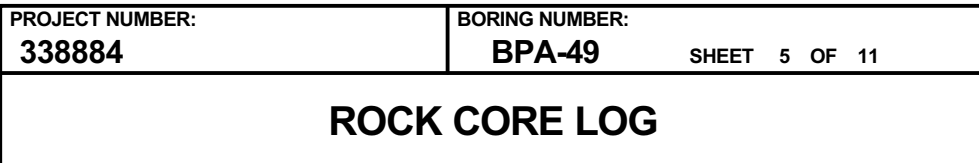
START : 12/7/06 08:00

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 <b>Clay (CL)</b> 49.4-50.2' - dark brown, highly weathered	
50 211.9			10+		x	<b>Siltstone</b> 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





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

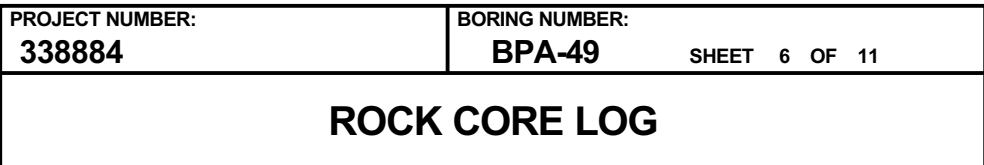
DRILLING CONTRACTOR : Whichard, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/EM

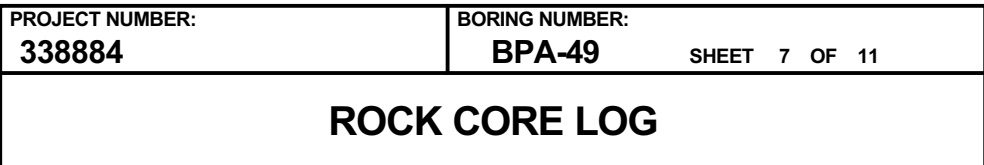
Rev. 1





LOGGER : RG/EM

Rev. 1



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

DRILLING CONTRACTOR : Whichard, Trigon Engineering

ORIENTATION : Vertical

LOGGER : RG/EM

Rev. 1



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	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS				
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS					
140 121.9	R26NQ 5 ft 100%	100	0	149.4' - Fracture, 30 deg, rough, undulating  150.2' - Contact between siltstone and sandstone, 10 deg, sharp contact	.	<b>Sandstone</b> 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			
145 116.9			0				R26: 12:58-13:10			
			0							
			0				At 143.0': R-Scale = R3-R4			
			0				At 143.7': R-Scale = R3-R4			
150 111.9	100	0	.				<b>Siltstone</b> 150.2-166.0' - very dark gray, mottled greenish gray, soft, fresh	R27: Finished at 08:40		
		0						At 146.9': R-Scale = R3		
		0						At 148.2': R-Scale = R3		
		1						SC-7 collected 149.5-150.2'		
		0						R28: 09:00-09:26		
		155 106.9						98	0	.
0										
0										
0										
156.0	88	0								
		0								
		0								



PROJECT NUMBER:

338884

BORING NUMBER:

BPA-49

SHEET 9 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				
160 101.9			10+	159.7' - Fracture, 10 deg, rough, undulating 160.1' - Fracture, 10 deg, rough, undulating	XXXXXX XXXX			



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

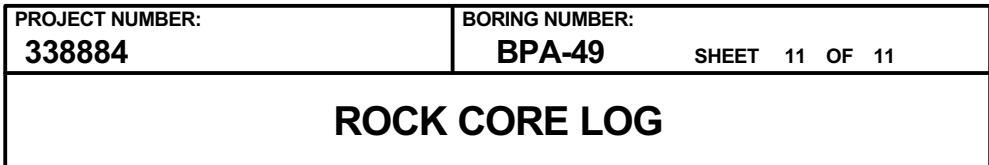
WATER LEVELS : ---

START : 12/7/06 08:00

END : 12/12/06 16:15

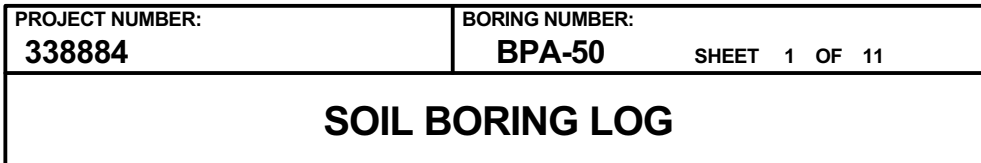
LOGGER : RG/EM

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			
180 81.9			0	180.6' - Fracture, 25 deg, smooth, undulating	X		R34: 13:39-13:52	
	181.0		1			<b>Sandstone</b> 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%	98	0			182.3-182.9' - very coarse sand		
			0			183.4-184.2' - very coarse sand		
			0					
			0					
185 76.9	186.0				185.6-186.0' - very coarse sand	At 185.0': R-Scale = R3 At 185.1': R-Scale = R3		
	R35NQ 5 ft 100%	100	0	190.4' - Fracture, horizontal, rough, undulating	X	<b>Siltstone</b> 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	
			0		X			
			0		X			
			0		X			
190 71.9	191.0		3			X	190.6' - 0.04' thick clay seam	R36: 14:55-15:14
	R36NQ 5 ft 105%	100	0			X		
			0		X			
			0		X			
			0		X			
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%	100	0		X			
			0		X			
			0		X			
					X	197.3-198.0' - up to 30% fine to medium sand	At 198.8': R-Scale = R3	



LOGGER : RG/EM

Rev. 1



LOGGER : RM/RG

Rev. 1





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+	15.2' - Fracture zone, rough, undulating		<b>Sandstone</b> 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+							
		10+								
		10+								
		10+								
	21.5	R3HQ 5 ft 100%	97*	0					20.5-21.5' - light reddish brown, highly weathered	At 20.5-21.5': R-scale = R1
	0			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		
	1			24.4' - Fracture, horizontal, rough, undulating				At 24.8': R-Scale = R2		
	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		
25 248.0	26.5	R4HQ 5 ft 100%	71*	1		<b>Weathered Clayey Siltstone</b> 25.4-26.2' - olive gray, very soft, moderately weathered	At 26.3-26.5': R-Scale = R0 At 26.5-27.4': R-Scale = R1 R4: 17 min 10 sec			
	10+			<b>Silt (ML)</b> 26.2-26.5' - dark reddish brown, moderately weathered, soft, laminated	At 27.4-29.2': R-Scale = R2					
	1			<b>Silt (ML)</b> 26.5-27.4' - brown, moderately weathered	At 28.6': R-Scale = R2					
	1			<b>Siltstone</b> 27.4-29.2' - reddish brown to dark reddish brown, soft, moderately weathered, laminated 27.8-28.2' - sand lens	At 29.2-29.9': R-scale = R0 At 29.3' PP: 1.0 tsf SC-11 collected 29.3-29.8'					
	31.5	R5HQ 5 ft 99%	80	2		<b>Clay (CL)</b> 29.2-29.8' - moderately weathered 29.8-29.9' - slightly weathered	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'			
	2			<b>Siltstone</b> At 29.9' - reddish brown to dark reddish brown, mottled greenish gray, soft 29.9-34.3' - slightly weathered 31.3' - clasts 32.2-32.5' - very soft, soil-like 32.5-34.3' - dark reddish brown, trace fine sand	At 32.9': R-Scale = R2-R3					
	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		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	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	<b>Siltstone</b> 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%	100	1			<b>Sandstone</b> 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				39.6' - Fracture, horizontal, rough, undulating, loose fit			
	41.5		0					At 40.5': R-Scale = R2-R3 At 40.8': R-Scale = R2-R3  R7: 21 min 23 sec At 42.2': R-Scale = R2-R3	
	45 228.0	R7HQ 5 ft 96%	93	0					
			1				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	42.8-43.5' - greenish gray, mottled gray and white <b>Siltstone</b> At 43.5' - dark reddish brown, soft, fresh	At 43.4': R-Scale = R2
			1						At 44.8': R-Scale = R3
			1				45.3' - Fracture, horizontal, smooth, stepped, tight fit		At 45.5-46.5': R-Scale = R2-R3
46.5			XXXX	46.2' - Fracture, horizontal, smooth, stepped, 0.0003' reddish brown clay infilling, loose fit		R8: 21 min 36 sec			
50 223.0		R8HQ 5 ft 106%	99	0				At 47.1': R-Scale = R2-R3 At 47.5-51.5': R-scale = R2-R3	
	1				47.8' - Fracture, 70 deg, rough, planar, tight fit	47.5-48.8' - mottled reddish brown, hard			
	2				48.6' - Fracture, horizontal, smooth, planar, loose fit 48.7' - Fracture, horizontal, rough, undulating, <0.00003' reddish brown clay infilling		SC-1 collected 49.5-50.2' At 50.2': R-Scale = R2		
	0				49.4' - Fracture, horizontal, smooth, stepped, tight fit				
	51.5		1						
	55	R9HQ 5 ft 100%	100	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		R9: 27 min At 51.5-53.8': R-Scale = R3 At 52.3': R-Scale = R3		
2									
1									
0							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:

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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		
			0		x		At 92.8': R-Scale = R3
			1	93.7' - Fracture, horizontal, smooth, planar, tight fit	x		At 93.3': R-Scale = R3
95	R17HQ 5 ft 96%	94	1		x		
			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

START: 172635.41		END: 172755.10.17		EQUATOR: 171.13			
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		
100 173.0	96.5	100	1	94.6' - Fracture, 50 deg and 60 deg, rough, stepped, loose fit	<div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> <div>XXXX</div> 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<b>PROJECT NUMBER:</b> <b>338884</b>	<b>BORING NUMBER:</b> <b>BPA-50</b>
<b>SHEET 7 OF 11</b>	
<h2 style="margin: 0;">ROCK CORE LOG</h2>	

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
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WATER LEVEL (ft)		CORE RUN, LENGTH, AND RECOVERY (%)		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	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		1	116.3' - Fracture, horizontal, rough, stepped		x 				









PROJECT NUMBER:

338884

BORING NUMBER:

BPA-50

SHEET 9 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			
160 113.0	156.5		0	164.5' - Contact between siltstone and sandstone, 30 deg, smooth, planar  165.5' - Fracture, 40 deg, smooth, planar, broke at contact of siltstone and sandstone interbed	x x x x x x x x x x x x	<b>Siltstone</b> 155.4-156.9' - dark reddish brown, fresh 156.3-156.5' - soft, 20-30% medium to coarse sand	R30: 10:40-10:52	
	R30HQ 5 ft 100%	0			<b>Sandstone</b> 156.9-165.5' - light gray, soft, medium sand to coarse sand, fresh, poorly to well sorted	At 157.3': R-Scale = R3.5		
		0						
		0						
		0						
	165 108.0	161.5			0			
R31HQ 5 ft 100%		0			162.5-164.5' - becomes coarser grained	R31: 11:13-11:52		
		1						
		1			164.5-165.5' - interbedded siltstone laminae until contact			
		0						
170 103.0		166.5			0	165.5-171.5' - dark reddish brown, fresh, well sorted, 10-20% very fine to fine sand 166.9-167.4' - 5-10% dark pinkish clasts, soft 167.8-169.4' - 5-10% dark pinkish clasts (0.0003-0.004' in size), soft	x x x x x x x x x x x x	R32: 12:16-12:40
	R32HQ 5 ft 100%	0					At 169.7': R-Scale = R3.5	
		0						
		0						
		0						
	175	171.5		1				
R33HQ 5 ft 100%		0		<b>Sandstone</b> 171.5-174.0' - very dark gray, soft, fresh, very fine grained to cryptocrystalline quartz matrix with fine to medium quartz grains dispersed throughout, muscovite mica grains	At 172.5': R-Scale = R3-R3.5 At 173.3': R-Scale = R3-R3.5 At 173.5': R-Scale = R3-R3.5			
		0						
		0		<b>Sandstone</b> At 174.0' - bluish gray, soft, fine sand to medium sand, fresh, well sorted				
		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	
	R35HQ 5 ft 100%	100	0			181.5-182.5' - laminae on 15 degree angle	
185 88.0			0			183.7-184.9' - laminae on 25 degree angle	
			0				
186.5			3	186.8' - Fracture, horizontal, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations	X X X	<b>Siltstone</b>	R36:15:43-16:07
			0	186.9' - Fracture, 1 deg, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations	X X X	186.5-198.7' - dusky red, soft, laminated bedding, fresh, 5-10% gravel sized clasts	At 186.5-191.5': R-scale = R3.5
	R36HQ 5 ft 100%	91	1	187.2' - Fracture, 2 deg, rough, planar, <0.002' clay infilling, medium plasticity, break along laminations	X X X		
190 83.0			1	189.3' - Fracture	X X X		
			0	190.4' - Fracture	X X X		
191.5			0		X X X		R37: 16:28-16:51
			0		X X X		At 192.4': R-Scale = R4
	R37HQ 5 ft 97%	93	0		X X X		
195			0		X X X		At 194.3': R-Scale = R4

# 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

[illegible]



PROJECT NUMBER:

**338884**

BORING NUMBER:

**BGA-1**

SHEET 1 OF 5

# SOIL BORING 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

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)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
263.9	0.0	8.0	SS1SS	8-5-6-8 (11)	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		Soil sampling completed at 14:10 on 4/21/06
	2.0						
	2.5	14.0	SS2SS	4-5-5-50/5 (10)	Lean Clay (CL) 2.5-3.7' - reddish brown, moist, stiff, medium plasticity, no dilatancy, yellow mottling, scattered bedrock pieces to coarse sand sized		
	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		
	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

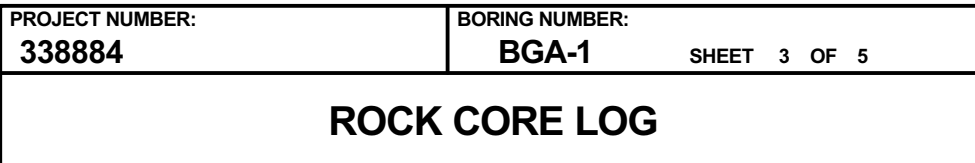
WATER LEVELS : 7.1 ft bgs

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	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			
10 253.9	5.6	R1NQ 9.9 ft 99%	82*	1	6.5' - Fracture, horizontal, rough, undulating, tight fit	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	Siltstone At 5.6' - reddish brown, soft, fine grained, green along fracture/bedding planes 6.3-6.8' - pink-white to light gray rip-up clasts of siltstone 6.8-14.2' - moderately weathered	Rock coring began at 14:25 on 4/21/06 R1: 14:25-14:38 and 14:40-14:50 on 4/21/06	
				1					
				0					
				1					
				2					
				2					
				3					
				2					
				3					
				1					
15 248.9	15.5	R2NQ 10 ft 92%	83	2	15.1' - Fracture, 15 deg, smooth, undulating 15.6' - Fracture, horizontal, rough, planar 15.8' - Fracture, horizontal, rough, planar  17.4' - Fracture, 50 deg, rough, undulating  18.5-20.5' - siltstone rip-up clasts, some along areas of fractures  20.0-25.5' - light gray to white siltstone infilling within former fractures in rip-up clasts, some white fracture infilling may be calcitic  20.8' - Fracture, 60 deg, rough, undulating 21.4' - Fracture, 60 deg, rough, undulating 21.8' - Fracture, horizontal, rough, undulating 21.9' - Fracture, horizontal, rough, undulating 22.0' - Fracture, horizontal, rough, undulating  23.2' - Fracture, horizontal, rough, undulating  24.1' - Fracture, horizontal, slickensided, undulating	XXXXXX XXXX			



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

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

ORIENTATION : Vertical

LOGGER : JS/DT/JF

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-1

SHEET 4 OF 5

# 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

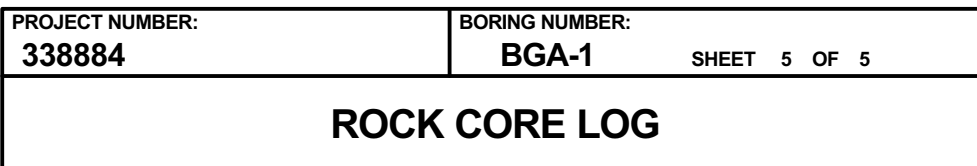
START : 4/21/06 13:30

END : 4/24/06 15:45

LOGGER : JS/DT/JF

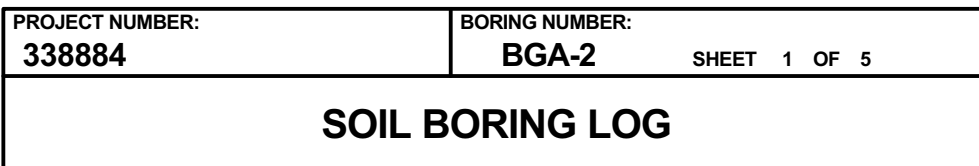
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
50 213.9	R5NQ 10 ft 100%	100	0	53.0' - Fracture, <5 deg, rough, undulating	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	45.0-55.0' - reddish brown to dark reddish brown, mottled blue-green along relic fractures, soft	
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			1				
			0				
55 208.9	55.0		1	56.3' - Fracture, <5 deg, rough, undulating 56.5' - Fracture, <5 deg, rough, undulating 56.5' - Fracture, <5 deg, rough, undulating 56.7' - Fracture, 10 deg, rough, undulating 56.9' - Fracture, <5 deg, rough, undulating 57.1-57.2' - Fracture, horizontal/parallel, rough, undulating 58.2' - Fracture, <5 deg, rough, undulating  59.9' - Fracture, 10 deg, rough, undulating 60.0-62.0' - Fractures, horizontal and vertical, hairline fractures  62.0' - Fracture, >80 deg, rough, undulating 62.0-63.0' - Fracture, vertical, white calcitic infilling, hairline fracture	XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX XXXXXX	55.0-65.0' - weak red to very dusky red, mottled blue-green along relic fractures, soft  57.5-58.0' - white-gray inclusions	R6: 11:35-13:45
			5				
			3				
			2				
			1				
			1				
			1				
			1				
			1				
			1				
60 203.9	R6NQ 10 ft 100%	91					
65 198.9	65.0						





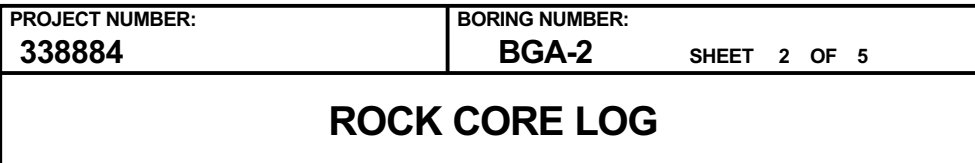
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Rev. 1



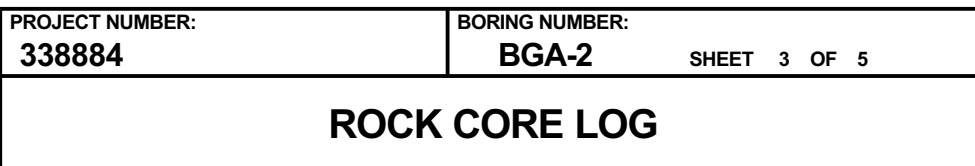
LOGGER : LH

Rev. 1



LOGGER : LH

Rev. 1



LOGGER : LH

Rev. 1





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

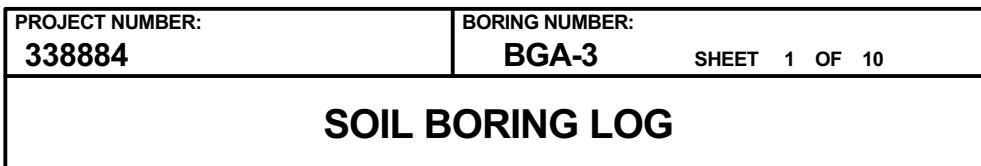
WATER LEVELS : 5.0 ft bgs

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			
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		x x	70.0-70.4' - greenish gray mottling, very soft to soft, trace very fine sand throughout; becomes coarser with depth	
			0	68.5-68.7' - Fracture, 45 deg, hard white infilling	x x		
75 187.4	R15NQ 5 ft 100%	100	0	68.8' - Fracture, horizontal, rough, undulating	x x	<b>Sandstone</b> 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	69.1' - Fracture, 30 deg, hard white infilling, tightly healed	x x		
			0		x x		
			0		x x		
			0		x x		
75 187.4	R16NQ 5 ft 100%	88	0		x x	<b>Siltstone</b> 73.8-82.3' - dark reddish brown, greenish gray mottling, very soft to soft, trace very fine sand throughout 73.8-78.0' - fresh 75.0-80.0' - trace greenish gray mottling 75.0-77.6' - soft, laminated beds	At 72.0': R-Scale = R3
			0		x x		
			0		x x		
			0		x x		
			0		x x		
80 182.4	R17NQ 5 ft 100%	86	0		x x	77.6-80.0' - very soft, trace medium grained sand 78.0-82.3' - slightly weathered	R16: 13:57-14:06
			5	78.1-78.4' - Fracture (2), 45 deg, rough, undulating, overlying a horizontal fracture with same characteristics	x x		
			1	78.6' - Fracture, horizontal, smooth, undulating	x x		
			1	78.7' - Fracture, horizontal, smooth, undulating	x x		
			1	79.0-79.4' - Fracture, 45 deg, tightly healed	x x		
			3	79.5-79.6' - Fracture	x x	80.0-82.3' - very soft, laminated beds	At 76.3': R-Scale = R3-R4 SC-2 collected 75.0 - 76.0'
			0	79.9-80.0' - Fractures (2), horizontal and vertical, horizontal are rough, planar and vertical are slickensided	x x		
			1	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		
			1	82.6' - Fracture, 10 deg, tightly healed	x x		
			3	83.5' - Fracture, horizontal	x x		
85 177.4				84.5' - Fracture, horizontal, rough, planar	x x	<b>Sandstone</b> 82.3-85.0' - dusky red, soft to hard, very fine sand to fine sand, fresh, very thin to medium bedding 83.5-84.2' - rock seems to have more silt (in layers)	R17: 14:12-14:24
				84.8' - Fracture, horizontal, rough, undulating	x x		
				85.0' - Fracture, horizontal, rough, undulating	x x		
					x x		
					x x		
						Bottom of Boring at 85.0 ft bgs on 6/2/06 14:24	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



LOGGER : JS

Rev. 1





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 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 			

# 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

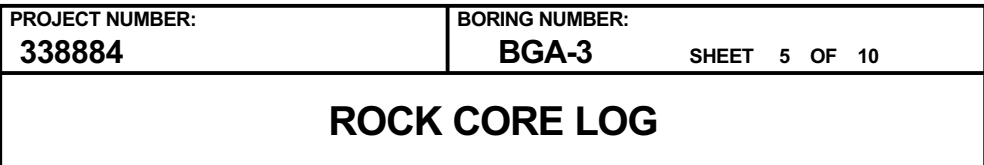
WATER LEVELS : 9.4 ft bgs

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		
55 204.9	51.5		3	50.6' - Fracture, horizontal, smooth, undulating, loose fit	X 		



LOGGER : JS

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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

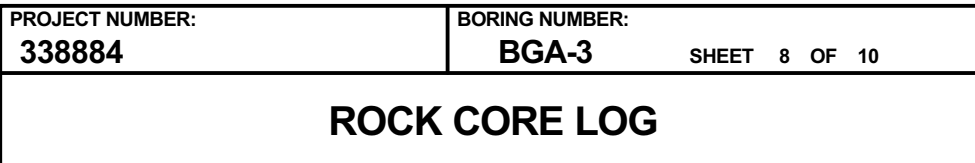
START : 4/19/06 10:15

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	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				
95 164.9	91.5		0	90.5' - Fracture, 80 deg, rough, undulating, thin quartz infilling, tight	x x			





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

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

ORIENTATION : Vertical

LOGGER : JS

Rev. 1





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

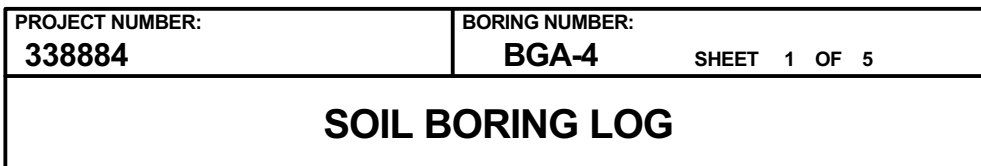
DISCONTINUITIES		SYMBOLIC LOG		LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT	DESCRIPTION	SYMBOLIC LOG	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID 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 		



<b>PROJECT NUMBER:</b> <div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>338884</b></div>	<b>BORING NUMBER:</b> <div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>BGA-3</b></div>
<b>SHEET 10 OF 10</b>	
<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) (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							



LOGGER : DT/JF

Rev. 1



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

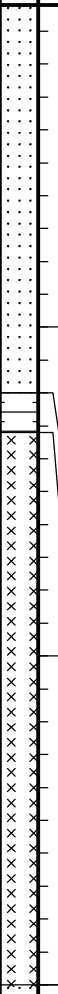
ORIENTATION : Vertical

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	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				
20 255.0	15.1	R1NQ 4.9 ft 106%	96	1	15.3' - Fracture, 5 deg, rough, undulating, tight, 0.05' relief		<b>Sandstone</b> 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 <b>Claystone</b> 21.0-21.6' - dark reddish brown, tan, and blue green, heavily mottled, very soft, highly weathered, very fine grained <b>Siltstone</b> 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						
	25 250.0	20.0	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	
30 245.0	25.0	R3NQ 5 ft 100%	100		23.7-24.6' - Horizontal hairlike fractures across bedding, bedding not readily visible					
	0			25.0' - Fracture, small horizontal capillary fractures		R3: 13:35-13:50				
	0									
	0									
	0									
	35 245.0	30.0	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			



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			

# 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 bqs

START : 5/12/06 11:45

END : 5/26/06 13:05

LOGGER : DT/JF

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PROJECT NUMBER:

338884

BORING NUMBER:

BGA-4

SHEET 5 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

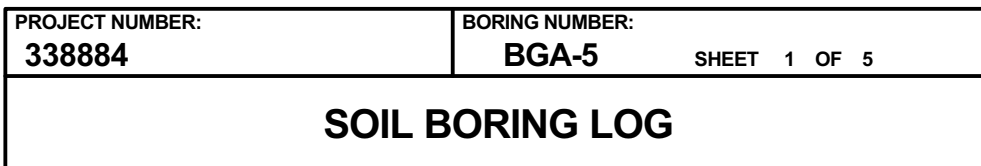
START : 5/12/06 11:45

END : 5/26/06 13:05

LOGGER : DT/JF

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			
80 195.0	R13NQ 5 ft 100%	100	0	77.3' - Fracture, 55 deg and 60 deg, rough, undulating, tight	x x		





LOGGER : EM

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-5

SHEET 2 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			
				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.
12.6			0			<b>Sandstone</b> 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	Rock coring began at 11:45 on 7/26/06
15	R1NQ 3.7 ft 97%	95	0			14.1-14.5' - gray, little to no silt	R1: 11:45-11:55 on 07/26/06
253.4			0			14.5-15.0' - 40% silt	SC-1 collected 12.5-13.4'
16.3			0			15.0-15.4' - soft	
			0			15.4-16.3' - 40% silt	At 15.4': R-Scale = R2-R3 (performed at later date)
			1	17.0' - Fracture, 25 deg, smooth, undulating	x x x	<b>Siltstone</b> 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'	R2: 12:53-13:10
			0		x x x	17.7-20.5' - laminated to very thin bedding, irregularly shaped sand pockets	
20	R2NQ 5 ft 97%	97	0		x x x		At 18.2': R-Scale = R2-R3 (performed at later date)
248.4			0		x x x		
21.3			0		x x x	20.9-21.5' - grades to sandstone, laminated interbedded siltstone and sandstone	R3: 13:19-13:30
			1	21.9' - Fracture, 10 deg, smooth, undulating, black stains	x x x	<b>Sandstone</b> 21.5-26.5' - gray, black mottling, soft to hard, fine sand to coarse sand, poorly sorted	
			1	22.8' - Fracture, 10 deg, rough, undulating	x x x	21.5-26.3' - fresh	
25	R3NQ 5 ft 101%	90	0		x x x	21.5-23.0' - some laminated clay-siltstone beds at 20 degrees, mottled greenish gray	At 24.9': R-Scale = R1 (performed at later date)
243.4			0		x x x		
26.3			2	25.8' - Fracture, 65 deg, rough, undulating, black stains	x x x	26.3-26.5' - slightly weathered	R4: 14:00-14:20
			0	26.0' - Fracture, vertical, rough, undulating, black stains	x x x	<b>Siltstone</b> 26.5-36.3' - dark reddish brown, mottled dark reddish gray and dark greenish gray, very soft to soft	At 27.0': R-Scale = R2 (performed at later date)
			0	26.3' - Fracture, 55 deg, black stains	x x x	26.5-31.3' - slightly weathered, 45-50% fine sand, fining with depth	
			0	26.5' - Contact between siltstone and sandstone, <5 deg	x x x		At 28.9': R-Scale = R2 (performed at later date)
30	R4NQ 5 ft 98%	98	0		x x x		
238.4			0	29.0' - Joint, 55 deg	x x x		
			0		x x x		
31.3			0		x x x		R5: 14:28-14:43
			0		x x x		



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		
35 233.4	R5NQ 5 ft 102%	95	2	32.9' - Fracture, 60 deg and <5 deg, rough, undulating	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

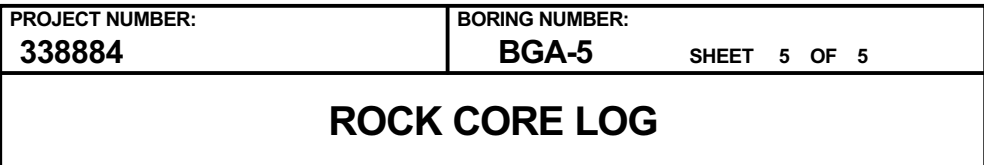
WATER LEVELS : 6.9 ft bgs

START : 7/26/06 10:00

END : 7/28/06 16:00

LOGGER : EM

WATER LEVEL: 10.00		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			
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 		



LOGGER : EM

Rev. 1



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
	RECOVERY (in)	#	TYPE				
275.2	0.0	11.0	SS1SS	2-2-3-4 (5)	<b>Clayey Sand (SC)</b> 0.0-0.5' - grayish brown, loose, fine to medium grained, medium plasticity, subrounded to subangular <b>Clayey Sand (SC)</b> 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)	<b>Sandy Clay (CL)</b> 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)	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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 <b>Clay (CL)</b> 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")	<b>Silty Sand (SM)</b> 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")	<b>Silty Sand (SM)</b> 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						
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS							
20 255.2	17.8	R1NQ 3.7 ft 59%	0			<b>Sandstone</b> 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			
	0											
	0											
	0											
	26.5	R3NQ 5 ft 106%	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												
31.5	R4NQ 5 ft 94%		31.5-36.5' - gray, soft, laminated bedding, soft clay ripup clasts	At 31.1': R-Scale = R2 R4: 14:35-14:45								
1												
0												
0												
35 240.2	36.5				0	36.5-41.5' - medium bedding, fine gravel to medium gravel, subrounded to subangular, poorly sorted, clay clasts	R5: 14:55-15:08					
		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

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																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
40 235.2	R5NQ 5 ft 100%	0	3	38.1' - Fracture, <5 deg, rough, undulating 38.4' - Fracture, <5 deg, rough, undulating 38.9' - Fracture, <5 deg, rough, undulating 39.2' - Fracture, 20 deg, rough, undulating 39.4' - Fracture, 20 deg, rough, undulating 39.6' - Fracture, 20 deg, rough, undulating 39.8' - Fracture, 70 deg and <5 deg, rough, undulating 39.9' - Fracture, 70 deg and <5 deg, rough, undulating 40.2' - Fracture, <5 deg, rough, undulating 40.8' - Fracture, <5 deg, rough, undulating 41.1' - Fracture, <5 deg, rough, undulating 41.3' - Fracture, 10 deg, rough, undulating 42.3' - Fracture, 80 deg, slickensided, undulating, brownish-yellow staining 42.5-42.6' - Fracture zone, <5 deg, smooth, undulating, heavily fractured; crumbled 43.9-44.1' - Fracture zone, <5 deg, smooth, undulating  45.2' - Contact between siltstone and sandstone, 10 deg, smooth, undulating, V shape	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.</



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 LEVEL: 3.7 RSD		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			
60 215.2	R9NQ 5 ft 96%	74	10+	57.6-57.8' - Fracture zone, <5, 20, and 45 deg; smooth, undulating	xx xx			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-6

SHEET 5 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: 6.7' 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							
80 195.2	R13NQ 5 ft 97%	97	0	79.8' - Contact between siltstone and sandstone, 40 deg 80.0' - Joint, fractured 1/2 way through; about 0.01' thick  81.6' - Fracture, <5 deg, rough, undulating	x x x x	<b>Sandstone</b> At 78.6' - dusky red, soft to hard, laminated bedding, fresh, siltstone and sandstone bands that gradually lead to mostly sandstone then grade into siltstone again with pockets of sandstone ~0.05' thick At 80.0' - gray, soft to hard, very thin to medium bedding, fine sand to coarse sand, subrounded to subangular, poorly sorted, some pebbles up to 0.05' thick (~5%), red mottling, oval shaped joint around bottom half, 0.01' clay clasts throughout sandstone, coarsens with depth 82.6-82.9' - 15% clay ripup clasts  84.3-84.5' - 15% clay ripup clasts  85.1-85.4' - 15% clay ripup clasts 85.6-85.8' - 15% clay ripup clasts	At 80.8': R-Scale = R3-R4  R14: 13:48-13:55					
			0					x x x x				
			0						x x x x			
			0							x x x x		
81.5	x x x x	At 85.2': R-Scale = R2										
R14NQ 5 ft 102%			99		1	x x x x	R15: 14:07-14:19					
					0			x x x x				
					0				x x x x			
	0	x x x x										
85 190.2	x x x x		At 89.7': R-Scale = R4									
R15NQ 5 ft 102%				98	2	x x x x	R16: 14:30-14:40					
					1			x x x x				
		2			x x x x							
	0	x x x x										
90 185.2	x x x x		First water level = 6.7' bgs taken 7/25/06 at 17:13; second water level = 8.8' bgs taken 7/26/06 at 17:15									
R16NQ 4.4 ft 100%				100		0	x x x x					
					0	x x x x						
		0			x x x x							
	0	x x x x										
95 180.2	x x x x		At 94.3': R-Scale = R3-R4 Driller Remark: Ran out of water 0.5' short of 5' core run R-Scale performed after drilling on stored samples									
95.9								Bottom of Boring at 95.9 ft bgs on 7/25/06 14:40				





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 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		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				
35 232.8	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	: : 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		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			
55 212.8	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 53.6-53.8' - clay seam 54.0' - clay seam, 0.05' thick 54.3-55.0' - very soft to soft	R10: 09:45-10:00  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  R-Scale not performed on rock core samples
	1	x x x					
	1	x x x					
	0	x x x					
	R10NQ 5 ft 102%	100	0	57.2' - Fracture, horizontal, rough, stepped	x x x	55.0-56.0' - mottled black, fresh, 50% very fine to fine sand  56.0-56.6' - mottled green, very soft to soft, fresh, much less sand <b>Sandstone</b> 56.6-60.0' - dusky red, mottled green, fine sand, fresh, 20% silt 57.2-57.5' - brown, mottled green, fine sand to medium sand 58.3-58.5' - dark brown to gray, some green mottling 59.0-59.9' - dark reddish brown, mottled black and green, very fine sand to fine sand 59.9-60.0' - brown  Bottom of Boring at 60.0 ft bgs on 5/18/06 11:30	
			0		x x x		
			1		x x x		
			0		x x x		
			0		x x x		
			0		x x x		
60 207.8	60.0						
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 : 3.0 ft bgs		START : 3/13/06 15:33		END : 3/10/06 4:30		LOGGER : 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)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		
263.6	0.0	19.0	SS1SS	2-2-3-4 (5)	<b>Lean Clay (CL)</b> 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)	<b>Lean Clay (CL)</b> 2.5-3.2' - brownish yellow, mottled dark orange, moist, medium stiff, low to medium plasticity, no to slow dilatancy		
	4.5				<b>Fat Clay (CH)</b> 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)	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 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							
248.6	15.0 15.2	2.0	SS7SS	50/1.5 (50/1.5")	<b>Clay (CL)</b> 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		



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	<b>Siltstone</b> 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		.....	<b>Sandstone</b> 18.2-19.9' - dark reddish brown, soft, very fine sand to fine sand, slightly weathered  <b>Siltstone</b> 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		
			0	22.2' - Fracture, horizontal, smooth, undulating	x		
24.0	R3NQ 5 ft 100%	50	1	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 <b>Sandstone</b> 28.3-28.5' - dark reddish brown, bedding, very fine sand to fine sand, slightly weathered <b>Siltstone</b> 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  34.0-38.0' - mica particles	R3: 16:29-16:42
25			0	24.3' - Fracture, horizontal, smooth, undulating, tight fit	x		
238.6			10+	26.3' - Fracture, horizontal, smooth, stepped 26.6-26.9' - Fracture zone	x		
			10+	27.2-27.4' - Fracture zone	x		
29.0	R4NQ 5 ft 94%	94	2	28.3' - Fracture, horizontal, smooth, undulating, loose fit 28.5' - Fracture, 60 deg, smooth, stepped, loose fit	x	R4: 09:00-09:14 on 05/16/06	
30			0	30.1' - Fracture, horizontal, smooth, undulating, tight fit	x		
233.6			0		x		
			0	32.7' - Fracture, 40 deg, thin white infilling, partial fracture, tightly healed	x		
34.0			0		x	R5: 09:20-09:35	
35			1		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	R6: No time recorded  SC-1 collected 38.0-39.1'		
			0						
			10+						
	R6NQ 5 ft 98%	84	0			40.3-41.0' - clay seam, 0.75' thick			
			1					41.0-45.2' - very soft to soft, fresh, coarse sand to fine gravel, scattered inclusions	
			10+						
			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
			0						
	45 218.6	R8NQ 5 ft 104%	100			1		47.4' - Fracture, 50 deg, smooth, undulating, thin quartz infilling	<b>Sandstone</b> 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
0									
0									
1									
0									
0									
50 213.6	R9NQ 5 ft 100%	96	0	53.9' - Fracture, 30 deg, smooth, undulating, black staining	<b>Siltstone</b> 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  <b>Sandstone</b> 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						
			0						
			1						
			0						
55			0			R10: No time recorded			



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


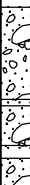
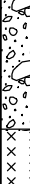
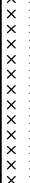
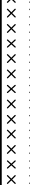
ORIENTATION : Vertical

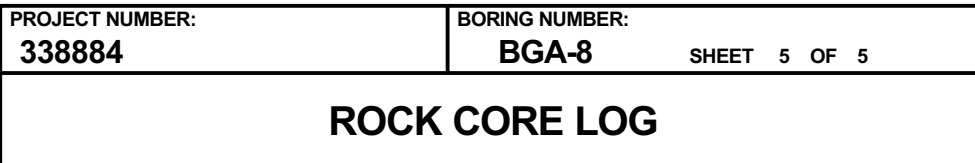
WATER LEVELS : 9.0 ft bgs

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	
					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	R11: 12:45-12:57
			0			<b>Conglomerate</b> 54.0-55.2' - dark greenish gray, soft to hard, fresh, multicolored grains, gray clay, coarse sand to fine gravel	
			1			<b>Sandstone</b> 55.2-58.0' - dark reddish gray, laminated to very thin bedding, fine sand to medium sand, fresh, with some coarser beds, multicolored grains	
			0			57.8-58.0' - clay seam	
	R11NQ 5 ft 100%	100	0	62.7' - Fracture, 20 deg, rough, undulating		<b>Conglomerate</b> 58.0-59.4' - dark greenish gray, soft to hard, fresh, multicolored grains, coarse sand, fewer fine gravel, less fines, (gray clay)	
			0			<b>Sandstone</b> 59.4-59.5' - dark reddish gray, hard, very thin bedding, fine sand to medium sand, fresh	
			1			<b>Conglomerate</b> 59.5-60.1' - dark reddish gray, soft, thin bedding, fresh, multicolored grains (red, white, gray) and staining, medium gravel	
			0			<b>Sandstone</b> 60.1-60.3' - dark reddish gray, hard, very thin bedding, fine sand to medium sand, fresh	
	R12NQ 4.8 ft 100%	100	0	70.5' - Fracture, horizontal, smooth, undulating, loose fit 71.1-73.0' - Fracture zone, horizontal		<b>Conglomerate</b> 60.3-62.7' - dark reddish gray, soft to hard, fresh, multicolored grains (red, white, gray) and staining, medium gravel	
			0			<b>Siltstone</b> At 62.7' - dark reddish brown, black and green mottling, fresh, fine grained, soft	
0			64.0-69.4' - no green mottling, fine grained				
0			<b>Sandstone</b> 69.4-69.8' - dark reddish brown, soft to hard, very fine sand to fine sand, fresh				
70 193.6	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		<b>Siltstone</b> At 69.8' - dark greenish gray, very soft to soft	
			1			69.8-71.1' - fresh	
			10+			70.4-73.0' - dark reddish gray, mottled dark red, green, gray, very soft, fine grained	
			73.0			71.1-74.3' - highly weathered	
75	R14NQ 1 ft 100%	0	3	73.0-74.3' - dusky red, clay seams 73.1-73.3' - clay seam		<b>Sandstone</b> 74.3-77.1' - greenish black, fresh	R14: 13:58-14:02
		1				R15: 14:09-14:26	



LOGGER : JS

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-9

SHEET 1 OF 5

# SOIL BORING 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

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

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs

START : 5/15/06 12:40

END : 5/17/06 11:22

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)				
253.3	0.0	16.0	SS1SS	2-3-4-6 (7)	<b>Organic Clay (OL)</b> 0.0-0.5' - dark reddish brown, moist, medium stiff, trace sand organics <b>Fat Clay (CH)</b> 0.5-1.3' - yellowish red, moist, medium stiff, medium to high plasticity, trace fine sand		
	2.0						
	2.5	22.0	SS2SS	7-7-15-50/5 (22)	<b>Clay (CL)</b> 2.5-4.3' - dark reddish brown, moist, very stiff, low to medium plasticity		
	4.5						
5							
248.3	5.0	4.0	SS3SS	50/4 (50/4")	<b>Clay (CL)</b> 5.0-5.3' - dark reddish brown, very soft, some fine sand and clay		
	7.0						
	7.5	3.0	SS4SS	50/3 (50/3")	<b>Clay (CL)</b> 7.5-7.8' - dark reddish brown, very soft, some fine sand and clay Begin Rock Coring at 7.8 ft bgs See the next sheet for the rock core log		Soil sampling completed at 14:10 on 5/15/06 Rock coring began at 14:20 on 5/15/06
	7.8						
10							
243.3							



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			
				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.
7.8			0		x x x x	<b>Siltstone</b> 7.8-14.8' - dark reddish brown, very soft, highly weathered, trace fine sand, micaceous	
10			0		x x x x		
243.3	R1NQ 6.7 ft 103%	0	2	9.6' - Fracture, 10 deg, smooth, undulating, loose	x x x x		
			1	9.9' - Fracture, 10 deg, smooth, undulating, loose	x x x x		
			0	10.6' - Fracture, horizontal, rough, undulating, loose	x x x x		
			1	12.8' - Fracture, 65 deg, rough, stepped, tight	x x x x		
14.5			0		x x x x		
15			NA		x x x x	<b>Clay (CL)</b> 14.8-15.8' - dark reddish brown, mottled, low to medium plasticity, highly weathered	R1: 14:20-14:26 and 14:29-14:45 on 05/15/06
238.3			NA		x x x x	<b>Fat Clay (CH)</b> 15.8-16.2' - reddish brown, moist, high plasticity, highly weathered	R2: 14:56-15:13 and 15:16-15:40 and 16:25-16:32
			NA		x x x x	<b>Clay (CL)</b> 16.2-19.5' - dark reddish brown, mottled, very soft, low plasticity, highly weathered	NA - Information Not Available
			NA		x x x x		
			NA		x x x x	<b>Clay (CL)</b> 19.5-22.5' - pale brown, mottled, low plasticity, highly weathered, some fine sand	
20	R2NQ 10 ft 90%	0	NA		x x x x		
233.3			NA		x x x x		
			NA		x x x x		
			NA		x x x x		
24.5			10+	24.5-25.4' - Fracture zone, 15 deg, slickensided, undulating, tight	x x x x	<b>Siltstone</b> 22.5-26.5' - bluish gray, very soft to soft, some fine sand	
25			7	25.6-26.5' - Fractures, 20 deg, slickensided, undulating, loose	x x x x	22.5-24.5' - highly weathered	
228.3			1	26.7' - Fracture, 20 deg, slickensided, undulating, loose	x x x x	24.5-26.5' - slightly weathered	R3: 09:08-09:20, 13:47-13:57, and 13:59-14:20 on 05/16/06
					x x x x	<b>Sandstone</b> 26.5-35.4' - bluish gray, soft, fine sand to medium sand, some silt	
					x x x x	26.5-34.5' - slightly weathered	





PROJECT NUMBER:

338884

BORING NUMBER:

BGA-9

SHEET 3 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			
				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.
30 223.3	R3NQ 10 ft 88%	65.5	1	27.7' - Fracture, 70 deg, rough, undulating, tight			
			0				
			1	29.7' - Fracture, 30 deg, rough, stepped, tight			
			0				
			0				
			0				
34.5							
35 218.3			0			34.5-35.4' - moderately weathered	R4: 14:50-15:08 and 15:10-15:30
			1	35.9-36.3' - Fracture, vertical	x x x	<b>Siltstone</b> 35.4-41.8' - dark reddish brown, soft to hard, moderately weathered	
			1	36.3' - Fracture, 30 deg, rough, undulating, tight	x x x		
			0	37.2' - Fracture, horizontal, rough, undulating, loose	x x x		SC-1 collected 37.4-38.5'
			1		x x x		
40 213.3	R4NQ 10 ft 94%	76	2	39.4' - Fracture, 10 deg, rough, undulating, loose	x x x		
			2	40.0' - Fracture, 10 deg, rough, undulating, loose	x x x		
			2	40.3' - Fracture, 10 deg, rough, undulating, loose	x x x		
			2	40.7' - Fracture, 20 deg, rough, stepped, tight	x x x		
			4	41.4' - Fracture, 10 deg, smooth, undulating, loose	x x x	<b>Siltstone</b> 41.8-45.5' - very dark greenish gray, soft to hard, fine grained 41.8-44.5' - moderately weathered	
			10+	41.9' - Fracture, 15 deg, rough, undulating, loose	x x x		
				42.3' - Fracture, 15 deg, smooth, undulating, loose	x x x		
				42.7-43.3' - Fracture, 15 deg, smooth, stepped, loose	x x x	43.8-44.7' - dark bluish gray, very soft, fine grained, some clay	
			4	43.5-43.9' - Fracture zone	x x x	44.5-45.5' - slightly weathered	
			4	44.5-45.4' - Fracture, 15 deg, rough, undulating, loose	x x x	44.7-45.5' - very dark bluish gray, soft, fine grained	R5: 08:16-08:40 and 08:42-09:04 on 05/17/06
			4	44.6-44.7' - Fracture, 10 deg, rough, undulating, tight	x x x	<b>Siltstone</b> At 45.5' - dark reddish brown, soft, fine grained	
			0	45.4-45.5' - Fracture, 20 deg, rough, undulating, tight	x x x	45.5-55.5' - slightly weathered	
				45.9-46.1' - Fracture, 10 deg, rough, undulating, tight	x x x		
				46.4' - Fracture, 20 deg, rough, planar, loose	x x x		

# 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&amp;ME

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

ORIENTATION : Vertical

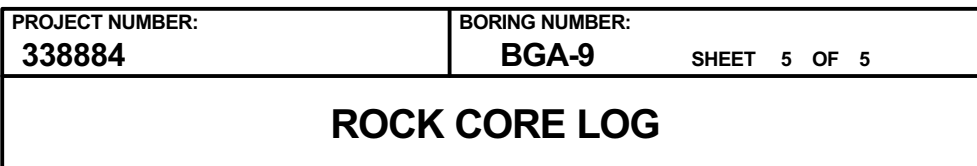
WATER LEVELS : 5.2 ft bgs

START : 5/15/06 12:40

END : 5/17/06 11:22

LOGGER : DT

[illegible]



LOCATION : (NAD 27) (688154.6 N, 2012066.0 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 1



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

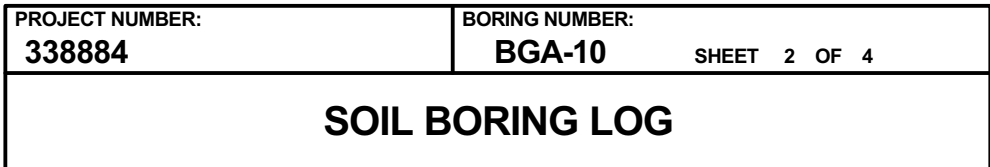
WATER LEVELS : 13.8 ft bgs

START : 5/17/06 14:05

END : 5/18/06 11:13

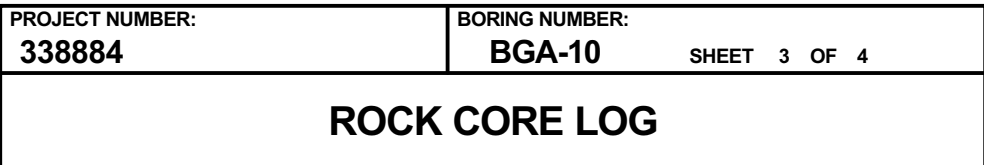
LOGGER : DT

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
		RECOVERY (in)	#TYPE				
6"-6"-6"-6" (N)							
246.2	0.0	13.0	SS1SS	2-2-5-6 (7)	<b>Fat Clay (CH)</b> 0.0-0.5' - reddish brown, mottling, moist, medium stiff, high plasticity, organics <b>Sandy Clay (CL)</b> 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)	<b>Sandy Clay (CL)</b> 2.5-3.6' - brownish yellow and light greenish gray, mottling, stiff, fine to medium grained		
	4.5						
5							
241.2	5.0	16.0	SS3SS	4-4-9-13 (13)	<b>Sandy Clay (CL)</b> 5.0-6.3' - brownish yellow and light greenish gray, mottling, stiff, fine to medium grained		
	7.0						
	7.5	16.0	SS4SS	4-6-11-14 (17)	<b>Sandy Clay (CL)</b> 7.5-8.8' - brownish yellow and light greenish gray, moist, very stiff, fine to coarse grained		
	9.5						
10							
236.2	10.0	9.0	SS5SS	7-50/3 (50/3")	<b>Sandy Clay (CL)</b> 10.0-10.5' - brownish yellow and light greenish gray, moist, very stiff, fine to coarse grained <b>Clay (CL)</b> 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")	<b>Clay (CL)</b> 12.5-13.5' - reddish brown and light greenish gray, mottling, moist, hard, low plasticity, some fine sand <b>Silty Sand (SM)</b> 13.5-13.7' - light greenish gray, moist, hard, fine grained, micaceous		
	14.5						
15							
231.2	15.0	13.5	SS7SS	12-27-50/1.5 (77/7.5")	<b>Clay (CL)</b> 15.0-16.1' - light greenish gray and brownish yellow, mottling, moist, black oxide zones, laminated		
	17.0						
	17.5	2.0	SS8SS	50/2 (50/2")	<b>Sandy Clay (CL)</b> 17.5-17.7' - dark brown, moist, fine grained, medium plasticity, trace sandstone fragments, micaceous		
	19.5						
20							



LOGGER : DT

Rev. 1



LOCATION : (NAD 27) (688222.3 N, 2012329.5 E)

DRILLING CONTRACTOR : A. Martin, S&ME

ORIENTATION : Vertical

LOGGER : DT

Rev. 1



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

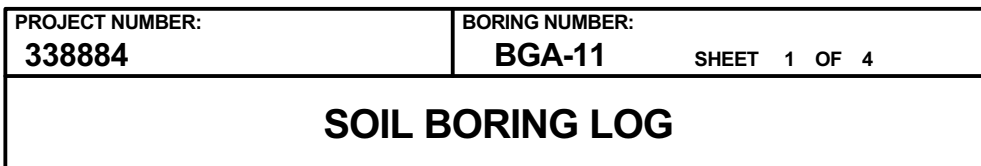
START : 5/17/06 14:05

END : 5/18/06 11:13

LOGGER : DT

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			
45 201.2	44.5		0		x x		





LOGGER : JS/AT

Rev. 1



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	<b>Siltstone</b> 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	<b>Sandstone</b> At 9.8' - light brownish gray, soft, medium bedding, very fine sand to medium sand, multicolored sand 9.8-10.8' - moderately weathered	R2: 16:01-16:13
236.8			1	10.4' - Fracture, horizontal, smooth, undulating 10.5' - Fracture, 10 deg, smooth, undulating	x x x	<b>Clay Seam</b> 10.5-10.8' - slightly weathered 11.2-11.3' - dark reddish brown mottling 11.5-15.6' - gray, soft to hard, very fine sand to coarse sand, 20-25% silt	At 11.5': R-Scale = R2
	R2NQ 5 ft 97%	83	0		x x x		
			0		x x x		
			1		x x x		
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	<b>Siltstone</b> 15.6-22.0' - dark reddish brown, greenish gray mottling, soft 15.6-15.7' - slightly weathered 15.7-22.0' - fresh	At 16.6': R-Scale = R2
231.8			0	17.3' - Fracture, 15 deg, rough, undulating	x x x		
	R3NQ 5 ft 98%	88	0		x x x		
			0		x x x		
			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	<b>Sandstone</b> 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			0		x x x		
	R4NQ 5 ft 103%	97	0		x x x		
			0		x x x		
			1		x x x		
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	<b>Siltstone</b> 23.4-33.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh	R5: 07:54-08:13 on 8/9/06
25			0		x x x		
221.8			0		x x x		
	R5NQ 5 ft 95%	92	0		x x x		

# 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

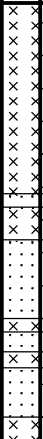
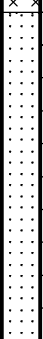
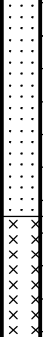

ORIENTATION : Vertical

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	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		
30 216.8	29.5	R6NQ 5 ft 101%	100	0	31.2' - Fracture, 25 deg, smooth, undulating, white/greenish staining		<div>Sandstone 30.6-30.8' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand</div> <div>Siltstone 30.8-31.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh</div> <div>Sandstone 31.3-32.5' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand</div>	R6: 08:19-08:34
				0				
				0				
				1				
				0				
35 211.8	34.5	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		<div>Siltstone 32.5-32.7' - dark reddish brown, greenish gray mottling, soft to hard, fresh</div> <div>Sandstone 32.7-33.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand</div> <div>Siltstone 33.0-33.3' - dark reddish brown, greenish gray mottling, soft to hard, fresh</div> <div>Sandstone 33.3-34.0' - light brownish gray, soft, very fine sand to medium sand, fresh, poorly laminated; multicolored sand</div>	R7: 08:41-09:03
				0				
				2				
				1				
				4				
40 206.8	39.5	R8NQ 5 ft 102%	83	1	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		<div>Sandstone 33.5-34.5' - dark reddish brown, greenish gray mottling, soft to hard, fresh</div> <div>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</div> <div>Siltstone At 42.8' - dark reddish brown, green mottling, soft to hard 42.8-44.6' - slightly weathered to moderately weathered 44.5-49.5' - greenish-gray and black mottling 44.6-58.3' - fresh</div> <div>Clay Seam 44.6' - &lt;0.05' thick</div>	R8: 09:21-09:43
				1				
				2				
				4				
				0				
45 201.8	44.5	R9NQ 5 ft 101%	91	1	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			R9: 09:51-10:04
				2				
				1				



PROJECT NUMBER:  
**338884**

BORING NUMBER:  
**BGA-11**

SHEET 4 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

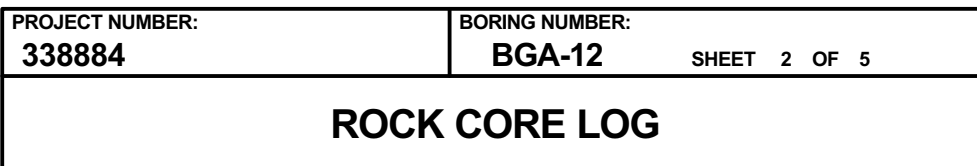
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
50 196.8	49.5		0		x x		



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BGA-12</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) (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)				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL (ft)		#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
	RECOVERY (in)						
260.9	0.0				<b>Clay (CL)</b> 0.0-2.0' - reddish brown, moist, stiff, fine grained, low plasticity, some mica, black oxide nodules		
	2.0	24.0	SS1SS	2-4-8-9 (12)			
	2.5				<b>Clay (CL)</b> 2.5-4.5' - reddish brown, moist, very stiff, low to medium plasticity, trace organic debris, gray bands		
	4.5	23.0	SS2SS	6-9-14-12 (23)			
5							
255.9	5.0				<b>Clay (CL)</b> 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	23.0	SS3SS	12-14-18-29 (32)			
	7.5				<b>Clay (CL)</b> 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	18.0	SS4SS	20-22-33-39 (55)			
10							
250.9	10.0				<b>Clay (CL)</b> 10.0-11.0' - reddish brown, moist, hard, fine grained, some mica, trace fine sand, black oxide nodules		
	12.0	10.0	SS5SS	48-52/4 (52/4")			
	12.5	2.5	SS6SS	50/2.5 (50/2.5")	<b>Clay (CL)</b> 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					Soil sampling completed at 11:37 on 4/17/06	
15							
245.9							



LOGGER : DT

Rev. 1







PROJECT NUMBER:

338884

BORING NUMBER:

BGA-12

SHEET 4 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		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				
55 205.9   								



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-12

SHEET 5 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

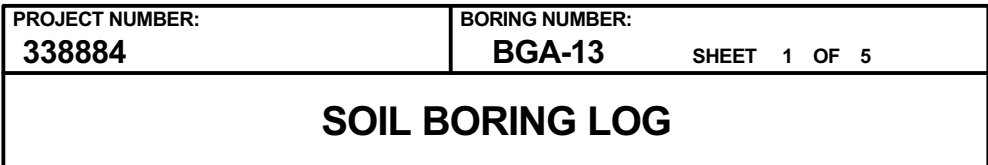
WATER LEVELS : 8.0 ft bgs

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.
75 185.9	76.0  R14NQ 5 ft 100%	97	0	76.0-81.0' - Microfractures, capillary pattern 76.4' - Fracture, smooth, undulating, tight fit 76.6' - Fracture, smooth, undulating, tight fit	x	74.5-75.0' - coarse sand sized feldspar grains (<1%) 75.0-79.3' - grayish red to pale red, coarse siltstone, grades to sandstone in places, claystone pebbles (10-25% volume)  79.2' - mottled greenish gray 79.3-81.0' - grayish red, fine grained, some white inclusions (0.5-1)	R14: 15:56-16:30  First water level = 8.0' bgs taken 4/20/06 at 11:30  R-Scale not performed on rock core samples
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
			0		x		
80 180.9	81.0		0		x	Bottom of Boring at 81.0 ft bgs on 4/18/06 16:30	
					x		
					x		
					x		
					x		
					x		
					x		
85 175.9					x		
					x		
					x		
					x		
					x		
					x		
					x		
90 170.9					x		
					x		
					x		
					x		
					x		
					x		
					x		



LOGGER : AT/LH/EM

Rev. 1

# 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&amp;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

[illegible]



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	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			
30 230.6	29.2		2		29.0-39.0' - moderately weathered 29.2-34.2' - soft to hard, 40% very fine to fine sand  32.7-34.2' - mottled green, soft  34.2-34.8' - mottled green, soft, <10% very fine to fine sand 35.0-35.5' - section was crushed in removal from rod 35.5-36.2' - dark brown, very soft, clay rich layer, poorly bedded 35.7' - clay layer 36.2-39.2' - mottled pale olive and reddish black, soft to hard, 25% gravel sized to coarse sand sized clasts  39.0-54.2' - fresh 39.2-44.2' - large irregular shaped white clasts from <1/4 to 1, harder than matrix	At 28.5': R-Scale = R2 R6: No time recorded  At 30.5': R-Scale = R3-R4  At 31.4': R-Scale = R3-R4 At 32.0': R-Scale = R2-R3 At 32.5': R-Scale = R3  At 33.2': PP: 1.0 tsf At 33.4': PP: 1.0 tsf  R7: No time recorded At 34.4': R-Scale = R2    At 37.6': R-Scale = R3   At 39.0': R-Scale = R2 R8: No time recorded   At 42.9': R-Scale = R2  At 43.8': R-Scale = R2 R9: No time recorded  At 45.0': R-Scale = R3  At 46.2': R-Scale = R3-R4		
35 225.6		73	4	29.3' - Fracture, horizontal, smooth, undulating 29.4' - Fracture, horizontal, smooth, undulating 29.5' - Fracture, horizontal, smooth, undulating 30.0' - Fracture, 5 deg, smooth, undulating, 0.01' relief 31.1' - Fracture, 15 deg, smooth, undulating 31.6' - Fracture, horizontal, smooth, undulating				
			1					
			1					
			0					
			2	33.5' - Fracture, 5 deg, smooth, undulating				
40 220.6	34.2		3	34.9' - Fracture, horizontal, smooth, undulating 35.0' - Fracture, horizontal, smooth, undulating, 0.005' relief 35.6' - Fracture, horizontal, smooth, undulating 35.8' - Fracture, horizontal, smooth, undulating 36.1' - Fracture, 5 deg, smooth, undulating, 0.01' relief 36.4' - Fracture, 5 deg, smooth, undulating, 0.01' relief 37.0-37.5' - Fractures (2), 80 deg, smooth, undulating, 0.01' relief 38.3' - Fracture, horizontal, smooth, undulating 38.6' - Fracture, horizontal, smooth, undulating				
			10+					
			3					
			1					
			2					
45 215.6	39.2		1					
			0					
			0					
			0					
			0					
			0					
	44.2		0					
			0					
			0					
			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

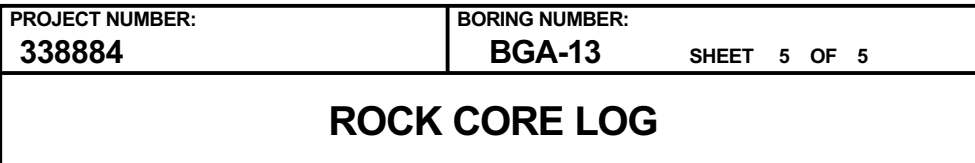
WATER LEVELS : 6.2 ft bgs

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	49.0-54.2' - gradational change in sand content from 25% at 52.5 to 50% at 53.8, then decreases to 30%.	R10: No time recorded
			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		At 52.3': R-Scale = R3
54.2					X		
55			2		X	54.2-58.0' - gradational change in sand content to <10%	R11: No time recorded
205.6			2		X	54.2-64.2' - moderately weathered	SC-1 collected
			0		X		54.2-55.4'
	R11NQ 5 ft 103%	80	3	57.1' - Fracture, horizontal, smooth, undulating, 0.03 inch clay infilling	X		At 56.0': R-Scale = R3-R4
			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	58.7-58.8' - clay seam	
60			10+	59.2-59.3' - Fracture zone, horizontal, smooth, undulating	X	59.2-64.2' - dark reddish brown, mottled black & greenish gray, trace fine sand	R12: No time recorded
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	64.2-69.2' - mottled black & greenish gray, very soft to soft, fresh	R13: No time recorded
195.6			0		X		
	R13NQ 5 ft 102%	94	0		X		
			0		X		



LOGGER : AT/LH/EM

Rev. 1





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




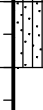





ORIENTATION : Vertical

WATER LEVELS : 15.4 ft bgs

START : 7/31/06 13:10

END : 8/1/06 16:10

LOGGER : AT

WATER LEVELS : 13.4 fdds		START : 7/5/00 15.10		END : 8/10/00 10.10		LOGGER : 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)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		
287.0	0.0	10.8	SS1SS A&B	9-8-5-5 (13)	<b>Silty Gravel (GM)</b> 0.0-0.7' - pinkish gray, dry, dense, well graded fine to coarse, angular gravel. 25% fine to coarse sand silt <b>Clay (CL)</b> 0.7-0.9' - pale brown, moist, soft, high plasticity		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	2.0						
	2.5	21.6	SS2SS	4-9-26-31 (35)	<b>Clay (CL)</b> 2.5-3.8' - pale brown, moist, soft, high plasticity, sharp contact between clay layers at 3.75'		
	4.5				<b>Sandy Silt (ML)</b> 3.8-4.3' - brown, dry to moist, no plasticity, rapid dilatancy, 10-15% very fine to fine sand		
5							
282.0	5.0	18.0	SS3SS	17-39-50 (89)	<b>Sandy Silt (ML)</b> 5.0-5.5' - brown, dry to moist, no plasticity, rapid dilatancy, 10-15% very fine to fine sand <b>Silty Sand (SM)</b> 5.5-6.5' - pinkish gray, reddish yellow linear mottling, dry to moist, 70-75% very fine to fine sand		
	7.0						
	7.5	15.6	SS4SS	44-36-50 (86)	<b>Sandy Silt (ML)</b> 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							
277.0	10.0	13.2	SS5SS	32-50 (50")	<b>Sandy Silt (ML)</b> 10.0-10.5' - pinkish gray, dark brown mottling, dry to moist, very fine to fine grained		
	12.0						
	12.5	7.2	SS6SS	50 (50")	<b>Sandy Silt (ML)</b> 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							
272.0	15.0	6.0	SS7SS	50/5 (50/5")	<b>Sandy Silt (ML)</b> 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")	<b>Sandy Silt (ML)</b> 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		
	19.5						
20							



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <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)		INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG		COMMENTS	
		RECOVERY (in)		#TYPE		6"-6"-6"-6" (N)				DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
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	23.4' - Fracture, 20 deg, smooth, undulating, 0.01' relief, tight fit 23.5' - Fracture, 10 deg, rough, undulating, dark brown stains, 0.025' relief 24.1' - Fracture, 5 deg, smooth, undulating 24.2-24.5' - Clay seam, 10 deg, smooth, undulating, same color as matrix 24.8' - Fracture, 10 deg, smooth, undulating, 0.005' relief 25.0-25.1' - Clay seam, 60 deg, smooth, undulating, 0.15' thick	XXXXXX XXXXXX			





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		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.	
65 222.0	R9NQ 5 ft 98%	98	2	63.0' - Fracture, 10 deg, smooth, planar, tight fit		: : : : : 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 : 8/2/06 13:10		END : 8/4/06 14:21		LOGGER : EMERY	
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)				
266.6	0.0	14.4	SS1SS	5-6-6-8 (12)	Clay (CL) 0.0-1.2' - yellow, mottled dark red, moist, stiff, medium to high plasticity, rapid dilatancy		
	2.0						
	2.5	15.6	SS2SS	5-7-8-10 (15)	Lean Clay (CL) 2.5-3.8' - dark red & light gray, moist, stiff, medium to high plasticity, slow to rapid dilatancy		
	4.5						
5							
261.6	5.0	16.8	SS3SS	9-15-23-30 (38)	Clay (CL) 5.0-6.4' - dark red, moist, hard, low to medium plasticity, slow to rapid dilatancy		
	7.0						
	7.5	18.0	SS4SS	17-22-33-44 (55)	Clay (CL) 7.5-9.0' - dark red, moist, hard, low to medium plasticity		
	9.5						
10							
256.6	10.0	12.0	SS5SS	33-50/2 (50/2")	Clay (CL) 10.0-11.0' - dark red, mottled black & light olive brown, dry to moist, hard, low plasticity, rapid dilatancy		
	12.0						
	12.5	13.2	SS6SS	10-50/5.5 (50/5.5")	Clay (CL) 12.5-13.6' - dark red, mottled greenish gray, dry to moist, hard, low plasticity, slow to rapid dilatancy		
	14.5						
15							Soil sampling completed at 17:40 on 8/2/06
251.6	15.0 15.3	3.0	SS7SS	50/3 (50/3")	Clay (CL) 15.0-15.3' - dark red, dry to moist, hard, low plasticity, highly weathered, 15% fine sand 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		



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-15

SHEET 2 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				
20 246.6	15.4 R1NQ 16.0 0.6 ft 92%	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  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  Siltstone At 29.3' - dark reddish brown, very soft, laminated bedding 29.3-33.5' - slightly weathered 29.6-31.0' - mottled black, 10% fine sand 31.0-36.0' - mottled green gray, very soft  33.5-36.0' - highly weathered	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						
		2	At 24.9': R-Scale = R2					
		2						
25 241.6	21.0 R3NQ 5 ft 101%	77	1					
			2					
			3					
			2					
			2					
			0					
			0					
			1					
			0					
			0					
30 236.6	26.0 R4NQ 5 ft 100%	100	0					
			0					
			1					
			0					
			0					
			0					
			1					
			0					
			0					
			0					
35 231.6	31.0 R5NQ 5 ft 100%	50	0					
			1					
			0					
			0					
			2					





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

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			
40 226.6	36.0	82	2	36.0' - Fracture, horizontal, rough, undulating	x x			

LOGGER : EM/LH



# 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

[illegible]



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	42.5-44.9' - moderately weathered, clay seams at bottom	At 41.7': R-Scale = R2
			1	41.5' - Fracture, <5 deg, rough, undulating, 0.03' thick clay infilling	x	42.8-44.9' - soft, white to pink clay clasts 0.01-0.04' thick	At 42.2': R-Scale = R3
			0		x	43.0-45.0' - 50-60% black mottling	
			10+	43.4' - Fracture, <5 deg, smooth, undulating	x		
				44.1-44.7' - Fracture zone, 0.01-0.02' thick clay infilling, highly fractured (crumbled)	x	44.9-62.3' - fresh	
45			1	45.3' - Fracture, 15 deg, rough, undulating, 0.01' thick clay infilling, black stains	x	44.9-49.9' - dark reddish brown, mottled yellowish brown, reddish black, and light greenish gray	R9: 14:40-15:04
215.6			0		x	44.9-46.1' - 50-75% reddish black mottling; large white clasts up to 0.1' thick	SC-2 collected 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		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%		0	58.8' - Fracture, 10 deg, rough, undulating	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	R10: 15:10-15:24  At 53.1': R-Scale = R2	
50	50.0		0		x x x	49.9-55.0' - dark reddish brown, mottled reddish black and greenish gray, soft 50.1' - white clay clasts 0.02' thick		
210.6			0		x x x	51.8-53.0' - coarse sand sized clast (white clay)		
	R10NQ 5 ft 102%	100	0		x x x			
			0		x x x			
			0		x x x			
55	55.0		0		x x x	55.0-60.0' - dark reddish brown, mottled reddish black, greenish gray, and yellowish brown, soft		
205.6			0		x x x	56.3-60.0' - soft to hard 56.6-58.5' - 25% fine to medium sand 56.6-56.9' - trace coarse sand		
	R11NQ 5 ft 100%	100	0		x x x			
			1		x x x			
			0		x x x			
60	60.0		0		x x x	60.0-65.0' - dark reddish brown, mottled reddish black and greenish gray, 45-50% fine to medium sand 60.0-60.6' - 20-25% fine to medium sand		
200.6			0		x x x			
	R12NQ 4.7 ft 100%	100	0		x x x			
			0		x x x			
			0		x x x			
65	64.7				x x x	Bottom of Boring at 64.7 ft bgs on 7/17/06 16:45	R12: 16:11-16:35 SC-3 collected 60.0-60.8'  At 62.1': R-Scale = R2  R-Scale performed after drilling on stored samples	
195.6								



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)				
261.6	0.0	24.0	SS1SS	3-4-8-10 (12)	<b>Clay (CL)</b> 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)	<b>Clay (CL)</b> 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)	<b>Clay (CL)</b> 5.0-5.3' - reddish brown, mottled strong brown, moist, hard, low plasticity, medium dilatancy		
	7.0				<b>Clay (CL)</b> 5.3-6.0' - pale yellow, mottled black, moist, hard		
	7.5	16.8	SS4SS	5-7-10-12 (17)	<b>Clay (CL)</b> 6.0-6.8' - dark reddish brown, mottled black, moist, hard, black material is in chunks (sand to fine gravel sized)		
	9.5				<b>Clay (CL)</b> 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				<b>Clay (CL)</b> 7.9-8.1' - very dark gray, mottled yellowish red, moist, very stiff		
251.6	12.0	22.8	SS5SS	4-6-10-12 (16)	<b>Clay (CL)</b> 8.1-8.5' - pale yellow, mottled black, moist, hard		
	12.5				<b>Clay (CL)</b> 8.5-8.9' - very dark gray, mottled yellowish red and light gray, moist, very stiff		
	14.5	20.4	SS6SS	10-12-15-18 (27)	<b>Clay (CL)</b> 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				<b>Clay (CL)</b> 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)	<b>Clay (CL)</b> 13.4-14.2' - olive yellow, yellow, black and gray, moist, very stiff, trace medium to coarse sand		
	17.5				<b>Clay (CL)</b> 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 <b>Clay (CL)</b> 17.5' - lost sample		Driller Remark: Didn't have catcher, lost sample.
20							





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)		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									
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											

Driller's Remark: At 26.5' bgs material begins to be harder. At 27.0' it becomes even harder

Soil sampling completed at 15:10 on 7/24/06





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	54.2  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  54.2-57.5' - coarse sand sized white clasts in linear (vertical) feature 54.2-59.2' - gravel sized white clasts  56.4-59.2' - very fine sand sized vugs appearing as darker spots 57.0' - trace weak red mottles  <b>Partially Metamorphosed Siltstone</b> At 57.7' - bluish black, very hard, fresh, no foliations or linear features present  59.2-83.4' - vugs present	R6: 11:15-11:45  Driller Remark: Keep having to stop because of circulation problems. At 54.2-59.2': R-Scale = R5+  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+	45.5' - Fracture, horizontal, smooth, stepped, yellow and dark gold/orange stains, foliated	x		
			10+	45.7-46.1' - Fracture zone, rough, undulating, dark gold/orange, lime, yellow and black stains, undulating and stepped, gray, foliations	x		
			3	46.1-46.5' - Fracture, vertical, rough, undulating, black, yellow and orange/gold stains	x		
			10+	46.5' - Fracture, rough, undulating, black and orange/gold stains, parabolic shaped	x		
			6	46.9' - Fracture, horizontal and vertical, rough, planar, greenish gray and black stains, foliations	x		
60 201.6	59.2  R7NQ 5 ft 84%	44	10+	47.3-48.0' - Fracture zone, rough, undulating, hard white infilling, black stains, foliations	x		
			10+	48.0-48.3' - Fracture, vertical, rough, undulating, hard greenish gray to white infilling, black, greenish gray and red stains	x		
			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	64.2  R8NQ 5 ft 93%	85	2	50.9' - Fracture, horizontal, rough, stepped, hard white infilling	x		
			2	51.7' - Fracture, horizontal, rough, stepped, hard white infilling	x		
			2	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		
			1	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	69.2  R9NQ 5 ft 100%	91	3	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		
			1	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		

# 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

WATER LEVEL: 9.7' 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					
75 186.6	74.2	100	3	56.5' - Fracture, horizontal and horizontal, smooth, stepped, hard white infilling, undulating and planar, foliations		x	x		R10: 08:21-08:30 on 07/26/06
			0	56.9' - Fracture, 20 deg, smooth, planar, hard white infilling		x	x		
	1		57.0-57.3' - Fracture, 70 deg, rough, undulating, hard white infilling, foliations and linear features		x	x			
	2		57.1' - Fracture, horizontal, smooth, planar, hard white infilling		x	x			
	1		57.3' - Fracture, horizontal, smooth, planar, hard white infilling, tightly healed, foliations and linear features= horizontal		x	x			
	2		57.5' - Fracture, 30 deg, rough, undulating, hard white infilling, foliations and linear features		x	x			
	0		57.7' - Fracture, horizontal, smooth, planar, hard white infilling		x	x			
	1		57.9' - Fracture, 10 deg, rough, planar, hard white infilling		x	x			
	2		58.2' - Fracture, horizontal, rough, planar, hard white infilling		x	x			
	2		58.4' - Fracture, 20 deg, rough, undulating, hard white infilling		x	x			
80 181.6	R11NQ 4.2 ft 100%	100	2	58.5' - Fracture, 20 deg, smooth, undulating, hard white infilling, undulates once (concave)		x	x	SC-1 collected 77.5-78.2'	
			2	59.0-59.1' - Fracture, smooth, stepped, hard white infilling, many angles, foliations on angle		x	x		
			2	59.2-59.7' - Fracture zone, rough, undulating, some hard white infilling, stepped at bottom		x	x		
			3	59.8' - Fracture, horizontal, rough, undulating, hard white infilling		x	x		
85 176.6				60.7' - Fracture, 20 deg, rough, undulating, ground up rock and hard white infilling		x	x		Bottom of Boring at 83.4 ft bgs on 7/26/06 08:50
				61.1' - Fracture, 45 deg, rough, undulating, hard white infilling		x	x		
				61.4' - Fracture, 20 deg, rough, undulating, ground up rock and hard white infilling		x	x		
				61.6' - Fracture, 20 deg, rough, undulating, hard white infilling		x	x		
				62.4' - Fracture, 45 deg, rough, undulating, hard white infilling		x	x		
				62.7' - Fracture, 20 deg, rough, planar, hard white infilling		x	x		
		63.5' - Fracture, 20 deg, rough, planar, hard white infilling		x	x				
		63.7' - Fracture, 20 deg, rough, undulating, hard white infilling, black stains		x	x				
		64.6' - Fracture, 45 deg, rough, undulating, hard white infilling, linear features		x	x				
		64.9' - Fracture, horizontal, rough, undulating, hard white infilling, no linear features		x	x				
90 171.6			65.8' - Fracture, 20 deg, rough, planar, hard greenish gray infilling		x	x			
			66.6' - Fracture, 45 deg, rough, planar, hard greenish gray infilling		x	x			
			67.4' - Fracture, 45 deg, rough, planar, hard greenish gray infilling		x	x			
			67.8' - Fracture, 45 deg, rough, planar, hard greenish gray infilling		x	x			
					x	x			
					x	x			
					x	x			
					x	x			



PROJECT NUMBER:

338884

BORING NUMBER:

BGA-17

SHEET 6 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		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			
95 166.6				68.4' - Fracture, 45 deg, rough, undulating, hard white infilling, no linear features 69.8' - Fractures (2), horizontal, rough, undulating, hard white infilling 70.1' - Fracture (1), horizontal, rough, undulating, hard white infilling 70.5' - Fracture, 45 deg, rough, undulating, hard white infilling 71.8' - Fracture, horizontal, rough, undulating, hard white infilling 72.2' - Fracture, 45 deg, rough, undulating, hard white infilling 72.9' - Fractures, horizontal, rough, undulating 73.0' - Fracture, 20 deg, rough, undulating, hard white infilling 74.8' - Fracture, 30 deg, rough, undulating, hard white infilling 75.4' - Fracture, horizontal, rough, undulating, hard white infilling 75.9' - Fracture, 45 deg, rough, undulating, hard white infilling 77.1' - Fracture, 20 deg, rough, undulating, hard white infilling 77.5' - Fracture, horizontal, rough, undulating, hard white infilling 78.2' - Fracture, horizontal, rough, undulating, hard white infilling 79.8' - Fracture, 20 deg, rough, undulating, hard white infilling 80.6' - Fracture, horizontal, rough, undulating, hard white infilling 80.9' - Fracture, horizontal, rough, undulating, hard white infilling 81.2' - Fracture, horizontal, rough, undulating, hard white infilling 81.7' - Fracture, rough, undulating, hard white infilling 82.3' - Fracture, horizontal and 50 deg, rough, undulating, hard white infilling 83.3' - Fracture, horizontal, rough, undulating, hard white infilling			
100 161.6							
105 156.6							
110 151.6							



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)	<b>Topsoil</b> 0.0-0.2' - grass, gravel <b>Silty Gravel With Sand (GM)</b> 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 <b>Clay (CL)</b> 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 <b>Silt With Sand To Clay (CL)</b> 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 <b>Lean Clay (CL)</b> 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 <b>Clay (CL)</b> 5.5-6.3' - reddish brown, greenish white mottling, dry to moist, very hard, low plasticity, some bedrock pieces, friable <b>Lean Clay (CL)</b> 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)	<b>No Recovery</b> 10.0-12.0'		
	12.0						
	12.5	3.0	SS6SS	50/3 (50/3")	<b>Clay (CL)</b> 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 111%	86	0		X X		



# 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&amp;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

WATER LEVEL: 104 RDS		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			
55 208.5	5 ft 101%  55.4	90	0	52.3-52.4' - Fracture, rough, undulating, circular break, 1/4 deep in to core, complete fracture 53.7-53.9' - Fracture, 45 deg, smooth, undulating	x x			



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 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
	INTERVAL (ft)	RECOVERY (in)						
		#TYPE	6"-6"-6"-6" (N)					
260.4	0.0	15.6	SS1SS	21-15-6-5 (21)	<b>Asphalt</b> 0.0-0.3' - asphalt mixed with fines <b>Gravel With Sand (GM)</b> 0.3-0.9' - gray, dry, loose, looks like a CA-6 fill <b>Clay (CL)</b> 0.9-1.2' - dark reddish brown, dry to moist, very stiff <b>Silty Sand (SM)</b> 1.2-1.3' - pale brown, dry to moist, medium dense, <5% clay <b>Sandy Clay (CL)</b> 2.5-3.4' - light greenish gray and very pale brown, moist, very stiff, little silt <b>Silty Sand (SM)</b> 3.4-4.5' - pale brown, dry to moist, medium dense, little silt, <5% clay <b>Silty Sand (SM)</b> 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'
5 255.4	5.0	16.8	SS3SS	12-27-32-42 (59)	<b>Gravelly Sand (SW-SM)</b> 7.5-8.0' - pale brown, moist, dense, very fine grained, subangular to subrounded, little silt, poorly sorted <b>Fine To Coarse Sand (SP-SM)</b> 8.0-8.5' - light gray, moist, very dense, little silt, laminated <b>Silt (ML)</b> 8.5-9.4' - light gray and light brownish gray, moist, very dense, rapid dilatancy, laminations <b>Silt (ML)</b> 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
10 250.4	10.0	10.8	SS5SS	28-50/4 (50/4")	<b>Clay (CL)</b> 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
15 245.4	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		
				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 			



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	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	
					DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		
40 220.4	R6NQ 5 ft 101%	100	0		XXXXXX XXXXXX		



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	x 			



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BCTA-1</div>
<b>SHEET 5 OF 5</b>	
<div style="font-size: 1.5em; 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: 175.4		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	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		
80 180.4	R14NQ 5 ft 100%	100	0	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

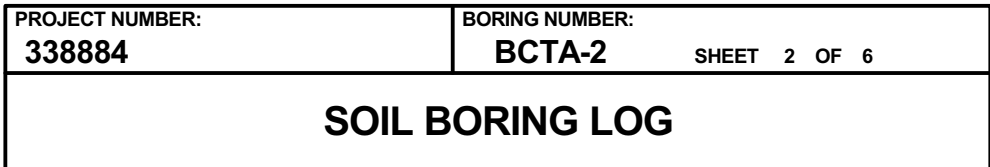
WATER LEVELS : 8.5 ft bgs

START : 7/13/06 16:55

END : 7/18/06 12:17

LOGGER : LH/EM

WATER LEVELS : 0.3 ft bgs		START : 7/13/00 10:33		END : 7/13/00 2:17		LOGGER : L7/E7M		
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)					
261.0					<b>Asphalt</b> 0.0-0.3'			PT-1 collected 2.0-4.0'
	0.8				<b>Base Gravel</b> 0.3-0.8' - fill			
	16.8	SS1SS	2-3-5-7 (8)		<b>Clay (CL)</b> 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			
	2.8							
	3.3				<b>Sandy Clay &amp; Clay (CL)</b> 3.3-4.5' - olive yellow, mottled light gray and reddish brown, moist, stiff, up to 30% fine to medium sand			3.0
5		21.6	SS2SS	5-5-7-10 (12)				
256.0	5.3				<b>Clay (CL)</b> 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							
					<b>Clay (CL)</b> 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				<b>Lean Clay (CL)</b> 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
10		18.6	SS4SS	5-7-8-6 (15)				
251.0	10.3							
	10.8				<b>Fat Clay (CH)</b> 10.8-11.7' - olive yellow, mottled light gray and light red, dry to moist, very stiff, high plasticity, no dilatancy			2.0-2.75
	22.2	SS5SS	3-6-14-20 (20)		<b>Clay (CL)</b> 11.7-12.6' - reddish brown, moist, very stiff, rapid dilatancy, trace (<5%) very fine and coarse sand			
	12.8							
	13.3				<b>Clay (CL)</b> 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				<b>Clay (CL)</b> 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				<b>Clay (CL)</b> 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. 1



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

DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS			
		RQD (%)	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.			
25 236.0	23.8' R1NQ 0.3 ft 67% 24.5' R2NQ 0.7 ft 86%	0	0		<b>Sandstone</b> 23.5-23.8' - very dark gray, mottled reddish black and pale yellow, very soft to soft, subangular to subrounded, well sorted, highly weathered, very fine to fine grained, very thin beds	Rock coring began at 10:30 on 7/14/06 R1: 10:33-10:40 on 7/14/06 At 23.5-24.5': R-Scale = R0 R2: 11:10-11:15 R3: 11:37-11:55 At 24.5-27.0': R-Scale = R0-R1			
			3		<b>Siltstone</b> At 23.8' - dark reddish brown, mottled reddish black and olive yellow, very soft, highly weathered 24.5-27.0' - reddish black and greenish gray mottling 25.3-25.5' - clay seam, 0.25' thick, medium stiff to stiff, friable	At 27.0-28.4': R-Scale = R3			
			2						
	R3NQ 5 ft 106%	0	1						
			0						
			10+		<b>Sandstone</b> 27.0-28.4' - dark reddish brown, soft, medium bedding, highly weathered	At 28.4-34.5': R-Scale = R0-R1			
30 231.0	29.5		10+		<b>Siltstone</b> 28.4-34.9' - dark reddish brown, mottled reddish black and olive yellow, very soft 28.4-34.5' - highly weathered 29.0-29.3' - clay seam, 0.3' thick, hard, friable 29.9-30.9' - clay seam, with breaks, stiff, 0.95' thick 31.5-32.1' - clay seam, with breaks, stiff, 0.6' thick 32.9-33.3' - clay seam, with breaks, stiff, 0.4' thick	R4: 12:08-12:15 and 13:02-13:07			
			10+						
	R4NQ 5 ft 97%	0	10+						
			10+						
			1		33.7' - Fracture, horizontal, smooth, planar				
35 226.0	34.5		1		34.6' - Fracture, horizontal, smooth, planar	R5: 09:36-09:42 and 09:47-09:50 on 7/18/06			
			0		<b>Sandstone</b> 34.9-40.4' - dark reddish brown to dark reddish gray, soft, medium bedding, subangular to subrounded, well sorted, fresh, very fine sand to fine grained sand 34.9-36.1' - reddish black mottling	At 37.4': R-Scale = R4-R5			
			0						
			0		38.2-38.3' - 30-40% silt lense				
40 221.0	39.5		0			R6: 10:00-10:07			
			1						
			1		<b>Siltstone</b> 40.4-41.5' - dark reddish brown, mottled reddish black, soft, laminated to very thin bedding, fresh, 40% very fine sand, trace fine to medium grained sand	At 41.5': R-Scale = R2			
	R6NQ 5 ft 97%	90	4						
			0		42.1-42.1' - Fracture (3), horizontal, rough, planar 42.3' - Fracture, horizontal, rough, planar				



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

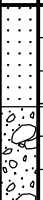
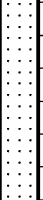
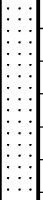
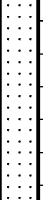
ORIENTATION : Vertical

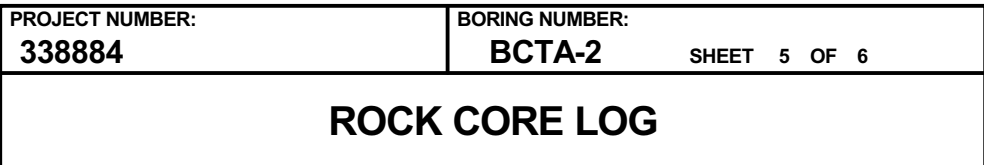
WATER LEVELS : 8.5 ft bgs

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		<b>Sandstone</b> 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 <b>Conglomerate</b> 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 48.3' - Fracture, horizontal, smooth, planar 48.4' - Fracture, horizontal, smooth, planar				
			2	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.				
50 211.0	49.5		0			<b>Sandstone</b> 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  53.1-54.5' - becomes coarse grained	R8: 10:28-10:36	
		0						
	R8NQ 5 ft 98%	98	0				At 51.6': R-Scale = R2-R3	
			0					
			0					
			0					
55 206.0	54.5		0			<b>Shale</b> 54.5-59.2' - dark gray, white, and reddish brown, soft, subrounded, poorly sorted, very fine to coarse grained 54.9-58.2' - 0-30% fine gravel	R9: 10:40-10:47	
		0						
	R9NQ 5 ft 105%	100	0				At 56.2': R-Scale = R2	
			0					
			0					
			0					
60 201.0	59.5		0			<b>Sandstone</b> 59.2-67.1' - dark gray, white, and reddish brown, soft, medium bedding, subrounded, poorly sorted, fresh, very fine to coarse grained sand	R10: 10:52-11:01	
		0						
	R10NQ 5 ft 100%	100	0				At 60.8': R-Scale = R3	
			0					
			0					
			0					



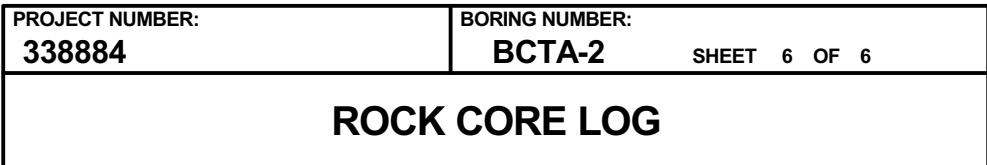
LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 1



LOCATION : (NAD 27) (687760.2 N, 2013343.4 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH/EM

Rev. 1



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  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)				
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 10.3	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
	13.6				Begin Rock Coring at 13.6 ft bgs See the next sheet for the rock core log		
15							
245.3							





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 x				



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-3

SHEET 3 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

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		
	R6NQ 5 ft 102%	81	0					.	
			3						x x



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

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		PP (TSF)		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
		#TYPE									
262.8	0.0						<b>Topsoil</b> 0.0-0.2'				
		19.2	SS1SS	2-5-6-7 (11)			<b>Clay (CL)</b> 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				
	2.0										
	2.5						<b>Clay (CL)</b> 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				PT-1 collected 3.0-5.0'
	4.5										
5											
257.8	5.0						<b>Clay (CL)</b> 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				
	7.0										
	7.5						<b>Clay (CL)</b> 7.5-8.7' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, very stiff, trace roots				PT-2 collected 8.0-10.0'
	9.5										
10											
252.8	10.0						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 12.5-13.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots				
	14.5						<b>Fat Clay (CH)</b> 13.8-14.1' - brownish yellow, red mottling, moist, stiff		1.8		
15											
247.8	15.0						<b>Fat Clay (CH)</b> 15.0-16.1' - yellowish red, yellow mottling, moist, soft to medium stiff, becomes clay with depth				
		21.0	SS7SS	5-9-16-18 (25)			<b>Clay (CL)</b> 16.1-16.8' - reddish brown, mottled light greenish gray, white and brownish yellow, moist, trace roots		2.2		
	17.0										
	17.5						<b>Clay (CL)</b> 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											



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-4

SHEET 2 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

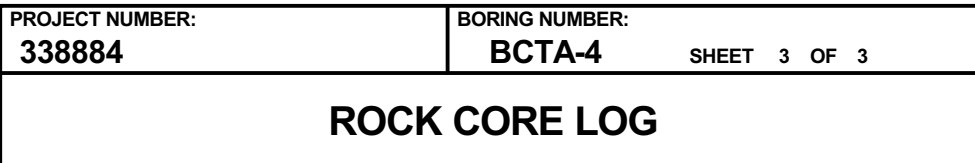
WATER LEVELS : 19.0 ft bgs

START : 7/20/06 14:30

END : 7/21/06 12:04

LOGGER : LH

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
242.8	20.0	17.0	SS9SS	15-30-50/5 (80/11")	Clay (CL) 20.0-21.8' - reddish brown, mottled reddish black and light greenish gray, moist, hard	4.5+	PT-4 collected 23.0-25.0' Offset: 9.6' N53W of BCTA-4 Lab Results USCS: CL w/Sand	
	22.0							
	22.5	22.8	SS10SS	28-38-39-45 (77)	Clay (CL) 22.5-24.4' - reddish brown, mottled reddish black and light greenish gray, moist, hard, laminated horizontal beds 23.6-23.8' - fractured area in hard clay			
	24.5							
25								
237.8	25.0	21.6	SS11SS	15-20-25-30 (45)	Clay (CL) 25.0-26.8' - reddish brown, mottled light olive gray, olive, light greenish gray and dark reddish gray, moist, very stiff to hard, laminated in areas			
	27.0							
	27.5	24.0	SS12SS	5-10-38-50/4 (48)	Clay (CL) 27.5-29.5' - reddish brown, mottled light olive gray, olive, light greenish gray and dark reddish gray, moist, very stiff to hard, laminated in areas			
	29.5							
30								
232.8	30.0	6.0	SS13SS	50/6 (50/6")	Clay (CL) 30.0-30.5' - reddish brown, mottled reddish black, light greenish gray, and olive yellow, moist, hard, laminated			
	32.0							
	32.5	1.2	SS14SS	50/2 (50/2")	Clay (CL) 32.5-32.6' - reddish brown, moist, hard, laminated		Soil sampling completed at 10:12 on 7/21/06	
	32.7							
	33.4				Begin Rock Coring at 33.4 ft bgs See the next sheet for the rock core log			
35								
227.8								



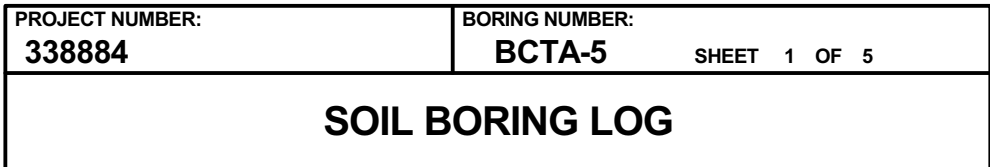
LOCATION : (NAD 27) (687562.0 N, 2013436.5 E)

DRILLING CONTRACTOR : D. Hedges, S&ME

ORIENTATION : Vertical

LOGGER : LH

Rev. 1



LOGGER : EM

Rev. 1



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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
10.4	R1NQ 4 ft 103%	50	3	10.4' - Fracture, <5 deg, rough, undulating, black stains	x	<b>Siltstone</b> At 10.4' - dark reddish brown 10.4-11.6' - highly weathered 10.4-14.4' - greenish gray and black mottling, 15% fine sand 10.6-10.7' - clay seam, 0.15' thick 10.7-11.3' - voids 11.3-11.7' - very soft to soft, white clasts ~0.01' thick, hardness increases down core 11.6-19.5' - slightly weathered	Rock coring began at 11:35 on 7/31/06 R1: 11:35-11:53 on 7/31/06 At 10.6-10.7': PP: 1.0 tsf At 11.2': R-Scale = R1
			5	10.7' - Fracture, horizontal and <5 deg, rough, undulating	x		
			0	10.8' - Fracture, horizontal and <5 deg, rough, undulating	x		
			0	11.1' - Fracture, horizontal and <5 deg, rough, undulating	x		
			0	11.2' - Fracture, horizontal and <5 deg, rough, undulating	x		
14.4	R2NQ 5 ft 100%	94	0	11.3' - Fracture, horizontal and <5 deg, rough, undulating	x	14.4-19.4' - trace greenish gray mottling, soft, 10% fine to medium sand gradually increases to 30-35% down core with 10% coarse grained sand (subrounded grains)	At 13.6': R-Scale = R2  R2: 08:00-08:16 on 8/1/06  At 15.5': R-Scale = R3
			1	11.6' - Fractures (2), horizontal and <5 deg	x		
			0	14.8' - Fracture, 70 deg, rough, undulating, 10-15% limonite	x		
			0		x		
			2		x		
19.4	R3NQ 5 ft 96%	85	1	18.1' - Fracture, 20 deg, smooth, undulating, 20% black stains, 10% limonite	x	19.4-22.0' - soft, 30% fine to medium sand that gradually increases to 60% fine to medium sand, 10% coarse seen in 0.05' bands at 20.2' and 21.4' at 20 degree angles 19.5-24.4' - moderately weathered	At 18.6': R-Scale = R3  R3: 08:40-09:00  At 21.2': R-Scale = R3
			2	18.3' - Fracture, 20 deg, smooth, undulating, 20% black stains, 10% limonite	x		
			1	19.0' - Fracture, 35 deg, smooth, undulating, 20% black stains	x		
			2	20.0' - Fracture, 20 deg, smooth, undulating, white	x		
			1	20.4' - Fracture, 10 deg, smooth, undulating	x		
24.4	R4NQ 5 ft 103%	100	1	21.0' - Fracture, 20 deg, smooth, undulating	x	22.0-24.1' - up to 40% coarse grained sand and small pebbles, subrounded grains, some fine grained rip up clasts scattered throughout  23.9-24.1' - hard 24.1-24.4' - very soft, very fine to fine grained, large pebble sized voids or weathering 24.4-29.4' - dusky red, greenish gray mottling, soft, 10% fine grained sand 24.4-46.1' - fresh 25.7-26.2' - up to 15-20% fine to medium grained sand	At 22.5': R-Scale = R3-R4  R4: 09:05-09:21  At 26.0': R-Scale = R2 SC-1 collected 26.7-27.6' At 27.6': R-Scale = R3
			2	21.7' - Fracture, 40 deg, rough, undulating	x		
			10+	22.9' - Fracture, <5 deg, rough, undulating	x		
			0	23.3-23.5' - Fracture zone, 60 deg and 5 deg, upper surface rough, lower surface smooth; undulating, lower surface <5 deg, undulating, smooth	x		
			0	23.6' - Fracture, 60 deg, smooth, undulating	x		
29.4			0	24.1' - Fracture, 45 deg, smooth, undulating, V-shaped, also contact between coarse material with fine material	x		R5: 09:30-09:47 At 30.0': R-Scale = R3-R4
			0		x		
			0		x		
			0		x		
			0		x		
30			0		x		
213.5							



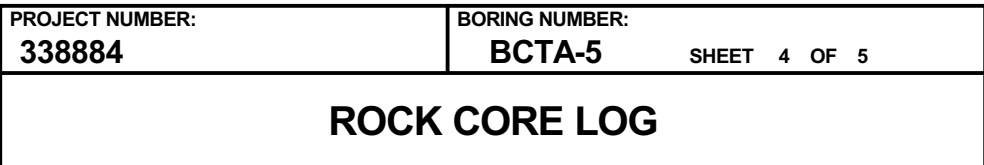


<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BCTA-5</div>
<b>SHEET 3 OF 5</b>	
<div style="font-size: 1.5em; font-weight: bold;">ROCK CORE LOG</div>	

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 XXXX			



LOGGER : EM

Rev. 1



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	X 





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+		<b>Sandstone</b> 10.2-10.7' - dusky red, very soft, very fine sand to fine sand, highly weathered, 35% fines (silt)	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+		12.9-14.5' - Sandy silt seam		<b>Siltstone</b> 10.7-12.0' - dusky red, trace green and black mottling, very soft, highly weathered, very fine grained 10.7-11.5' - clay seam
			10+				<b>Clay (CL)</b> 12.0-12.6' - highly weathered, some bedrock pieces
			10+				<b>Siltstone</b> 12.6-12.9' - dusky red, trace green and black mottling, very soft, highly weathered, very fine grained
			10+				<b>Sandy Silt (ML)</b> 12.9-14.5' - highly weathered
20 219.8	R2NQ 5 ft 90%	86	0		<b>Sandstone</b> 14.5-15.0' - dark gray, black mottling, soft, very fine sand to fine sand, highly weathered	R2: 08:10-08:23 on 7/27/06	
			2		<b>Siltstone</b> At 15.0' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh		
			2		20.0-22.4' - soft		
			0		<b>Sandstone</b> 22.4-23.8' - white, dark gray, and dark greenish gray, mottled dark reddish brown and greenish gray, soft, medium bedding, subangular to subrounded, fresh, very fine to fine sand, well sorted, trace medium sand		
			0				<b>Siltstone</b> At 23.8' - dark reddish brown, mottled greenish gray and reddish black, very soft to soft, fresh, gravel sized white clasts throughout 25.0-30.0' - coarsening with depth 25.0-27.9' - very soft
25 214.8	R3NQ 5 ft 101%	100	0		27.9-30.0' - soft, 0-30% very fine to fine sand	R4: 09:03-09:17 At 25.0-30.0': R-Scale = R2	
			0				
			0				
			0				
			0				
30 30.0	R4NQ 5 ft 100%	100	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

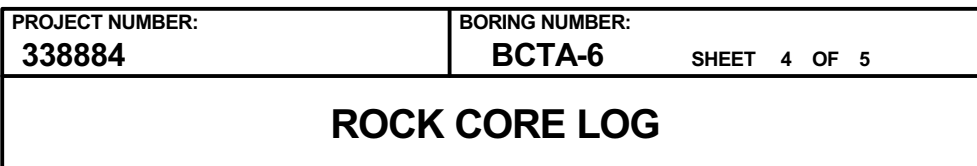
WATER LEVELS : 9.0 ft bgs

START : 7/26/06 14:40

END : 7/27/06 15:46

LOGGER : JS/LH

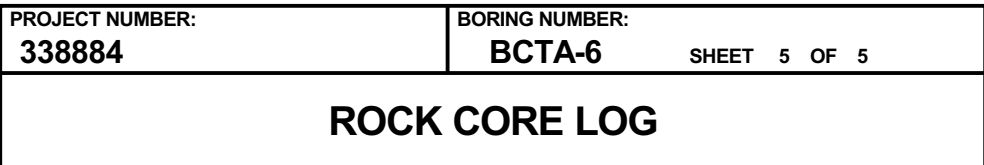
WATER LEVEL: 30.00		DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY		COMMENTS	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	R Q D (%)	FRACTURES PER FOOT		DESCRIPTION	ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, 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' - &lt;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' - &lt;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>	R5: 09:26-09:30 and 09:31-09:39		
			4	30.8' - Fracture, 10 deg, rough, undulating				
			4	31.2' - Fracture, horizontal, rough, undulating				
			1	31.3-31.4' - Fractures (2), horizontal and 45 deg, rough, undulating				
			1	31.5' - Fracture, 45 deg, rough, planar				
	40 199.8	R6NQ 5 ft 93%	93	0		32.2' - Fracture, horizontal, 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	
				0		32.3' - Fracture, horizontal, rough, undulating		
				0		32.3' - Fracture, horizontal, rough, undulating, contact between sandstone and siltstone		
				0		33.0' - Fracture, horizontal, rough, undulating		
				0		33.9' - Fracture, 45 deg, rough, undulating		
45 194.8	R7NQ 5 ft 103%	84	10+	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			
			1					
			0	40.3' - Fracture, horizontal, rough, planar				
			0	40.3-40.9' - Fracture zone, rough, undulating				
			0					
	50	R8NQ 5 ft 103%	99	0	41.7' - Fracture, horizontal, rough, undulating	R7: 11:57-12:08		
				0				
				0				
				1				
				0				
50			0	40.0-50.0' - moderately weathered	R8: 12:15-12:28			
			0					
			0					
			0	41.4-41.6' - trace gravel sized white clasts				
			0	43.0-45.0' - gravel sized white clasts				
50			0	47.3-47.8' - coarse sand and fine gravel sized white clasts	At 48.2-48.3': R-Scale = R0			
			0					
			0					
			1	48.1' - Fracture, horizontal, rough, undulating				
			0	48.1-48.3' - laminated bedding				
50			0	48.2-48.3' - clay seam, very soft, 0.08' thick, friable				
			0					
			0					
			0					
			0					



LOGGER : JS/LH

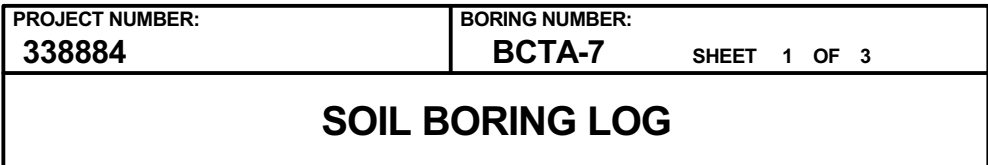
Rev. 1





LOGGER : JS/LH

Rev. 1



LOGGER : AT

Rev. 1



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-7

SHEET 2 OF 3

# 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

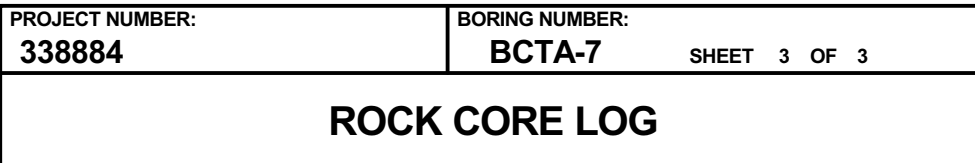
WATER LEVELS : 3.2 ft bgs

START : 8/2/06 10:32

END : 8/2/06 16:40

LOGGER : AT

WATER LEVEL: 32.00		START: 8/2/06 10:10		END: 8/2/06 10:10		ELEVATION	
DEPTH AND ELEVATION BELOW SURFACE (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		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		
15 217.8	10.2	R1NQ 4.8 ft 67%	48	0		<b>Siltstone</b> At 10.2' - dusky red, trace green and purple mottling, soft, 10% very fine to fine sand 10.2-15.0' - slightly weathered to moderately weathered	Rock coring began at 15:10 on 8/2/06 R1: No time recorded
	1						
	1			11.8-12.1' - Fracture	At 12.3': R-Scale = R2-R3 (performed during rock core logging) At 13.0': R-Scale = R2-R3 (performed during rock core logging) At 14.0': R-Scale = R2-R3 (performed during rock core logging)		
	0			12.5' - Fracture, 25 deg, smooth, undulating			
				13.5' - Fracture, 10 deg, smooth, undulating			
	15.0	R2NQ 5 ft 95%	69		14.2' - Fracture, 10 deg, smooth, undulating	15.0-15.7' - dark reddish brown, 10% very fine to fine sand, mottled purple to black, reddish black, and white, harder than matrix 15.0-20.0' - moderately weathered 15.7-40.0' - dark reddish brown, green mottling, 10% very fine sand, 10% white clasts, harder than matrix 17.2-17.5' - clay seam 17.9-18.2' - clay seam	At 14.7': R-Scale = R2-R3 (performed during rock core logging) R2: No time recorded  At 16.8': R-Scale = R3-R4 (performed during rock core logging) At 17.2-17.5': R-Scale = R0 At 17.9-18.2': R-Scale = R0
					14.7' - Fracture, 30 deg, smooth, undulating		
				3	15.0-15.1' - Fracture		
				0	15.2' - Fracture, horizontal, smooth, undulating		
				0	15.3' - Fracture, horizontal, smooth, undulating		
20 212.8	20.0	R3NQ 5 ft 103%	92		15.9' - Fracture, horizontal, smooth, undulating	20.0-38.8' - fresh	At 19.0': R-Scale = R3-R4 (performed during rock core logging) R3: 8:35-8:42
	1			20.4' - Fracture, 25 deg, smooth, undulating, 0.02' relief, loose	21.5-21.6' - soft to hard, large irregular shaped green mottling		
	2			21.4' - Fracture, 20 deg, smooth, undulating, fairly tight			
	1			21.5' - Fracture, 10 deg, smooth, undulating, loose			
	25.0	R4NQ 5 ft 98%	98	0	22.3' - Fracture, 20 deg, smooth, undulating, fairly tight	26.0-26.9' - soft to hard, 25% very fine to fine sand, harder than overlying and underlying material	SC-1 collected 23.6-24.7'  R4: 8:49-9:09  At 26.9': R-Scale = R2-R3
				0			
				0			
				1	26.5' - Fracture, 60 deg, rough, planar, secondary fracture 10 deg, smooth and undulating		
				1	27.3' - Fracture, 65 deg, rough, planar, secondary fracture horizontal, smooth and undulating		
30	30.0			0	28.5' - Fracture, horizontal, rough, undulating, 0.02' relief		



LOGGER : AT

Rev. 1



PROJECT NUMBER:

**338884**

BORING NUMBER:

**BCTA-8**

SHEET 1 OF 3

# SOIL BORING LOG

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

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

ORIENTATION : Vertical

WATER LEVELS : 2.1 ft bgs

START : 8/10/06 08:23

END : 8/10/06 13:29

LOGGER : 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)				
227.0	0.0	18.0	SS1SS	1-1-2-0 (3)	Clay (CL) 0.0-2.0' - reddish yellow, moist, very soft, low plasticity, rapid dilatancy		PT-1 collected 6.0-8.0'
	2.0						
	2.5	16.8	SS2SS	2-2-3-5 (5)	Clay (CL) 2.5-3.5' - reddish yellow, moist, soft, low to medium plasticity, slow to rapid dilatancy, 20% very fine to fine sand		
5	4.5				Sandy Silt (ML) 3.5-3.9' - reddish yellow, moist, soft, 40% very fine to medium sand, black organics		
222.0	5.0	16.8	SS3SS	17-22-27-50/4 (49)	Sandy Silt (ML) 5.0-5.4' - reddish yellow, moist, soft, 40% very fine to medium sand, black organics		
	7.0				Clay (CL) 5.4-6.4' - dark reddish brown, dry to moist, stiff to hard, low to medium plasticity, slow to rapid dilatancy		
	7.5	7.2	SS4SS	36-26-20-25 (46)	Clay (CL) 7.5-8.1' - dark reddish brown, dry to moist, stiff to hard, low to medium plasticity, slow to rapid dilatancy		
	9.5						
10							
217.0	10.0	10.8	SS5SS	45-50/3 (50/3")	Clay (CL) 10.0-10.9' - dark reddish brown, mottled greenish gray, dry to moist, hard, slow to rapid dilatancy		
	12.0						
	12.5	4.8	SS6SS	50/4 (50/4")	Clay (CL) 12.5-12.9' - dark reddish brown, mottled greenish gray, dry to moist, hard, slow to rapid dilatancy		
	14.5						
15							
212.0	15.0	0.5	SS7SS	50/0.5 (50/0.5")	Clay (CL) 15.0-15.1' - dark reddish brown, mottled greenish gray, dry to moist, hard, slow to rapid dilatancy Begin Rock Coring at 15.1 ft bgs See the next sheet for the rock core log		
	15.1						



PROJECT NUMBER:

338884

BORING NUMBER:

BCTA-8

SHEET 2 OF 3

# ROCK CORE LOG

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

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			
20 207.0	15.1	R1NQ 4.4 ft 98%	93	1	16.1' - Fracture, 50 deg, rough, undulating, greenish white staining, 0.2' relief	x x			



<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BCTA-8</div>
<b>SHEET 3 OF 3</b>	
<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
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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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						<b>Clay (CL)</b> 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:

338884

BORING NUMBER:

BCA-1

SHEET 2 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

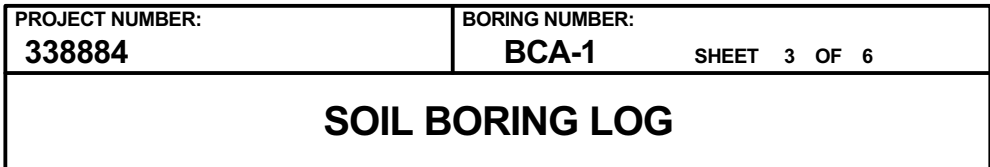
WATER LEVELS : 26.6 ft bgs

START : 8/2/06 08:11

END : 8/3/06 09:14

LOGGER : LH

DEPTH BELOW EXISTING GRADE (ft)		INTERVAL (ft)		RECOVERY (in)		STANDARD PENETRATION TEST RESULTS		SOIL DESCRIPTION		SYMBOLIC LOG		COMMENTS	
				#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	
236.2	20.0												
		14.0	SS9SS	2-2-2-3 (4)							0.5		
	22.0												
25													
231.2	25.0												
		14.0	SS10SS	2-3-3-3 (6)							0.9		
	27.0												
30													
226.2	30.0												
		0.0	SS11SS	3-4-4-4 (8)									
	32.0												
35													
221.2	35.0												
		9.0	SS12SS	11-24-26-36 (50)									
	37.0												
40	39.5												



LOGGER : LH

Rev. 1



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	----	<b>Sandstone</b> 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 <b>Siltstone</b> 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	----		R1: 14:36-14:46 on 8/2/06
			1	47.0' - Fracture, 45 deg and horizontal, smooth, undulating	----		
			1	47.8' - Fracture, horizontal, rough, undulating	----		At 48.2': R-Scale = R1
			1	48.6' - Fracture, horizontal, rough, undulating	----		
50 206.2	50.3		2	50.3' - Fracture, horizontal and 45 deg, rough, planar	----		R2: 14:57-15:05
	R2NQ 5 ft 98%	72	2		----		
			5		----		
			3	52.1' - Fracture, horizontal, smooth, planar, black stains	----		
			0	52.4' - Fracture, rough, planar, black stains	----		At 53.5': R-Scale = R3
			0	52.6' - Fracture, rough, planar, black stains	----		
55 201.2	55.3		0		----		R3: 15:12-15:21
	R3NQ 5 ft 101%	86	0		----		At 56.1': R-Scale = R3-R4
			0		----		
			2	57.2-57.8' - Series of vertical and angled fractures, some tightly healed, rough, undulating	----		
			0	58.4' - Fracture, 60 deg, slickensided, undulating, black stains	----		
			4	58.9' - Fracture, horizontal, rough, planar 59.2' - Fracture, horizontal, rough, planar, black stains	----		
60 196.2	60.3		8	59.7-59.8' - Fractures (2), horizontal, rough, planar, black stains	----	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	R4: 15:28-15:40
	R4NQ 5 ft 90%	68	3	60.3-60.6' - Fractures (4), horizontal, rough, planar, black stains	----		
			0	60.6' - Fracture (0), rough, planar, black stains	----		
			0	60.8-60.9' - Fractures (2), 45 deg, rough, planar, black stains	----		
			0	61.1-61.2' - Fractures (2), 40 deg, rough, planar, black stains	----		
			0	62.0-62.2' - Fractures (2), horizontal, rough, planar, black stains	----		
65 191.2	65.3				----		

# 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

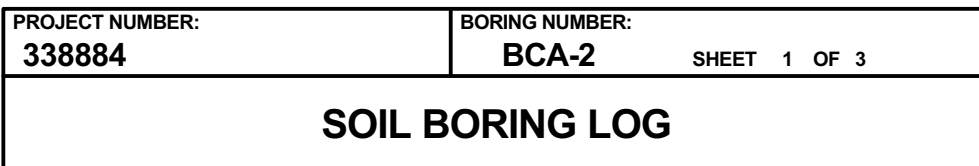
START : 8/2/06 08:11

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	<p>69.1' - Contact between siltstone and sandstone, horizontal, smooth, planar, slightly gradational, tightly healed 69.4' - Fracture, horizontal, rough, undulating 69.8' - Fracture, horizontal, rough, planar</p>	<p>65.3-69.5' - soft</p>	R5: 15:47-15:57	
				0				
				0				
				0				
				1				
75 181.2	75.3	R6NQ 5 ft 64%	44	0	<p>71.8-72.0' - Fracture, rough, undulating 72.2-72.4' - Fracture, rough, undulating</p> <p>72.9' - Contact between siltstone and sandstone, horizontal, rough, undulating 73.0-73.5' - Fractures (2), rough, undulating</p>	<p><b>Sandstone</b> 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</p>	At 70.1': R-Scale = R5 R6: 16:28-16:35	
				1				
				3				
								
80 176.2	80.3	R7NQ 5 ft 98%	92	2	<p>75.4' - Fracture, horizontal and vertical, rough, undulating 76.3-76.4' - Fractures (2), 30 deg, rough, planar 76.8' - Fractures (2), horizontal, rough, planar</p>	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	<p>80.0' - Fracture, horizontal and 10 deg, rough, undulating 80.9' - Fracture, rough, undulating</p> <p>82.6' - Contact between siltstone and sandstone</p> <p>84.3' - Fracture, 35 deg, rough, undulating</p>	<p><b>Sandstone</b> 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</p>	R8: 08:16-08:23	
				0				
				0				
				1				
				0				





LOGGER : AT

Rev. 1





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

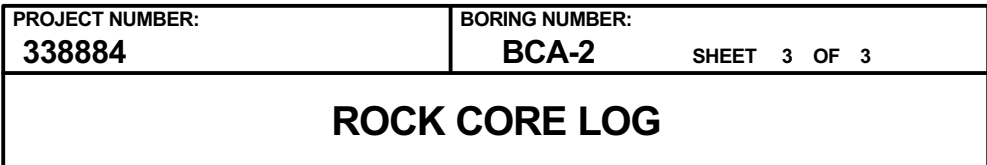
WATER LEVELS : 2.7 ft bgs

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	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.	
10 234.4	7.8 R1NQ 1.7 ft 97%	68	0	x x			



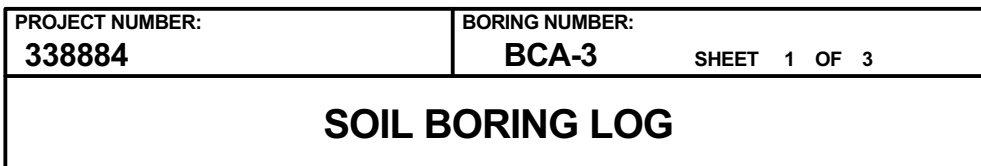
LOCATION : (NAD 27) (688236.2 N, 2013338.7 E)

DRILLING CONTRACTOR : R. Norwood, S&ME

ORIENTATION : Vertical

LOGGER : AT

Rev. 1



LOGGER : LH/JS/AT

Rev. 1



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	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			
5 257.6	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

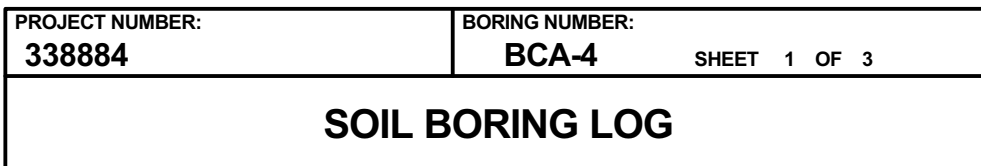
WATER LEVELS : 6.6 ft bgs

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%  25.3	98	0	21.8' - Fracture, 20 deg, rough, undulating		21.6-21.7' - laminated bedding <b>Sandstone</b> At 21.7' - white, dark gray, and dark greenish gray, soft, massive bedding, very fine sand to medium sand, angular to subrounded, fresh	R6: No time recorded
			1	24.1' - Fracture, 30 deg, rough, undulating		21.7-22.4' - 20% coarse grained	
			1	24.9' - Fracture, rough, undulating		23.2-23.4' - 20% coarse grained	
			0			24.2-25.0' - greenish gray mottles	At 26.8': R-Scale = R3-R4
			1			24.4-24.9' - 20% coarse grained	
			2	27.2' - Fracture, 50 deg		25.3-26.5' - mottled dark gray to dark brown, soft to hard, well sorted	
		74	6	27.9' - Fracture, 60 deg, rough, undulating		26.5-27.1' - soft to hard, fine sand to coarse sand, rust colored mottling	At 29.6': R-Scale = R2
			6	28.2' - Fracture, horizontal, rough, undulating		27.4-28.2' - soft to hard, fine sand to medium sand, poorly graded	
			0	28.4-28.6' - Fracture zone (3), smooth, undulating		27.9-28.1' - rust colored mottling	
30 232.6	30.3		0	28.7' - Fracture, 5 deg, rough, undulating, gray stains		28.2-28.2' - clay and sandstone pieces	R7: No time recorded on 07/27/06
			1	28.8' - Fracture, horizontal, smooth, undulating		28.3-28.6' - 5% irregular white clasts harder than matrix	
			0	29.2' - Fracture, 5 deg, smooth, undulating			
			1	31.0' - Fracture, smooth to rough, stepped		30.3-35.5' - green and purple mottling, very fine to fine grained, 10-15% mottles in scattered threads	At 34.0': R-Scale = R2
			0				
			1	32.4' - Fracture, 10 deg, some white infilling			
		100	1	33.5' - Fracture, horizontal, some white infilling			R8: No time recorded
			1				
			0				
35 227.6	35.3		0			35.5-40.3' - mottled green, 25-30% fine sand, harder in sandy areas	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
			0				
			0				
		100	0				At 38.6': R-Scale = R3-R4
			0				
			0				
40 222.6	40.3		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. 1



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  								



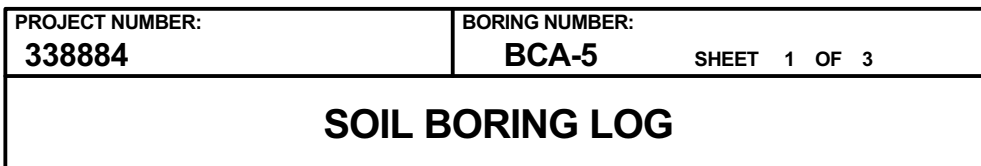


<b>PROJECT NUMBER:</b> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">BCA-4</div>
<b>SHEET 3 OF 3</b>	
<div style="border: 1px solid black; padding: 5px; font-size: 1.2em; font-weight: bold;">ROCK CORE LOG</div>	

PROJECT : PEC COLA, New Hill, NC	LOCATION : (NAD 27) (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
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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			
40 222.9	40.2	90	2	34.4-34.6' - Fracture, 60 deg, rough, undulating	x x	35.6-35.9' - white clasts 35.9-36.2' - very soft, laminated bedding 36.2-37.7' - soft	R5: 14:25-14:33  At 37.8-38.2': R-Scale = R0-R1 First water level = 6.8' bgs taken 8/1/06 at 16:14; second water level = 8.1' bgs taken 8/2/06 at 08:55  R-Scale performed after drilling on stored samples
			1	34.5' - Fracture, horizontal, rough, undulating 36.0' - Fracture, 30 deg, rough, undulating 36.2' - Fracture, horizontal, rough, undulating 36.7' - Fracture, 30 deg, smooth, stepped	x x x x x x x x x x		
			2		x x x x x x x x x x		
			2	38.3' - Fracture, horizontal, rough, undulating	x x x x x x x x x x		
			0		x x x x x x x x x x		
45 217.9						Bottom of Boring at 40.2 ft bgs on 8/1/06 14:33	
50 212.9							
55							



LOGGER : JS/AT

Rev. 1



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	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			
7.6	R1NQ 2.4 ft 102%	100	0	8.7' - Fracture, 5 deg, rough, undulating, black streaks	x x			





<b>PROJECT NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">338884</div>	<b>BORING NUMBER:</b> <div style="font-size: 1.2em; font-weight: bold;">BCA-6</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) (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

WATER LEVELS : 4.9 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)	#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		
245.4	0.0	3.6	SS1SS	13-16-10-12 (26)	<b>Sandy Silt (ML)</b> 0.0-0.2' - yellowish brown, dry to moist, hard, 30% very fine to fine sand, fine to coarse gravel		
	2.0						
	2.5	8.4	SS2SS	5-5-6-8 (11)	<b>Sandy Silt (ML)</b> 2.5-3.2' - yellowish brown, dry to moist, soft, 30% very fine to fine sand, fine to coarse gravel		
	4.5						
5							
240.4	5.0	13.2	SS3SS	2-2-4-6 (6)	<b>Clay (CL)</b> 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						
	7.5	12.0	SS4SS	7-14-17-21 (31)	<b>Clay (CL)</b> 7.5-7.9' - grayish brown, moist, low to medium plasticity, slow to rapid dilatancy, black organic layer, root casts <b>Clay (CL)</b> 7.9-8.5' - reddish brown, dry to moist, hard, low to medium plasticity, slow to rapid dilatancy		
10							
235.4	10.0	10.8	SS5SS	15-22-50/2 (72/8")	<b>Clay (CL)</b> 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						
	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			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
15 230.4	11.5 R1NQ 4 ft 79%	38	1	12.1' - Fracture, 25 deg, smooth, undulating, dark grayish black stains	x x x	<b>Siltstone</b> At 11.5' - dark reddish brown, 15% green mottling, 10% very fine to fine sand	Rock coring began at 14:50 on 8/3/06 R1: No time recorded on 8/4/06
			2	13.0' - Fracture, 20 deg, smooth, undulating	x x x	11.5-15.7' - moderately weathered	At 11.5-19.4': R-Scale = R0-R1
			3	13.4' - Fracture, 10 deg, smooth, undulating, dark grayish black stains	x x x	13.0-13.1' - clay seam	
				13.6' - Fracture, 5 deg and 60 deg, smooth, undulating	x x x	13.5-15.0' - hard, much harder (less weathered)	
				13.8' - Fracture, 30 deg, smooth, undulating	x x x		
				14.2' - Fracture, 10 deg, smooth, undulating	x x x	15.0-15.5' - soft	
	15.5				x x x		
			1	15.9' - Fracture, 5 deg, smooth, undulating	x x x	15.7-19.4' - highly weathered	R2: No time recorded
			10+		x x x	15.7-15.8' - clay seam	
				17.3-17.6' - Fracture zone, very soft	x x x	16.4-16.7' - clay seam	
			0		x x x	16.8-17.3' - clay seam	
		20	0		x x x		
			1		x x x		
20 225.4	20.5		3	19.4' - Fracture, 25 deg, smooth, undulating	x x x	19.2-19.7' - fining upward sequence	
				19.5' - Fracture, 5 deg, smooth, undulating	x x x	25-60% sand	
				19.7' - Fracture, 15 deg, rough, undulating	x x x	19.4-19.7' - slightly weathered	At 20.1': R-Scale = R2
				20.4-20.5' - Fracture zone, rough, planar, sample crushed - brittle	x x x	<b>Sandstone</b>	R3: No time recorded
			10+	20.5' - Fracture, horizontal, rough, planar	x x x	19.7-20.7' - multicolored, soft to hard, very fine sand to coarse sand, poorly sorted, slightly weathered, some light brown mottling	
			0		x x x	<b>Siltstone</b>	
		100	0		x x x	20.7-20.9' - dark reddish brown, 15% green mottling, slightly weathered, 10% very fine to fine sand	
			0		x x x	<b>Sandstone</b>	At 23.5': R-Scale = R2-R3
					x x x	20.9-26.3' - multicolored, soft to hard, very fine sand to coarse sand, poorly sorted, slightly weathered, some light brown mottling	At 24.7': R-Scale = R2
25 220.4	25.5		0		x x x		R4: No time recorded
			0		x x x		
			0		x x x		
			0		x x x		
		97	0		x x x	<b>Siltstone</b>	At 28.0': R-Scale = R3-R4
					x x x	26.3-30.5' - dark reddish brown, 15% green mottling, fresh, 10% very fine to fine sand	
			0		x x x	26.3-26.4' - clayey sand layer	
			0		x x x	28.2-30.0' - hard to soft	
30 215.4	30.5		0		x x x		
			1	30.7' - Fracture, horizontal, smooth	x x x	30.5-32.3' - hard to soft, 10-15% purple mottling	R5: No time recorded







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

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)	#TYPE	6"-6"-6"-6" (N)				
263.2	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

WATER LEVELS:		START: 8/9/06 16:07		END: 8/9/06 16:07		LOGSHEET: 17	
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		
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		
	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		First water level = 7.4' bgs taken 8/10/06 at 20:02
35							
228.2							
40							