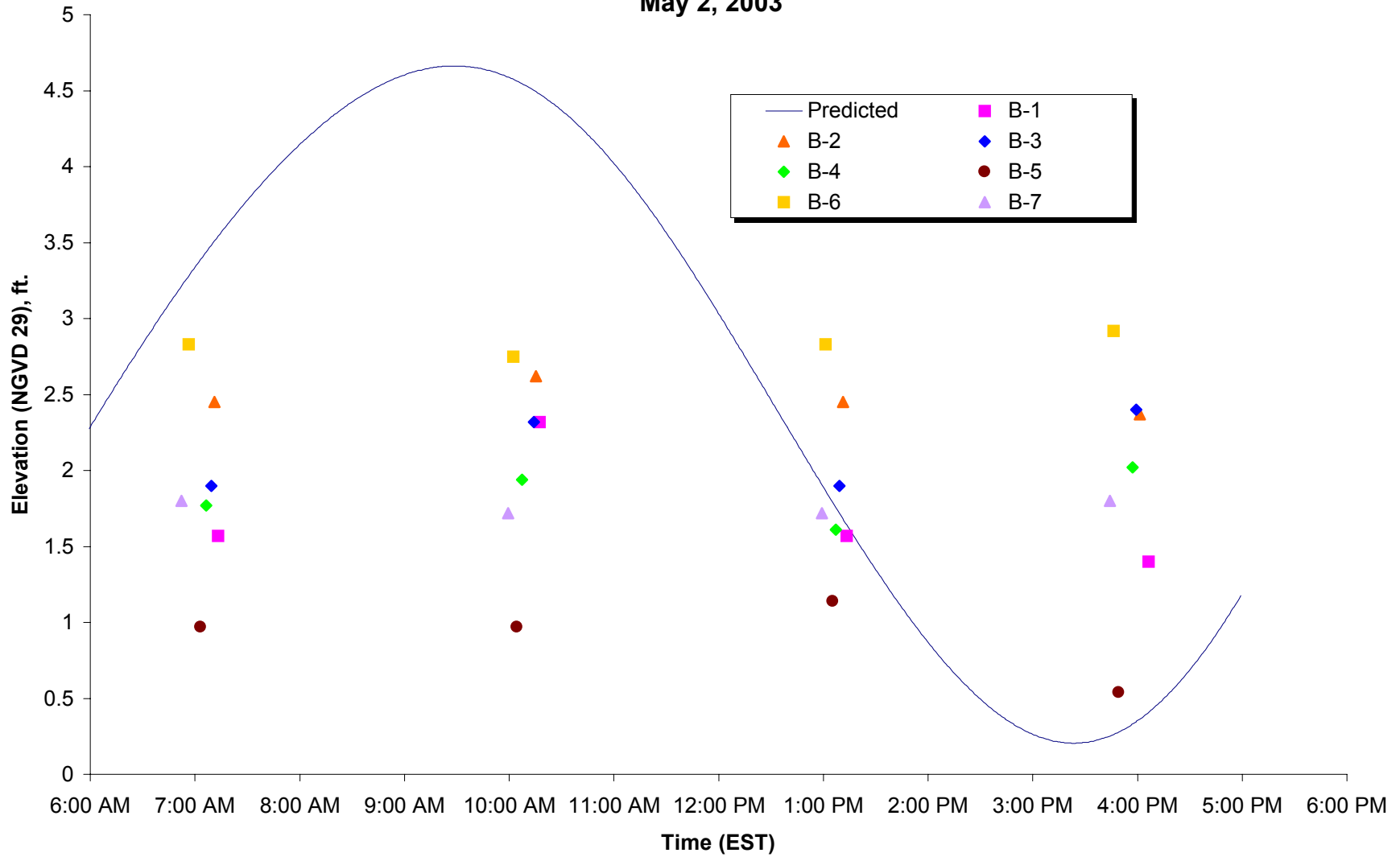


Appendix K

Geotechnical Investigation of the
High Battery Seawall, Low Battery Seawall, and the Marina Seawall
Logs of Borings B-1 through B-7
Ground Water Tables for Borings B-1 through B-7, May 2, 2003

Seawall Evaluation and Study
GWT Tables in Boring Nos. 1 through 7
May 2, 2003





LOG OF BORING B-1

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: EAST BATTERY - STA 60+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.07

Date: 4-28-2003

GWT (ft):

Strata	Sample	Elev. Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
					0	25	50	75
			ASPHALTIC CONCRETE (9")	--				
	1		VERY LOOSE BLACK SILTY SAND WITH BRICK AND WOOD FRAGMENTS (SM)	1-1-1	2			
	2		LOOSE GRAY FINE SAND WITH WOOD (SP-SM)	1-2-4	6			
	3	0 5	WOOD	17-6-5	11			
	4		LOOSE GRAY FINE SAND WITH TRACE ORGANIC CLAY AND SHELL (SP-SM)	1-2-3	15			
	5	-5 10	DENSE GRAY FINE SAND WITH SHELL AND BRICK FRAGMENTS (SP-SM)	17-20-15	35			
	6		VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-1-1	2			
	7	-10 15	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-1-1	2			
	8		VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND DECAYED ROOT (OH)	1-1-1	2			
	9	-15 20	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND HIGH PEAT (Pt)	1-1-2	3			
	10	-20 25	SOFT GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1-2-2	4			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
WOR - WEIGHT OF ROD.
WOH - WEIGHT OF HAMMER.

Testing and Sampling
in accordance with
ASTM D 1586

PRIMARY: 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03

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LOG OF BORING B-1

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: EAST BATTERY - STA 60+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.07

Date: 4-28-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
Diagonal Hatching	11			VERY SOFT GRAY INORGANIC CLAY WITH TRACE SAND AND SHELL (CH)	1-1-1	2
Diagonal Hatching	12	-30	35	MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND AND SHELL (CH)	1-2-4	6
Diagonal Hatching	13	-35	40	MEDIUM GRAY FINE CLAYEY SAND WITH TRACE SHELL (SC)	3-5-6	11
Dotted Pattern	14	-40	45	VERY DENSE GRAY FINE SAND (SP-SM)	15-25-34	59
Dotted Pattern	15	-45	50	DENSE GRAY FINE SAND (SP-SM)	5-10-25	35
Dotted Pattern	16	-50	55	DENSE GRAY FINE SAND (SP-SM)	6-12-22	34
			60			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.

Testing and Sampling in accordance with ASTM D 1586

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LOG OF BORING B-1

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: EAST BATTERY - STA 60+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.07

Date: 4-28-2003

GWT (ft):

Strata	Sample	Elev. Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
					0	25	50	75
	17		VERY DENSE GRAY FINE SAND (SP-SM)	50/5"--				
	18	-60 65	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	7-10-20			30	
	19	-65 70	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	6-8-13			21	
	20	-70 75	HARD BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	9-16-18			34	
	21	-75 80	HARD BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	12-15-29			44	
			<i>BORING B-1 TERMINATED AT A DEPTH OF 81.5 FEET</i>					
		-80 85						
		90						

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
WOR - WEIGHT OF ROD.
WOH - WEIGHT OF HAMMER.

Testing and Sampling
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LOG OF BORING B-2

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: EAST BATTERY - STA 50+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.62

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
						0	25	50	75
		5		ASPHALTIC CONCRETE (10")	--				
	1			LOOSE BROWN FINE SAND (SP-SM)	2-2-1	3			
	2			VERY LOOSE BROWN FINE SAND WITH WOOD, BRICK FRAGMENTS & SHELL (SP-SM)	5-2-2	4			
	3	0	5	WOOD	1/18"--	1			
	4			WOOD	1-2-2	4			
	5	-5	10	WOOD	1-1-1	2			
	6			VERY SOFT BROWN ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1			
	7	-10	15	MEDIUM BROWN ORGANIC CLAY WITH TRACE SAND (OH)	1-1-6	7			
	8			MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND (CH)	2-3-2	5			
	9	-15	20	MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND (CH)	2-2-3	5			
	10	-20	25	VERY SOFT GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1/18"--	1			
			30						

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.

Testing and Sampling in accordance with ASTM D 1586

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LOG OF BORING B-2

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: EAST BATTERY - STA 50+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.62

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
11	X	-25	-	LOOSE GRAY FINE SAND WITH SHELL AND TRACE INORGANIC CLAY (SP-SM W/SHELL)	2-3-5	8
12	X	-30	35	VERY SOFT GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1-1-1	2
13	X	-35	40	SOFT GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1-1-2	3
14	X	-40	45	SOFT GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1-1-2	3
15	X	-45	50	MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1-2-3	5
16	X	-50	55	SOFT GRAY INORGANIC CLAY WITH SAND (CL)	1-2-2	14
			60			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.

Testing and Sampling
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LOG OF BORING B-2

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: EAST BATTERY - STA 50+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.62

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
	17	-55		MEDIUM GRAY FINE SAND WITH TRACE INORGANIC CLAY (SP-SM)	6-7-6	13
	18	-60	65	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	2-6-10	16
	19	-65	70	MEDIUM BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	1-2-4	6
	20	-70	75	STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	2-2-7	9
	21	-75	80	MEDIUM BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	1-1-5	6
				<i>BORING B-2 TERMINATED AT A DEPTH OF 81.5 FEET</i>		
		-80	85			
		-90	90			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.

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LOG OF BORING B-3

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 42+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 6.07

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
					0	25	50	75
		5	ASPHALTIC CONCRETE (10")	--				
	1		LOOSE TAN FINE SAND (SP-SM)	3-3-3	6			
	2		VERY LOOSE GRAY FINE SAND WITH TRACE ORGANIC CLAY AND SHELL (SP-SM)	2-2-2	4			
	3	5 0	SOFT GRAY ORGANIC CLAY WITH SAND & TRACE SHELL (OL)	2-2-1	3			
	4		VERY LOOSE GRAY FINE SAND WITH TRACE SHELL (SP-SM)	1/18"--	1			
	5	10 -5	VERY LOOSE GRAY FINE SAND WITH TRACE SHELL (SP-SM)	2/18"--	1			
	6		VERY LOOSE GRAY FINE SAND (SP-SM)	2-2-1	3			
	7	15 -10	MEDIUM GRAY FINE SAND (SP-SM)	2-4-11	15			
	8		MEDIUM GRAY FINE SAND (SP-SM)	5-7-7	14			
	9	20 -15	SOFT TAN & GRAY INORGANIC CLAY WITH TRACE SAND & SHELL (CH)	2-2-2	4			
	10	25 -20	MEDIUM GRAY INORGANIC CLAY TRACE SAND & SHELL (CH)	1-3-5	8			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.

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PRIMARY: 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03



LOG OF BORING B-3

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 42+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 6.07

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
[Dotted pattern]	11	-25		DENSE GRAY FINE SAND WITH TRACE SHELL (SP-SM)	5-14-17	31
			35			
[Diagonal lines]	12	-30		LOOSE GRAY FINE SAND WITH TRACE INORGANIC CLAY & SHELL (SP-SM)	3-3-6	19
			40			
[Diagonal lines]	13	-35		MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND (CH)	2-2-3	5
			45			
[Diagonal lines]	14	-40		MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND (CH)	2-2-4	6
			50			
[Diagonal lines]	15	-45		MEDIUM GRAY FINE SAND WITH SOME INORGANIC CLAY (SC)	2-6-7	13
			55			
[Diagonal lines]	16	-50		LOOSE GRAY FINE SAND WITH SOME INORGANIC CLAY & SHELL (SC)	1-2-7	19
			60			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.

Testing and Sampling in accordance with ASTM D 1586

PRIMARY/2 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03

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LOG OF BORING B-3

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 42+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 6.07

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
	17	-55		MEDIUM GRAY FINE SAND WITH SOME INORGANIC CLAY & SHELL (SC)	4-5-7	12
	18	-60	65	STIFF GRAY INORGANIC CLAY WITH TRACE SAND & SHELL (CH)	3-3-10	13
	19	-65	70	MEDIUM GRAY FINE SAND WITH TRACE SHELL (SP-SM)	8-8-10	18
	20	-70	75	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	10-8-15	23
	21	-75	80	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	4-4-13	17
				<i>BORING B-3 TERMINATED AT A DEPTH OF 81.5 FEET</i>		
			85			
			-80			
			90			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.

Testing and Sampling in accordance with ASTM D 1586

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PRIMARY/2 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03



LOG OF BORING B-4

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 24+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.94

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
						0	25	50	75
				ASPHALTIC CONCRETE (6"), AGGREGATE BASE (4")	--				
	1			LOOSE TAN FINE TO COARSE SAND (SP-SM)	2-3-4				
	2			VERY SOFT GRAY ORGANIC CLAY WITH TRACE & SHELL (OH)	WOH--				
		0	5						
	3			LOOSE GRAY FINE SAND (SP-SM)	3-3-3				
	4			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-1-1				
		-5	10						
	5			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-1-2				
	6			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH) - SEE NOTE BELOW	20-20-27				
		-10	15						
	7			VERY LOOSE GRAY FINE SAND WITH ORGANIC CLAY & TRACE SHELL (SC)	1-2-2				
	8			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-1-1				
		-15	20						
	9			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-1-1				
		-20	25						
	10			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOH--				
		-25	30						

PRIMARY/2 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
WOR - WEIGHT OF ROD.
WOH - WEIGHT OF HAMMER.
SAMPLE 6 CONTAINED PIECES OF METAL AND ROCK, AND IT IS BELIEVED THE BLOW COUNT TO BE ARTIFICIALLY ELEVATED DUE TO DRIVING THROUGH DEBRIS.

Testing and Sampling
in accordance with
ASTM D 1586

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LOG OF BORING B-4

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 24+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.94

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
						0	25	50	75
	11			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOR--	0			
	12	-30	35	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOH--	0			
	13	-35	40	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1			
	14	-40	45	SOFT GRAY INORGANIC CLAY WITH TRACE SAND & SHELL (CH)	WOH-1-6	7			
	15	-45	50	MEDIUM GRAY INORGANIC CLAY WITH TRACE SAND (CH)	1-2-4	6			
	16	-50	55	STIFF GRAY INORGANIC CLAY WITH TRACE SAND (CH)	3-4-7	11			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
 ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.
 SAMPLE 6 CONTAINED PIECES OF METAL AND ROCK, AND IT IS BELIEVED THE BLOW COUNT TO BE ARTIFICIALLY ELEVATED DUE TO DRIVING THROUGH DEBRIS.

Testing and Sampling
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PRIMARY: 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03

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LOG OF BORING B-4

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 24+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.94

Date: 4-23-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values				
						0	25	50	75	
	17			HARD BROWNISH-GREEN INORGANIC CLAY WITH TRACE CALCAREOUS CLAYEY SILT (CH)	4-6-50					
	18	-60	65	VERY DENSE FINE TO COARSE SAND WITH PHOSPHATE NODULES (SP-SM)	50/4"--				100	
	19	-65	70	HARD BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	10-20-15				35	
	20	-70	75	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	7-10-13				23	
	21	-75	80	VERY STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	8-15-15				30	
				BORING B-4 TERMINATED AT A DEPTH OF 81.5 FEET						
		-80	85							
		-85	90							

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
 ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.
 SAMPLE 6 CONTAINED PIECES OF METAL AND ROCK, AND IT IS BELIEVED THE BLOW COUNT TO BE ARTIFICIALLY ELEVATED DUE TO DRIVING THROUGH DEBRIS.

Testing and Sampling
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LOG OF BORING B-5

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 10+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.14

Date: 4-18-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
						0	25	50	75
				ASPHALTIC CONCRETE (8")	--				
	1			MEDIUM BROWN FINE SAND WITH TRACE SHELL (SP-SM)	4-10-12				
			0	-----					
	2			LOOSE TAN FINE SAND WITH TRACE SHELL (SP-SM)	3-3-5		8		
			5	-----					
	3			VERY LOOSE TAN FINE SAND WITH TRACE SHELL AND DECAYED ROOT (SP-SM)	1-1-1		2		
			10	-----					
	4			LOOSE GRAY FINE SAND WITH TRACE ORGANIC CLAY & SHELL (SP-SM)	1-2-3		15		
			-5	-----					
	5			MEDIUM GRAY FINE TO COARSE SAND WITH TRACE SHELL (SP-SM)	3-4-10			14	
			10	-----					
	6			LOOSE GRAY FINE TO COARSE SAND WITH TRACE SHELL (SP-SM)	3-3-4			7	
			-10	-----					
	7			VERY LOOSE GRAY FINE TO COARSE SAND WITH TRACE SHELL	1/18"--			1	
			15	-----					
	8			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND MARSH GRASS ROOT (OH)	1/18"--			1	
			-15	-----					
	9			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND MARSH GRASS ROOT (OH)	1/18"--			1	
			20	-----					
	10			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOR--			0	
			-20	-----					
			25	-----					
			-25	-----					
			30	-----					

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.

Testing and Sampling
in accordance with
ASTM D 1586

PRIMARY: 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03

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LOG OF BORING B-5

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 10+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.14

Date: 4-18-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
11	X	-	-	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND SHELL (OH)	WOH--	0
		-30	35			
12	X	-	-	DENSE GRAY FINE SAND (SP-SM)	7-11-22	33
		-35	40			
13	X	-	-	VERY DENSE GRAY FINE TO COARSE SAND (SP-SM)	16-30-30	160
		-40	45			
14	X	-	-	SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-2-2	4
		-45	50			
15	X	-	-	MEDIUM GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1-3-3	6
		-50	55			
16	X	-	-	DENSE GRAY FINE SAND (SP-SM)	9-7-22	29
		-55	60			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
 ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.

Testing and Sampling
in accordance with
ASTM D 1586

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LOG OF BORING B-5

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: MURRAY BOULEVARD - STA 10+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.14

Date: 4-18-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
	17			STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	3-4-6	10
		-60				
	18		65	STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	4-5-8	13
		-65				
	19		70	STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	5-5-7	12
		-70				
	20		75	STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	4-6-7	13
		-75				
	21		80	STIFF BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	3-3-7	10
		-80				
		-85				
		-90				
				<i>BORING B-5 TERMINATED AT A DEPTH OF 81.5 FEET</i>		

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
 ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.

Testing and Sampling
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LOG OF BORING B-6

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: OFF LOCKWOOD DRIVE - STA 1+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.5

Date: 4-29-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
	1	5		MEDIUM BROWN FINE SAND WITH TRACE INORGANIC CLAY AND SHELL (SP-SM)	3-8-15	23
	2			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND A FOREIGN ODOR (OH)	1-1-1	2
	3	0	5	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND, SHELL AND DECAYED WOOD (OH)	1/18"--	1
	4			MEDIUM GRAY ORGANIC CLAY WITH WOOD (OH)	1-2-3	5
	5	-5	10	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	3-1-1	2
	6			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1
	7	-10	15	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1
	8			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOH--	0
	9	-15	20	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOH--	0
	10	-20	25	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOH--	0
			30			

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING. WOH - WEIGHT OF HAMMER.

Testing and Sampling in accordance with ASTM D 1586

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PRIMARY/2 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03



LOG OF BORING B-6

**Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY
TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA**

Location: OFF LOCKWOOD DRIVE - STA 1+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.5

Date: 4-29-2003

GWT (ft):

Strata	Sample	Elev. Depth (feet)	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
					0	25	50	75
[Wavy pattern]	11	-25	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1			
[Dotted pattern]	12	-30	LOOSE GRAY FINE SAND WITH TRACE SHELL (SP-SM)	2-2-3	5			
[Diagonal lines]	13	-35	VERY SOFT GRAY INORGANIC CLAY WITH TRACE SAND (CH)	WOH--	10			
[Diagonal lines]	14	-40	MEDIUM BROWN FINE CLAYEY SAND (SC)	1-4-11	15			
[Dotted pattern]	15	-45	VERY LOOSE GRAY FINE SAND (SP-SM)	6-1-2	3			
[Dotted pattern]	16	-50	DENSE GRAY FINE TO COARSE SAND (SM-SP)	10-15-20	35			
		60						

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
WOH - WEIGHT OF HAMMER.

Testing and Sampling
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PRIMARY/2 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03



LOG OF BORING B-6

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: OFF LOCKWOOD DRIVE - STA 1+00

SCI No.: 0355

Datum: NGVD 29

Elevation: 5.5

Date: 4-29-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values				
						0	25	50	75	
	17	-55		VERY DENSE GRAY FINE SAND (SP-SM)	25-35-37				72	
	18	-60	65	HARD BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	25-30-40				70	
	19	-65	70	HARD BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	8-10-25		35			
				<i>BORING B-6 TERMINATED AT A DEPTH OF 71.5 FEET</i>						
			75							
			-70							
			80							
			-75							
			85							
			-80							
			90							

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING. WOH - WEIGHT OF HAMMER.

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LOG OF BORING B-7

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: OFF LOCKWOOD DRIVE - STA 3+12

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.3

Date: 4-30-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
	1			LOOSE BROWN FINE SAND WITH TRACE CONCRETE AND ASPHALT FRAGMENTS AND ROOT (SP-SM)	2-4-6	10
	2			MEDIUM TAN FINE SAND (SP-SM)	4-7-5	12
	3			LOOSE BLACK FINE SAND (SP-SM)	4-3-2	5
	4			MEDIUM GRAY ORGANIC CLAY WITH PEAT (Pt)	1-3-2	15
	5			STIFF GRAY ORGANIC CLAY WITH WOOD (OH)	1-4-9	13
	6			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND SHELL (OH)	1/18"--	1
	7			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND SHELL (OH)	2/18"--	1
	8			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOH--	0
	9			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1
	10			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	2/18"--	1

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE. ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.
 SHOVEL SAMPLE TAKEN ADJACENT TO BORING INDICATED VARYING ROOT CONTENT TO A DEPTH OF 5 INCHES.

Testing and Sampling in accordance with ASTM D 1586

PRIMARY: 0355 SEAWALL EVALUATION AND STUDY - CHARLESTON.GPJ PRIMARY.GDT 5/1/03

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LOG OF BORING B-7

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: OFF LOCKWOOD DRIVE - STA 3+12

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.3

Date: 4-30-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values			
						0	25	50	75
	11			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1			
		-30	35						
	12			VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND AND SHELL (OH)	WOH--	0			
		-35	40						
	13		40	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	WOR--	0			
		-40	45						
	14		45	VERY SOFT GRAY ORGANIC CLAY WITH TRACE SAND (OH)	1/18"--	1			
		-45	50						
	15		50	DENSE GRAY FINE TO COARSE SAND (SP-SM)	12-20-22			42	
		-50	55						
	16		55	MEDIUM GRAY FINE SAND (SP-SM)	5-7-19		26		
		-55	60						

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
 ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.
 SHOVEL SAMPLE TAKEN ADJACENT TO BORING INDICATED VARYING ROOT CONTENT TO A DEPTH OF 5 INCHES.

Testing and Sampling
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LOG OF BORING B-7

Project: SEAWALL EVALUATION AND STUDY, EAST BATTERY TO THE CITY MARINA, CHARLESTON, SOUTH CAROLINA

Location: OFF LOCKWOOD DRIVE - STA 3+12

SCI No.: 0355

Datum: NGVD 29

Elevation: 4.3

Date: 4-30-2003

GWT (ft):

Strata	Sample	Elev. (feet)	Depth	Visual Description (Unified Soil Classification System)	Blows/6"	"N" Values
17	X	-60	65	DENSE GRAY FINE TO COARSE SAND (SP-SM)	12-20-19	39
18	X	-65	70	VERY DENSE GRAY FINE TO COARSE SAND WITH PHOSPHATE NODULES (SP-SM)	17-25-50	75
19	X	-70	75	HARD BROWNISH-GREEN CALCAREOUS CLAYEY SILT WITH TRACE SAND (MH- LOCALLY CALLED MARL)	10-15-27	42
				<i>BORING B-7 TERMINATED AT A DEPTH OF 71.5 FEET</i>		

Remarks: GROUND WATER TABLES MEASURED OVER A TIDE CYCLE - VALUES SHOWN ARE AT HIGHEST TIDE.
 ELEVATION AT BOREHOLE ESTIMATED FROM PROVIDED SURVEY DRAWING.
 WOR - WEIGHT OF ROD.
 WOH - WEIGHT OF HAMMER.
 SHOVEL SAMPLE TAKEN ADJACENT TO BORING INDICATED VARYING ROOT CONTENT TO A DEPTH OF 5 INCHES.

Testing and Sampling
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