



Nobis Engineering
PO Box 2890
Concord, New Hampshire 03302

PROJECT

Remedial Design For Operable Unit 01

New Bedford Harbor Superfund Site

New Bedford, Massachusetts

BORING NO. FD-22

SHEET 1 of 3

FILE NO. 48138.07

CHKD. BY J. Trottier

Boring Co. Atlantic Testing Laboratories, Limited Boring Location northing 2696654.2 easting 814095.5
 Driller R. Pryce Ground Surface El. 11.28 Datum NGVD
 Logged By S. Bonis Date Start 9/15/99 Date End 9/20/99

Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb safety hammer free falling from a height of 30 inches.
 Drill Rig: CME 75 truck mount
 Drilling Method: 4-inch I.D. (HW) flush-joint casing; spin and wash.

Groundwater Readings (from ground surface)				
Date	Time	Depth	Elev.	Stabilization Time
No water levels recorded				

DEPTH	Casing Blows (R)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	R E M A R K S
		Type & No.	PEN/REG (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
1	Spin	S-1	24/12	0-2	14-30-14-9	44	Poorly graded sand with silt and gravel (SP-SM); dry, dense, 60% fine sand, 10% coarse sand, 15% gravel, 15% silt, dark brown. Wood and concrete fragments noted in sample. (FILL)	SP-SM (FILL)	
2	Spin						Advance HW drill casing to 3 ft.		
3	Spin						Advance 3-7/8 in. roller bit. to 3 ft.		
4	Spin	S-2	24/1	3-5	9-30-9-4	39	Poorly graded gravel (GP); dense, 90% gravel, 10% coarse sand. (FILL)	GP (FILL)	
5	Spin						Advance HW drill casing to 9.5 ft.		
6	Spin						Very slow drilling; possible boulders.		
7	Spin						Advance 3-7/8 in. roller bit. to 9.5 ft.		
8	Spin						Possible boulder from 7.5 to 9.5 ft.		
9	Spin							Probable Boulder	
10	Spin	S-3	7/3	9.5-10.1	25-50/1*	>50	Poorly graded sand with silt and gravel (SP-SM); 70% sand, 20% gravel, 10% silt. Fractured cobble fragments and bits of wire noted in sample. (FILL)	SP-SM (FILL)	
11	Spin						Advance HW drill casing to 13 ft.		
12	Spin						Advance 3-7/8 in. roller bit. to 13 ft.		
13	Spin								
14	Spin	S-4	24/4	13-15	15-4-4-11	8	Poorly graded sand with silt (SP-SM); loose, 90% fine sand, 10% silt, heavy sheen, strong petroleum/tar odor, black. (FILL)	SP-SM (FILL)	
15	Spin						Advance HW drill casing to 18 ft.		
16	Spin						Advance 3-7/8 in. roller bit. to 18 ft.		
17	Spin								
18	Spin								
19	Spin	S-5	24/7	18-20	9-6-5-7	11	Silty sand (SM); medium dense, 15% medium sand, 60% fine sand, 10% gravel, 15% silt, gray. Traces of shell fragments noted in sample. (FILL)	SM (FILL)	
20	Spin						Advance HW drill casing to 23 ft.		
							Advance 3-7/8 in. roller bit. to 23 ft.		

0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	1. S denotes split-barrel sampler. 2. U denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. PID denotes Photoionization Detector 8. PPM denotes parts per million. 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. ROD denotes Rock Quality Designation. 12. R denotes core run number.
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SHEET 2 of 3

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 Logged By S. Bonis Date Start 9/15/99 Date End 9/20/99

Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb safety hammer free falling from a height of 30 inches.
 Drill Rig: CME 75 truck mount
 Drilling Method: 4-inch I.D. (HW) flush-joint casing; spin and wash.

Groundwater Readings (from ground surface)				
Date	Time	Depth	Elev.	Stabilization Time
No water levels recorded				

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
21	Spin						Estimated strata change at 20 ft.		
22	Spin								
23	Spin								
24	Spin	S-6 24/8	23-25	25-8-5-6	13	Organic soil (OH); moist, stiff, 90% organic clay/silt, 10% fine sand, hydrogen sulfide odor, dark gray. Plant material and shell fragments noted in sample. Advance HW drill casing to 28 ft. Advance 3-7/8 in. roller bit. to 28 ft.	OH		
25	Spin								
26	Spin								
27	Spin								
28	Spin								
29	Spin	S-7 24/20	28-30	7-5-7-7	12	Organic soil (OH); moist, stiff, 90% organic clay/silt, 5% coarse sand, 5% fine sand, hydrogen sulfide odor, dark gray. Shell fragments noted in sample. Advance HW drill casing to 33 ft. Advance 3-7/8 in. roller bit. to 33 ft.	OH		
30	Spin								
31	Spin								
32	Spin								
33	Spin								
34	Spin	S-8 24/6	33-35	22-31-21-23	52	Well-graded sand with silt and gravel (SW-SM); very dense, 50% medium sand, 15% coarse sand, 10% fine sand, 15% gravel, 10% silt. Advance HW drill casing to 38 ft. Advance 3-7/8 in. roller bit. to 38 ft.	SW-SM		
35	Spin								
36	Spin								
37	Spin								
38	Spin								
39	Spin	S-9 24/11	38-40	15-12-9-10	21	Similar to S-8; except medium dense. Advance HW drill casing to 43 ft. Advance 3-7/8 in. roller bit. to 43 ft.	SW-SM		
40	Spin								

0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	1. S denotes split-barrel sampler. 2. U denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test	7. PID denotes Photoionization Detector 8. PPM denotes parts per million. 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. R denotes core run number
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Drill Rig: CME 75 truck mount
Drilling Method: 4-inch I.D. (HW) flush-joint casing; spin and wash.

Groundwater Readings (from ground surface)				
Date	Time	Depth	Elev.	Stabilization Time
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DEPTH	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Type & No.	PENREC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
41	Spin								
42	Spin								
43	Spin								
44	Spin	S-10	24/20	43-45	14-11-13-11	24	Well-graded sand with silt and gravel (SW-SM); medium dense, 50% medium sand, 15% coarse sand, 10% fine sand, 15% gravel, 10% silt. Advance HW drill casing to 48 ft.	SW-SM	
45	Spin						Advance 3-7/8 in. roller bit.		
46	Spin								
47	Spin								
48	Spin								
49	Spin	S-11	24/16	48-50	35-17-18-17	35	Well-graded gravel with sand (GP); dense, 50% gravel, 30% coarse sand, 10% medium sand, 5% fine sand, 5% silt. Advance HW drill casing to 53 ft.	GP	
50	Spin						Advance 3-7/8 in. roller bit.		
51	Spin								
52	Spin								
53	Spin								
54	Spin	S-12	24/0	53-55	8-7-7-8	14	No recovery. (1st attempt) Stopped for the weekend.	SM	
55	Spin		24/4	53-55	8-5-6-14	11	Monday: 2 ft. of wash noted in bottom of casing. Advance 3-7/8 in. roller bit to remove material. Re-attempt 53 to 55 ft. sample.		
56	Spin						S-12: Silty sand (SM); medium dense, 50% medium sand, 30% fine sand, 20% silt. (2nd attempt) Advance HW drill casing to 55.5 ft. (probable bedrock)		
57							Advance HW drill casing to 56.5 ft. Advance 3-7/8 in. roller bit to 57 ft. to confirm bedrock.	BEDROCK	
58							Bottom of exploration at 57 ft.: boring terminated in probable bedrock.		
59									
60									

UNDISTURBED SAMPLES (UO)	RECOVERED SAMPLES (REC)	SYMBOLS	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	1. S denotes split-barrel sampler. 2. U denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. PID denotes Photoionization Detector 8. PPM denotes parts per million. 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. R denotes core run number

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