



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-20  
 SHEET 1 of 3  
 FILE NO. 48138.07  
 CHKD. BY J. Trotter

Boring Co. Atlantic Testing Laboratories, Limited Boring Location northing 2696458.0 easting 814073.9  
 Driller A. Carter Mudline El. -4.08 Datum NGVD  
 Logged By E. Thibodeau Date Start 9/7/99 Date End 9/8/99

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: Acker AD2 truck mount  
 Drilling Method: 4-inch I.D. (HW) flush-joint casing; wash and drive.  
 All casing driven with a 300 lb center hole hammer free falling from a height of 30-inches.

Groundwater Readings Not Applicable for Offshore Borings				
Date	Time	Depth	Elev.	Stabilization Time

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			
1	Hyd. Push						Advance HW drill casing to 3 ft. (hydraulic push) Advance 3-7/8 in. button bit from 0 to 3 ft.		
2	Hyd. Push								
3	Hyd. Push								
4	Hyd. Push	S-1	24/8	3-5	WOR/24*	0	Organic soil with sand (OH); very soft, 60% organic clay, 20% organic silt, 15% fine sand, 5% medium sand, strong organic odor, slight sheen, dark gray to black. Advance HW drill casing to 5 ft. (hydraulic push) Advance 3-7/8 in. button bit from 3 to 5 ft.	OH	
5	Hyd. Push								
6	Hyd. Push	S-2	24/18	5-7	WOR/15*- 1/3*-3	0	S-2A: Sandy organic soil (OH); very soft, 40% organic clay, 25% organic silt, 30% fine sand, 5% shell fragments, strong organic odor, dark gray. (12 in.) S-2B: Poorly graded sand with silt (SP-SM); 50% fine sand, 40% medium sand, 10% silt, gray to brown. (6 in.)	OH	
7	Hyd. Push							SP-SM	
8	19						Advance HW drill casing to 10 ft. (hydraulic push) Very difficult push at 7 ft.; drive casing. Advance 3-7/8 in. button bit from 5 to 10 ft.		
9	16								
10	21								
11	7/6"	S-3	24/19	10-12	17-29-29-26	58	Poorly graded sand (SP); very dense, 50% medium sand, 35% fine sand, 5% coarse sand, 5% gravel, 5% silt, brown. Advance HW drill casing to 15 ft. Advance 3-7/8 in. button bit from 10 to 15 ft.	SP	1
12	18								
13	26								
14	37								
15	43								
16	14	S-4	24/12	15-17	6-6-7-7	13	Poorly graded sand (SP); medium dense, 40% medium sand, 25% fine sand, 20% coarse sand, 10% gravel, 5% silt, brown. Advance HW drill casing to 20 ft. Add bentonite to drilling fluid. Advance 3-7/8 in. button bit from 15 to 20 ft.	SP	
17	26								
18	41								
19	46								
20	49								

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.

**REMARKS:**

- 1) HW drill casing advanced approximately 6 in. during standard penetration test; therefore, N-value may be biased high.
- 2) Slight loss of drilling fluid noted during advancement of button bit.
- 3)
- 4)



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 Logged By E. Thibodeau Date Start 9/7/99 Date End 9/8/99

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: Acker AD2 truck mount  
 Drilling Method: 4-inch I.D. (HW) flush-joint casing; wash and drive.  
 All casing driven with a 300 lb center hole hammer free falling from a height of 30-inches.

Groundwater Readings Not Applicable for Offshore Borings				
Date	Time	Depth	Elev.	Stabilization Time

DEPTH (ft)	Casing Blows (ft)	SAMPLE INFORMATION				SPT N-Value	SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Type & No.	PENREC (inches)	DEPTH (feet)	BLOWS PER 8 INCHES				
21	36	S-5	24/19	20-22	11-14-21-31	35	Poorly graded sand with gravel (SP); dense, 30% medium sand, 30% fine sand, 15% coarse sand, 20% gravel, 5% silt, brown. Advance HW drill casing to 25 ft. Advance 3-7/8 in. button bit from 20 to 25 ft.	SP	
22	37								
23	30								
24	36								
25	60								
26	81	S-6	24/8	25-27	10-14-11-13	25	Poorly graded sand with silt and gravel (SP-SM); medium dense, 30% medium sand, 15% coarse sand, 15% fine sand, 30% gravel, 10% silt, brown. Advance HW drill casing to 30 ft. Advance 3-7/8 in. button bit from 25 to 30 ft.	SP-SM	
27	120								
28	191								
29	123								
30	115								
31	78	S-7	24/10	30-32	25-17-14-14	31	Silly sand with gravel (SM); dense, 20% medium sand, 15% coarse sand, 15% fine sand, 35% gravel, 15% silt, brown. Advance HW drill casing to 35 ft. Advance 3-7/8 in. button bit from 30 to 35 ft.	SM	
32	73								
33	85								
34	113								
35	115								
36	76	S-8	24/6	35-37	39-18-10-10	28	Poorly graded sand with silt and gravel (SP-SM); medium dense, 30% coarse sand, 20% fine sand, 10% medium sand, 30% gravel, 10% silt, brown. Piece of gravel lodged in tip of sampler. Advance HW drill casing to 40 ft. Advance 3-7/8 in. button bit from 35 to 40 ft.	SP-SM	
37	70								
38	130								
39	128								
40	81								

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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Groundwater Readings Not Applicable for Offshore Borings

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D E P T H	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	R E M A R K S
		Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 8 INCHES	SPT N-Value			
41	78	S-9	24/6	40-42	30-24-11-9	35	Poorly graded sand with silt (SP-SM); dense, 40% medium sand, 30% fine sand, 10% coarse sand, 10% gravel, 10% silt, brown. Advance HW drill casing to 46 ft.	SP-SM	2
42	100						Advance 3-7/8 in. button bit from 40 to 46 ft.		
43	196								
44	89								
45	63								
46	79								
47	56	S-10	24/18	46-48	19-12-7-5	19	Poorly graded sand with gravel (SP); medium dense, 40% medium sand, 20% coarse sand, 20% fine sand, 15% gravel, 5% silt, brown. Traces of weathered bedrock noted in sample. Advance HW drill casing to 48.8 ft.	SP	
48	65						Top of bedrock at 48.8 ft.		
49	218/ 9"						Advance 3-7/8 in. button bit from 46 feet to 50.8 ft.		
50								BEDROCK	
51									
52							Bottom of exploration at 50.8 feet; boring terminated in probable bedrock.		
53							Note: Pumped approximately 59 gallons of grout to grout completed borehole to top of HW drill casing.		
54									
55									
56									
57									
58									
59									
60									

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