



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-28
SHEET 1 of 3
FILE NO. 48138.07
CHKD. BY J. Trottier

Boring Co. Atlantic Testing Laboratories, Limited Boring Location northing 2697357.3 easting 814553.5
Driller A. Carter Mudline El. -13.9 Datum NGVD
Logged By E. Thibodeau Date Start 8/5/99 Date End 8/6/99

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: 5-inch I.D. (PW) flush joint outer casing and 4-inch I.D. (HW) flush-joint inner casing. All casing driven with a 300 lb center hole hammer free falling from a height of 30-inches.

Groundwater Readings Not Applicable for Offshore Boring

Date	Time	Depth	Elev.	Stabilization Time

DEPTH (ft)	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			
1	Hyd. Push						Advance PW outer drill casing to 3 ft. (hydraulic push) Advance 4-7/8 in. roller bit from 0 to 3 ft.		
2	Hyd. Push								
3	Hyd. Push								
4	Hyd. UO-1	24/24	3-5				Sandy organic soil (OH); 40% organic clay, 20% organic silt, 30% fine sand, 10% shells and shell fragments, dark gray.	OH	
5	Hyd. Push						Advance PW outer drill casing to 6 ft. (hydraulic push) Advance 4-7/8 in. roller bit from 3 to 6 ft.		
6	Hyd. Push								
7	Hyd. UO-2	24/24	6-8				Similar to UO-1. Advance PW outer drill casing to 9 ft. (hydraulic push) Advance 4-7/8 in. roller bit from 6 to 9 ft.	OH	
8	Hyd. Push								
9	Hyd. Push								
10	Hyd. UO-3	24/17	9-11				Top: Sandy organic soil (OH); 35% organic silt, 15% organic clay, 40% fine sand, 10% shells and shell fragments, dark gray. (disturbed) Bottom: Organic soil with sand (OH); 50% organic clay, 30% organic silt, 15% fine sand, 5% shells and shell fragments, dark gray.	OH	
11	Hyd. Push						Advance PW outer drill casing to 12 ft. (hydraulic push) Advance 4-7/8 in. roller bit from 9 to 12 ft.		
12	Hyd. UO-4	24/6	12-14				Organic soil with sand (OH); 45% organic clay, 35% organic silt, 20% fine sand, strong organic odor, dark gray. (jarred sample) Advance PW outer drill casing to 15 ft. (hydraulic push) Very difficult push to 15 ft. Advance 4-7/8 in. roller bit from 12 to 15 ft.		
13	Hyd. Push								
14	Hyd. Push								
15	Hyd. Push								
16	37	S-1	24/24	15-17	13-6-9-11	15	S-1A: Poorly graded sand with silt (SP-SM); medium dense, 40% fine sand, 25% medium sand, 15% coarse sand, 10% gravel, 10% silt, moderate organic odor, gray. (6 in.) S-1B: Poorly graded sand (SP); medium dense, 70% fine sand, 25% medium sand, 5% silt, slight organic odor, gray. (18 in.)	SP-SM SP	1
17	35						Telescope HW inner drill casing to 20 ft.		
18	20						Advance 3-7/8 in. button bit from 15 to 20 ft.		
19	11								
20	18								

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

REMARKS:
1) Due to low recovery, sample was removed from Shelby Tube and placed into a sample jar.
2)
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		Type & No.	PENREC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
21	22	S-2	24/12	20-22	13-5-4-7	9	Silty sand (SM); loose, 65% fine sand, 10% medium sand, 25% silt, mild organic odor, gray. Advance HW inner drill casing to 25 ft. Advance 3-7/8 in. button bit from 20 to 25 ft.	SM	
22	27								
23	18								
24	23								
25	32								
26	20	S-3	24/20	25-27	9-3-1-1	4	Sandy silt (ML); soft, 40% silt, 30% clay, 30% fine sand, brown to gray. Advance HW inner drill casing to 30 ft. Add bentonite to drilling fluid. Advance 3-7/8 in. button bit from 25 to 30 ft.	ML	
27	15								
28	13								
29	31								
30	32								
31	33	S-4	24/12	30-32	20-10-11-9	21	Poorly graded sand (SP); medium dense, 45% medium sand, 30% fine sand, 10% coarse sand, 10% gravel, 5% silt, brown. Advance HW inner drill casing to 35 ft. Advance 3-7/8 in. button bit from 30 to 35 ft.	SP	
32	55								
33	60								
34	58								
35	61								
36	32	S-5	24/8	35-37	20-11-10-5	21	Well-graded sand with gravel (SW); medium dense, 35% medium sand, 25% fine sand, 20% coarse sand, 15% gravel, 5% silt, brown. Advance HW inner drill casing to 40 ft. Advance 3-7/8 in. button bit from 35 to 40 ft.	SW	
37	39								
38	40								
39	43								
40	59								

SOIL CLASSIFICATION	COHESIVE SOILS (IN CHAINS)	SYMBOL KEY	
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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 6 INCHES	SPT N-Value			
41	52	S-6	24/10	40-42	18-8-7-8	15	Well-graded sand with gravel (SW); medium dense, 35% medium sand, 25% fine sand, 20% coarse sand, 15% gravel, 5% silt, brown.	SW	
42	56						Advance HW inner drill casing to 45 ft.		
43	60						Advance 3-7/8 in. button bit from 40 to 45 ft.		
44	52								
45	44								
46	30	S-7	24/6	45-47	11-6-10-14	16	Poorly graded sand with gravel (SP); medium dense, 40% coarse sand, 20% medium sand, 20% fine sand, 15% gravel, 5% silt, brown.	SP	
47	62						Advance HW inner drill casing to 48.9 ft.		
48	84						Advance 3-7/8 in button bit from 45 to 48.9 ft.		
49	11"	S-8	1/0	48.9- 49.0	50/1"	—	Trace amount of drill cuttings recovered.		
50							Top of bedrock at 48.9 feet.		
51		R1		50.9-51.9	5 mins.		Advance 3-7/8 in. button bit from 48.9 to 50.9 ft. Begin NX rock core at 50.9 ft. R1: 50.9 to 55.9 ft.	BEDROCK	
52				51.9-52.9	2.5 mins.		Fresh, moderately hard, light gray, aphanitic GNEISS with horizontal to moderately dipping, very close to closely spaced, rough, planar, slightly discolored, open joints.		
53				52.9-53.9	5 mins.		REC = 78%; ROD = 53% (fair)		
54				53.9-54.9	6 mins.		Core barrel dropped from 51.9 to 52.2 ft. Probable void or cavity.		
55				54.9-55.9	6 mins.		Loss of drilling fluid noted at 52.9 ft.		
56									
57							Bottom of exploration at 55.9 ft.; boring terminated in bedrock.		
58									
59									
60									

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