



Nabis 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-29

SHEET 1 of 4

FILE NO. 48138.07

CHKD. BY J. Trottier

Boring Co. Atlantic Testing Laboratories, Limited Boring Location northing 2697062.2 easting 814575.0
 Driller A. Carter Mudline El. -14.2 Datum NGVD
 Logged By E. Thibodeau Date Start 8/31/99 Date End 9/2/99

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 (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						Perform continuous field vane shear testing from 1 to 6.8 ft. (no samples taken) Advance HW drill casing to 7 ft. (hydraulic push)		
2	Hyd. Push						Advance 3-7/8 in. button bit from 0 to 7 ft.		
3	Hyd. Push								
4	Hyd. Push								
5	Hyd. Push								
6	Hyd. Push								
7	Hyd. Push								
8	Hyd. Push	S-1	24/18	7-9	WOR/24"	0	Organic soil with sand (OH); very soft, 50% organic clay, 30% organic silt, 20% fine sand, strong organic odor, dark gray.	OH	
9	Hyd. Push						Advance HW drill casing to 10 ft. (hydraulic push) Advance 3-7/8 in. button bit from 7 to 10 ft.		
10	Hyd. Push								
11	Hyd. Push	S-2	24/6	10-12	WOR/18"-2	0	Silty sand (SM); very loose, 40% fine sand, 35% medium sand, 20% silt, 5% shell fragments, strong organic odor, gray.	SM	
12	Hyd. Push						Advance HW drill casing to 13 ft. (hydraulic push) Advance 3-7/8 in. button bit from 10 to 13 ft.		
13	Hyd. Push								
14	10	S-3	24/18	13-15	2-3-4-6	7	Poorly graded sand (SP); loose, 60% medium sand, 30% fine sand, 5% coarse sand, 5% silt, gray.		
15	14						Advance HW drill casing to 15 ft. Add bentonite to drilling fluid.		
16	10	S-4	24/13	15-17	4-7-7-7	14	Advance 3-7/8 in. button bit from 13 to 15 ft.	SP	
17	17						S-4A: Poorly graded sand (SP); medium dense, 60% medium sand, 20% fine sand, 10% coarse sand, 5% gravel, 5% silt, gray. (10 in.) S-4B: Silty sand (SM); medium dense; 40% fine sand, 30% medium sand, 25% silt, 5% clay, gray. (3 in.)	SM	
18	20						Advance HW drill casing to 20 ft.		
19	27						Advance 3-7/8 in. button bit from 15 to 20 ft.		
20	31								

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 4

FILE NO. 48138.07

CHKD. BY J. Trotter

Boring Co. Atlantic Testing Laboratories, Limited

Driller A. Carter

Logged By E. Thibodeau

Boring Location

northing 2697062.2 easting 814575.0

Mudline El.

-14.2

Datum

NGVD

Date Start

8/31/99

Date End

9/2/99

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 (#)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Type & No.	PENREC (Inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
21	19	S-5	24/12	20-22	5-3-4-7	7	S-5A: Poorly graded sand (SP); loose, 60% medium sand, 35% fine sand, 5% silt, gray. (10 in.)	SP	
22	15						S-5B: Silty sand (SM); loose, 50% fine sand, 25% medium sand, 25% silt, gray. (2 in.)	SM	
23	18						Advance HW drill casing to 25 ft.		
24	17						Advance 3-7/8 in. button bit from 20 to 25 ft.		
25	31								
26	15	S-6	24/18	25-27	3-5-4-6	9	Poorly graded sand (SP); loose, 50% medium sand, 30% fine sand, 10% coarse sand, 5% gravel, 5% silt, gray to brown.	SP	
27	17						Advance HW drill casing to 30 ft.		
28	24						Advance 3-7/8 in. button bit from 25 to 30 ft.		
29	29								
30	33								
31	33	S-7	24/4	30-32	3-5-2/12"	6	Poorly graded sand (SP); loose, 35% medium sand, 35% fine sand, 15% coarse sand, 10% gravel, 5% silt, brown.	SP	
32	44						Advance HW drill casing to 32 ft.		
33	21	S-8	24/14	32-34	WOR/12"-	6	S-8A: Silty sand (SM); loose, 60% fine sand, 10% medium sand, 30% silt, brown to gray. (2 in.)	SM	
34	26				6-6		S-8B: Poorly graded sand (SP); loose, 70% medium sand, 25% fine sand, 5% silt, gray. (12 in.)	SP	
35	28						Advance HW drill casing to 35 ft.		
36	44	S-9	24/4	35-37	8-8-8-11	16	Poorly graded sand with gravel (SP); medium dense, 35% medium sand, 20% fine sand, 15% coarse sand, 25% gravel, 5% silt, brown.	SP	
37	53						Advance HW drill casing to 40 ft.		
38	54						Advance 3-7/8 in. button bit from 35 to 40 ft.		
39	51								
40	57								

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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Driller A. Carter Mudline El. -14.2 Datum NGVD
Logged By E. Thibodeau Date Start 8/31/99 Date End 9/2/99

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	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Blows (N)	Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES			
41	49	S-10	24/8	40-42	4-2-2-11	4	Poorly graded sand with gravel (SP); very loose, 30% medium sand, 20% coarse sand, 15% fine sand, 30% gravel, 5% silt, brown.	SP	
42	44						Advance HW drill casing to 45 ft.		
43	76						Advance 3-7/8 in. button bit from 40 to 45 ft.		
44	58								
45	65								
46	89	S-11	24/4	45-47	7-5-7-7	12	Silty sand with gravel (SM); dense, 20% medium sand, 20% fine sand, 15% coarse sand, 30% gravel, 15% silt, brown.	SM	
47	72						Advance HW drill casing to 50 ft.		
48	67						Advance 3-7/8 in. button bit from 45 to 50 ft.		
49	98						Loss of drilling fluid return at 50 ft.		
50	99						Add more bentonite to drilling fluid.		
51	120	S-12	18/6	50-51.5	9-20-21-50/0"	41	Silty sand with gravel (SM); dense, 20% medium sand, 20% fine sand, 10% coarse sand, 30% gravel, 20% silt, brown.	SM	
52	137/6"	R1		51.5-52.5			Advance HW drill casing to 51.5 ft.		
53				52.5-53.5			Advance 3-7/8 in. button bit from 50 to 51.5 ft.		
54				53.5-54.5			Top of bedrock at 51.5 ft.	BEDROCK	
55				54.5-55.5			Telescope and advance NW inner drill casing to 52 ft. for coring. (spin)		
56				55.5-56.5			Begin NX rock core at 51.5 ft.		
57				56.5-57.5			Mixture of bentonite and polymer drilling muds used for coring.		
58				57.5-58.5			R1: 51.5 to 61.5 ft.		
59				58.5-59.5			Fresh, moderately hard, gray, fine grained GNEISS. Near horizontal foliation;		
60				59.5-60.5			10 degrees. Primary joint set: horizontal, sand filled, moderate to widely spaced, rough, planar, fresh, and tight.		
							REC = 85%; RQD = 75% (good)		
							Fractured zone noted from 53.7 to 54.5 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.
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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	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
61		R1	60.5-61.5	4.5 mins.			BEDROCK		
62		cont.							
63						Bottom of exploration at 61.5 ft.; boring terminated in bedrock.			
64						Note: Pumped approximately 74 gallons of grout to grout completed borehole to top of HW drill casing.			
65									
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