



Nobis Engineering
18 Chenell Drive
Concord, New Hampshire 03301

PROJECT

Remedial Design For Operable Unit 01
New Bedford Harbor Superfund Site
New Bedford, Massachusetts

BORING NO. FD-106
SHEET 1 of 12
FILE NO. 48138.27
CHKD. BY J. Trottier

Boring Co. Warren George, Inc. Boring Location northing 2696916 easting 814510
Driller S. Laurenza Mudline El. -10.74
Logged By A. Juneau Date Start 12/7/00 Datum NGVD
Date End 12/15/00

Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb. center hole hammer free falling from a height of 30 inches.
Drill Rig: Failing Truck Rig
Drilling Method: 5-inch (PW) flush joint drill casing, 4-inch (HW) flush joint drill casing. Casing driven with a 300 lb. center hole hammer free falling from a height of 24 inches.

Groundwater Readings Not Applicable for Offshore Borings				
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	WOC								
2	WOC						Osterberg sampler did not extend when attempting to collect UO sample at 2 ft.; problem corrected and sample collected from 2.5 to 4.5 ft.		
3	WOC	UO-1	24/23	2.5-4.5			Organic soil with sand (OH); 5% medium sand, 15% fine sand, 80% organic clay/silt, shells, plant material, dark olive gray. Advance PW drill casing to 5 ft. Advance 4-3/4 in. roller bit to 5 ft.		
4	WOC								
5	WOC								
6	WOC	UO-2	24/24	5-7			Organic soil with sand (OH); 10% medium sand, 15% fine sand, 75% organic clay/silt, shell, dark olive gray. Advance PW drill casing to 8 ft. Advance 4-3/4 in. to 8 ft.	ORGANIC CLAY	
7	WOC								
8	WOC								
9	WOC	UO-3	24/24	8-10			Sandy organic soil (OH); 5% coarse sand, 5% medium sand, 25% fine sand, 5% gravel, 60% organic clay/silt, dark olive gray, subangular to subround sand and gravel. Advance PW drill casing to 11 ft. Advance 4-3/4 in. roller bit to 11 ft.		
10	WOC								

GRANULAR SOILS (ASTM D1586)	COHESIVE SOILS (ASTM D2487)	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.

REMARKS:
1) *3-inch O.D. split-barrel sampler driven 24 inches with a 300 lb. center hole hammer free falling from a height of 24 inches.
2) Sample description based on laboratory classification. Refer to GeoTesting Express Report dated March 5, 2001. Laboratory description presented in bold.
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SHEET 2 of 12

FILE NO. 48138.27

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Driller S. Laurenza
Logged By A. Juneau

Boring Location northing 2696916 easting 814510
Mudline El. -10.74 Datum NGVD
Date Start 12/7/00 Date End 12/15/00

Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb. center hole hammer free falling from a height of 30 inches.
Drill Rig: Falling Truck Rig
Drilling Method: 5-inch (PW) flush joint drill casing, 4-inch (HW) flush joint drill casing. Casing driven with a 300 lb. center hole hammer free falling from a height of 24 inches.

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

D E P T H	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2486)	STRATUM DESCRIPTION	R E M A R K S	
		Type & No.	PENREC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value				
11	WOC	UO-4	24/17	11-13	—	—	Sandy organic soil (OH); 10% medium sand, 25% fine sand, 65% organic clay/silt, dark olive gray. Advance PW drill casing to 13 ft. Advance 3-7/8 in. roller bit to 13 ft.	ORGANIC CLAY		
12	WOC							12.5 ft.		
13	WOC	S-1	24/9	13-15	5-7-18-21	25	Poorly graded sand with gravel (SP); medium dense, 25% coarse sand, 40% medium sand, 10% fine sand, 20% gravel, 5% silt, subrounded to subangular sand and gravel, trace shell fragments, gray. Advance PW drill casing to 15 ft. Advance 3-7/8 in. roller bit to 15 ft.	GLACIO FLUVIAL		
14	10									
15	14	S-2	24/6	15-17	19-26-26-24	52	Poorly graded gravel with silt and sand (GP-GM); very dense, 5% coarse sand, 5% medium sand, 30% fine sand, 50% gravel, 10% silt, subround to subangular sand and gravel, gray. Advance PW drill casing to 20 ft. Mix bentonite drilling mud, specific gravity = 1.09. Advance 3-7/8 in. roller bit to 20 ft.			
16	25									
17	27									
18	19									
19	69									
20	76									

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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SHEET 3 of 12

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Casing driven with a 300 lb. center hole hammer free falling from a height of 24 inches.

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

DEPTH (ft)	Casing	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS			
		Type & No.	PENREC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value						
		S-3	24/12	20-22	6-6-6-7	12*	Poorly graded sand with silt (SP-SM); 5% coarse sand, 18% medium sand, 56% fine sand, 11% gravel, 10% silt, gray. Subangular to subround sand and gravel. Advance PW drill casing to 25 ft. Advance 3-7/8 in. roller bit to 25 ft.	GLACIO FLUVIAL	1.2			
21	15											
22	47											
23	54											
24	77											
25	94											
26	76	S-4	24/15	25-27	12-10-9-12	19*				Silty sand with gravel (SM); 11% coarse sand, 23% medium sand, 24% fine sand, 23% gravel, 19% silt, light gray. Subangular to subround sand and gravel. Advance PW drill casing to 30.5 ft. Advance 3-7/8 in. roller bit to 30.5 ft.	GLACIO FLUVIAL	1.2
27	82											
28	74											
29	55											
30	64											

GRAVEL (PERCENT BY WEIGHT)	ADHESIVE SOILS (PERCENT)	NOTES
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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SHEET 4 of 12

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Groundwater Readings Not Applicable for Offshore Borings

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			
31	51	S-5	24/0	30-32	10-4-3-5	7*	Washed sample Advance PW drill casing to 32 ft. Advance 3-7/8 in. roller bit to 32 ft.	GLACIO FLUVIAL	1
32	46	S-6	24/12	32-34	6-4-7-21	11*	Well graded sand with gravel (SW); medium dense, 20% coarse sand, 20% medium sand, 15% fine sand, 40% gravel, 5% silt, subangular to subround sand and gravel, light gray. Refusal of PW drill casing at 34.0 ft. Advanced 3-7/8 in. roller bit to 34.0 ft.	34.0 ft.	1
34	224/9*						Advance 3-7/8 in. roller bit through boulder from 34 to 36.5 ft.	Boulder	
35	SPIN								
36	SPIN								
37	SPIN	S-7	24/12	36.7-38.7	13-20-14-14	34*	S-7A: Poorly graded sand with gravel (SP); 20% coarse sand, 20% medium sand, 13% fine sand, 45% gravel, 2% silt, brown. (7 in.) S-7B: Silty sand with gravel (SM); 8% coarse sand, 14% medium sand, 19% fine sand, 40% gravel, 19% silt, brownish gray. Subangular to angular sand and gravel (5 in.) Advance HW drill casing to 41 ft. Advance 3-7/8 in. roller bit to 41 ft.	GLACIO FLUVIAL	1.2 2
38	SPIN								
39	SPIN								
40	SPIN								

GRANULAR SOILS (NGVA#3)	COHESIVE SOILS (NGVA#8)	SYMBOL KEY	
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				
Date	Time	Depth	Elev.	Stabilization Time

DEPTH (ft)	Casing Blows (R)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	R E M K S
		Type & No.	PENREC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
41	SPIN	S-8	24/0	41-43	15-19-24-27	43*	Washed sample. Advance HW drill casing to 43 ft. Advancing 2-15/16 in. roller bit to 43 ft.	GLACIO FLUVIAL	1
42	42								
43	45	S-9	24/6	44-46	14-21-28-37	49	Washed sample. Advance HW drill casing to 49.0 ft.		
44	40								
45	45								
46	125								
47	154								
48	75								
49	54								
50	100/0*						HW drill casing refusal at 49.0 ft. Advance 3-7/8 in. roller bit to 50.5 ft. Advance HW drill casing to 50.5 ft.		

GRAVIMETER SOIL CLASSIFICATION 0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	MOISTURE SOIL CLASSIFICATION 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	SAMPLER TYPES 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.	OTHER TESTS 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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REMARKS:
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SHEET 6 of 12

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Groundwater Readings Not Applicable for Offshore Borings

Date	Time	Depth	Elev.	Stabilization Time

DEPTH (ft)	Casing Blows (R)	SAMPLE INFORMATION					SAMPLE DESCRIPTION (ASTM D2488)	STRATUM DESCRIPTION	REMARKS
		Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	SPT N-Value			
							Begin HQ rock core at 50.5 ft. (boring log continued on next page)		
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									

GRAND AVERAGE	SOILS	SOILS	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. ROD denotes Rock Quality Designation. 12. R denotes core run number.

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

DEPTH (feet)	VISUAL REPRESENTATION	CORE INFORMATION			ROCK CORE DESCRIPTION	REMARKS
		CORE RUN	CORE INTERVAL	CORE TIME		
51.0		R1	50.5-51.5	9 min.	Begin R1 at 50.5 ft. Fresh, very hard, gray, fine to medium grained GNEISS, low angle foliation (approx. 30 degrees), biotite/feldspar foliation, no joints/fractures (discontinuities) noted. REC = 82%; RQD = 82%. Water return color: milky white.	
51.5			51.5-52.5	8.83 min.		
52.0			52.5-53.5	4.75 min.		
52.5			53.5-54.5	5.25 min.		
53.0			54.5-55.5	5.25 min.		
53.5					54.6 ft.: Mechanical break in rock core. No core grinding noted.	
54.0					End of R1 recovered length	
54.5						
55.0						
55.5					End R1 at 55.5 ft.	

GRANULAR SOILS (MAYN) 0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	COHESIVE SOILS (MAYN) 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	SOILS (MAYN) 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.	TESTS (MAYN) 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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Date	Time	Depth	Elev.	Stabilization Time

DEPTH (feet)	VISUAL REPRESENTATION	CORE INFORMATION			ROCK CORE DESCRIPTION	REMARKS
		CORE RUN	CORE INTERVAL	CORE TIME		
56.0		R2	55.5-56.5	5.5 min.	Begin R2 at 55.5 ft. Fresh, very hard, gray, fine to medium grained GNEISS, low angle foliation (approx. 15 to 30 degrees), biotite/feldspar foliation, no joints/fractures (discontinuities) noted. REC = 102%; RQD = 102% Water return color: milky white.	
56.5			56.5-57.5	4.5 min.		
57.0			57.5-58.5	4.5 min.		
57.5			58.5-59.5	6.5 min.		
58.0					58.2 ft.: Mechanical break in rock core. No core grinding noted.	
58.5						
59.0					58.8 ft.: Mechanical break in rock core. No core grinding noted.	
59.5					End of R2 recovered length	
60.0		R3	59.5-60.5	8.5 min.	Begin R3 at 59.5 ft. Slightly weathered, hard to very hard, gray, fine to medium grained GNEISS, low angle foliation (approx. 10 degrees), low angle joints are close to moderately spaced, orange discoloration up to 1/2 in. into rock, partly open to open, with no obvious infilling. REC = 98%; RQD = 96% 59.9 ft.: Irregular fracture at bottom of quartz/feldspar dike (1 in.), low angle (approx. 20 degrees), rough, planar, tight, iron stained, slightly weathered.	
60.5						

GRANULAR SOILS (Relative)	CONES/VESS/STIFF (Relative)	SYMBOLS/KEY
0 to 4 - Very Loose	0 to 2 - Very Soft	1. S denotes split-barrel sampler.
5 to 10 - Loose	3 to 4 - Soft	2. U denotes 3-inch O.D. undisturbed sample.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	3. UO denotes 3-inch Osterberg undisturbed sample.
31 to 50 - Dense	9 to 15 - Stiff	4. PEN denotes penetration length of sampler.
Over 50 - Very Dense	16 to 30 - Very Stiff	5. REC denotes recovered length of sample.
	Over 30 - Hard	6. SPT denotes Standard Penetration Test.
		7. PID denotes Photoionization Detector
		8. PPM denotes parts per million.
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		10. FVST denotes field vane shear test.
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Date	Time	Depth	Elev.	Stabilization Time

DEPTH (feet)	VISUAL REPRESENTATION	CORE INFORMATION			ROCK CORE DESCRIPTION	REMARKS
		CORE RUN	CORE INTERVAL	CORE TIME		
61.0		R3 (cont.)	60.5-61.5	4.5 min.	60.5 ft.: Irregular joints: rough, planar, partly open, slightly weathered. Core grinding observed. 60.6 ft.: Irregular joint: rough, stepped, open, slightly weathered. Core grinding observed.	
61.5						
62.0			61.5-62.5	5.5 min.	61.9 ft.: Mechanical break in rock core. Minimal core grinding noted.	
62.5			62.5-63.5	5 min.	62.5 ft.: Minor joint, smooth, planar, tight, iron staining on surface only.	
63.0					63.3 ft.: Mechanical break in rock core. No core grinding noted.	
63.5			63.5-64.5	4.5 min.	63.7 ft.: Mechanical break in rock core. No core grinding noted. End of R3 recovered length.	
64.0						
64.5		R4	64.5-65.5	5.5 min.	Fresh, very hard, gray, fine to medium grained GNEISS, low angle foliation (approx. 15 degrees), biotite/feldspar foliation, no joints/fractures noted. REC = 100%; RQD = 100% Water return color: milky white.	
65.0						
65.5						

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 Photolionization 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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REMARKS:
1) *3-inch O.D. split-barrel sampler driven 24 inches with a 300 lb. center hole hammer free falling from a height of 24 inches.
2) Sample description based on laboratory classification. Refer to GeoTesting Express Report dated March 5, 2001. Laboratory description presented in bold.
3)
4)



Nobis Engineering
18 Chenell Drive
Concord, New Hampshire 03301

PROJECT

Remedial Design For Operable Unit 01

New Bedford Harbor Superfund Site

New Bedford, Massachusetts

BORING NO. FD-106

SHEET 10 of 12

FILE NO. 48138.27

CHKD. BY J. Trottier

Boring Co. Warren George, Inc.
Driller S. Laurenza
Logged By A. Juneau

Boring Location northing 2696916 easting 814510
Mudline El. -10.74 Datum NGVD
Date Start 12/7/00 Date End 12/15/00

Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb. center hole hammer free falling from a height of 30 inches.
Drill Rig: Falling Truck Rig
Drilling Method: 5-inch (PW) flush joint drill casing. 4-inch (HW) flush joint drill casing.
Casing driven with a 300 lb. center hole hammer free falling from a height of 24 inches.

Groundwater Readings Not Applicable for Offshore Borings

Date	Time	Depth	Elev.	Stabilization Time

DEPTH (feet)	VISUAL REPRESENTATION	CORE INFORMATION			ROCK CORE DESCRIPTION	REMARKS
		CORE RUN	CORE INTERVAL	CORE TIME		
66.0			65.5-66.5	5.17 min.		
66.5						
67.0			66.5-67.5	5 min.		
67.5						
68.0			67.5-68.5	4.17 min.		68.2 ft.: Mechanical break in rock core. No core grinding noted.
68.5						
69.0			68.5-69.5	5.83 min.		68.5 ft.: Mechanical break in rock core. No core grinding noted.
69.5						69.0 ft.: Mechanical break in rock core. Minimal core grinding noted. Orthoclase feldspar rich zone from 69.0 to 69.3 ft. End of R4 recovered length. End R4 at 69.5 ft.
70.0						Bottom of exploration at 69.5 ft. Boring terminated in bedrock. Grout completed borehole to mudline with cement/bentonite grout, specific gravity = 1.40.
70.5						

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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REMARKS:
1) *3-inch O.D. split-barrel sampler driven 24 inches with a 300 lb. center hole hammer free falling from a height of 24 inches.
2) Sample description based on laboratory classification. Refer to GeoTesting Express Report dated March 5, 2001. Laboratory description presented in bold.
3)
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Concord, New Hampshire 03301

PROJECT

Remedial Design For Operable Unit 01
New Bedford Harbor Superfund Site
New Bedford, Massachusetts

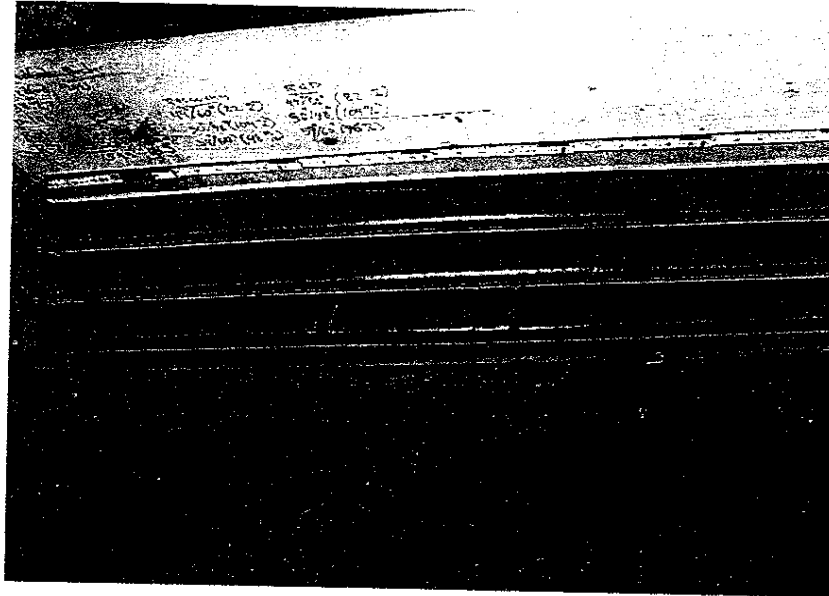
BORING NO. FD-106
SHEET 11 of 12
FILE NO. 48138.27
CHKD. BY J. Trottier

Boring Co. Warren George, Inc. Boring Location northing 2696916 easting 814510
Driller S. Laurenza Mudline El. -10.74 Datum NGVD
Logged By A. Juneau Date Start 12/7/00 Date End 12/15/00

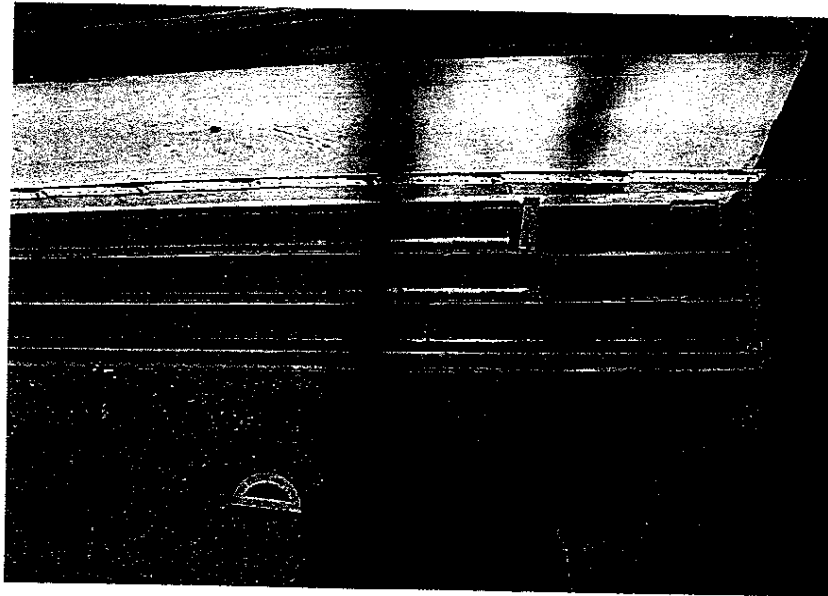
Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb. center hole hammer free falling from a height of 30 inches.
Drill Rig: Falling Truck Rig
Drilling Method: 5-inch (PW) flush joint drill casing. 4-inch (HW) flush joint drill casing.
Casing driven with a 300 lb. center hole hammer free falling from a height of 24 inches.

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

ROCK CORE PICTURES



Core Runs R1 through R3



Core Runs R1 through R3

REMARKS:

- 1) *3-inch O.D. split-barrel sampler driven 24 inches with a 300 lb. center hole hammer free falling from a height of 24 inches.
- 2) Sample description based on laboratory classification. Refer to GeoTesting Express Report dated March 5, 2001. Laboratory description presented in bold.
- 3)
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PROJECT

Remedial Design For Operable Unit 01

New Bedford Harbor Superfund Site

New Bedford, Massachusetts

BORING NO. FD-106

SHEET 12 of 12

FILE NO. 48138.27

CHKD. BY J. Trottier

Boring Co. Warren George, Inc.
Driller S. Laurenza
Logged By A. Juneau

Boring Location northing 2696916 easting 814510
Mudline El. -10.74 Datum NGVD
Date Start 12/7/00 Date End 12/15/00

Sampler: 2-inch O.D. split-barrel sampler driven 24 inches with a 140 lb. center hole hammer free falling from a height of 30 inches.

Drill Rig: Falling Truck Rig

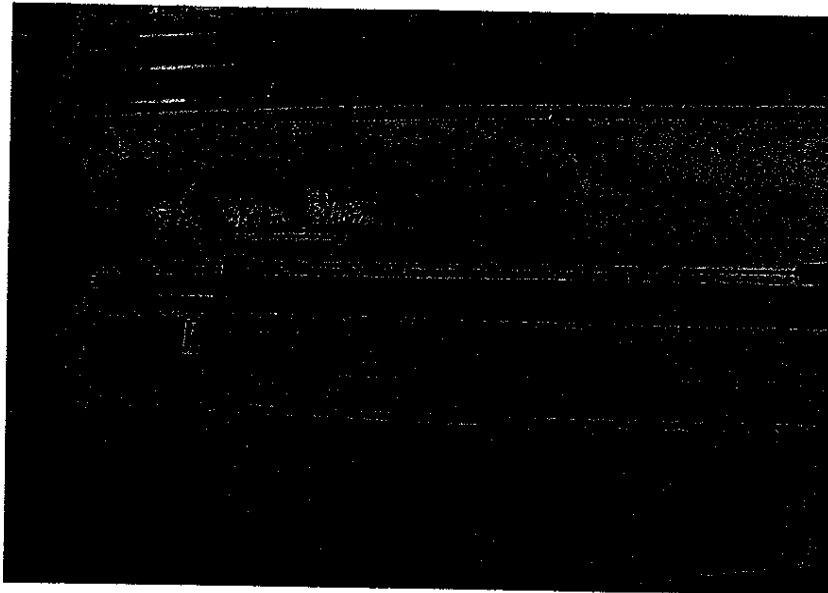
Drilling Method: 5-inch (PW) flush joint drill casing. 4-inch (HW) flush joint drill casing.

Casing driven with a 300 lb. center hole hammer free falling from a height of 24 inches.

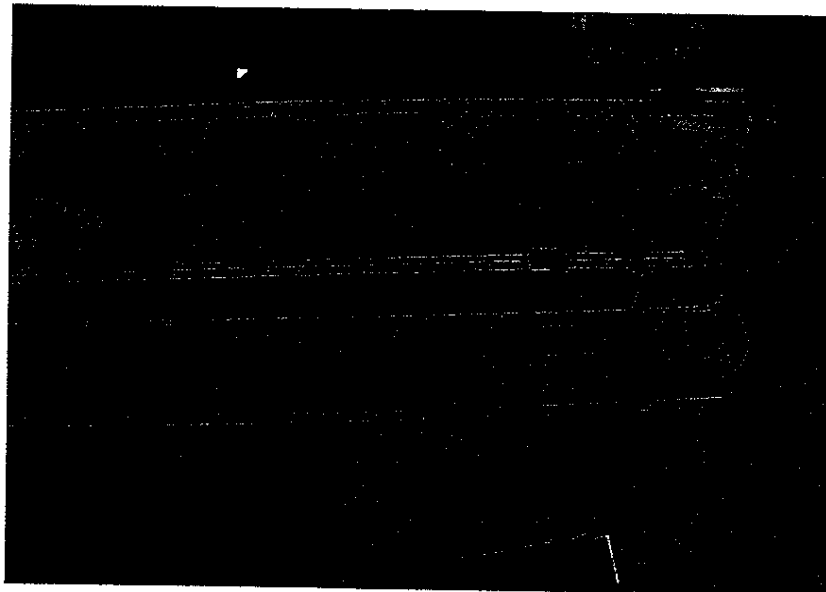
Groundwater Readings Not Applicable for Offshore Borings

Date	Time	Depth	Elev.	Stabilization Time

ROCK CORE PICTURES



Core Run R4



Core Run R4

REMARKS:

- 1) *3-inch O.D. split-barrel sampler driven 24 inches with a 300 lb. center hole hammer free falling from a height of 24 inches.
- 2) Sample description based on laboratory classification. Refer to GeoTesting Express Report dated March 5, 2001. Laboratory description presented in bold.
- 3)
- 4)