



BORING LOG

CHELSEA
BHF 0169(10)
VT-110 BR-11

Boring No.: **B-101**
Page No.: **1 of 2**
Pin No.: **12C152**
Checked By: **CCB**

Boring Crew: **JUDKINS, HOOK, NIETO**
Date Started: **4/15/15** Date Finished: **4/16/15**
VTSFG NAD83: **N 544598.25 ft E 1654349.60 ft**
Station: **175+78.0** Offset: **-5.60**
Ground Elevation: **833.2 ft**

Casing Sampler
Type: **WB SS**
I.D.: **5 in 1.5 in**
Hammer Wt: **N.A. 140 lb.**
Hammer Fall: **N.A. 30 in.**
Hammer/Rod Type: **Auto/AWJ**
Rig: **CME 55 TRACK C = 1.46**

Groundwater Observations		
Date	Depth (ft)	Notes
04/15/15	9.1	End of day.
04/16/15	9.8	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate (min/feet)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0		Asphalt Pavement, 0.0 ft - 0.92 ft								
2.5		A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft				10-10-8-7 (18)	9.8	26.9	59.9	13.2
		A-1-b, SaGr, brn, Moist, Rec. = 1.0 ft, Lab Note: Broken Rock was within sample. Cleaned out with roller cone.				10-7-7-8 (14)	12.5	45.5	44.9	9.6
5.0		A-2-4, GrSa, brn, Moist, Rec. = 0.5 ft, Cleaned out with roller cone.				8-7-9-9 (16)	13.4	25.2	58.4	16.4
7.5		Field Note: No Recovery				R@2.5" (R)				
		Field Note: NXDC, Boulder								
10.0		A-1-b, GrSa, brn-Lt/brn, Moist, Rec. = 1.1 ft, Lab Note: Broken Rock was within sample. Cleaned out with NXDC.				47-39-R@6.0" (R)	18.6	38.1	47.9	14.0
		Lab Note, Mostly Broken Rock, Lt/brn, Moist, Rec. = 0.3 ft				R@3.5" (R)	10.2	64.3	28.1	7.6
12.5		Field Note: Drilled a 4 inch diameter Concrete Core								
		A-1-a, SaGr, brn-Lt/gy, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample. Cleaned out with NXDC.				2-35-31-31 (66)	10.1	60.3	32.3	7.4
15.0		A-1-b, SaGr, gry-Lt/brn, Moist, Rec. = 0.3 ft, Lab Note: Lots of Broken Rock was within sample. Cleaned out with NXDC.				30-R@5.0" (R)	11.1	45.7	36.1	18.2
17.5		Lab Note, Mostly Broken Rock, gry, Moist, Rec. = 0.2 ft, Cleaned out with NXDC.				R@2.5" (R)	9.2	56.3	31.6	12.1
20.0		A-1-b, SaGr, gry-brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample. Cleaned out with NXDC.				9-13-9-11 (22)	10.7	48.4	38.0	13.6
		A-1-b, SiGrSa, brn, Moist, Rec. = 0.7 ft				12-14-14-26 (28)	13.6	27.4	50.6	22.0
22.5		A-2-4, SiSa, brn, Moist, Rec. = 0.7 ft, Cleaned out with NXDC.				14-19-22-R@3.5" (41)	16.2	15.0	54.9	30.1

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.



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Boring No.: **B-101**
Page No.: **2 of 2**
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Boring Crew: **JUDKINS, HOOK, NIETO**
Date Started: **4/15/15** Date Finished: **4/16/15**
VTSFG NAD83: **N 544598.25 ft E 1654349.60 ft**
Station: **175+78.0** Offset: **-5.60**
Ground Elevation: **833.2 ft**

Casing Sampler
Type: **WB SS**
I.D.: **5 in 1.5 in**
Hammer Wt: **N.A. 140 lb.**
Hammer Fall: **N.A. 30 in.**
Hammer/Rod Type: **Auto/AWJ**
Rig: **CME 55 TRACK C = 1.46**

Groundwater Observations		
Date	Depth (ft)	Notes
04/15/15	9.1	End of day.
04/16/15	9.8	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate (min/feet)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
27.5		Field Note: NXDC, Boulder								
30.0		A-1-b, GrSa, gry-Lt/brn, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample. Cleaned out with NXDC.				8-25-R@5.0" (R)	13.8	33.8	47.0	19.2
		Lab Note, Broken Rock, gry, Moist, Rec. = 0.1 ft				R@1.0"				
32.5		31.1 ft - 36.1 ft, Dark gray, Phyllitic mica Schist, with some Quartz veins. Hard, Unweathered, Good rock, NXMDC, Gray Meta-Limestone begins at 0.8 ft. Grades into layered Meta-Limestone and Quartz veins at 3.8 feet. RMR = 71	1 (50)	100 (77)	4					
		Top of Bedrock @ 31.1 ft								
35.0										
37.5		36.1 ft - 41.1 ft, Alternating gray meta-limestone and dark gray phyllitic mica-Schist, with some orange/brown staining on joints. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 74	2 (50)	100 (92)	3					
40.0										
42.5		Hole stopped @ 41.1 ft								

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STATE OF VERMONT
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BORING LOG

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BHF 0169(10)
VT-110 BR-11

Boring No.: **B-102**
Page No.: **1 of 1**
Pin No.: **12C152**
Checked By: **CCB**

Boring Crew: JUDKINS, HOOK, NIETO
Date Started: 4/08/15 Date Finished: 4/14/15
VTSPG NAD83: N 544617.15 ft E 1654355.89 ft
Station: 175+93.2 Offset: 7.20
Ground Elevation: 833.2 ft

Type: _____ Casing WB Sampler SS
I.D.: 5 in 1.5 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/AWJ
Rig: CME 45C TRACK C = 1.34

Groundwater Observations		
Date	Depth (ft)	Notes
04/08/15	2.1	End of day.
04/14/15	9.7	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	
		Asphalt Pavement, 0.0 ft - 1.0 ft									
5		A-1-b, GrSa, brn, Moist, Rec. = 1.3 ft				9-17-11-9 (28)	10.4	25.9	58.9	15.2	
		A-2-4, SiSa, brn, Moist, Rec. = 1.5 ft, Cleaned out with roller cone.				9-10-23-30 (33)	15.8	18.3	61.2	20.5	
		A-2-4, SiSa, brn, Moist, Rec. = 1.5 ft, Cleaned out with roller cone.				23-29-23-24 (52)	18.4	12.7	61.1	26.2	
		A-2-4, SiGrSa, brn, MTW, Rec. = 1.8 ft, Lab Note: Broken Rock was within sample.				14-22-29-29 (51)	20.1	25.5	52.4	22.1	
		A-2-4, GrSa, blk-brn, MTW, Rec. = 1.4 ft, Cleaned out with roller cone. Lab Note: Broken Rock was within sample.				19-28-20-17 (48)	22.8	20.6	61.2	18.2	
		Field Note: No Recovery Field Note: Drilled a 4 inch diameter Concrete Core, Rec. = 2.0 ft				R@2.5"					
15		A-2-4, GrSa, brn-gry, Moist, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.				8-8-12-11 (20)	18.1	25.9	59.5	14.6	
		Field Note: No Recovery, Stone stuck in sampler. NXDC, Cleaned out casing.				13-24-16-14 (40)					
20		A-1-b, GrSa, brn, Moist, Rec. = 0.4 ft				6-7-9-9 (16)	16.2	22.5	58.2	19.3	
		A-1-b, SaGr, brn-Lt/brn, Moist, Rec. = 1.2 ft, NXDC, Cleaned out casing.				6-8-7-12 (15)	14.4	44.7	43.0	12.3	
		A-1-b, GrSa, gry-Lt/brn, Moist, Rec. = 1.0 ft				10-11-12-11 (23)	16.0	22.5	61.0	16.5	
		A-1-b, GrSa, brn-gry, Moist, Rec. = 1.2 ft, NXDC, Cleaned out casing.				8-9-18-24 (27)	14.5	35.1	53.1	11.8	
		A-1-b, SaGr, brn-Lt/brn, Moist, Rec. = 1.1 ft, NXDC, Cleaned out casing.				20-34-31-14-12-7 (71)	13.8	46.8	39.5	13.7	
		A-1-b, GrSa, gry, Moist, Rec. = 0.8 ft				R@5.0"	13.3	26.3	53.8	19.9	
30		28.4 ft - 33.4 ft, Dark gray, Phyllitic mica- Schist, After 2.1 ft., gray Meta-Limestone with some Quartz veins. Hard, Very slightly weathered, Good rock, NXMDC, Joints have light orange/brown staining. RMR = 67	1 (50)	100 (52)	4						
					4						
					3						
					4						
35		33.4 ft - 38.4 ft, Gray, Meta-Limestone, with orange/brown staining on joints. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 74	2 (50)	98 (91)	3						
					3						
					3						
					3						
Hole stopped @ 38.4 ft											

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
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BORING LOG 2 CHELSEA BHF 0169(10)_GPU VERMONT AOT.GDT 5/20/15



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CENTRAL LABORATORY

BORING LOG

CHELSEA
BHF 0169(10)
VT-110 BR-11

Boring No.: **B-103**

Page No.: 1 of 1

Pin No.: 12C152

Checked By: CCB

Boring Crew: WHITLOCK, JUDKINS, HOOK
Date Started: 4/01/15 Date Finished: 4/03/15
VTSPG NAD83: N 544677.90 ft E 1654315.74 ft
Station: 176+64.5 Offset: -7.50
Ground Elevation: 833.2 ft

Type: WB SS
I.D.: 5 in 1.5 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/AWJ
Rig: CME 45C TRACK C = 1.34

Groundwater Observations

Date	Depth (ft)	Notes
04/03/15	10.5	Before drilling.
04/03/15	7.7	After drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.63 ft								
		A-1-b, GrSa, orange-brn, Moist, Rec. = 1.4 ft, Lab Note: Broken Rock was within sample.				10-16-16-14 (32)	10.6	33.2	52.7	14.1
		A-1-b, GrSa, Dk/brn, Moist, Rec. = 1.0 ft				10-13-R@5.0" (R)	10.9	27.7	56.8	15.5
5		Lab Note, Sample had Broken rock pieces, but mostly Pulverized Rock, gry, Moist, Rec. = 0.4 ft, Cleaned out with roller cone					1.1	45.9	35.9	18.2
		A-2-4, Sa, brn, MTW, Rec. = 1.5 ft				WH-45-32-R@1.0" (77)	22.3	19.3	62.1	18.6
		A-1-b, GrSa, brn, MTW, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.				15-12-16-20 (28)	20.5	33.2	52.7	14.1
10		Lab Note, Lots of Broken Rock and a few wood pieces were within sample., brn, Moist, Rec. = 0.6 ft, NXDC, Cleaned out casing.				6-9-7-16 (16)	13.6	61.7	30.6	7.7
		Field Note:, No Recovery				R@5.0" (R)				
		Field Note:, Drilled a 4 inch diameter Concrete Core, Rec. = 2.1 ft								
		Lab Note, Mostly Broken Rock with sand, brn, Moist, Rec. = 0.5 ft, NXDC, Cleaned out casing. Went inside with 4 inch casing.				34-40-16 (56)	9.9	63.5	27.8	8.7
15		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				15-7-7-6 (14)	16.6	32.0	49.0	19.0
		Visual Description:, Broken Rock, gry-blk, Moist, Rec. = 0.1 ft, NXDC, Cleaned out casing.				8-8-14-14 (22)				
		A-2-4, Sa, brn, Moist, Rec. = 0.6 ft				23-R (R)	14.2	17.1	64.1	18.8
20		19.6 ft - 24.6 ft, Gray, Meta-Limestone, with Quartz veins and staining on joints. Hard, Unweathered, Fair rock, NXMDC, RMR = 52	1 (55)	98 (63)	3					
					3					
					3					
					3					
					3					
25		24.6 ft - 29.6 ft, Gray, Meta-Limestone, with some Quartz veins. Hard, Unweathered, Good rock, NXMDC, RMR = 69	2 (55)	100 (94)	3					
					3					
					3					
					3					
30		Hole stopped @ 29.6 ft								

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BORING LOG 2 CHELSEA BHF 0169(10).GPJ VERMONT AOT.GDT 5/20/15



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BORING LOG

CHELSEA
BHF 0169(10)
VT-110 BR-11

Boring No.: **B-104**

Page No.: **1 of 1**

Pin No.: **12C152**

Checked By: **CCB**

Boring Crew: JUDKINS, HOOK, NIETO
Date Started: 4/07/15 Date Finished: 4/08/15
VTSPG NAD83: N 544699.52 ft E 1654322.91 ft
Station: 176+82.0 Offset: 7.20
Ground Elevation: 833.2 ft

Type: Casing WB Sampler SS
I.D.: 5 in 1.5 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/AWJ
Rig: CME 45C TRACK C_r = 1.34

Groundwater Observations

Date	Depth (ft)	Notes
04/07/15	7.8	End of day.
04/08/15	9.7	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	Groundwater Observations			
											Date	Depth (ft)	Notes	
		Asphalt Pavement, 0.0 ft - 0.92 ft												
5		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft, Lab Note: Broken Rock & pieces of Asphalt Pavement were within sample.				6-12-20-14 (32)	14.1	37.7	49.3	13.0				
		A-1-b, GrSa, brn, Moist, Rec. = 1.3 ft, Lab Note: Broken Rock was within sample. Cleaned out casing within roller cone.				10-13-15-16 (28)	9.0	37.8	49.4	12.8				
		A-1-b, SaGr, brn-gry, Moist, Rec. = 0.8 ft, Lab Note: Broken Rock was within sample. Cleaned out casing within roller cone.				36-48-R@2.5" (R)	16.3	45.9	39.9	14.2				
10		A-2-4, Sa, brn, Moist, Rec. = 1.5 ft, Lab Note: Cleaned out casing within roller cone.				12-14-7-6 (21)	26.6	11.9	70.9	17.2				
		A-2-4, GrSa, brn, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.				8-39-8-14 (47)	21.4	28.7	55.0	16.3				
		Field Note:, No Recovery Field Note:, Concrete Footing, Rec. = 1.9 ft				(R)								
15		Lab Note, Sample was mostly Broken & Pulverized Rock, gry, Moist, Rec. = 0.5 ft, NXDC, Cleaned out casing.				35-R@2.5" (R)	8.9	69.3	21.8	8.9				
		A-2-4, SiGrSa, brn-Dk/brn, Moist, Rec. = 0.7 ft, NXDC, Cleaned out casing.				48-18-25-R@1.0" (43)	14.9	22.3	55.9	21.8				
		A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft				14-14-R@1.0" (R)	14.4	41.8	42.8	15.4				
20		18.5 ft - 23.5 ft, Gray, Meta-Limestone, with Quartz veins. Hard, Very slightly weathered, Good rock, NXMDC, Four thick Quartz veins starts at 1.85 feet. Joint at 2.45 ft. has light brown/gray calcium carbonate coating. RMR = 69	1	100	5									
			(50)	(93)	5									
					4									
					4									
25		23.5 ft - 28.5 ft, Gray, Meta-Limestone, with Quartz veins. Calcium carbonate coating on joints. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 69	2	100	5									
			(50)	(93)	4									
					3									
					3									
30		Hole stopped @ 28.5 ft												

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