



STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury-Stowe
STP 2945(1)
VT-100 Mast Arms

Boring No.: B-201
Page No.: 1 of 1
Pin No.: 11b342
Checked By: END

Boring Crew: Gonyaw, Garrow, Mazzei
Date Started: 7/19/17 Date Finished: 7/19/17
VTSPG NAD83: N 672502.70 ft E 1575810.04 ft
Station: 35+54 Offset: 40.20
Ground Elevation: 515.8 ft

Type: WB Sampler SS
I.D.: 3 in 1.5 in
Hammer Wt: N.A. 140 lb.
Hammer Fall: N.A. 30 in.
Hammer/Rod Type: Auto/AWJ
Rig: Diedrich D25 CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
07/19/17	5.4	W.T. during 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 %
5		A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft				2-2-2-2 (4)	10.0	35.9	44.2	19.9
		A-1-b, SaGr, brn, Moist, Rec. = 0.6 ft				3-3-3-4 (6)	8.0	48.6	33.3	18.1
		A-4, GrSaSi, brn, Moist, Rec. = 1.4 ft				3-2-5-8 (7)	14.2	23.1	34.3	42.6
		A-1-b, SaSiGr, gry, Moist, Rec. = 1.6 ft, Lab Note: Broken and weathered rock was within sample Field Note:, BXDC, cleaned out casing				8-5-17-7 (22)	7.0	54.3	22.8	22.9
		A-1-b, GrSa, brn-gry, Moist, Rec. = 1.1 ft				8-8-R@2.5" (R)	14.2	36.6	43.7	19.7
		Field Note:, BXDC, roller cone cleaned out casing								
10		A-1-b, GrSa, gry, Moist, Rec. = 0.5 ft				R@5" (R)	19.2	35.3	49.3	15.4
		Field Note:, BXDC, roller cone cleaned out casing								
		Field Note:, No Recovery								
15		15.4 ft - 18.4 ft, Light gray-green, PHYLLITE, consisting of "sandy" quartz-muscovite-chlorite and thinly veined CaCO3 bearing quartz strewn throughout. Joints are rough with light orange oxidation. Moderately hard, Slightly weathered, Poor rock, BX, RMR=41	1 (75)	77 (26)	5	R@5" (R)				
		18.4 ft - 23.4 ft, Interbedded light gray-green and black, PHYLLITE, containing distinct cm wide zones of quartz-muscovite-chlorite and fine grained graphitic minerals. Both zones have CaCO3 bearing quartz strewn throughout. Joints are rough with light orange oxidation. Moderately hard, Slightly weathered, Fair rock, BX, RMR=49	2 (80)	48 (63)	6					
		23.4 ft - 25.4 ft, White, Pinstriped black PHYLLITE, with black cm wide zones of fine-grained, graphitic minerals and are sulfide bearing. White pinstripes are CaCO3 bearing quartzite. Low RQD value due in part to mechanical breking by drill. Moderately hard, Moderately weathered, Poor rock, RMR=29 BX	3 (75)	65 (0)	6					
		Hole stopped @ 25.4 ft			4					
20										
25										
Remarks: Hole collapsed at 8.5 feet.										

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
 <<SUB>><<SUB>> 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 LOG

Waterbury-Stowe
 STP 2945(1)
 VT-100 Mast Arms

Boring No.: B-202
 Page No.: 1 of 1
 Pin No.: 11b342
 Checked By: END

Boring Crew: Emerson, Garrow, Mazzei
 Date Started: 7/13/17 Date Finished: 7/18/17
 VTSPG NAD83: N 672511.05 ft E 1575716.16 ft
 Station: 34+98 Offset: -34.00
 Ground Elevation: 511.2 ft

Casing: WB Sampler: SS
 Type: WB I.D.: 3 in 1.5 in
 Hammer Wt: N.A. 140 lb.
 Hammer Fall: N.A. 30 in.
 Hammer/Rod Type: Auto/AWJ
 Rig: Diedrich D25 CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
07/18/17	5.5	W.T. during 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 %
0.0 - 0.5		A-1-b, GrSa, brn, Moist, Rec. = 0.5 ft				WH-3-2-2 (5)	6.9	39.8	47.6	12.6
0.5 - 1.1		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				3-4-3-4 (7)	9.3	36.6	49.5	13.9
1.1 - 1.6		A-1-b, SaGr, brn, Wet, Rec. = 0.5 ft				3-3-2-3 (5)	11.2	47.6	40.5	11.9
1.6 - 2.1		A-1-b, GrSa, brn, Wet, Rec. = 0.65 ft				5-2-3-3 (5)	14.2	41.5	47.7	10.8
2.1 - 3.6		A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft				2-2-8-25 (10)	11.9	42.5	42.7	14.8
10.1 - 15.1		10.1 ft - 15.1 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Poor rock, BX, RMR=34	1 (80)	90 (16)	4	Top of Bedrock @ 10.1 ft				
15.1 - 17.6		15.1 ft - 17.6 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. BX	2 (50-90)	96 (85)	9					
17.6 - 20.1		17.6 ft - 20.1 ft, Light gray-green, Muscovite-biotite-chlorite-quartz PHYLLITE, with erratic veining and cm thick banding of CaCO3 bearing quartz disrupts the contacts between different zones. Joints are smooth with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, RMR=58			12					
20.1 - 20.1		Hole stopped @ 20.1 ft			7					
20.1 - 22.5		Remarks: Hole collapsed at 5.2 feet. 1. Driller switched from 4 inch to 3 inch casing at 8 feet.			7					

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BORING LOG

Waterbury-Stowe
 STP 2945(1)
 VT-100 Mast Arms

Boring No.: B-203

Page No.: 1 of 1

Pin No.: 11b342

Checked By: END

Boring Crew: Emerson, Garrow, Mazzei

Date Started: 7/17/17 Date Finished: 7/17/17

VTSPG NAD83: N 676543.30 ft E 1578809.72 ft

Station: 87+17 Offset: 23.70

Ground Elevation: 580.2 ft

Type: WB Sampler SS
 I.D.: 4 in 1.5 in
 Hammer Wt: N.A. 140 lb.
 Hammer Fall: N.A. 30 in.
 Hammer/Rod Type: Auto/AWJ
 Rig: CME 45C SKID CE = 1.42

Groundwater Observations

Date	Depth (ft)	Notes
07/17/17	5.0	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		A-1-b, GrSa, brn, Moist, Rec. = 1.7 ft			2-3-2-3 (5)	11.7	21.5	65.6	12.9
		A-2-4, GrSiSa, brn, Moist, Rec. = 1.2 ft			1-2-2-3 (4)	20.1	20.9	44.5	34.6
		A-4, SaSi, brn, Moist, Rec. = 0.9 ft			3-1-3-1 (4)	24.2	10.6	36.2	53.2
		A-4, SaSi, gry, Moist, Rec. = 2.0 ft, Lab Note: A small amount of clay was within sample. Sample tested non-plastic			1-1-1-1 (2)	31.3	1.9	36.3	61.8
10		Field Note:, No Recovery			WH-WH-1-1 (1)				
15		A-1-b, SiSaGr, gry, Moist, Rec. = 0.6 ft, Lab Note: Broken rock was within sample			4-7-9-8 (16)	17.8	44.3	35.6	20.1
		Field Note:, NXDC, Cleaned out casing							
		A-4, Si, gry, Moist, Rec. = 0.2 ft, Lab Note: Insufficient sample size to perform Atterberg limit tests			1-2-3-2 (5)	29.1	18.9	13.2	67.9
20		A-1-b, SiGrSa, gry, Moist, Rec. = 0.5 ft, Lab Note: Some clay was within sample. Sample tested non-plastic			2-2-2-2 (4)	34.4	38.1	41.6	20.3
25		A-4, GrSi, gry, Moist, Rec. = 0.2 ft, Lab Note: Broken rock was within sample	1 (70-80)	90 (90)	R@2-5" (R)	14.2	25.6	0.5	73.9
30		25.2 ft - 30.2 ft, Black-light gray, -green graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, NX, RMR=53			R@2-5" (R)	14.2	25.6	0.5	73.9
Hole stopped @ 30.2 ft									
Remarks: Hole collapsed at 18.4 feet.									

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BORING LOG - WATERBURY-STOWE STP2945(1) - VERMONT ROUTE 302 - 08/3/17



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BORING LOG

Waterbury-Stowe
 STP 2945(1)
 VT-100 Mast Arms

Boring No.: B-204
 Page No.: 1 of 1
 Pin No.: 11b342
 Checked By: END

Boring Crew: Emerson, Garrow, Mazzei
 Date Started: 7/14/17 Date Finished: 7/14/17
 VTSPG NAD83: N 676501.21 ft E 1578746.22 ft
 Station: 86+55 Offset: -13.70
 Ground Elevation: 582.3 ft

Casing: WB Sampler: SS
 I.D.: 4 in 1.5 in
 Hammer Wt: N.A. 140 lb.
 Hammer Fall: N.A. 30 in.
 Hammer/Rod Type: Auto/AWJ
 Rig: CME 45C SKID CE = 1.42

Groundwater Observations		
Date	Depth (ft)	Notes
07/14/17	6.5	W.T. during 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 %
0.0 - 0.55		Asphalt Pavement, 0.0 ft - 0.55 ft								
0.55 - 1.1		A-1-b, SaGr, brn, Moist, Rec. = 1.1 ft				1-7-12-2 (19)	8.4	44.5	42.1	13.4
1.1 - 1.9		A-1-b, SiSaGr, brn, Moist, Rec. = 0.8 ft				3-2-5-3 (7)	14.1	41.3	33.9	24.8
1.9 - 2.7		Field Note:, NXDC, Cleaned out casing								
2.7 - 3.5		A-4, GrSiSa, brn, Moist, Rec. = 0.8 ft				2-3-1-1 (4)	20.5	26.5	37.1	36.4
3.5 - 4.3		Field Note:, No Recovery				2-1-1-1 (2)				
4.3 - 5.1		A-4, SiSa, gry, Moist, Rec. = 0.9 ft				1-1-1-1 (2)	31.8	2.6	59.5	37.9
5.1 - 5.8		A-1-b, GrSa, gry, Moist, Rec. = 0.7 ft, Lab Note: Pieces of decomposing wood and wood fibers were within sample					31.8	31.4	55.0	13.6
5.8 - 7.0		A-1-b, GrSa, gry, Moist, Rec. = 1.2 ft				1-4-2-2 (6)	20.6	39.3	52.2	8.5
7.0 - 15.0		Field Note:, NXDC, Cleaned out casing								
15.0 - 16.8		A-1-b, SaGr, gry, Moist, Rec. = 0.5 ft				10-14-12-11 (26)	9.6	48.1	38.7	13.2
16.8 - 17.3		17.3 ft - 22.3 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, NX, RMR=49	1 (80)	72 (58)	7					
17.3 - 22.3		17.3 ft - 22.3 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, NX, RMR=49			7					
22.3 - 27.3		22.3 ft - 27.3 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, NX, RMR=44	2 (70-80)	96 (47)	7					
27.3 - 30.0		Hole stopped @ 27.3 ft			3					
30.0 - 31.0		Remarks: Hole collapsed at 16.0 feet.			4					
31.0 - 32.0					5					
32.0 - 33.0					5					

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