



BORING LOG

CAVENDISH
BO 1442(38)
TH-1 BR-58

Boring No.: **B-101**
Page No.: 1 of 2
Pin No.: 13J302
Checked By: MLM

Boring Crew: DAIGNEAULT, JUDKINS, HOOK
Date Started: 7/21/14 Date Finished: 7/23/14
VTSPG NAD83: N 321088.86 ft E 1604273.38 ft
Station: 43+11 Offset: 12.30
Ground Elevation: 931.4 ft

Casing Sampler
Type: WB 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
Rlg: CME 55 TRACK C_c = 1.46

Groundwater Observations		
Date	Depth (ft)	Notes
07/22/14	12.4	Before drilling.
07/23/14	13.4	After drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate (min/ft)	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		Asphalt Pavement, 0.0 ft - 0.64 ft A-1-a, SaGr, brn-gry, Moist, Rec. = 0.25 ft, Lab Note: Broken Rock was within sample.				R@3.5" (R)	11.2	63.3	27.7	9.0
5		Field Note: NXDC, Cleaned out casing. A-1-b, GrSa, brn-gry, Moist, Rec. = 0.25 ft, Lab Note: Broken Rock was within sample. Field Note: NXDC, Cleaned out casing.				R@5.0" (R)	12.6	33.5	50.6	15.9
10		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft, Lab Note: Broken Rock was within sample. Field Note: NXDC, Cleaned out casing.				6-4-5-4 (9)	13.6	38.7	48.3	13.0
15		Field Note: NXDC, Cleaned out casing. Field Note: No Recovery. Appears to be silty sand., Rock plugged end of sampler.				5-2-1-2 (3)				
20		Field Note: Cleaned out with Roller cone A-2-4, Sa, brn, MTW, Rec. = 0.5 ft				1-1-1-3 (2)	28.6	2.0	85.1	12.9
25		Field Note: Cleaned out with Roller cone A-4, SiSa, brn, Molst, Rec. = 0.8 ft				2-2-3-3 (5)	30.4	0.2	62.5	37.3
30		Field Note: Cleaned out with Roller cone A-2-4, Sa, brn, Molst, Rec. = 0.8 ft				2-3-3-4 (6)	26.9	0.1	82.8	17.1
40		SiSa, brn, Moist, Rec. = 1.0 ft, 40.0 ft - 42.0 ft				2-3-3-4 (6)	30.6		53.9	46.1
50		Field Note: Cleaned out with Roller cone Field Note: No Recovery. Appears to be sand.				1-3-3-5 (6)				
60		Field Note: Cleaned out with Roller cone A-2-4, SiSa, brn, Molst, Rec. = 0.6 ft				5-7-8-8 (15)	28.3	0.6	73.5	25.9

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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TH-1 BR-58

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Checked By: MLM

Boring Crew: DAIGNEAULT, JUDKINS, HOOK
Date Started: 7/21/14 Date Finished: 7/23/14
VTSPG NAD83: N 321088.86 ft E 1604273.38 ft
Station: 43+11 Offset: 12.30
Ground Elevation: 931.4 ft

Casing Sampler
Type: WB 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
Rlg: CME 55 TRACK C_c = 1.46

Groundwater Observations		
Date	Depth (ft)	Notes
07/22/14	12.4	Before drilling.
07/23/14	13.4	After drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate (min/ft)	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		A-2-4, Sa, brn, Moist, Rec. = 1.7 ft				7-8-11-12 (19)	23.0	5.5	75.4	19.1
10		Field Note: Cleaned out with Roller cone								
80		A-2-4, SiSa, brn, Moist, Rec. = 0.8 ft				6-7-8-7 (15)	27.9		76.5	23.5
90		A-2-4, Sa, brn, Moist, Rec. = 0.7 ft A-2-4, SiSa, gry-brn, Molst, Rec. = 0.6 ft				16-32-20-23 (52)	22.0	2.8	78.7	18.5
100		Field Note: Cleaned out with Roller cone A-2-4, SiSa, brn, Molst, Rec. = 0.2 ft				6-10-15-16 (25)	20.9	15.2	64.7	20.1
110		A-2-4, Sa, brn, Moist, Rec. = 0.4 ft				R@5.0" (R)	23.6	7.3	73.1	19.6
120		Field Note: BXDC, Cleaned out casing.								
120.0		120.0 ft - 124.0 ft, Dark green, Amphibolite, Hard, Unweathered, Good rock, BX, RMR=72	1 (55)	70 (58)	9					Top of Bedrock @ 120.0 ft
124.0		124.0 ft - 129.0 ft, Dark green, Amphibolite, and light-gray to white, gneissic hornblende-biotite tonalite. Closely spaced horizontal jointing. Hard, Unweathered, Fair rock, BX, RMR=52	2 (55)	80 (8)	3					
130		Hole stopped @ 129.0 ft								
		Remarks: Hole collapsed at 33.6 ft.								

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

BORING LOG 2 CAVENDISH BO 1442(38) GPJ VERMONT AOT.GDT 8/5/14

BORING LOG 2 CAVENDISH BO 1442(38) GPJ VERMONT AOT.GDT 8/5/14

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-102				
VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		CAVENDISH BO 1442(38) TH-1 BR-58		Page No.: 1 of 3 Pln No.: 13J302 Checked By: MLM				
Boring Crew: <u>DAVISON, JUDKINS, HOOK</u>		Type: <u>WB SS</u>		Casing Sampler		Groundwater Observations				
Date Started: <u>7/02/14</u> Date Finished: <u>7/17/14</u>		I.D.: <u>4 in 1.5 in</u>		Date		Date				
VTSFG NAD83: <u>N 321165.60 ft E 1604160.35 ft</u>		Hammer Wt: <u>N.A. 140 lb.</u>		07/08/14		12.5 While drilling.				
Station: <u>44+44</u> Offset: <u>-10.20</u>		Hammer Fall: <u>N.A. 30 In.</u>		07/09/14		3.3 Before drilling.				
Ground Elevation: <u>929.5 ft</u>		Hammer/Rod Type: <u>Auto/AWJ</u>		07/15/14		10.1 While drilling.				
		Rlg: <u>CME 45C SKID</u>		C = <u>1.33</u>						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip-sep)	Core Rec. % (ROD %)	Drill Rate (min/feet)	Blow#* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		Asphalt Pavement, 0.0 ft - 0.64 ft								
0		A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.				8-9-12-9 (20)	9.9	39.7	43.8	16.5
5		A-1-b, SiGrSa, brn, Moist, Rec. = 1.6 ft				5-5-4-4 (9)	8.8	33.1	46.3	20.6
5		A-1-b, SiGrSa, brn, Moist, Lab Note: Broken Rock was within sample.				4-11-4- (15)	9.8	35.3	42.5	22.2
10		Visual Description: Sandy Gravel with broken rock, gry, Moist, Rec. = 2 ft, Lab Note: Insufficient sample for testing.				11-6-2-2 (8)	27.7	0.8	56.8	42.4
10		A-4, SiSa, brn, Moist, Rec. = 1.5 ft				3-3-3-3 (6)	13.4	27.1	50.1	22.8
10		A-2-4, SiGrSa, brn, Moist, NXDC, Cleaned out casing.								
10		A-2-4, Sa, brn, MTW, Rec. = 0.25 ft				4-12-15-19 (27)	24.5	1.6	85.1	13.3
15		A-1-a, SaGr, brn-white, MTW, Rec. = 1.0 ft, Lab Note: Broken Rock was within sample, NXDC, Cleaned out casing.				25-25- (36)	11.8	49.5	38.8	11.7
15		Field Note: NXDC, Cleaned out casing.				R@0.10* (83)				
15		Visual Description: Broken Rock, white, Dry, Rec. = 0.1 ft, NXDC, Cleaned out casing.				0-4-2-5-14 (67)				
15		Field Note: No Recovery, Appears to be GrSa				15-11-8-10 (19)	24.9	1.0	84.0	15.0
20		A-2-4, Sa, brn, Moist, Rec. = 1.0 ft				6-5-5-7 (10)				
25		A-2-4, Sa, brn, Moist, Rec. = 0.9 ft				3-5-6-5 (11)	23.1	0.2	84.6	15.2
30		A-2-4, SiSa, brn, MTW, Rec. = 1.0 ft				6-7-8-8 (15)	27.3	0.1	74.0	25.9
35		A-2-4, SiSa, brn, MTW, Rec. = 0.7 ft				8-6-6-8 (12)	26.6	0.1	74.0	25.9
40		A-2-4, SiSa, brn, Moist, Rec. = 0.7 ft				4-5-6-7 (11)	24.1		73.6	26.4
45		A-2-4, SiSa, brn, MTW, Rec. = 0.6 ft				4-6-7-8 (13)	29.5		75.4	24.6
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.										

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-102				
VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		CAVENDISH BO 1442(38) TH-1 BR-58		Page No.: 2 of 3 Pln No.: 13J302 Checked By: MLM				
Boring Crew: <u>DAVISON, JUDKINS, HOOK</u>		Type: <u>WB SS</u>		Casing Sampler		Groundwater Observations				
Date Started: <u>7/02/14</u> Date Finished: <u>7/17/14</u>		I.D.: <u>4 in 1.5 in</u>		Date		Date				
VTSFG NAD83: <u>N 321165.60 ft E 1604160.35 ft</u>		Hammer Wt: <u>N.A. 140 lb.</u>		07/08/14		12.5 While drilling.				
Station: <u>44+44</u> Offset: <u>-10.20</u>		Hammer Fall: <u>N.A. 30 In.</u>		07/09/14		3.3 Before drilling.				
Ground Elevation: <u>929.5 ft</u>		Hammer/Rod Type: <u>Auto/AWJ</u>		07/15/14		10.1 While drilling.				
		Rlg: <u>CME 45C SKID</u>		C = <u>1.33</u>						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip-sep)	Core Rec. % (ROD %)	Drill Rate (min/feet)	Blow#* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		A-2-4, SiSa, brn, Moist, Rec. = 0.6 ft				5-6-7-8 (13)	27.5		73.4	26.6
55		Field Note: NXDC, Cleaned out casing.				3-6-8-8 (14)	28.6	0.1	74.9	25.0
60		A-2-4, SiSa, brn, Moist, Rec. = 0.7 ft				10-9-10-11 (19)	25.5	2.8	72.5	24.7
65		A-2-4, Sa, brn, Wet, Rec. = 0.5 ft				8-13-12-11 (25)	32.7	2.8	77.6	19.6
70		Field Note: No Recovery				6-9-10- (19)				
75		A-2-4, SiSa, brn, Moist, Rec. = 1.2 ft				6-12-15-19 (27)	24.1	2.8	73.4	23.8
80		A-2-4, SiSa, brn, Moist, Rec. = 0.8 ft				10-15-19-20 (34)	22.9	3.4	73.0	23.6
85		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft				11-15-19-21 (34)	24.1	0.7	73.1	26.2
90		A-2-4, SiSa, brn, Moist, Rec. = 0.8 ft				15-20-22-23 (42)	22.5	2.9	64.5	32.6
95										
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VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-102				
VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		CAVENDISH BO 1442(38) TH-1 BR-58		Page No.: 3 of 3 Pln No.: 13J302 Checked By: MLM				
Boring Crew: <u>DAVISON, JUDKINS, HOOK</u>		Type: <u>WB SS</u>		Casing Sampler		Groundwater Observations				
Date Started: <u>7/02/14</u> Date Finished: <u>7/17/14</u>		I.D.: <u>4 in 1.5 in</u>		Date		Date				
VTSFG NAD83: <u>N 321165.60 ft E 1604160.35 ft</u>		Hammer Wt: <u>N.A. 140 lb.</u>		07/08/14		12.5 While drilling.				
Station: <u>44+44</u> Offset: <u>-10.20</u>		Hammer Fall: <u>N.A. 30 In.</u>		07/09/14		3.3 Before drilling.				
Ground Elevation: <u>929.5 ft</u>		Hammer/Rod Type: <u>Auto/AWJ</u>		07/15/14		10.1 While drilling.				
		Rlg: <u>CME 45C SKID</u>		C = <u>1.33</u>						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip-sep)	Core Rec. % (ROD %)	Drill Rate (min/feet)	Blow#* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		A-2-4, SiSa, brn, Moist, Rec. = 0.5 ft				9-16-18-7 (34)	21.3	0.2	77.7	22.1
105		Field Note: NXDC, Cleaned out casing, Appears to be cobbles.								
105		Field Note: Went inside 4" casing with 3" casing.								
110		Field Note: BXDC, Cleaned out casing.								
110		Field Note: No Recovery, Appears to be a boulder.								R@0.0" (R)
120		Field Note: BXDC, Cleaned out casing.								
120		A-2-4, GrSiSa, Ltbrn-gry, Moist, Rec. = 0.1 ft								R@0.5" (R)
125										11.4 23.5 47.3 29.2
130		A-4, GrSaSl, gry, Moist, Rec. = 0.1 ft								R@0.5" (R)
135		133.5 ft - 134.5 ft. Dark green, Amphibolite, Hard, Unweathered, Fair rock, BX, RMR=52								1 94 4 4
135		134.5 ft - 138.5 ft. Light gray to white, Gneissic hornblende-biotite Tonallite, closely spaced horizontal jointing, Hard, Unweathered, Fair rock, RMR=52								(2) (0) 4 6 6 4
140		138.5 ft - 143.5 ft. Light gray to white, Gneissic hornblende-biotite Tonallite, Hard, Unweathered, Good rock, BX, RMR=72								2 74 2 2
140										(2) (60) 3 2 3 3
145		Hole stopped @ 143.5 ft								
Remarks: 1. Groundwater was noted by the drillers at 13.2 ft and 12.9 ft on 7/17/14 and 7/18/14, respectively. 2. Hole collapsed at 13.0 ft.										
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STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND
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BORING LOG

CAVENDISH
 BO 1442(38)
 TH-1 BR-58

Boring No.: B-201

Page No.: 1 of 1

Pin No.: 13J302

Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson
 Date Started: 8/24/17 Date Finished: 8/24/17
 VTSPG NAD83: N 321029.66 ft E 1604244.81 ft
 Station: 21+26.22 Offset: -45.40
 Ground Elevation: 930.6 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
08/24/17	13.0	W.T. after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	
		A-2-4, GrSa, brn, Moist, Rec. = 0.7 ft, Lab Note: Plant material was within sample	WH-WH-5-3 (5)	11.0	23.6	61.7	14.7	
		A-1-b, SiGrSa, brn, Moist, Rec. = 0.8 ft	2-2-4-6 (6)	7.0	29.3	49.9	20.8	
5		A-1-b, SaGr, Lt/brn, Moist, Rec. = 0.9 ft, Lab Note: Broken rock was within sample	9-8-6-9 (14)	2.7	45.6	42.5	11.9	
		A-1-b, GrSa, brn, Moist, Rec. = 0.5 ft, Lab Note: Broken rock was within sample	12-19-R@3.5" (R)	11.0	40.7	43.9	15.4	
		Field Note:, NXDC, Cleaned out casing, Cobbles						
		A-1-b, SaGr, brn, Moist, Rec. = 0.8 ft, Lab Note: Broken rock was within sample	12-18-22-21 (40)	8.6	54.9	29.3	15.8	
10		A-2-4, Sa, brn, Moist, Rec. = 0.7 ft	9-11-8-7 (19)	17.2	2.9	80.8	16.3	
		A-2-4, Sa, brn, Moist, Rec. = 0.9 ft	6-5-6-5 (11)	19.4	3.4	83.4	13.2	
		A-2-4, Sa, brn, Moist, Rec. = 1.3 ft	4-4-4-5 (8)	23.8	0.9	86.4	12.7	
15		A-2-4, Sa, brn, Moist, Rec. = 1.1 ft	4-4-4-5 (8)	21.1	1.0	85.6	13.4	
		A-2-4, Sa, brn, Moist, Rec. = 0.7 ft	5-3-4-4 (7)	24.2	4.5	81.5	14.0	
20		A-2-4, SiSa, brn, Moist, Rec. = 0.8 ft	4-3-5-6 (8)	26.9	1.2	74.7	24.1	
		Field Note:, No Recovery, appears to be sand	10-8-6-9 (14)					
		A-2-4, Sa, brn, Moist, Rec. = 0.5 ft	8-10-10-9 (20)	24.1	1.5	86.0	12.5	
25		A-2-4, Sa, brn, Moist, Rec. = 0.7 ft	4-5-9-14 (14)	26.0	0.4	82.7	16.9	
		Field Note:, No Recovery, appears to be sand	15-13-13-13 (26)					
30		Hole stopped @ 30.0 ft						
		Remarks: Hole Collapsed at 30 feet. 1. Added bentonite to drilling operation at 20 feet due to sand.						

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
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BORING LOG Z CAVENDISH BO 1442(38) VERMONT AGENCY OF TRANSPORTATION



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

BORING LOG

CAVENDISH
 BO 1442(38)
 TH-1 BR-58

Boring No.: B-204
 Page No.: 1 of 1
 Pin No.: 13J302
 Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson
 Date Started: 8/23/17 Date Finished: 8/23/17
 VTSPG NAD83: N 321127.25 ft E 1604145.44 ft
 Station: 22+79.31 Offset: -48.40
 Ground Elevation: 928.3 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
08/23/17	11.4	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
2.5		A-1-b, GrSa, blk, Moist, Rec. = 0.5 ft, Lab Note: Plant roots were within sample	1-1-1-1 (2)	11.6	28.8	51.9	19.3
3.2		A-2-4, GrSa, blk, Moist, Rec. = 0.7 ft, Lab Note: Sticks and plant roots were within sample	1-1-1-1 (2)	5.2	21.7	58.8	19.5
3.9		A-2-4, GrSa, blk, Moist, Rec. = 0.5 ft, Lab Note: Broken rock and glass was within sample	2-1-1-1 (2)	5.4	31.5	51.4	17.1
4.6		A-1-b, GrSa, blk, Moist, Rec. = 0.5 ft	1-1-1-1 (2)	5.4	32.8	51.8	15.4
5.3		A-2-4, SiSa, Lt/brn, Moist, Rec. = 1.0 ft, Lab Note: Decomposing plant material was within sample		2.4	2.8	77.2	20.0
5.9		A-2-4, SiGrSa, blk, Moist, Rec. = 0.4 ft, Lab Note: A very small amount of organic material was within sample	6-5-3-2 (8)	25.4	24.5	52.6	22.9
6.6		A-2-4, GrSa, Lt/brn, Moist, Rec. = 1.0 ft, Lab Note: Broken rock was within sample	3-4-15-28 (19)	17.1	24.9	59.7	15.4
7.3		A-1-a, SaGr, Lt/brn, Moist, Rec. = 0.6 ft, Lab Note: A lot of broken rock was within sample	17-20-28-25 (48)	7.5	67.7	23.7	8.6
8.0		Field Note:, BXDC, Cleaned out casing, Gravel					
8.7		A-2-4, GrSa, Lt/brn, Moist, Rec. = 0.8 ft, Lab Note: Broken rock was within sample	14-9-6-4 (15)	14.8	30.7	55.8	13.5
9.4		Field Note:, BXDC, Cleaned out casing, Gravel					
10.1		A-3, Sa, Lt/brn, Moist, Rec. = 0.3 ft, Lab Note: A small amount of broken rock was within sample	4-4-4-5 (8)	22.3	15.2	76.8	8.0
10.8		A-2-4, Sa, Lt/brn, Moist, Rec. = 0.8 ft	3-4-4-5 (8)	24.8	3.0	81.1	15.9
20.0	Hole stopped @ 20.0 ft						
22.5	Remarks: Hole collapsed at 12.4 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.



STATE OF VERMONT
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BORING LOG

CAVENDISH
 BO 1442(38)
 TH-1 BR-58

Boring No.: P-301

Page No.: 1 of 1

Pin No.: 13J302

Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson

Date Started: 8/25/17 Date Finished: 8/25/17

VTSPG NAD83: N 321071.13 ft E 1604257.45 ft

Station: 21+57 Offset: -11.20

Ground Elevation: 931.0 ft

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

Groundwater Observations

Date	Depth (ft)	Notes
08/25/17	14.7	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.45		Asphalt Pavement, 0.0 ft - 0.45 ft					
0.45 - 1.3		Concrete, 0.45 ft - 1.3 ft					
1.3 - 10.0		Field Note:, Appears to be Gr Sa					
10.0 - 14.4		Field Note:, NXDC, Cleaned out casing, Appears to be cobbles					
14.4 - 20.0		Field Note:, Appears to be Sa					
20.0 - 21.0		Field Note:, NXDC, Cleaned out casing, Appears to be cobbles					
21.0 - 30.0		Field Note:, Appears to be Sa					
30.0		Hole stopped @ 30.0 ft					
		Remarks: Hole collapsed at 14.4 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.

BORING LOG 2 CAVENDISH BO 1442(38).GPJ VERMONT AOT.GDI 9/28/17



STATE OF VERMONT
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 CENTRAL LABORATORY

BORING LOG

CAVENDISH
 BO 1442(38)
 TH-1 BR-58

Boring No.: P-302
 Page No.: 1 of 1
 Pin No.: 13J302
 Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson
 Date Started: 8/25/17 Date Finished: 8/25/17
 VTSPG NAD83: N 321095.99 ft E 1604273.49 ft
 Station: 21+66 Offset: 17.10
 Ground Elevation: 931.2 ft

Casing WB Sampler SS
 Type: WB 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
08/25/17	14.8	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0 - 0.3		Asphalt Pavement, 0.0 ft - 0.3 ft Field Note:, Appears to be Sa Gr					
0.3 - 12.8		Field Note:, Appears to be cobbles					
12.8 - 18.0		Field Note:, Appears to be wood					
18.0 - 30.0		Field Note:, Appears to be Sa					
30.0		Hole stopped @ 30.0 ft					
		Remarks: Hole collapsed at 12.8 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

CAVENDISH
 BO 1442(38)
 TH-1 BR-58

Boring No.: P-303
 Page No.: 1 of 1
 Pin No.: 13J302
 Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson
 Date Started: 8/28/17 Date Finished: 8/29/17
 VTSPG NAD83: N 321136.16 ft E 1604187.35 ft
 Station: 22+54.64 Offset: -13.40
 Ground Elevation: 930.1 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
08/29/17	13.9	W.T. after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.6	Asphalt Pavement	Asphalt Pavement, 0.0 ft - 0.6 ft					
0.6 - 1.8	Concrete	Concrete, 0.6 ft - 1.8 ft					
1.8 - 15.0	Field Note	Field Note:, Appears to be Gr Sa					
15.0 - 17.0	Field Note	Field Note:, Appears to be Sa					
17.0 - 18.0	Field Note	Field Note:, Appears to be wood					
18.0 - 20.0	Field Note	Field Note:, Appears to be concrete					
20.0 - 22.0	Field Note	Field Note:, Appears to be Sa Gr					
22.0 - 26.0	Field Note	Field Note:, Appears to be Sa					
26.0	Hole stopped @ 26.0 ft						
30.0	Remarks: 1. Hole was grouted to the surface with bentonite/portland cement grout.						

Notes:
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BORING LOG

CAVENDISH
 BO 1442(38)
 TH-1 BR-58

Boring No.: **P-304**

Page No.: 1 of 1

Pin No.: 13J302

Checked By: SPM

Boring Crew: Gonyaw, Garrow, Emerson
 Date Started: 8/28/17 Date Finished: 8/28/17
 VTSPG NAD83: N 321161.01 ft E 1604203.40 ft
 Station: 22+59.78 Offset: 15.75
 Ground Elevation: 930.2 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
08/28/17	12.9	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.06	Asphalt Pavement	Asphalt Pavement, 0.0 ft - 0.06 ft					
0.06 - 0.56	Concrete	Concrete, 0.06 ft - 0.56 ft Field Note:., Appears to be Sa Gr					
5.0 - 15.0	Cobbles	Field Note:., Appears to be Cobbles					
15.0 - 16.0	Wood	Field Note:., Appears to be Wood					
16.0 - 20.0	Sand	Field Note:., Appears to be Sa					
20.0 - 21.0	Wood	Field Note:., Appears to be Wood					
21.0 - 30.0	Sand	Field Note:., Appears to be Sa					
30.0	Hole stopped @ 30.0 ft						
	Remarks: Hole collapsed at 9.6 feet.						

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
 <<SUB>><<SUB>> is the hammer energy correction factor.
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BORING LOG Z CAVENDISH BO 1442(38).GPJ VERMONT AOTI.GDT 9/28/17