



BORING LOG

Highway 80 1448 (43)
(GeoDesign #730-08.16)
Bridge #25, Highway, VT

Boring No.: 0-108
Page No.: 1 of 2
Pin No.: P90171
Checked By: JFW/SPK

Boring Crew: J. Leachard (COO), A. Baribault (GeoDesign)
Date Started: 8/19/14 Date Finished: 8/19/14
VDPG HDBS: M 082804.00 N E 1514303.00 N
Station: 15+25 Offset: 0.00
Ground Elevation: 221.5 N

Casing Sampler
Type: FJ SS
I.D.: 4 in. 1.38 in.
Hammer Mt: 140 lb. 140 lb.
Hammer Fall: 30 in. 30 in.
Hammer/Red Type: Auto/IMJ
Rig: CME SSBH ATV CE = 1.5

Groundwater Observations (S)

Date	Depth (ft)	Notes
08/20/14		None observed.

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Res (lb/ft³)	Core Res. (lb/ft³)	Soil Temp. (min/ft)	Moisture Content (%)	Gravel %	Sand %	Fines %
2.5	2'-0"	S1 (0.5'-2'): Medium dense, brown (light gray/brown upper 4") fine to coarse SAND, little fine GRAD, little SIL, mat. (ROAD GRADE) (ARNDT W145 Classification: A-1-b.) Res. = 1.0 N							
5.0	2'-4"	S2 (2'-4"): Loose, brown fine to coarse SAND, little SIL, trace fine GRAD, trace shells (in lower 6"), mat. (FILL) Res. = 1.5 N (ARNDT W145 Classification: A-1-b.)							
5.0	4'-6"	S3 (4'-6"): Loose, brown fine to coarse SAND, some (+) SIL, little fine GRAD, trace shells, sat. (FILL) Res. = 0.7 N (ARNDT W145 Classification: A-2-A.)							
7.5	6'-8"	S4 (6'-8"): Loose, brown fine to coarse SAND, some (+) SIL, little fine GRAD, mat. Res. = 0.9 N (ARNDT W145 Classification: A-2-A.)							
10.0	8'-0"	S5 (8'-0"): Very dense, SSa (upper 6"): gray and orange fine to coarse GRNCL and fine to coarse SAND, trace SIL, mat. to sat. SSb (lower 6"): gray with white and orange fine GRNCL (friable) and fine to coarse SAND, little SIL, mat. (WEATHERED ROCK) Res. = 1.2 N (ARNDT W145 Classification: A-1-a.)							
10.0	10'-12"	S6 (10'-12"): Very dense, gray fine to coarse GRNCL (friable) and fine to coarse SAND, little SIL, mat. (WEATHERED ROCK) (ARNDT W145 Classification: A-1-b.) Res. = 1.8 N							
12.5	12'-12.5"	S7 (12'-12.5"): Refusal, gray fine GRNCL (friable) and fine to coarse SAND, trace SIL, mat. (WEATHERED ROCK) Res. = 0.5 N (ARNDT W145 Classification: A-1-a.)							
15.0	13'-17.5"	C1 (13'-17.5'): Fair quality, moderately hard with soft cores, slightly to moderately weathered, fine-grained gray with light gray/white banding and orange weathering SLATE. Fracturing approximately 80 to 90 degrees from horizontal. Strong reaction to dilute HCl in white bands. C1S1 UCS (10.1" deep) 6,070 psi.	C1	78 (54)	0.43				
17.5	17.5'-21.5"	C2 (17.5'-21.5'): Fair quality, moderately hard, slightly weathered, fine-grained gray with white banding/strips, SLATE. Fracturing approximately 30 degrees and 80-90 degrees from horizontal. Strong reaction to dilute HCl in white bands.	C2	100 (87)	0.50				

Notes: 1. Stratification lines represent approximate boundary between material types. Variation may be greater.
2. If return flow not been observed for hammer drops, CE is the hammer energy correction factor.
3. Soil temp readings have been made of fines and water conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.



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Groundwater Observations (S)

Date	Depth (ft)	Notes
08/20/14		None observed.

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Res (lb/ft³)	Core Res. (lb/ft³)	Soil Temp. (min/ft)	Moisture Content (%)	Gravel %	Sand %	Fines %
22.5	21.5'-28.5"	C3 (21.5'-28.5'): Fair quality, moderately hard, slightly weathered to fresh, fine-grained, gray with white stripes, SLATE; fracturing approximately 80 degrees above horizontal. Strong reaction to dilute HCl in white bands.	C3	85 (85)	0.67				
25.0					0.67				
25.0					0.71				
25.0					0.53				
25.0					0.4				
27.5		Hole stopped @ 28.5 N							
30.0									
32.5									
35.0									
37.5									

Remarks:
1) Drove 4" casing through asphalt prior to sampling.
2) Sample S2 not performed in accordance with ASTM D1586 (barrel not cleared with roller bit prior to sampling)
3) Moisture descriptions may not accurately reflect in situ conditions due to wash-dry drilling methods.
4) Casing set to 11.5 feet deep prior to clearing boring with roller bit to 13 feet deep.
5) Wash water return gray-dark gray during core C1. Total loss of water from 15.5 to 17.5 feet deep. Estimate ~150 gallons lost over 2" core.
6) No return water observed during C2 or C3 advances.
7) Bedrock cores were obtained with a 1 1/2" size rock core barrel.

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2. If return flow not been observed for hammer drops, CE is the hammer energy correction factor.
3. Soil temp readings have been made of fines and water conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.