

PROJECT NAME: HARDWICK SLIDE PROJECT NUMBER: ST 030-3(4)
 SITE NAME: RT.15 SITE NUMBER: MUDSLIDE
 STATION: 202+07 GROUND ELEVATION: 943.85 ft
 OFFSET: 248.00 GROUNDWATER DEPTH: 7.99 ft 6/08/04
 VTSPG: N 729723.30 ft E 1676395.41 ft PROJECT PIN NUMBER: 04E060

BORING CREW BORING RIG: TRUCK
 CREW CHIEF: SOMERS BORING TYPE: WASH BORE
 DRILLER: SOMERS SAMPLE TYPE: SPLIT BARREL
 LOGGER: ELIASSEN CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
Top of Well Elevation: 946.1 ft										
		A-4, SaSi, brn, Moist, Rec. = 1.0 ft, Well casing above ground level = 2.5 feet.		18	19.2	9.1	36.9	54.0		
		A-4, SaSi, brn, Moist, Rec. = 1.6 ft		14	17.6	0.5	26.3	73.2		
5		A-4, SaSi, brn, Moist, Rec. = 1.1 ft		11	29.1	1.4	21.6	77.0		
		A-4, Si, brn, Wet, Rec. = 1.6 ft		8	32.5	0.1	4.7	95.2		
		A-4, SaGrSi, brn, Wet, Rec. = 1.1 ft, Ground water elevation (from top of well casing) = 10.49 feet 06/08/04 3:30PM		7	19.6	23.5	22.4	54.1		
10		A-4, GrSi, brn, Wet, Rec. = 1.4 ft, Sample was tested for Limits.		11	17.1	29.1	18.9	52.0		
		Loose Silt & Rock fragments, brn, Wet, Rec. = 0.3 ft, 12.0 ft - 14.0 ft, Stone in Sampler.		20						
15		Broken Rock particles, 14.0 ft - 15.0 ft, Advanced casing to 17.0'		R						
		A-4, Si, gry, Moist, Rec. = 1.4 ft		97	14.8	8.6	13.7	77.7		
20		A-4, SaSi HP, gry, Moist, Rec. = 1.0 ft		R	8.4	5.7	29.3	65.0		
25		A-4, SaSi HP, gry, Moist, Rec. = 0.9 ft		R	12.0	3.9	22.2	73.9		
30		A-4, SaSi HP, gry, Moist, Rec. = 1.4 ft		R	13.8	5.5	32.9	61.6		

LOG OF BORING HARDWICK ST030-3(4) GPJ VT AOT.GBT 9/7/06

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 LOGGER: ELIASSEN CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
35		A-4, Cisi HP, gry, Moist, Rec. = 1.9 ft		R	18.4	0.0	7.7	92.3	33	10
40		A-6, SICI HP, gry, Moist, Rec. = 1.9 ft		53	19.9	0.0	5.3	94.7	33	11
		A-6, SICI HP, gry, Moist, Rec. = 2.0 ft		61	25.5	0.0	1.6	98.4	37	14
45		A-7-6, Cl, gry, Moist, Rec. = 1.0 ft		R	32.5	0.3	7.7	92.0	42	20
		A-4, Cisi HP, gry-brn, Moist			18.2	16.8	21.2	62.0	27	9
		A-2-4, SiGrSa HP, gry-brn, Moist			14.0	33.4	37.3	29.3		
		Visual Class: A-2-4, Gr Sa, Insufficient sample for testing., Dark brown, Moist, 46.0 ft - 46.3 ft		R						
		Visual Class: Broken Rock., gry, Moist, 48.0 ft - 48.2 ft		R						
50		Boulders & Till, 48.5 ft - 50.0 ft								
		A-4, SaSi, brn, Moist, Rec. = 0.3 ft		R	14.3	15.3	41.2	43.5		
		Visual Class: A-2-4, Sa Gr, Insufficient sample for testing., brn, MTW, Rec. = 0.2 ft, 52.0 ft - 52.5 ft		R						
55		Visual Class: A-2-4, Sa Gr, Insufficient sample for testing., brn, MTW, Rec. = 0.3 ft, 55.0 ft - 55.5 ft		R						
60		BXDC, Boulders & Till, 60.0 ft - 64.0 ft								

LOG OF BORING HARDWICK ST030-3(4) GPJ VT AOT.GBT 9/7/06

PROJECT NAME: HARDWICK SLIDE PROJECT NUMBER: ST 030-3(4)
 SITE NAME: RT.15 SITE NUMBER: MUDSLIDE
 STATION: 202+07 GROUND ELEVATION: 943.85 ft
 OFFSET: 248.00 GROUNDWATER DEPTH: 7.99 ft 6/08/04
 VTSPG: N 729723.30 ft E 1676395.41 ft PROJECT PIN NUMBER: 04E060

BORING CREW BORING RIG: TRUCK
 CREW CHIEF: SOMERS BORING TYPE: WASH BORE
 DRILLER: SOMERS SAMPLE TYPE: SPLIT BARREL
 LOGGER: ELIASSEN CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
				RUN	REC (%)	ROD (%)	Dip (deg)	Drill Rate (min/ft)		
65										
70		No Recovery, 70.0 ft - 70.5 ft		R						
		Top of Bedrock @ 73.8 ft								
75		Gray, Meta-Limestone, Some stained jointing, Hard, Unweathered, BXGDC, 73.8 ft - 78.5 ft, Rec. = 2.0 ft		1	43	16				
80		Dark gray, Phyllite, Numerous closely spaced stained joints., Moderately hard, BXGDC, 78.5 ft - 80.5 ft, Rec. = 3.75 ft		2	71	0	60			
		Gray, Meta-Limestone, Some stained jointing., Hard, 80.5 ft - 81.5 ft								
		Dark gray, Phyllite, Some stained jointing., Moderately hard, 81.5 ft - 82.25 ft								
85		Alternating gray meta-limestone and dark gray phyllite, Hard to Moderately hard, Numerous stained jointing., BXGDC, 83.8 ft - 88.8 ft, Rec. = 3.2 ft		3	64	0	50			
90		Hole stopped @ 88.8 ft								
		DRILLERS NOTE'S: A Monitoring Well MW-1 was installed 5.0 feet West of B-1. Monitoring Well depth was 19.5 feet.								
95										

LOG OF BORING HARDWICK ST030-3(4) GPJ VT AOT.GBT 9/7/06

VTrans Working to Get You There
 STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 MATERIALS & RESEARCH SECTION
 SUBSURFACE INFORMATION

BORING NUMBER: B-2 MW-2
 SHEET 1 of 3
 DATE STARTED: 5/27/04
 DATE COMPLETED: 6/08/04

PROJECT NAME: HARDWICK SLIDE
 SITE NAME: RT.15
 STATION: 201+65
 OFFSET: 221.00
 VTSPG: N 729752.67 ft E 1676342.02 ft

PROJECT NUMBER: ST 030-3(4)
 SITE NUMBER: MUDSLIDE
 GROUND ELEVATION: 937.4 ft
 GROUNDWATER DEPTH: 6.58 ft 6/08/04
 PROJECT PIN NUMBER: 04E060

BORING CREW
 CREW CHIEF: SOMERS
 DRILLER: SOMERS
 LOGGER: ELIASSEN

BORING RIG: TRUCK
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
		Visual Class: A-2-4, Sa with Loam, brn, Moist, Rec. = 0.5 ft, 0.0 ft - 2.0 ft, Well casing above ground = 2.1 feet.		16	20.4					
		Visual Class: A-2-4, Sa Si with Broken Rock, brn, Dry, Rec. = 0.9 ft, 2.0 ft - 4.0 ft		52	4.3					
5		Visual Class: A-4, Sa Si with Broken Rock, brn, MTW, Rec. = 0.5 ft, 4.0 ft - 6.0 ft		R	10.3					
		A-4, SaSi, gry, Moist, Rec. = 0.7 ft		39	15.5	4.8	24.9	70.3		
		A-4, SaSi, gry, Moist, Rec. = 1.6 ft		62	12.7	14.3	30.3	55.4		
10		A-4, SaSi, gry, Moist, Rec. = 1.2 ft		R	11.4	13.8	34.0	52.2		
		A-4, SaSi, gry, Moist, Rec. = 1.4 ft		R	11.4	12.8	36.8	50.4		
15		A-4, SaSi, gry, Moist, Rec. = 1.0 ft		R	10.3	18.2	36.1	45.7		
		A-6, SiCl, gry, Moist, Rec. = 1.2 ft		66	18.4	1.8	11.5	86.7	29	11
		A-6, SiCl, gry, Moist, Rec. = 1.5 ft		R	18.3	0.2	2.2	97.6	35	15
20		A-6, SiCl, gry, Moist, Rec. = 1.6 ft		R	18.4	4.7	14.2	81.1	27	11
		A-4, CiSi, gry, MTW, Rec. = 1.7 ft		64	16.3	6.5	33.2	60.3	21	7
25		A-6, Cl, gry, MTW, Rec. = 1.0 ft		R	23.0	5.6	9.1	85.3	40	20
		A-2-4, GrSiSa, gry-brn, Moist, Rec. = 0.8 ft		R	9.7	27.0	39.0	34.0		
		Visual Class: A-2-4, Gr Si, brn, Moist, Rec. = 0.5 ft, 28.0 ft - 29.0 ft, Insufficient sample for testing.		R						
30		Visual Class: A-2-4, Gr Si, brn, Moist, Rec. = 0.3 ft, 29.0 ft - 29.5 ft, Insufficient sample for testing.		R						

LOG OF BORING HARDWICK ST030-3(4).DPR, VT, AOT,GBT 9/7/06

VTrans Working to Get You There
 STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 MATERIALS & RESEARCH SECTION
 SUBSURFACE INFORMATION

BORING NUMBER: B-2 MW-2
 SHEET 2 of 3
 DATE STARTED: 5/27/04
 DATE COMPLETED: 6/08/04

PROJECT NAME: HARDWICK SLIDE
 SITE NAME: RT.15
 STATION: 201+65
 OFFSET: 221.00
 VTSPG: N 729752.67 ft E 1676342.02 ft

PROJECT NUMBER: ST 030-3(4)
 SITE NUMBER: MUDSLIDE
 GROUND ELEVATION: 937.4 ft
 GROUNDWATER DEPTH: 6.58 ft 6/08/04
 PROJECT PIN NUMBER: 04E060

BORING CREW
 CREW CHIEF: SOMERS
 DRILLER: SOMERS
 LOGGER: ELIASSEN

BORING RIG: TRUCK
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
		A-7-6, SiCl, gry, Moist, Rec. = 2.0 ft		60	31.8	0.0	2.8	97.2	41	19
40		A-7-6, Cl, gry, Moist, Rec. = 2.0 ft		78	30.3	0.0	3.0	97.0	42	20
		A-4, CiSi, gry, Moist, Iron stained lamina.		R	18.4	0.4	17.6	82.0	26	9
		A-4, CiSi, gry, Moist, Rec. = 0.5 ft		R	25.1	1.4	26.9	71.7	24	8
		A-2-4, SiSa, brn, Moist, Rec. = 1.5 ft		R	14.7	19.5	52.4	28.1		
		A-4, SaSi, brn, Moist, Iron stained lamina.		R	17.9	0.5	33.7	65.8		
45		A-4, SaSi, gry-brn, Moist, Rec. = 0.8 ft		R	16.1	5.7	43.1	51.2		
		A-4, SaSi, brn, Moist, Rec. = 1.0 ft, Iron stained lamina.		R	15.7	4.3	41.1	54.6		
		Rock particles, 47.7 ft - 48.0 ft		R						
50		Visual Class: A-1-b, Gr with Broken rock particles, Rec. = 0.3 ft, 49.0 ft - 49.5 ft, Insufficient sample for testing.		R						
		A-2-4, SiSa, gry, Moist, Rec. = 0.4 ft		R	17.4	17.1	54.7	28.2		
		A-1-a, SaGr, Rec. = 0.2 ft		R	11.7	72.9	24.7	2.4		
		BXDC, Boulder, 53.4 ft - 54.2 ft								
		BXMD, Boulders, 54.2 ft - 56.2 ft								
60		No Rec., On Rock, 61.3 ft - 62.1 ft		R						

LOG OF BORING HARDWICK ST030-3(4).DPR, VT, AOT,GBT 9/7/06

VTrans Working to Get You There
 STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 MATERIALS & RESEARCH SECTION
 SUBSURFACE INFORMATION

BORING NUMBER: B-2 MW-2
 SHEET 3 of 3
 DATE STARTED: 5/27/04
 DATE COMPLETED: 6/08/04

PROJECT NAME: HARDWICK SLIDE
 SITE NAME: RT.15
 STATION: 201+65
 OFFSET: 221.00
 VTSPG: N 729752.67 ft E 1676342.02 ft

PROJECT NUMBER: ST 030-3(4)
 SITE NUMBER: MUDSLIDE
 GROUND ELEVATION: 937.4 ft
 GROUNDWATER DEPTH: 6.58 ft 6/08/04
 PROJECT PIN NUMBER: 04E060

BORING CREW
 CREW CHIEF: SOMERS
 DRILLER: SOMERS
 LOGGER: ELIASSEN

BORING RIG: TRUCK
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
65		A-2-4, GrSiSa, gry-brn, MTW, Rec. = 0.5 ft		R	19.5	30.7	36.5	32.8		
		Gray, Phyllitic Schist, Some stained jointing., Moderately hard, BXMD, 68.0 ft - 68.5 ft, Rec. = 2.7 ft		1	54	10	55			
70		Meta-Limestone, Some stained jointing, Hard, 68.5 ft - 73.0 ft								
		Gray, Meta-Limestone, Hard, Unweathered, BXMD, 73.0 ft - 78.0 ft, Rec. = 4.0 ft		2	80	75	60			
75		Hole stopped @ 78.0 ft								
80		DRILLERS NOTE'S: A Monitoring Well MW-2 was installed.								
85										
90										
95										

LOG OF BORING HARDWICK ST030-3(4).DPR, VT, AOT,GBT 9/7/06



PROJECT NAME: HARDWICK SLIDE
SITE NAME: RT.15
STATION: 202+25
OFFSET: 171.00
VTSPG: N 729800.51 ft E 1676427.94 ft

PROJECT NUMBER: ST 030-3(4)
SITE NUMBER: MUDSLIDE
GROUND ELEVATION: 915.16 ft
GROUNDWATER DEPTH: 7.3 ft 7/20/04
PROJECT PIN NUMBER: 04E060

BORING CREW
CREW CHIEF: SOMERS
DRILLER: SOMERS
LOGGER: PUALWAN

BORING RIG: LAG TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
Top of Well Elevation: 916.94 ft										
		A-4, SaSi, gry-brn, Moist, Rec. = 1.2 ft, Sample was tested for Limits, Well casing above ground = 1.8 feet.		3	26.9	3.5	25.6	70.9		
2.5		A-6, SiCl, gry, Moist, Rec. = 1.0 ft		9	30.8	1.7	6.3	92.0	37	13
5.0		A-6, SiCl, gry, Moist, Rec. = 1.8 ft		6	28.8	2.2	4.0	93.8	38	14
7.5		A-6, SiCl, gry, Moist, Rec. = 1.0 ft		10	29.0	0.0	2.2	97.8	36	12
10.0		A-6, SiCl, gry, Moist, Rec. = 1.2 ft		10	27.1	0.0	1.2	98.8	38	14
12.5		A-6, SiCl, gry, Moist, Rec. = 1.3 ft		9	25.9	0.0	0.9	99.1	38	12
15.0		A-6, SiCl, gry, Moist, Rec. = 1.6 ft		13	28.5	0.0	1.0	99.0	39	14
17.5		A-6, SiCl, gry, Moist, Rec. = 1.5 ft		16	30.9	0.0	1.2	98.8	39	15
20.0		A-4, SaSi, gry-brn, Moist, Rec. = 1.5 ft		78	19.7	4.8	30.0	65.2	24	4
		A-2-4, SiSa, brn, Moist, Rec. = 0.5 ft		R	12.1	19.1	51.3	29.6		
		A-2-4, SiSaGr, gry-brn, Moist, Rec. = 0.9 ft		R	12.6	40.5	30.1	29.4		
		BXDC, Boulders, 20.9 ft - 22.0 ft								
22.5		A-1-b, SiGrSa, gry, Moist, Rec. = 0.9 ft		R	11.7	38.3	41.4	20.3		
		NXDC, Cleaned and advanced casing, 23.0 ft - 24.0 ft								

LOG OF BORING HARDWICK ST030-3(4).GPI VT AOT.GDT 9/7/06



PROJECT NAME: HARDWICK SLIDE
SITE NAME: RT.15
STATION: 202+25
OFFSET: 171.00
VTSPG: N 729800.51 ft E 1676427.94 ft

PROJECT NUMBER: ST 030-3(4)
SITE NUMBER: MUDSLIDE
GROUND ELEVATION: 915.16 ft
GROUNDWATER DEPTH: 7.3 ft 7/20/04
PROJECT PIN NUMBER: 04E060

BORING CREW
CREW CHIEF: SOMERS
DRILLER: SOMERS
LOGGER: PUALWAN

BORING RIG: LAG TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
25.0		Visual Classification: Broken Rock, Rec. = 0.2 ft, 24.0 ft - 26.0 ft		R						
27.5		A-2-4, SiSa with trace of Wood, brn, Moist, Rec. = 1.2 ft		R	11.4	17.0	51.6	31.4		
		A-4, SiSa, yel-brn, Moist, Rec. = 0.5 ft		R	14.6	12.8	44.3	42.9		
		A-4, SaSi Possible Weathered Rock, blk, Moist, Rec. = 0.6 ft			25.3	0.2	42.4	57.4		
30.0		A-2-4, SiSaGr, gry-brn, Moist, Rec. = 0.4 ft		R	12.3	37.1	33.7	29.2		
		A-4, SiSa HP Till, Possible Weathered Rock, Dk/gry-brn, Moist, Rec. = 1.4 ft		R	13.5	14.8	43.8	41.4		
32.5		A-4, SiSa HP Till, Possible Weathered Rock, Dk/gry-brn, Moist, Rec. = 1.4 ft		R	14.0	14.5	45.3	40.2		
35.0		A-1-b, SiGrSa, gry-brn, Moist, Rec. = 2.0 ft		R	9.5	34.4	43.8	21.8		
		A-1-b, SiSaGr, brn, Moist, Rec. = 0.4 ft		93	9.8	46.0	32.7	21.3		
		A-4, SaSi, brn, Moist, Rec. = 1.0 ft			16.0	0.0	26.4	73.6		
37.5		A-4, SaSi, Lt/brn, Moist, Rec. = 1.2 ft		86	15.7	2.5	30.9	66.6		
40.0		A-4, SaSi, Lt/brn, Moist, Rec. = 1.5 ft		61	17.2	0.1	27.5	72.4		
42.5		A-4, SaSi, Lt/brn, Moist, Rec. = 1.3 ft		83	17.9	1.4	39.3	59.3		
		A-4, SaSi, gry-brn, Moist, Rec. = 0.5 ft, Drop stones were present		R	12.6	1.6	30.9	67.5		
45.0		Could not retrieve sample, Sample barrel broke off, 44.0 ft - 46.0 ft								
		Hole stopped @ 46.0 ft								
47.5		DRILLERS NOTE'S: An Inclinometer Well INC-1 was installed.								

LOG OF BORING HARDWICK ST030-3(4).GPI VT AOT.GDT 9/7/06

PROJECT NAME: HARDWICK SLIDE PROJECT NUMBER: ST 030-3(4)
 SITE NAME: RT.15 SITE NUMBER: MUDSLIDE
 STATION: 201+77 GROUND ELEVATION: 928.28 ft
 OFFSET: 193.80 GROUNDWATER DEPTH: 11.2 ft 8/11/04
 VTSPG: N 729778.54 ft E 1676362.26 ft PROJECT PIN NUMBER: 04E060

BORING CREW BORING RIG: LAG TRACK RIG
 CREW CHIEF: HOLT BORING TYPE: WASH BORE
 DRILLER: DRILLER SAMPLE TYPE: SPLIT BARREL
 LOGGER: PUALWAN CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
Top of Well Elevation: 930.64 ft										
		A-4, SaSi, Dk/brn, Moist, Rec. = 1.2 ft, Well casing above ground = 2.4 feet.		3	34.7	4.2	46.8	49.0		
5	XXXX	Visual Class: Silt Asphalt & Wood, Possible Fill Material, Dk/brn, Moist, Rec. = 1.3 ft, 2.0 ft - 4.0 ft		3	17.6					
	XXXX	Visual Class: Silt & Asphalt, Possible Fill Material, Dk/brn, Moist, Rec. = 1.0 ft, 4.0 ft - 6.0 ft		4	11.5					
	XXXX	Visual Class: Asphalt & Silt, Possible Fill Material, Dk/brn, MTW, Rec. = 0.5 ft, 6.0 ft - 8.0 ft		7	12.3					
	XXXX	Visual Class: Asphalt with Sa Gr, Possible Fill Material, brn, Moist, Rec. = 0.6 ft, 8.0 ft - 10.0 ft		15	10.5					
10	XXXX	Visual Class: Gr & Rubber, Possible Fill Material, blk, Moist, Rec. = 0.3 ft, 10.0 ft - 12.0 ft		58	11.2					
		A-4, Si, Lt/brn, MTW, Rec. = 1.2 ft		4	39.8	2.7	13.3	84.0		
15		A-4, Si, Lt/brn, MTW, Rec. = 1.0 ft		3	32.3	6.8	13.0	80.2		
		A-4, SaSi, Dk/brn, MTW, Rec. = 0.2 ft		4	12.3	13.4	35.5	51.1		
20	OO	Visual Class: A-2-4, Gr Sa, brn, Wet, Rec. = 1.2 ft, 18.0 ft - 20.0 ft		2	22.8					
		A-4, GrSaSi, gry, Moist, Rec. = 0.9 ft		9	28.5	20.9	26.0	53.1		
		A-4, SaSi, gry, Moist, Rec. = 0.9 ft		16	13.0	13.1	34.1	52.8		
25	XXXX	A-6, SiCl with small varved layers of Silt, gry, Moist, Rec. = 1.4 ft		12	26.3	0.4	4.4	95.2	36	14
		A-7-6, Cl, gry, Moist, Rec. = 0.2 ft		76	30.5	0.3	5.6	94.1	46	23
		A-7-6, Cl with varved layers at 40-45 degree angle, gry, Moist, Rec. = 2.0 ft		25	33.9	0.0	7.8	92.2	44	20
30		A-7-6, Cl with few varved layer with very little angle, gry, Moist, Rec. = 2.0 ft		11	34.1	0.0	8.0	92.0	51	26

LOG OF BORING HARDWICK ST030-3(4).SP1 VT.AOT.GBT 9/7/06

PROJECT NAME: HARDWICK SLIDE PROJECT NUMBER: ST 030-3(4)
 SITE NAME: RT.15 SITE NUMBER: MUDSLIDE
 STATION: 201+77 GROUND ELEVATION: 928.28 ft
 OFFSET: 193.80 GROUNDWATER DEPTH: 11.2 ft 8/11/04
 VTSPG: N 729778.54 ft E 1676362.26 ft PROJECT PIN NUMBER: 04E060

BORING CREW BORING RIG: LAG TRACK RIG
 CREW CHIEF: HOLT BORING TYPE: WASH BORE
 DRILLER: DRILLER SAMPLE TYPE: SPLIT BARREL
 LOGGER: PUALWAN CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
		A-7-6, Cl, gry, Moist, Rec. = 2.0 ft		81	27.9	0.0	3.3	96.7	50	24
35		A-6, SiCl, gry, Moist			21.2	0.3	24.4	75.3	33	14
		A-4, SaSi, brn, Moist		R	18.0	1.1	36.4	62.5	24	4
		A-4, SaSi, brn-gry, Moist, Rec. = 1.6 ft, Tested NP			17.2	9.2	33.4	57.4		
		A-6, SaCl, gry, Moist, Rec. = 1.8 ft		R	27.1	3.7	51.9	44.4	33	13
		A-4, SiSa, gry, Moist			14.5	8.6	53.3	38.1		
40		Visual Class: Broken Rock particles, NXDC, gry, Moist, Rec. = 0.4 ft, 38.0 ft - 40.0 ft		R						
		A-1-a, SaGr HP Till, gry, Moist, Rec. = 0.6 ft		R	10.2	50.8	38.6	10.6		
45		NXDC, Boulder, 43.8 ft - 44.5 ft								
		A-1-b, SaGr HP Till, gry, Moist, Rec. = 0.5 ft		R	8.7	55.6	28.6	15.8		
50		A-4, SiSa HP, gry-brn, Moist, Rec. = 0.9 ft		R	12.8	10.2	53.4	36.4		
		A-2-4, SiGrSa HP, brn, Moist			9.8	27.7	47.0	25.3		
55		A-4, SaSi, gry, Moist, Rec. = 0.8 ft		R	19.5	1.4	23.0	75.6		
60		A-4, Si, gry, Moist, Rec. = 1.1 ft		R	25.3	0.0	7.0	93.0	27	3

LOG OF BORING HARDWICK ST030-3(4).SP1 VT.AOT.GBT 9/7/06

PROJECT NAME: HARDWICK SLIDE PROJECT NUMBER: ST 030-3(4)
 SITE NAME: RT.15 SITE NUMBER: MUDSLIDE
 STATION: 201+77 GROUND ELEVATION: 928.28 ft
 OFFSET: 193.80 GROUNDWATER DEPTH: 11.2 ft 8/11/04
 VTSPG: N 729778.54 ft E 1676362.26 ft PROJECT PIN NUMBER: 04E060

BORING CREW BORING RIG: LAG TRACK RIG
 CREW CHIEF: HOLT BORING TYPE: WASH BORE
 DRILLER: DRILLER SAMPLE TYPE: SPLIT BARREL
 LOGGER: PUALWAN CHECKED BY: TDE

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)	BLOWS PER FOOT		DIP (deg)	Drill Rate (min/ft)
											RUN	REC (%)		
65		A-4, Si, gry, Moist, Rec. = 1.3 ft		R	24.9	1.1	17.8	81.1						
		NXDC, Cleaned out casing and cored ahead, 67.0 ft - 70.0 ft												
70		Visual Class: A-2-4, Si Sa with Weathered Rock, gry with streaks of yellow, Moist, Rec. = 0.3 ft, 70.0 ft - 71.0 ft		R										
		Gray, Phyllite, Moderately soft to moderately hard, Moderately to severely weathered, NXGDC, 71.5 ft - 73.5 ft, Rec. = 4.1 ft		1	82	20	70							
		Gray, Meta-Limestone, Moderately hard to hard, Unweathered, 73.5 ft - 75.3 ft												
75		Gray, Phyllite, Moderately soft to moderately hard, Moderately to severely weathered, 75.3 ft - 76.5 ft		2	88	60	70							
		Gray, Phyllite, Moderately hard, Moderately weathered, NXGDC, 76.5 ft - 77.5 ft, Rec. = 4.4 ft												
80		Gray, Meta-Limestone, Moderately hard to hard, Unweathered, 77.5 ft - 81.5 ft												
		Hole stopped @ 81.5 ft												
85		DRILLERS NOTE'S: An inclinometer Well INC-2 was installed. There was no water in B-4, on the day of INC-2 installation.												
90														
95														

LOG OF BORING HARDWICK ST030-3(4).SP1 VT.AOT.GBT 9/7/06



PROJECT NAME: HARDWICK SLIDE
SITE NAME: RT.15
STATION: 202+42
OFFSET: 246.38
VTSPG: N 729712.77 ft E 1676457.30 ft

PROJECT NUMBER: ST 030-3(4)
SITE NUMBER: MUDSLIDE
GROUND ELEVATION: 946.75 ft
GROUNDWATER DEPTH: 12.0 ft 7/10/06
PROJECT PIN NUMBER: 04E060

BORING CREW
CREW CHIEF: HOLT
DRILLER: PORTER
LOGGER: WERNER

BORING RIG: LAG TRACK RIG w/AUTO HAMMER
BORING TYPE: HOLLOW STEM AUGER
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
5		A-4, SaSi, brn, Moist, Rec. = 0.4 ft	33	12.8	12.3	34.0	53.7		
10		A-4, SaSi, gry, Moist, Rec. = 1.9 ft	44	8.5	10.7	33.3	56.0		
15		A-4, SaSi, gry, Moist, Rec. = 2.0 ft	82	12.7	9.9	26.0	64.1		
		A-4, Si, gry, Moist, Rec. = 1.9 ft	65	15.3	1.5	8.6	89.9		
20		A-4, Si, gry, Moist, Rec. = 1.9 ft	51	17.4	1.1	3.1	95.8	25	6
		A-4, Cisi, gry, Moist, Rec. = 0.5 ft	31	18.3	0.2	8.1	91.7	25	7
		A-4, SaSi, gry, Moist, Rec. = 0.4 ft, Field Note: Sand seam @ 21.6'	19.5	13.1	12.0	41.7	46.3	24	6
		A-4, Si, gry, Moist, Rec. = 1.0 ft	44	19.5	0.0	9.5	90.5	24	6
		A-6, SiCl, gry, Moist, Rec. = 1.9 ft, Lab Note: Vertical soil structure was noticed.	44	21.9	0.0	1.2	98.8	35	13
25		A-6, SiCl, gry, Moist, Rec. = 2.0 ft, Lab Note: Vertical soil structure was noticed.	35	25.6	0.0	3.9	96.1	40	19

LOG OF BORING HARDWICK ST030-3(4).GPI VT AOT.GDT 7/18/06



PROJECT NAME: HARDWICK SLIDE
SITE NAME: RT.15
STATION: 202+42
OFFSET: 246.38
VTSPG: N 729712.77 ft E 1676457.30 ft

PROJECT NUMBER: ST 030-3(4)
SITE NUMBER: MUDSLIDE
GROUND ELEVATION: 946.75 ft
GROUNDWATER DEPTH: 12.0 ft 7/10/06
PROJECT PIN NUMBER: 04E060

BORING CREW
CREW CHIEF: HOLT
DRILLER: PORTER
LOGGER: WERNER

BORING RIG: LAG TRACK RIG w/AUTO HAMMER
BORING TYPE: HOLLOW STEM AUGER
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
		A-7-6, Cl, gry, Moist, Rec. = 0.8 ft, Lab Note: Vertical soil structure was noticed.	82	26.8	0.4	3.9	95.7	48	24
		A-4, SaSi, gry, Moist, Rec. = 0.35 ft	13.6	13.6	8.1	28.5	63.4	21	6
		A-4, SaSi, gry, Moist, Rec. = 0.2 ft	10.4	10.4	9.9	38.5	51.6		
		Field Class: Cobble	49	8.7	11.2	37.2	51.6		
30		A-4, SaSi, gry, Moist, Rec. = 0.7 ft	16.7	16.7	0.6	7.8	91.6	33	11
		A-6, SiCl, gry, Moist, Rec. = 1.3 ft, Lab Note: Vertical soil structure was noticed.	40	21.9	0.0	1.1	98.9	38	14
		A-6, SiCl, gry, Moist, Rec. = 1.9 ft, Lab Note: Vertical soil structure was noticed.	41	23.4	0.0	2.0	98.0	36	13
35		A-6, SiCl, gry, Moist, Rec. = 2.0 ft, Lab Note: Some vertical soil structure with a thin sand lens was noticed.	47	22.1	0.0	1.6	98.4	39	15
		A-6, SiCl, gry, Moist, Rec. = 2.0 ft, Lab Note: Vertical soil structure was noticed.	47	26.2	0.0	2.4	97.6	37	12
40		A-4, Cisi, gry, Moist, Rec. = 2.0 ft, Lab Note: Vertical soil structure was noticed.	37	26.3	0.0	2.1	97.9	35	9
		A-7-6, Cl, gry, Moist, Rec. = 1.1 ft, Lab Note: Vertical soil structure was noticed.	70	27.5	0.0	1.4	98.6	45	22
		A-7-6, Cl, gry, Moist, Rec. = 0.4 ft, Field Note: A small silt varve was noticed.	R	24.3	0.2	5.6	94.2	53	28
		A-4, SaSi, gry-brn, Moist, Rec. = 0.7 ft, Lab Note: A small amount of weathered rock was within sample.	15.5	15.5	8.4	33.7	57.9	23	5
45		A-2-4, SiSaGr, gry, Moist, Rec. = 0.5 ft	R	9.8	36.4	35.8	27.8		
		A-2-4, GrSiSa, gry-brn, Moist, Rec. = 1.1 ft	R	13.2	23.7	41.7	34.6		
		A-2-4, SiSa, brn, Moist, Rec. = 1.2 ft	R	6.6	15.7	52.0	32.3		
50		Hole stopped @ 50.2 ft							

LOG OF BORING HARDWICK ST030-3(4).GPI VT AOT.GDT 7/18/06



STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 MATERIALS & RESEARCH SECTION
 SUBSURFACE INFORMATION

BORING NUMBER: INC-3
 SHEET 1 of 1
 DATE STARTED: 8/07/06
 DATE COMPLETED: 8/08/06

PROJECT NAME: HARDWICK SLIDE
 SITE NAME: RT.15
 STATION: 202+40
 OFFSET: 207.00
 VTSPG: N 729766.76 ft E 1676451.82 ft

PROJECT NUMBER: ST 030-3(4)
 SITE NUMBER: MUDSLIDE
 GROUND ELEVATION: 924.36 ft
 GROUNDWATER DEPTH:
 PROJECT PIN NUMBER: 04E060

BORING CREW
 CREW CHIEF: STEVE GARSIDE
 DRILLER: MATT STONE
 LOGGER: MATT STONE

BORING RIG: N.H. BORING
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		Top of Well Elevation: 927.86 ft						
		Field Class.: Si Fine Sa, brn, Moist, Rec. = 1.5 ft, Well casing is 3.5' above ground level.		3				
5		Field Class.: Sa Si with Trace of Organics, Dk/brn, Moist, Rec. = 1.1 ft		1				
10		Field Class.: Fine Si Sa, brn, MTW, Rec. = 1.4 ft		WH				
15		Field Class.: Si Cl, gry, Moist, Rec. = 1.4 ft		12				
20		Field Class.: Cl, gry, Moist, Rec. = 1.7 ft		16				
25		Field Class.: Gr Sa Till, gry, Moist, Rec. = 0.4 ft		R				
30		A-1-b, SiSa, gry-brn, Moist, Rec. = 0.7 ft		R	12.9	18.9	56.3	24.8
35		A-1-b, SiGrSa, gry-brn, Moist, Rec. = 0.9 ft		R	12.9	36.3	39.9	23.8
40		A-2-4, GrSiSa, gry-brn, Moist, Rec. = 0.8 ft		R	11.2	21.5	48.6	29.9
		Hole stopped @ 42.2 ft						
45		DRILLERS NOTE'S: 1. An Inclinator Well INC-3 was installed. 2. All samples were taken using NWJ rod. 3. Each 5.0 ft. section of NWJ rod weighed 35.0 lbs.						

LOG OF BORING HARDWICK ST030-3(4).GPJ VT.AOT.GDT 11/29/06



STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: INC-4
SHEET 1 of 1
DATE STARTED: 8/09/06
DATE COMPLETED: 8/10/06

PROJECT NAME: HARDWICK SLIDE
SITE NAME: RT.15
STATION: 201+83
OFFSET: 231.00
VTSPG: N 729741.94 ft E 1676367.88 ft

PROJECT NUMBER: ST 030-3(4)
SITE NUMBER: MUDSLIDE
GROUND ELEVATION: 931.25 ft
GROUNDWATER DEPTH:
PROJECT PIN NUMBER: 04E060

BORING CREW
CREW CHIEF: STEVE GARSIDE
DRILLER: MATT STONE
LOGGER: MATT STONE

BORING RIG: N.H. BORING
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)	
		Field Note: Well casing is 2.6 ft. above ground level.									
		Field Class: Si Sa with Trace of Organics, Dk/brn, Moist, Rec. = 0.7 ft		21							
10		Field Note: No Recovery		2							
		Field Class: Si Cl, gry, Moist, Rec. = 1.3 ft		14							
20		Field Class: Si Cl, gry, Moist, Rec. = 1.1 ft		26							
		Field Class: Si Cl, gry, Moist, Rec. = 1.4 ft		38							
30		Field Class: Cl, gry, Moist, Rec. = 1.6 ft		34							
		A-7-6, Cl, gry, Moist, Rec. = 1.0 ft		85	27.8	0.1	1.8	98.1	54	29	
		A-4, SaSi, brn, Moist, Rec. = 0.4 ft, Sample tested "NP" for Limits.			17.7	0.6	42.9	56.5			
40		A-4, SaSi with a very small amount of possible weathered rock particles., gry-brn, Moist, Rec. = 1.2 ft		80	15.0	10.3	37.2	52.5			
		A-2-4, GrSiSa, gry-brn, Moist, Rec. = 0.8 ft		R	11.3	26.3	39.1	34.6			
		Hole stopped @ 46.4 ft									
50		DRILLERS NOTE'S: 1. An inclinometer Well INC-4 was installed. 2. All samples were taken using NWJ rod. 3. Each 5.0 ft. section of NWJ rod weighed 35.0 lbs.									

LOG OF BORING HARDWICK ST030-3(4).GPJ VT AOT.GDT 11/29/06



STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 MATERIALS & RESEARCH SECTION
 SUBSURFACE INFORMATION

BORING NUMBER: MW-4
 SHEET 1 of 1
 DATE STARTED: 8/08/06
 DATE COMPLETED: 8/09/06

PROJECT NAME: HARDWICK SLIDE
 SITE NAME: RT.15
 STATION: 201+96
 OFFSET: 186.00
 VTSPG: N 729784.89 ft E 1676389.37 ft

PROJECT NUMBER: ST 030-3(4)
 SITE NUMBER: MUDSLIDE
 GROUND ELEVATION: 915.6 ft
 GROUNDWATER DEPTH: 0.9 ft 8/10/06
 PROJECT PIN NUMBER: 04E060

BORING CREW
 CREW CHIEF: STEVE GARSIDE
 DRILLER: MATT STONE
 LOGGER: MATT STONE

BORING RIG: N.H. BORING
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
Top of Well Elevation: 918.3 ft										
		Field Note: Well casing is 2.7 ft. above ground level.								
2.5										
5.0		A-4, SaSi, gry-brn, Moist, Rec. = 1.4 ft		10	24.1	3.4	21.4	75.2		
		A-4, ClSi, Lt/gry, Moist, Rec. = 0.5 ft			24.9	3.0	10.2	86.8	31	9
7.5										
10.0		Field Class.: Gr Sa Si, gry, Moist, Rec. = 0.5 ft, Insufficient sample for testing.		12	11.2					
12.5										
15.0		A-4, SaGrSi, gry, Moist, Rec. = 0.6 ft		28	14.3	33.5	24.0	42.5		
17.5		Hole stopped @ 17.5 ft								
		DRILLERS NOTE'S: 1. Monitoring Well MW-4 was installed. 2. All samples were taken using NWJ rod. 3. Each 5.0 ft. section of NWJ rod weighed 35.0 lbs.								

LOG OF BORING HARDWICK ST030-3(4).GPJ VT.AOT.GDT 11/29/06



STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: MW-5
SHEET 1 of 1
DATE STARTED: 8/09/06
DATE COMPLETED: 8/09/06

PROJECT NAME: HARDWICK SLIDE
SITE NAME: RT.15
STATION: 201+74
OFFSET: 248.50
VTSPG: N 729724.04 ft E 1676355.55 ft

PROJECT NUMBER: ST 030-3(4)
SITE NUMBER: MUDSLIDE
GROUND ELEVATION: 938.0 ft
GROUNDWATER DEPTH: 6.4 ft 8/10/06
PROJECT PIN NUMBER: 04E060

BORING CREW
CREW CHIEF: STEVE GARSIDE
DRILLER: MATT STONE
LOGGER: MATT STONE

BORING RIG: N.H. BORING
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	WELL DIAGRAM	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
Top of Well Elevation: 940.7 ft										
2.5		Field Note: Well casing is 2.7 ft. above ground level.								
5.0		Field Class: Si Sa, brn, Moist, Rec. = 1.6 ft		17						
7.5										
10.0		Field Class: Si Gr Sa, brn, Moist, Rec. = 1.0 ft		8						
12.5										
15.0		Field Class: Cl Si with some rock particles, gry, Moist, Rec. = 1.4 ft		33						
17.5										
20.0		A-4, SaSi, gry, Moist, Rec. = 0.8 ft, Sample had dried in sample barrel before tagging. Hole stopped @ 20.8 ft		R	8.1	2.6	21.9	75.5	20	5
22.5		DRILLERS NOTE'S: 1. Monitoring Well MW-5 was installed. 2. All samples were taken using NWJ rod. 3. Each 5.0 ft. section of NWJ rod weighed 35.0 lbs.								

LOG OF BORING HARDWICK ST030-3(4).GPJ VT.AOT.GDT 11/29/06