



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

BORING NUMBER: B-101
 SHEET 1 of 1
 DATE STARTED: 4/10/09
 DATE COMPLETED: 4/16/09

PROJECT NAME: RICHFORD
 SITE NAME: VT.105
 STATION: 4+79.5
 OFFSET: 4.50
 VTSPG: N 905864.70 ft E 1597459.70 ft

PROJECT NUMBER: STP 034-2(15)
 SITE NUMBER: SLIDE
 GROUND ELEVATION: 362.6 ft
 GROUNDWATER DEPTH: 6.55 ft 4/15/09
 PROJECT PIN NUMBER: 09B074

BORING CREW
 CREW CHIEF: HOLT
 DRILLER: GARROW
 LOGGER: MAHMUTOVIC

BORING RIG: LARGE SKID RIG w/AUTO HAMMER
 BORING TYPE: HOLLOW STEM AUGER
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: CCB

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
		Asphalt Pavement, 0.0 ft - 2.0 ft					
		A-1-b, GrSa, Dk/brn, Moist, Rec. = 1.1 ft	28	11.1	38.6	42.5	18.9
		A-4, SiSa, gry, Moist, Rec. = 1.2 ft	13	16.1	9.3	53.9	36.8
		A-4, SiSa, gry, Moist, Rec. = 1.4 ft	5	16.8	13.7	47.9	38.4
10		A-2-4, SiSa, gry, MTW, Rec. = 0.5 ft	5	14.7	12.6	54.4	33.0
		A-4, SaSi, gry, Moist, Rec. = 1.1 ft		26.4	8.8	23.5	67.7
		A-4, Si, gry, MTW, Rec. = 1.1 ft	3	30.2	0.4	13.0	86.6
		A-2-4, Sa, brn, Wet, Rec. = 1.1 ft	8	18.9	17.3	62.9	19.8
		A-2-4, SiSa, brn, Wet, Rec. = 1.1 ft	6	25.9	11.6	60.4	28.0
		A-2-4, GrSiSa, brn, Wet, Rec. = 0.7 ft	2	18.6	20.2	51.5	28.3
20		A-2-4, GrSiSa, brn, Wet, Rec. = 2.0 ft	5	16.1	23.5	51.3	25.2
		A-2-4, SiSa, gry-brn, Moist, Rec. = 1.0 ft	22	14.9	7.2	62.9	29.9
		A-2-4, SiSa, gry-brn, Moist, Rec. = 1.2 ft	35	16.3	13.0	67.0	20.0
		A-2-4, GrSa, gry-brn, Moist, Rec. = 1.6 ft	39	12.6	25.6	54.9	19.5
		A-2-4, SiSa, gry-brn, Moist, Rec. = 1.6 ft	40	12.0	13.1	60.5	26.4
30		A-2-4, SiGrSa, Lt/gry, Moist, Rec. = 1.5 ft	52	17.4	27.8	51.5	20.7
		A-2-4, Sa, Lt/gry, Moist, Rec. = 1.3 ft	65	14.9	7.2	74.1	18.7
		Field Note: NXDC, Boulder, Pulled auger and changed over to 4" casing.					
		A-2-4, SiSa, Lt/gry, Moist, Rec. = 2.0 ft	88	13.2	18.9	61.1	20.0
40				Top of Bedrock @ 39.6 ft			
		Silver-gray, Quartz-mica Schist, Competent., Hard, Unweathered, BXMDC, 39.6 ft - 42.6 ft, Rec. = 2.7 ft	1	90	20	40	8 18 18
	Silver-gray, Quartz-mica Schist, Competent., Hard, Unweathered, BXMDC, 42.6 ft - 47.6 ft, Rec. = 5.0 ft	2	100	44	40	12 15 12 12 15	
50		Hole stopped @ 47.6 ft					

LOG OF BORING RICHFORD STP 034-2(15)GPJ VT AOT.GBT 5/25/09



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SUBSURFACE INFORMATION

BORING NUMBER: B-102
SHEET 1 of 1
DATE STARTED: 4/16/09
DATE COMPLETED: 4/20/09

PROJECT NAME: RICHFORD
SITE NAME: VT.105
STATION: 4+01.0
OFFSET: 5.00
VTSPG: N 905856.80 ft E 1597537.80 ft

PROJECT NUMBER: STP 034-2(15)
SITE NUMBER: SLIDE
GROUND ELEVATION: 365.26 ft
GROUNDWATER DEPTH: 11.65 ft 4/20/09
PROJECT PIN NUMBER: 09B074

BORING CREW
CREW CHIEF: HOLT
DRILLER: GARROW
LOGGER: MAHMUTOVIC

BORING RIG: LARGE SKID RIG w/AUTO HAMMER
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: CCB

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
		Asphalt Pavement, 0.0 ft - 0.8 ft					
		Visual Classification, Mostly loose pavement with some gravel, brn, Moist	45				
		A-4, GrSaSi, brn, Moist, Rec. = 0.8 ft	20	22.5	26.2	26.2	47.6
		No Recovery. Stone in end of sampler, 5.0 ft - 7.0 ft	19				
		A-1-b, SaGr, brn, Moist, Rec. = 0.8 ft	16	9.7	48.7	37.2	14.1
10		NXDC, Stones, 9.0 ft - 9.8 ft					
		A-1-b, SaGr, brn, MTW, Rec. = 0.7 ft	24	11.2	54.3	37.1	8.6
		A-1-b, GrSa, brn, Wet, Rec. = 0.7 ft	12	15.2	33.5	56.5	10.0
		A-1-b, GrSa, gry, Wet, Rec. = 0.7 ft	10	15.2	26.4	57.5	16.1
		A-2-4, SiGrSa, gry, MTW, Rec. = 0.9 ft	17	11.4	25.4	53.0	21.6
20		A-1-b, SiGrSa, gry, Moist, Rec. = 1.1 ft	57	9.4	38.1	41.7	20.2
		A-1-b, SiSaGr, gry, Moist, Rec. = 1.1 ft	R	8.5	42.4	36.9	20.7
		A-2-4, SiGrSa (HP), gry, Moist, Rec. = 0.4 ft	R	8.1	33.5	36.9	29.6
		A-1-b, SiGrSa (HP), gry, Moist, Rec. = 0.3 ft	R	8.1	37.7	38.0	24.3
		A-1-b, SiGrSa (HP), gry, Moist, Rec. = 0.5 ft	R	7.1	38.2	40.2	21.6
		NXDC, Cobbles, 27.0 ft - 28.0 ft					
30		A-1-b, SiGrSa, gry, Moist, Rec. = 0.7 ft	46	9.1	29.4	48.9	21.7
		BXMDC, Cobbles, 31.5 ft - 33.0 ft					
		A-4, SaGrSi, gry, Moist, Rec. = 1.0 ft	61	10.7	30.6	25.5	43.9
		NXDC, Cobbles, 35.9 ft - 38.0 ft					
40		A-1-b, SiGrSa, gry, Moist, Rec. = 1.3 ft	80	8.3	36.8	40.8	22.4
		A-1-a, SaGr, gry, Moist, Rec. = 0.6 ft	R	6.5	52.5	38.4	9.1
50		A-3, Sa, brn, Moist, Rec. = 1.3 ft	R	18.2	6.1	85.7	8.2
		Top of Bedrock @ 50.9 ft					
		Gray, Micaceous Schist, with quartz stringers and pyrite. Competent., Moderately hard, Unweathered, BXMDC, 50.9 ft - 55.9 ft, Rec. = 4.8 ft	1	96	52	60	10 12 13 11 10
		Hole stopped @ 55.9 ft					

LOG OF BORING RICHFORD STP 034-2(15) GPJ VT AQI.GDT 5/28/09



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BORING NUMBER: B-103
 SHEET 1 of 1
 DATE STARTED: 4/24/09
 DATE COMPLETED: 4/29/09

PROJECT NAME: RICHFORD
 SITE NAME: VT.105
 STATION: 5+80.0
 OFFSET: 7.00
 VTSPG: N 905896.00 ft E 1597366.60 ft

PROJECT NUMBER: STP 034-2(15)
 SITE NUMBER: SLIDE
 GROUND ELEVATION: 361.6 ft
 GROUNDWATER DEPTH: 6.4 ft 4/28/09
 PROJECT PIN NUMBER: 09B074

BORING CREW
 CREW CHIEF: GARROW
 DRILLER: GARROW
 LOGGER: MAHMUTOVIC

BORING RIG: LARGE SKID RIG w/AUTO HAMMER
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: CCB

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
		Asphalt Pavement, 0.0 ft - 0.7 ft					
		Visual Classification, Broken Asphalt Pavement, blk, Wet, Rec. = 0.9 ft	30				
		A-1-b, SiGrSa, brn, Wet, Rec. = 0.5 ft	3	14.2	31.4	44.6	24.0
		No Recovery. Stone in end of sampler., 5.0 ft - 7.0 ft, Appears to be silt.					
		A-4, SaSi with Wood pieces within sample, gry, Wet, Rec. = 1.2 ft	3	30.2	11.9	30.3	57.8
10		A-4, Si, gry, Wet, Rec. = 1.4 ft	3	40.0	0.0	18.4	81.6
		A-4, SaSi, gry, Wet, Rec. = 1.5 ft	3	31.8	0.9	20.6	78.5
		A-4, SaSi, gry, Wet, Rec. = 1.0 ft	2	25.1	6.4	21.0	72.6
		A-4, Si, gry, Wet, Rec. = 2.0 ft	WR	28.2	0.0	6.6	93.4
		A-4, Si, gry, Wet, Rec. = 2.0 ft	1	27.0	0.0	19.6	80.4
20		No Recovery. Appears to be silt, gry, Wet, 19.0 ft - 21.0 ft	5				
		A-4, SaSi, gry, Wet, Rec. = 1.4 ft	4	26.6	0.0	22.5	77.5
		A-4, SaSi, gry, Wet, Rec. = 1.2 ft	3	25.7	0.2	29.3	70.5
		A-4, Si, gry, Wet, Rec. = 1.4 ft	3	24.3	0.0	15.1	84.9
		A-2-4, SiSa, brn, Wet, Rec. = 1.3 ft	10	17.8	4.8	71.0	24.2
30		A-3, Sa, brn, Wet, Rec. = 0.8 ft	25	17.9	0.6	90.4	9.0
		A-4, SaSi, brn, Wet, Rec. = 1.5 ft	77	18.5	7.3	42.4	50.3
40		A-4, GrSaSi, brn, MTW, Rec. = 1.5 ft	88	13.9	28.6	33.1	38.3
		A-2-4, Sa, brn, MTW, Rec. = 0.7 ft	80	16.0	0.5	86.6	12.9
50		Field Note: Lost water return at 48 ft. No Recovery, 49.0 ft - 51.0 ft	50				
		Top of Bedrock @ 51.7 ft					
		Silver-gray, Quartz-mica Schist, Competent., Hard, Unweathered, BXMDC, 51.7 ft - 56.7 ft, Rec. = 4.6 ft	1	92	72	20	19 18 14 17 15
		Hole stopped @ 56.7 ft					

LOG OF BORING RICHFORD STP 034-2(15) GPJ VT AQI.GDT 5/28/09



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BORING NUMBER: B-104
 SHEET 1 of 1
 DATE STARTED: 4/22/09
 DATE COMPLETED: 4/23/09

PROJECT NAME: RICHFORD
 SITE NAME: VT.105
 STATION: 6+40.0
 OFFSET: 9.00
 VTSPG: N 905927.80 ft E 1597319.10 ft

PROJECT NUMBER: STP 034-2(15)
 SITE NUMBER: SLIDE
 GROUND ELEVATION: 360.8 ft
 GROUNDWATER DEPTH: 5.5 ft 4/24/09
 PROJECT PIN NUMBER: 09B074

BORING CREW
 CREW CHIEF: GARROW
 DRILLER: GARROW
 LOGGER: MAHMUTOVIC

BORING RIG: LARGE SKID RIG w/AUTO HAMMER
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: CCB

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)		
		Asphalt Pavement, 0.0 ft - 0.8 ft							
		Visual Classification, A-1-b, GrSa with broken asphalt pavement, brn, Moist, Rec. = 0.4 ft	41	10.7					
		Field Note: NXDC 2.0 ft to 3.0 ft.	46	8.8					
		Visual Classification, A-1-b, SaGr with broken asphalt pavement, Dk/gry, Moist, Rec. = 0.9 ft	3	11.8	36.8	41.7	21.5		
		A-1-b, SiGrSa, brn, Moist, Rec. = 1.1 ft	8						
		No Recovery, 7.0 ft - 9.0 ft							
10		A-4, SaSi, gry, MTW, Rec. = 1.0 ft	3	24.8	13.1	35.1	51.8		
		No Recovery. Appears to be silt, 11.0 ft - 13.0 ft	6						
		A-4, Si, gry, Wet, Rec. = 1.2 ft	1	27.7	2.3	14.2	83.5		
		A-4, Si, gry, Wet, Rec. = 0.8 ft	2	23.0	0.0	19.4	80.6		
		A-4, SaSi, gry, MTW, Rec. = 1.9 ft	3	26.1	0.0	23.9	76.1	28	2
20		A-4, Si, brn, MTW, Rec. = 0.9 ft	4	31.2	0.0	12.2	87.8	31	1
		A-4, SaSi, brn, MTW, Rec. = 1.0 ft	3	24.9	0.0	37.4	62.6		
		A-4, SaSi, brn, MTW, Rec. = 1.3 ft	3	22.0	0.0	46.5	53.5		
		A-4, ClSi, brn, MTW, Rec. = 2.0 ft	1	30.9	0.0	5.5	94.5	31	7
		A-4, Si		32.7	0.0	6.9	93.1	31	5
30		A-4, SaSi, gry, MTW, Rec. = 2.0 ft	2	22.2	0.0	30.6	69.4		
		A-4, Si, gry, MTW, Rec. = 1.0 ft	1	28.6	0.0	1.5	98.5		
40		A-4, GrSaSi, gry, MTW, Rec. = 1.2 ft	14	13.9	22.6	31.3	46.1		
		A-2-4, SiSa, brn, Moist, Rec. = 1.3 ft	28	15.4	3.2	73.6	23.2		
		Top of Bedrock @ 47.4 ft							
50		Silver-gray, Quartz-mica Schist, Competent., Hard, Unweathered, BXMDC, 47.4 ft - 52.4 ft, Rec. = 5.0 ft	1	100	95	45	16 16 15 12 12		
		Hole stopped @ 52.4 ft							

LOG OF BORING RICHFORD STP 034-2(15) GPJ VT AQI.GDT 5/28/09