



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

BORING NUMBER: B-1
 SHEET 1 of 1
 DATE STARTED: 8/22/03
 DATE COMPLETED: 8/26/03

PROJECT NAME: MORETOWN-MIDDLESEX
 SITE NAME: US 2
 STATION: 268+78.00
 OFFSET: -20.00
 VTSPG: N 658613.36 ft E 1589020.38 ft

PROJECT NUMBER: BRS 0284(14)
 SITE NUMBER: BR-50
 GROUND ELEVATION: 440.48 ft
 GROUNDWATER DEPTH:
 PROJECT PIN NUMBER: 78F219

BORING CREW
 CREW CHIEF: TALLMAN
 DRILLER: TALLMAN
 LOGGER: RUSSELL

BORING RIG: SMALL SKID RIG
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	ROD (%)	Dip (deg)	Drill Rate (min/ft)
0.0 - 1.0		A-2-4, SiSa, gry, Dry, Rec. = 1.0 ft	2	11.5	0.0	76.2	23.8
1.0 - 2.5		A-2-4, SiSa, gry, Dry, Rec. = 1.1 ft	5	10.7	0.0	74.7	25.3
2.5 - 4.0		No Recovery, 4.0 ft - 4.5 ft	R	Top of Bedrock @ 4.5 ft			
4.0 - 5.0		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 4.5 ft - 7.5 ft, Rec. = 2.9 ft	1	97	50	80	
5.0 - 7.5		Green, Chlorite schist Greenstone, with laminated quartz veins, Moderately hard, Unweathered, NXMDC, 7.5 ft - 10.0 ft, Rec. = 2.1 ft	2	84	0	80	
7.5 - 10.0		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 10.0 ft - 15.0 ft, Rec. = 5.0 ft	3	100	95	80	
10.0 - 15.0		Hole stopped @ 15.0 ft					
15.0 - 17.5		DRILLER'S NOTES: 1. No water found 08/26/03					

LOG OF BORING MORETOWN-MIDDLESEX BRS0284(14).GPJ VT AOT.GDT 8/30/06



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BORING NUMBER: B-2
 SHEET 1 of 1
 DATE STARTED: 8/28/03
 DATE COMPLETED: 9/02/03

PROJECT NAME: MORETOWN-MIDDLESEX
 SITE NAME: US 2
 STATION: 268+97.50
 OFFSET: 22.00
 VTSPG: N 658569.59 ft E 1589005.53 ft

PROJECT NUMBER: BRS 0284(14)
 SITE NUMBER: BR-50
 GROUND ELEVATION: 450.1 ft
 GROUNDWATER DEPTH: 24.4 ft
 PROJECT PIN NUMBER: 78F219

BORING CREW
 CREW CHIEF: TALLMAN
 DRILLER: TALLMAN
 LOGGER: RUSSELL

BORING RIG: SMALL SKID RIG
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
5		A-1-b, GrSa, brn, Dry, Rec. = 0.4 ft	5	2.7	24.8	65.2	10.0
		A-1-b, GrSa, brn, Dry, Rec. = 0.7 ft	3	3.6	31.9	58.7	9.4
		A-1-b, GrSa, brn, Dry, Rec. = 1.0 ft	3	2.3	39.7	52.5	7.8
		Visual Classification: Gr with Wood, gry, Moist, Rec. = 0.15 ft, 6.0 ft - 8.0 ft	5				
		A-1-a, SaGr with rock fragments, brn-gry, Moist, Rec. = 0.9 ft	8	11.0	60.0	31.9	8.1
10		A-4, SaSi, brn, Moist, Rec. = 0.7 ft	3	28.4	0.2	43.2	56.6
		No Recovery, 12.0 ft - 14.0 ft	12				
15		A-2-4, SiSa, gry, Moist, Rec. = 0.8 ft	8	22.6	0.4	65.6	34.0
				Top of Bedrock @	17.0 ft		
20		Green, Chlorite schist Greenstone, with laminated quartz veins, Poor RQD due to near vertical joint throughout core run, Moderately hard, Unweathered, NXMDC, 17.0 ft - 20.0 ft, Rec. = 2.1 ft	1	70	0	80	
		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 20.0 ft - 23.0 ft, Rec. = 2.9 ft	2	97	75	80	
		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 23.0 ft - 28.0 ft, Rec. = 4.9 ft	3	98	90	80	
		Hole stopped @ 28.0 ft					

LOG OF BORING MORETOWN-MIDDLESEX BRS0284(14).GPJ VT AOT.GDT 8/30/06



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BORING NUMBER: B-3
 SHEET 1 of 1
 DATE STARTED: 9/13/04
 DATE COMPLETED: 9/15/04

PROJECT NAME: MORETOWN-MIDDLESEX
 SITE NAME: US 2
 STATION: 270+22
 OFFSET: -16.00
 VTSPG: N 658511.67 ft E 1589121.99 ft

PROJECT NUMBER: BRS 0284(14)
 SITE NUMBER: BR-50
 GROUND ELEVATION: 428.92 ft
 GROUNDWATER DEPTH:
 PROJECT PIN NUMBER: 78F219

BORING CREW
 CREW CHIEF: TALLMAN
 DRILLER: TALLMAN
 LOGGER: RUSSELL

BORING RIG: LARGE SKID RIG ON RAFT
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	ROD (%)	Dip (deg)	Drill Rate (min/ft)
		No Recovery, Boulders & Cobbles, 0.0 ft - 2.0 ft	R				
		No Recovery, Boulders & Cobbles, 2.0 ft - 4.0 ft	R				
5		A-3, Sa, brn, Moist, Rec. = 0.3 ft	17	19.3	9.2	82.1	8.7
		A-1-b, SaGr, brn, Moist, Rec. = 1.1 ft	35	11.7	46.3	42.8	10.9
		A-1-b, SaGr, brn, Moist, Rec. = 1.1 ft	17	11.5	47.1	41.2	11.7
10		A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft	31	15.2	23.1	62.3	14.6
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft	12	16.1	24.3	65.5	10.2
15		A-3, Sa, gry, Moist, Rec. = 0.9 ft	10	20.9	1.4	88.7	9.9
20		A-3, GrSa, gry, Moist, Rec. = 1.0 ft	12	15.5	20.3	71.8	7.9
25		A-2-4, SiSa, gry, Moist, Rec. = 0.8 ft	8	22.5	8.0	63.4	28.6
30		A-4, SiSa, gry, MTW, Rec. = 1.5 ft	13	29.4	3.4	59.0	37.6
		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 31.5 ft - 36.5 ft, Rec. = 4.9 ft	1	98	95	80	
35		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 36.5 ft - 41.5 ft, Rec. = 5.0 ft	2	100	98	80	
40		Hole stopped @ 41.5 ft					
45							

LOG OF BORING MORETOWN-MIDDLESEX BRS0284(14).GPJ VT AOT.GDT 8/30/06



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BORING NUMBER: B-4
SHEET 1 of 1
DATE STARTED: 8/26/04
DATE COMPLETED: 9/02/04

PROJECT NAME: MORETOWN-MIDDLESEX
SITE NAME: US 2
STATION: 270+36
OFFSET: 22.00
VTSPG: N 658474.19 ft E 1589106.31 ft

PROJECT NUMBER: BRS 0284(14)
SITE NUMBER: BR-50
GROUND ELEVATION: 427.53 ft
GROUNDWATER DEPTH:
PROJECT PIN NUMBER: 78F219

BORING CREW
CREW CHIEF: RUSSELL
DRILLER: RUSSELL
LOGGER: TALLMAN

BORING RIG: LARGE SKID RIG ON RAFT
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	ROD (%)	Dip (deg)	Drill Rate (min/ft)
		A-1-b, Sa, brn, Sat, Rec. = 1.0 ft	1	24.6	1.3	95.4	3.3
		A-1-b, GrSa, gry, Sat, Rec. = 0.81 ft	2	17.6	37.1	59.1	3.8
5		A-1-a, SaGr, gry, Sat, Rec. = 0.4 ft	14	12.8	54.5	38.9	6.6
		Visual Classification: A-1-a, Sa Gr, gry, Sat, Rec. = 0.3 ft, 6.0 ft - 8.0 ft, Insufficient sample for testing.	12				
		No Recovery, 8.0 ft - 10.0 ft	13				
10		Visual Classification: A-1-b, Gr Sa, brn, Sat, Rec. = 0.2 ft, 10.0 ft - 12.0 ft, Insufficient sample for testing.	13				
		A-1-b, GrSa, brn, Sat, Rec. = 1.2 ft	40	11.6	42.2	48.7	9.1
15		A-3, Sa, brn, Moist, Rec. = 1.3 ft	16	17.1	19.4	72.7	7.9
20		A-3, Sa, gry, Moist, Rec. = 0.9 ft	10	18.2	16.8	75.2	8.0
25		A-2-4, Sa, gry, Moist, Rec. = 0.7 ft	2	22.5	5.8	80.6	13.6
30		A-2-4, SiSa, gry, Moist, Rec. = 1.3 ft	5	24.9	0.0	74.5	25.5
35		A-2-4, SiSa, gry, Wet, Rec. = 0.4 ft	R				
		Green, Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 35.4 ft - 40.4 ft, Rec. = 4.8 ft	1	96	86	80	28.0
40		Green, Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, NXMDC, 40.4 ft - 45.4 ft, Rec. = 5.0 ft	2	100	80	80	
45		Hole stopped @ 45.4 ft					

LOG OF BORING MORETOWN-MIDDLESEX BRS0284(14).GPJ VT AOT.GDT 8/30/06

Top of Bedrock @ 35.4 ft
30.1 3.3 68.1



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BORING NUMBER: B-6
SHEET 1 of 2
DATE STARTED: 9/09/03
DATE COMPLETED: 10/03/03

PROJECT NAME: MORETOWN-MIDDLESEX
SITE NAME: US 2
STATION: 271+80.00
OFFSET: 20.00
VTSPG: N 658376.70 ft E 1589212.21 ft

PROJECT NUMBER: BRS 0284(14)
SITE NUMBER: BR-50
GROUND ELEVATION: 443.13 ft
GROUNDWATER DEPTH: 12.0 ft 10/03/03
PROJECT PIN NUMBER: 78F219

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: SMALL SKID RIG/LAG TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		Still in Sandy material, No Rec., 55.0 ft - 57.0 ft					
		A-2-4, Sa, brn, Moist, Rec. = 1.15 ft	8	15.5	1.5	79.9	18.6
10		A-3, Sa, brn, Moist, Rec. = 0.3 ft	5	20.1	4.1	91.9	4.0
		A-2-4, SiSaGr, brn, Moist, Rec. = 0.6 ft	11	21.7	40.8	33.4	25.8
20		No Sample, Boulders, 19.0 ft - 21.0 ft, Cleaned out casing					
		A-2-4, GrSa, brn, Moist, Rec. = 0.8 ft	48	16.1	25.9	58.3	15.8
		A-1-b, SaGr, gry, Moist, Rec. = 0.7 ft		9.6	51.6	31.2	17.2
30		BXDC, Cleaned out casing, 29.5 ft - 30.0 ft	41	10.2	57.2	29.3	13.5
		A-1-b, SaGr, gry, Moist, Rec. = 1.2 ft					
		A-1-a, SaGr, gry, Moist, Rec. = 1.0 ft, Flowing sand in casing back to 33 feet, Had to wash material back out	57	9.2	63.5	27.2	9.3
40		A-3, Sa, gry, Moist, Rec. = 1.0 ft, Flowing sand in casing, Had to wash material back out	9	25.0	0.5	93.5	6.0
		A-4, SaSi, gry, Moist, Rec. = 1.1 ft	15	21.1	7.7	40.9	51.4
50		No Sample, Into flowing sand, 50.0 ft - 55.0 ft, Plugged up with sand, Tried to wash out, Used drillers mud					

LOG OF BORING MORETOWN-MIDDLESEX BRS0284(14)GRJ_VT_AOT.GDT 8/30/06



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SUBSURFACE INFORMATION

BORING NUMBER: B-6
SHEET 2 of 2
DATE STARTED: 9/09/03
DATE COMPLETED: 10/03/03

PROJECT NAME: MORETOWN-MIDDLESEX
SITE NAME: US 2
STATION: 271+80.00
OFFSET: 20.00
VTSPG: N 658376.70 ft E 1589212.21 ft

PROJECT NUMBER: BRS 0284(14)
SITE NUMBER: BR-50
GROUND ELEVATION: 443.13 ft
GROUNDWATER DEPTH: 12.0 ft 10/03/03
PROJECT PIN NUMBER: 78F219

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: SMALL SKID RIG/LAG TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: DLG

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
		Still in Sandy material, No Rec., 55.0 ft - 57.0 ft	20				
60		A-1-a, SaGr, gry, Moist, Rec. = 0.3 ft, Casing plugged after sampling, Had to take five feet off to unplug	37	9.2	64.6	30.1	5.3
		A-1-b, GrSa, gry, Moist, Rec. = 1.1 ft, Had a hard fine going to 70 feet, Used two pails of mud	25	13.5	20.3	70.1	9.6
70		A-1-b, Sa, gry, Moist, Rec. = 1.0 ft, Removed Small Skid Rig from hole and replaced with Lag Track Rig	50	15.9	0.0	88.9	11.1
		A-1-a, SaGr, gry, Moist, Rec. = 0.7 ft	21	10.6	61.5	33.6	4.9
80		A-3, Sa, gry, Moist, Rec. = 0.5 ft, Plugged up, Had to pull five feet of casing back to unplug	23	27.7	0.2	96.3	3.5
		BXDC, Cleaned out casing, 83.0 ft - 84.0 ft					
		Green, Chlorite schist Greenstone, with laminated quartz veins, Competent, Moderately hard, Unweathered, BXDC, 84.0 ft - 88.0 ft, Rec. = 3.3 ft	1	83	65	80	
		Green, Chlorite schist Greenstone, with laminated quartz veins, Equipment problems resulted in loss of core run in hole, Moderately hard, Unweathered, BXDC, 88.0 ft - 93.0 ft, Rec. = 1.2 ft	2	24	24	80	
		Green, Chlorite schist Greenstone, with laminated quartz veins, Equipment problems resulted in loss of core run in hole, Moderately hard, Unweathered, BXDC, 93.0 ft - 98.0 ft, Rec. = 2.0 ft	3	40	40	80	
		Hole stopped @ 98.0 ft					
100		DRILLER'S NOTES: 1. Removed Small Skid Rig at 72.0' and used the Lag Track Rig to finish drilling this hole.					

LOG OF BORING MORETOWN-MIDDLESEX BRS0284(14)GRJ_VT_AOT.GDT 8/30/06