

BORING 2

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

TO CLOUGH HARBOUR & ASSOCIATES
PROJECT NAME ROCKINGHAM RAILROAD BRIDGE
REPORT SENT TO CARSTEN FLOESS
SAMPLES RETAINED BY CLOUGH HARBOUR

ADDRESS ALBANY, NY
LOCATION ROCKINGHAM VT
PROJ. NO. 7858-99
OUR JOB NO. 7858-99

SHEET 1 OF 2
DATE 8/23/99
HOLE NO. B-2
LINE & STA.
OFFSET

GROUND WATER OBSERVATIONS
AT 43'11" AT 172 HOURS
Type HSA
Size I. D. 3 1/4" 1 1/2"
Hammer Wt. 140# BIT
Hammer Fall 30"

DATE STARTED 8/23/99
DATE COMPL. 8/23/99
BORING FORMAN M.D. & O.C.
INSPECTOR C. FLOESS
SOILS ENGR.

LOCATION OF BORING 15' WEST OF WEST END OF TRESSLE - OFF SOUTH EDGE OF TIES

| Depth | SAMPLE DEPTHS FROM-TO | TYPE OF SAMPLE | Blows per 6" on sampler | MOISTURE DENSITY OR CONSIST. | STRATA CHANGE ELEV. | FIELD SOIL IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock color, type, cond., hardness, Drilling time, seams and set. | SAMPLE NO. PEN REC. |
|-------|-----------------------|----------------|-------------------------|------------------------------|---------------------|--|-------------------------|
| | | | | LOOSE | 11'6" | BALLAST | |
| | | | | MED. DENSE | 3' | CLAYERS | 1 24' 17" |
| 5' | 4' - 6' | SS | 3 4 4 4 | | | BROWN MEDIUM TO COARSE SANDS - TRACE OF FINE GRAVEL | 2 24' 18" |
| 10' | 9' - 11' | SS | 3 2 3 2 | | | SAME MATERIAL | 3 24' 16" |
| 15' | 14' - 15' | SS | 3 6 4 3 | | | SAME MATERIAL AS ABOVE WITH SOME COARSE GRAVEL | 4 24' 18" |
| 20' | 19' - 21' | SS | 9 19 27 38 | DENSE TO VERY DENSE | 18' | BROWN COARSE GRAVEL WITH COBBLES AND A FEW BOULDERS (ON A COBBLE AT 24') | 5 24' 21" |
| 25' | | | | | 28'6" | | |
| 30' | 29' - 31' | SS | 5 5 7 7 | | | BROWN FINE SAND | |
| 35' | | | | | | | |
| | 39' - 41' | SS | 8 9 11 14 | | | SAME MATERIAL | 6 24' 19" |

GROUND SURFACE TO 16'4" USED HSA CASING THEN DROVE SS 18"

Sample Type: D-Dry C-Cored W-Washed UP-Unfinished Piston TP-Test Pit A-Auger V-Vane UT-Undisturbed Thinwall

Proportions Used: trace 0 to 10%, little 10 to 20%, some 20 to 35%, and 35 to 50%

140 lb. wt. x 30" fall an 2" O.D. Sampler
Cohesionless Density: 0-10 Loose, 10-30 Med. Dense, 30-50 Dense, 50+ Very Dense
Cohesive Consistency: 0-4 Spill 30+ Hard, 4-8 M/S IIII, 8-15 S IIII, 15-30 V-S IIII

SUMMARY: EARTH BORING ROCK CORING SAMPLES 9 HOLE NO. B-2

APPROX. BOTTOM OF EXCAV.

BORING 3

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LOCATION ROCKINGHAM VT
PROJ. NO. 7858-99
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SHEET 2 OF 2
DATE 8/23/99
HOLE NO. B-2
LINE & STA.
OFFSET

GROUND WATER OBSERVATIONS
AT 43'11" AT 172 HOURS
Type HSA
Size I. D. 3 1/4" 1 1/2"
Hammer Wt. 140# BIT
Hammer Fall 30"

DATE STARTED 8/23/99
DATE COMPL. 8/23/99
BORING FORMAN M.D. & O.C.
INSPECTOR C. FLOESS
SOILS ENGR.

LOCATION OF BORING 15' WEST OF WEST END OF TRESSLE - OFF SOUTH EDGE OF TIES

| Depth | SAMPLE DEPTHS FROM-TO | TYPE OF SAMPLE | Blows per 6" on sampler | MOISTURE DENSITY OR CONSIST. | STRATA CHANGE ELEV. | FIELD SOIL IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock color, type, cond., hardness, Drilling time, seams and set. | SAMPLE NO. PEN REC. |
|-------|-----------------------|----------------|-------------------------|------------------------------|---------------------|--|-------------------------|
| | | | | WET | | SAVE MATERIAL | |
| 45' | | | | | 18' | SAVE MATERIAL | |
| 50' | 49' - 51' | SS | 5 5 9 18 | | | BROWN FINE SAND - TRACE OF FINE GRAVEL | 7 24' 21" |
| 55' | | | | MED. DENSE | | | |
| 60' | 59' - 61' | SS | 9 10 25 28 | DENSE TO VERY DENSE | 57' | GREY GRAVELLY SILTS AND SANDS WITH COBBLES | 8 24' 16" |
| 65' | 64' - 65' | SS | 31 53 97 | | 65'6" | NO BEDROCK TO DEPTH BACKFILLED HOLE WITH MIXTURE OF BENTONITE CHIPS AND SAND MATERIALS USED: 200# OF BENTONITE CHIPS | 9 18' 18" |
| 70' | | | | | | | |

GROUND SURFACE TO 65'6" USED HSA CASING THEN DROVE SS 18"

Sample Type: D-Dry C-Cored W-Washed UP-Unfinished Piston TP-Test Pit A-Auger V-Vane UT-Undisturbed Thinwall

Proportions Used: trace 0 to 10%, little 10 to 20%, some 20 to 35%, and 35 to 50%

140 lb. wt. x 30" fall an 2" O.D. Sampler
Cohesionless Density: 0-10 Loose, 10-30 Med. Dense, 30-50 Dense, 50+ Very Dense
Cohesive Consistency: 0-4 Spill 30+ Hard, 4-8 M/S IIII, 8-15 S IIII, 15-30 V-S IIII

SUMMARY: EARTH BORING ROCK CORING SAMPLES 9 HOLE NO. B-2

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LOCATION ROCKINGHAM VT
PROJ. NO. 7858-99
OUR JOB NO. 7858-99

SHEET 1 OF 1
DATE 8/23/99
HOLE NO. B-3
LINE & STA.
OFFSET

GROUND WATER OBSERVATIONS
AT DRY AT IMMEDIATELY HOURS
Type FA
Size I. D. 4"
Hammer Wt. Hammer Fall

DATE STARTED 8/23/99
DATE COMPL. 8/23/99
BORING FORMAN M.D. & O.C.
INSPECTOR C. FLOESS
SOILS ENGR.

LOCATION OF BORING 8' OFF WEST END OF TRESSLE

| Depth | SAMPLE DEPTHS FROM-TO | TYPE OF SAMPLE | Blows per 6" on sampler | MOISTURE DENSITY OR CONSIST. | STRATA CHANGE ELEV. | FIELD SOIL IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock color, type, cond., hardness, Drilling time, seams and set. | SAMPLE NO. PEN REC. |
|-------|-----------------------|----------------|-------------------------|------------------------------|---------------------|--|-------------------------|
| | | | | LOOSE | | BALLAST | |
| | | | | MED. DENSE | 2' | BLACK CLAYERS | |
| 5' | | | | | 4' | | |
| 10' | | | | MED. DENSE | | BROWN FINE TO MEDIUM SAND (FILL) | |
| 15' | | | | | 15'3" | SAVE MATERIAL | |
| 20' | | | | | 15'4" | REFUSAL TO AUGER - POSSIBLE ABUTMENT FOOTING OR STRUCTURE | |

GROUND SURFACE TO 16'4" USED 4" FA CASING THEN

Sample Type: D-Dry C-Cored W-Washed UP-Unfinished Piston TP-Test Pit A-Auger V-Vane UT-Undisturbed Thinwall

Proportions Used: trace 0 to 10%, little 10 to 20%, some 20 to 35%, and 35 to 50%

140 lb. wt. x 30" fall an 2" O.D. Sampler
Cohesionless Density: 0-10 Loose, 10-30 Med. Dense, 30-50 Dense, 50+ Very Dense
Cohesive Consistency: 0-4 Soft 30+ Hard, 4-8 M/S IIII, 8-15 S IIII, 15-30 V-S IIII

SUMMARY: EARTH BORING ROCK CORING SAMPLES 0 HOLE NO. B-3

APPROX. BOTTOM OF EXCAVATION

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of **ROCKINGHAM** Bridge No. **107**

Highway No. **Green Mountain Railroad** Log Sto. **Surv. Sto.**

BRIDGE OVER WILLIAMS RIVER

BORING LOGS

Designed By **J. Wilson** Drawn By **S. Gunn**

Checked By **S. Halloran** Date **6/02** Bridge Design Supervisor Date

PROJECT **ROCKINGHAM** PROJECT NO. **RAI-04-9044 C/T PHASE II**

I.G.C. Info. Bridge Sheet No. Sheet **5 of 11**

