

APPENDIX 15
TEST PIT LOGS

THE LA GROUP

40 Long Alley, Saratoga Springs, New York 12866

To: Kevin Franke

From: Roger J. Case, Soil Scientist

Re: Deep Soil Test pits @ Windham Resort (revised 12/17/2009)

On October 2008 the following deep soil test pits were observed.

Test pit #1: 0 to 4 inches, dark reddish brown silt loam
4 to 25 inches, yellowish red gravelly silt loam
25 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 25 inches, restrictive layer

Test pit #2: 0 to 4 inches, dark reddish brown silt loam
4 to 31 inches, yellowish red gravelly silt loam
31 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 31 inches, restrictive layer

Test pit #3: 0 to 4 inches, dark reddish brown silt loam
4 to 19 inches, yellowish red gravelly silt loam
19 inches, hard bedrock ledge

Soil type: Halcott silt loam
Boundary condition @ 19 inches, impervious layer

Test pit #4: 0 to 4 inches, dark reddish brown silt loam
4 to 26 inches, yellowish red gravelly silt loam
26 inches, hard bedrock ledge

Soil type: Vly silt loam
Boundary condition @ 26 inches, impervious layer

Test pit #5: 0 to 5 inches, dark reddish brown silt loam
5 to 31 inches, reddish brown very gravelly silt loam
31 inches, rippable red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 31 inches, impervious layer

Test pit #6: 0 to 5 inches, dark reddish brown silt loam
5 to 36 inches, reddish brown very gravelly silt loam
36 inches, rippable red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 36 inches, impervious layer

Test pit #7: 0 to 5 inches, dark reddish brown silt loam
5 to 30 inches, reddish brown, silty clay loam
30 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 30 inches, impervious layer

Test pit #8: 0 to 5 inches, dark reddish brown silt loam
5 to 22 inches, reddish brown, gravelly silt loam
22 inches, hard bedrock

Soil type: Vly silt loam
Boundary condition @ 22 inches, impervious layer

Test pit #9: 0 to 5 inches, dark reddish brown silt loam
5 to 40 inches, reddish brown, gravelly silt loam
40 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 40 inches, impervious layer

Test pit #10: 0 to 5 inches, dark reddish brown silt loam
5 to 16 inches, reddish brown, gravelly silt loam
16 to 36 inches, mottled reddish brown , gravelly silt loam
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Soil type: Onteora silt loam
Boundary condition @ 16 inches, seasonal high water table

Test pit #11: 0 to 4 inches, dark reddish brown silt loam
4 to 15 inches, yellowish red gravelly silt loam
15 inches, hard bedrock ledge

Soil type: Halcott silt loam
Boundary condition @ 15 inches, impervious layer

Test pit #12: 0 to 5 inches, dark reddish brown, gravelly (channery) silt loam
5 to 36 inches, reddish brown, very channery silt loam
36 to 51 inches, reddish brown, slightly firm, unconsolidated shale
fragments
51 inches, reddish brown shale bedrock

Soil type: Elka channery silt loam
Boundary condition @ 51 inches, impervious layer

Test pit #13: 0 to 5 inches, dark reddish brown, gravelly (channery) silt loam
5 to 40 inches, reddish brown, very channery silt loam
40 to 57 inches, reddish brown, slightly firm, unconsolidated shale
fragments
57 inches, reddish brown shale bedrock

Soil type: Elka channery silt loam
Boundary condition @ 57 inches, impervious layer

Test pit #14: 0 to 5 inches, dark reddish brown, gravelly (channery) silt loam
5 to 36 inches, reddish brown, very channery silt loam
36 to 60 inches, reddish brown, firm, unconsolidated shale fragments
60+ inches, reddish brown shale bedrock

Soil type: Elka channery silt loam
Boundary condition @ 60 inches, impervious layer

Test pit #15: 0 to 5 inches, dark reddish brown silt loam
5 to 25 inches, reddish brown, gravelly silt loam
25 to 40 inches, angular very gravelly aggregate
40 inches, hard bedrock

Soil type: Vly silt loam
Boundary condition @ 40 inches, impervious layer

Test pit #16: 0 to 5 inches, dark reddish brown silt loam
5 to 34 inches, reddish brown, gravelly silt loam
34 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 34 inches, impervious layer

Test pit #17: 0 to 5 inches, dark reddish brown silt loam
5 to 29 inches, reddish brown, gravelly silt loam
29 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 29 inches, impervious layer

Test pit #18: 0 to 4 inches, dark reddish brown silt loam
4 to 29 inches, yellowish red gravelly silt loam
29 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 29 inches, restrictive layer

Test pit #19: 0 to 5 inches, dark reddish brown, gravelly (channery) silt loam
5 to 45 inches, reddish brown, very channery silt loam
45 to 51 inches, reddish brown, slightly firm, unconsolidated shale
fragments with strong seeps in the upper part
51 inches, reddish brown shale bedrock

Soil type: Elka channery silt loam
Boundary condition @ 45 inches, seasonal high water table

Test pit #20: 0 to 4 inches, dark reddish brown silt loam
4 to 20 inches, yellowish red gravelly silt loam
20 to 29 inches, mottled, reddish brown gravelly fine sandy loam
29 to 72+ inches, reddish brown gravelly silt loam

Soil type: Willowemoc silt loam
Boundary condition @ 20 inches, seasonal high water table

Test pit #21: 0 to 4 inches, dark reddish brown silt loam
4 to 14 inches, yellowish red gravelly silt loam
14 inches, hard bedrock ledge

Soil type: Halcott silt loam
Boundary condition @ 14 inches, impervious layer

Test pit #22: 0 to 5 inches, dark reddish brown silt loam
5 to 30 inches, reddish brown, gravelly silt loam
30 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 30 inches, impervious layer

Test pit #23: 0 to 4 inches, dark reddish brown silt loam
4 to 26 inches, yellowish red gravelly silt loam
26 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 26 inches, restrictive layer

Test pit #24: 0 to 4 inches, dark reddish brown silt loam
4 to 12 inches, yellowish red gravelly silt loam
12 inches, hard bedrock ledge

Soil type: Halcott silt loam
Boundary condition @ 12 inches, impervious layer

Test pit #25: 0 to 5 inches, dark reddish brown silt loam
5 to 38 inches, reddish brown, gravelly silt loam
38 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 38 inches, impervious layer

Test pit #26: 0 to 4 inches, dark reddish brown silt loam
4 to 25 inches, yellowish red gravelly silt loam
25 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 25 inches, restrictive layer

Test pit #27: 0 to 4 inches, dark reddish brown silt loam
4 to 29 inches, yellowish red gravelly silt loam
29 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 29 inches, restrictive layer

Test pit #28: 0 to 5 inches, dark reddish brown silt loam
5 to 26 inches, reddish brown, gravelly silt loam
26 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 26 inches, impervious layer

Test pit #29: 0 to 4 inches, dark reddish brown silt loam
4 to 25 inches, yellowish red gravelly silt loam
25 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 25 inches, restrictive layer

Test pit #30: 0 to 4 inches, dark reddish brown silt loam
4 to 12 inches, yellowish red gravelly silt loam
12 inches, hard bedrock ledge

Soil type: Halcott silt loam
Boundary condition @ 12 inches, impervious layer

Test pit #31: 0 to 5 inches, dark reddish brown silt loam
5 to 34 inches, reddish brown, gravelly silt loam
34 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 34 inches, impervious layer

Test pit #32: 0 to 5 inches, dark reddish brown silt loam
5 to 29 inches, reddish brown, gravelly silt loam
29 inches, fractured bedrock

Soil type: Vly silt loam
Boundary condition @ 29 inches, impervious layer

Test pit #33: 0 to 4 inches, dark reddish brown silt loam
4 to 26 inches, yellowish red gravelly silt loam
26 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 26 inches, restrictive layer

Test pit #34: 0 to 5 inches, dark reddish brown silt loam
5 to 25 inches, yellowish red gravelly silt loam
25 to 70+ inches, very firm, reddish gray gravelly fine sandy loam

Soil type: Lewbeach silt loam
Boundary condition @ 25 inches, restrictive layer

Test pit #35: 0 to 5 inches, dark reddish brown silt loam
5 to 38 inches, reddish brown, gravelly silt loam
38 inches, hard red shale bedrock

Soil type: Vly silt loam
Boundary condition @ 38 inches, impervious layer

Every test pit witnessed at the property had a boundary condition. Where the boundary condition is bedrock it is described as an impervious layer. The restrictive layer is used to indicate the upper limits of a hardpan in a deep soil and seasonal high water table indicates mottling or seeps.

MEMO

TO: Kevin Franke, Mark Taber

FROM: Will Buetow

DATE: December 13, 2010

RE: Windham Test Pit and Percolation Tests Results

On December 10, 2010, I went to the Windham site to evaluate deep hole test pits and perform percolation tests for stormwater suitability determinations. The locations of five deep hole test pits were determined in the office and loaded onto a GPS unit so they could be located in the field. Five deep hole test pits were evaluated and three percolation tests were performed and GPS points were collected at each location. John from Katterskill was also present and performed all of the other percolation tests. The results from the deep hole test pits are as follows:

TP1-12/10/10

This site is located to the west of Trail Side Road close to the road edge. The slope at this location is approximately 12%.

- A 0"-7" (5YR 3/4) dark red brown, gravelly silt loam, strong, fine, granular structure, friable.
- B 7"-32" (5YR 4/3) red brown, gravelly fine silt loam, moderate, fine subangular blocky structure, friable.
- B/Cd 32"-48" (2.5YR 4/3) red brown, gravelly silt loam, weak, fine subangular blocky structure, moderately firm.

This pit was dug to 8' with no bedrock encountered. A fast flowing seep was observed at 67" which is representative of the water table. A percolation test was performed at a 24" depth resulting in a stabilized percolation rate of 36 minutes per inch of fall. This soil is most like the Lewbeach soil series.

TP2-12/10/2010

This site is located just off of a dirt road onsite in the northern most portion of the site and immediately south of an offsite house. The slope at this location is approximately 12%.

- A 0"-7" (5YR 3/4) dark red brown, gravelly silt loam, strong, fine, granular structure, friable, many large rocks at the soil surface.
- B 7"-32" (5YR 4/3) red brown, gravelly fine silt loam, moderate, fine subangular blocky structure, friable.
- B/Cd 32"-48" (2.5YR 5/3) red brown, gravelly silt loam, weak, fine subangular blocky structure, moderately firm.

This pit was dug to 9' with no bedrock indication of groundwater. A percolation test was performed at a 24" depth resulting in a stabilized percolation rate of 45 minutes per inch of fall. This soil is most like the Lewbeechee soil series.

TP3-12/10/10

This pit is located in the northern portion of the site just to the west of a switchback onsite. The slope at this location is approximately 17%.

- A 0"-5" (5YR 3/4) dark red brown, gravelly silt loam, strong, fine, granular structure, friable, many large pieces of shale at the soil surface.
- B 5"-29" (5YR 4/3) red brown, gravelly fine silt loam, strong, fine subangular blocky structure, friable.
- B/Cd 32"-48" (2.5YR 5/3) red brown, gravelly silt loam, very weak, fine subangular blocky structure, moderately firm.

This pit was dug to 8' with no bedrock encountered. Flowing seeps were observed at 76" depth which are indicative of groundwater. A percolation test performed at a 24" depth resulted in a stabilized percolation rate of 47 minutes per inch of fall. This soil is most like the Lewbeechee soil series.

TP4-12/10/10

This pit is located in the central portion of the site just to the east of the Wanderer Ski Slope. The slope at this location is approximately 8%. This area is a terrace which has bedrock exposed throughout the terrace face. This pit was dug to 26" and rippable shale was encountered. At 28" depth, hard bedrock was encountered. No percolation test was performed. This soil is most like the Vly soil series.

TP5-12/10/10

This pit is located in the southeastern portion of the property close to the eastern property boundary. The slope at this location is approximately 10%. Bedrock ledge and flowing seeps were encountered at a 24" depth. Numerous other pits were dug in the area with similar results. No percolation test were performed at this location. This soil is most like the Halcott and Vly soil series.