

DATE:
 START 9/19/2008
 FINISH 9/19/2008

SJB SERVICES, INC.
SUBSURFACE LOG



PROJ. NO. AD-08-051
 HOLE NO. B-8
 SURF. ELEV. 1900.57'
 G.W. DEPTH See Below

SHEET 1 OF 2

PROJECT: Subsurface Investigation
Belleayre UMP

LOCATION: Town of Shandaken
Ulster County, New York

DEPTH (ft.)	SAMPLE NO.	BLOWS ON SAMPLER					REC. (ft.)	SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	18/24	N			
0								TOPSOIL and roots. +/- 0.5'	Soil descriptions 0' - 40' by driller based on auger cuttings.
5							Red Brown silty SAND and GRAVEL with occasional cobbles (Dry) USCS: SM-GM	Driller notes coarse augering for length of hole with boulders encountered at: 7.5' - 9.5', 15.5' - 16.3', 26.2' - 28.1' 31.5' - 33.5', and 35.5' - 37.3'.	
10									
15									
20									
25									
30									
35									
40							USCS: SM-GM		

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW
 DRILLER: Tom Farrell DRILL RIG TYPE: CME 550x CLASSIFICATION: Visual by
Geotechnical Engineer
 METHOD OF INVESTIGATION: 4 1/4" Hollow Stem Augers

All recovered samples will be retained for approximately sixty (60) days, at which time the samples will be discarded unless directed otherwise.

DATE: _____
 START 9/19/2008
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 SHEET 2 OF 2

SJB SERVICES, INC.
SUBSURFACE LOG



PROJ. NO. AD-08-051
 HOLE NO. B-8
 SURF. ELEV. 1900.57'
 G.W. DEPTH See Below

PROJECT: Subsurface Investigation
Belleayre UMP

LOCATION: Town of Shandaken
Ulster County, New York

DEPTH (ft.)	SAMPLE NO.	BLOWS ON SAMPLER					REC. (ft.)	SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	18/24	N			
	1	48	100/2	-	-	-	0.4	Reddish Brown SAND, GRAVEL and Boulder (rock?) fragments, trace to little silt (Damp - Very Compact) End of Boring @ 40.7'	Hole backfilled w/ bentonite chips from 40.7' to 35.0', then tremie grout w/ bentonite slurry to surface.
45									
50									
55									
60									
65									
70									
75									
80									

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW
 DRILLER: Tom Farrell DRILL RIG TYPE: CME 550x CLASSIFICATION: Visual by
Geotechnical Engineer
 METHOD OF INVESTIGATION: 4 1/4" Hollow Stem Augers

All recovered samples will be retained for approximately sixty (60) days, at which time the samples will be discarded unless directed otherwise.



**Contract
Drilling
and
Testing**

TEST PIT LOG

DATE: September 17, 2008

PROJECT: Subsurface Investigation
Belleayre UMP

TEST PIT NO.: TP-1

G.S. ELEVATION: 1927.30'

CONTRACTOR: SJB Services, Inc.

PROJECT NO.: AD-08-051

FIELD GEOLOGIST: James Vincent, CPG

WEATHER / TEMP.: Sunny & Cool

EXCAVATION EQUIP.: Rubber-Tire Backhoe John Deere 410E

DEPTH	SOIL DESCRIPTION	EXCAV. EFFORT
0 - 2'	Topsoil w/numerous roots & cobbles	Moderate - Compact
2' - 6'	Orange-Brown fine to medium SAND and GRAVEL, little silt w/numerous sandstone cobbles and occassional tabular sandstone boulders (length 2' - 3' and 2" - 8" thick)	Moderate - Compact
6' - 12'	GLACIAL TILL: Brown GRAVEL and fine to medium SAND, trace silt w/numerous tabular sandstone cobbles and boulders (approx 30% to 40%)	Hard - Very Compact



**Contract
Drilling
and
Testing**

TEST PIT LOG

DATE: September 17, 2008

PROJECT: Subsurface Investigation
Belleayre UMP

TEST PIT NO.: TP-2

G.S. ELEVATION: 1910.41'

CONTRACTOR: SJB Services, Inc.

PROJECT NO.: AD-08-051

FIELD GEOLOGIST: James Vincent, CPG

WEATHER / TEMP.: Sunny & Cool

EXCAVATION EQUIP.: Rubber-Tire Backhoe John Deere 410E

DEPTH	SOIL DESCRIPTION	EXCAV. EFFORT
0 - 1.5'	Topsoil w/numerous tree roots & occasional cobbles	Moderate - Compact
1.5' - 3.5'	Orange-Brown fine to medium SAND and GRAVEL, little silt w/numerous tabular sandstone cobbles	Moderate - Compact
3.5' - 10.5'	SANDY TILL: Brown GRAVEL and fine to medium SAND, trace silt w/numerous (+/- 30% - 40%) tabular cobbles and boulders (1' - 2' length and 2" - 8" thick).	Hard - Very Compact



**Contract
Drilling
and
Testing**

TEST PIT LOG

DATE: September 17, 2008

PROJECT: Subsurface Investigation
Belleayre UMP

TEST PIT NO.: TP-3

G.S. ELEVATION: 1932.22'

CONTRACTOR: SJB Services, Inc.

PROJECT NO.: AD-08-051

FIELD GEOLOGIST: James Vincent, CPG

WEATHER / TEMP.: Sunny & Cool

EXCAVATION EQUIP.: Rubber-Tire Backhoe John Deere 410E

DEPTH	SOIL DESCRIPTION	EXCAV. EFFORT
0 - 1.0'	Topsoil w/small roots	Moderate - Compact
1.0' - 12.5'	SANDY TILL: Brown GRAVEL and fine to medium SAND, trace silt w/numerous tabular sandstone cobbles and boulders (1' - 2' length and 2" - 6" thick); less silt noted from 11.0' - 12.5'.	Hard - Very Compact

DATE
 STARTED 7/29/01
 FINISHED 7/30/01
 SHEET 1 OF 1



SJB SERVICES, INC. SUBSURFACE LOG

PROJ. No. AE-01-099
 HOLE No. B-1
 SURF. ELEV. 325.6
 G.W. DEPTH see notes

PROJECT _____ LOCATION _____

DEPTH (ft)	SAMPLES	SAMPLE No.	BLOWS ON SAMPLER					BLOWS ON CASING	SOIL OR ROCK CLASSIFICATION	NOTES
			0-6	6-12	12-18	18-24	N			
0								3" TOPSOIL	Groundwater at 10' upon completion, and 5' 24 hrs. after completion	
							15	Brown SILT, some Sand, trace clay, ML (Moist-Loose)		
							50/.5			
5								Gray SHALE, medium hard, weathered, thin bedded, some fractures	Run#1, 2.5'-5.0' 95% Recovery 50% RQD	

TABLE I

	Split Spoon Sample
	Shelby Tube Sample
	Geoprobe Macro-Core
	Auger or Test Pit Sample
	Rock Core

TABLE II

Identification of soil type is made on basis of an estimate of particle sizes, and in the case of fine grained soils also on basis of plasticity.

Soil Type	Soil Particle Size	
Boulder	>12"	
Cobble	3" - 12"	
Gravel - Coarse	3" - 3/4"	Coarse Grained (Granular)
- Fine	3/4" - #4	
Sand - Coarse	#4 - #10	
- Medium	#10 - #40	
- Fine	#40 - #200	
Silt - Non Plastic (Granular)	<#200	Cohesive
Clay - Plastic (Cohesive)		

TABLE III

The following terms are used in classifying soils consisting of mixtures of two or more soil types. The estimate is based on weight of total sample.

Term	Percent of Total Sample
"and"	35 - 50
"some"	20 - 35
"little"	10 - 20
"trace"	less than 10

(When sampling gravelly soils with a standard split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter.)

TABLE IV

The relative compactness or consistency is described in accordance with the following terms:

Granular Soils		Cohesive Soils	
Term	Blows per Foot, N	Term	Blows per Foot, N
Loose	<11	Very Soft	<3
Firm	11 - 30	Soft	3 - 5
Compact	31 - 50	Medium	6 - 15
Very Compact	>50	Stiff	16 - 25
		Hard	>25

(Large particles in the soils will often significantly influence the blows per foot recorded during the penetration test)

TABLE V

Varved	Horizontal uniform layers or seams of soil(s).
Layer	Soil deposit more than 6" thick.
Seam	Soil deposit less than 6" thick.
Parting	Soil deposit less than 1/8" thick.
Laminated	Irregular, horizontal and angled seams and partings of soil(s).

TABLE VI

Rock Classification Term	Meaning	Rock Classification Term	Meaning
Hardness	- Soft	Bedding	- Laminated (<1")
	- Medium Hard		- Thin Bedded (1" - 4")
	- Hard		- Bedded (4" - 12")
	- Very Hard		- Thick Bedded (12" - 36")
Weathering	- Very Weathered	- Massive (>36")	Natural breaks in Rock Layers
	- Weathered		
	- Sound		

(Fracturing refers to natural breaks in the rock oriented at some angle to the rock layers)