



Sub-Surface Log

Test Hole TH19-04

1 of 3

Client: Blumetric Environmental **Project Number:** [REDACTED]
Project Name: Former Wellgreen Mill and Tailings Area **Location:** UTM 7V, 6820494 m N, 589413 m E (Former Mill Site)
Contractor: Midnight Sun Drilling Inc. **Ground Elevation:** 795.37 m
Method: 100 mm sonic core in 152 mm casing hole, Rig 9 Terrasonic track mounted **Date Drilled:** 5 August 2019 - 5 August 2019

Sample Type: Grab (G) Shelby Tube (T) Split Spoon (SS) Split Barrel (SB) Core (C)
Particle Size Legend: Fines Clay Silt Sand Gravel Cobbles Boulders
Backfill Legend: Bentonite Cement Drill Cuttings Filter Pack Sand Grout Slough

Elevation (m)	Depth (m)	Soil Symbol	SP-04	MATERIAL DESCRIPTION	Sample Type	Sample Number	SPT (N)	Temperature (°C)	Bulk Unit Wt (kN/m³)		Undrained Shear Strength (kPa)	
									16	17	18	19
794.9	0.5	[Symbol]		SAND AND GRAVEL (FILL) - trace fines - greyish brown, reddish brown at 0.5 m, moist, compact - poorly-graded, fine sand to coarse gravel, sub-rounded, maximum diameter <75 mm	⊗	A	22	●				
794.8	0.5	[Symbol]		ORGANICS - fine to medium sand, dark brown, moist SAND - some gravel (<25 mm diam.), trace silt, light brown, moist, loose, poorly-graded, fine to coarse sand	⊗	B	21				160	
794.5	1.0	[Symbol]		CLAY (TILL) - silty, sandy, trace gravel (<30 mm diam.) - dark grey, grey below 1.5 m - moist, very stiff - low plasticity								
	2.7			- sand seam, trace organics, light brown (150 mm thick) at 2.7 m - brownish grey, stiff below 2.9 m	⊗	F	13	●				
	4.3			- grey, hard below 4.3 m								
	5.8			- trace cobbles (<300 mm diam.) below 5.8 m	⊗	G	35	●				

Logged By: [REDACTED] **Reviewed By:** [REDACTED] **Project Engineer:** [REDACTED]

SUB-SURFACE LOG LOGS 2019-11-08 WELLGREEN WORKPLAN SITE (TEST HOLES)_FINAL_BT_0154-015-00.GPJ_TREK GEOTECHNICAL_GDT_28/11/19



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Elevation (m)	Depth (m)	Soil Symbol	SP-04	MATERIAL DESCRIPTION	Sample Type	Sample Number	SPT (N)	Temperature (°C)	Bulk Unit Wt (kN/m ³)		Undrained Shear Strength (kPa)			
									16	17				
									Particle Size (%)		Test Type △ Torvane △ ⊕ Pocket Pen. ⊕ ⊠ Qu ⊠ ○ Field Vane ○			
									0	20		40	60	80
									PL	MC	LL			
									0	20	40	60	80	100
6.5				CLAY (TILL) - silty, sandy, trace gravel (<30 mm diam.) - dark grey, grey below 1.5 m - moist, very stiff - low plasticity	⊠	H	39				●			
7.0														
7.5														
8.0						⊠	I	33				●		
8.5														
9.0														
9.5					⊠	J	89				●			
10.0														
10.5														
11.0					⊠	K	68				●			
11.5														
12.0														
12.5					⊠	L	94				●			
782.6														
13.0				SAND AND GRAVEL - some fines, trace cobbles (<200 mm diam.) - greyish brown - moist, very dense - poorly-graded, fine sand to coarse gravel	⊠	M								

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Logged By: _____ Reviewed By: _____ Project Engineer: _____



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Elevation (m)	Depth (m)	Soil Symbol	SP-04	MATERIAL DESCRIPTION	Sample Type	Sample Number	SPT (N)	Temperature (°C)	Bulk Unit Wt (kN/m ³)		Undrained Shear Strength (kPa)	
									16 17 18 19 20 21			
									Particle Size (%)		Test Type △ Torvane △ ⊕ Pocket Pen. ⊕ ⊠ Qu ⊠ ○ Field Vane ○	
									0 20 40 60 80 100	0 20 40 60 80 100		
									PL	MC	LL	
									0 20 40 60 80 100	0 20 40 60 80 100		
13.5				- sub-rounded - large boulders from 13.1 m to 13.7 m.								
14.0												
14.5												
15.0												
15.5					⊠	N	60					
16.0												
16.5												
17.0					⊠	O	71 / 30mm					
17.5												
18.0												
777.1												

END OF TEST HOLE AT 18.3 m IN SAND AND GRAVEL

Notes:

1. No seepage observed.
2. Sloughing could not be observed due to drilling method.
3. Standpipe SP-04 (50 mm diameter) installed at 12.0 m below ground surface.
4. Test Hole backfilled with bentonite chips from the bottom of test hole to 12.5 m depth, sand from 12.5 m to 9.1 m depth, bentonite chips from 9.1 m to 0.3 m depth and sand from 0.3 m depth to surface.
5. Sample M, N and O were combined to obtain sufficient amount for testing. Results represent a combined material.