

February 21, 2019

M•L 8855

GEC Architecture

Suite 300, 2207 4 Street SW

Calgary, AB T2S 1X1

Attention: Mr. Robert (Bob) Stirling (bob.stirling@gecarchitecture.com)

**Subject: Laboratory Testing Results
Drumheller Curling Club
Calgary, Alberta**

Laboratory testing of select soil samples recovered from the Drumheller Curling Club site has been completed. Natural moisture contents are presented on the attached updated borehole logs, as well as, organic contents and soluble sulphate contents.

1.0 CONCRETE

Testing for soluble sulphates indicates a negligible soluble sulphate concentration of up to 0.082 percent. Therefore, the use of Type GU (Normal Portland) cement concrete in accordance with CSA A23.1, Table 2 for F-2 exposure is suitable for all concrete in contact with the soil which these samples represent. The F-2 exposure class requires minimum 25 MPa strength at 28 days, a maximum water to cementing materials ratio of 0.55 and 4-7 percent entrained air by volume based on 14-20 mm aggregate.

It is recommended that all imported soils to be utilized on site be tested for soluble sulphate concentrations.

2.0 SOIL ERODIBILITY

M•L has conducted laboratory testing and calculated soil erodibility factors (K-values) for the surficial soils within the subject site for use in an Erosion and Sedimentation Control (ESC) plan. The K-values were calculated in accordance with the RUSLEFAC guidelines¹ using two (2) pairs of hydrometer and organic content test results obtained on borehole Sample 2-2 and Sample 5-2. The samples were obtained from the surficial silty sand soils at an approximate depth of 1.07 m.

The particle size distribution of the soils was obtained using the hydrometer method. The hydrometer results are attached. The USDA classification scheme was used for differentiating silts and sand when

¹ Wall, G.J., D.R. Coote, E.A. Pringle and I.J. Shelton (editors). 2002. RUSLEFAC — Revised Universal Soil Loss Equation for Application in Canada: A Handbook for Estimating Soil Loss from Water Erosion in Canada. Research Branch, Agriculture and Agri-Food Canada. Ottawa. Contribution No. AAFC/AAC2244E. 117 pp.

determining the soil structure and permeability classes from the Erodibility Worksheet. Sample 2-2 and Sample 5-2 were classified as a 'Sandy Loam' (USDA) due to its elevated sand content, coupled with a balanced clay and silt content. The percentage of very fine sands (0.05 - 0.10 mm) was added to percent silt for application to the nomograph in Drawing 8855.00.B01.

The soil erodibility K-values for the sample were determined graphically (refer to Drawing 8855.00.B01) and is listed below:

Sample No.	Soil Class (USDA)	Percentage Composition, normalized to passing 2 mm sieve				Structure Class	Perm. Class	Organics (%)	K-value
		Clay	Silt	Very Fine Sand	Other Sand				
2-2	Sandy Loam	10.2	22.4	20.0	47.4	2	2	2.6	0.028
5-2	Sandy Loam	11.0	21.0	21.9	46.1	2	2	2.4	0.029

The graphically determined K-values are considered to represent the most erodible soil types on site likely to be exposed during rough grading. Furthermore, these soils are considered suitable as engineered fill soils for rough grading. Thus, an average K-value of 0.029 that represents the typical result from our experience in the area can be considered suitable for application in the ESC plan for the project site.

3.0 CLOSURE

We trust the information presented meets with your present requirements. Should you have questions please contact our office.

Respectfully submitted,

McIntosh•Lalani Engineering Ltd.

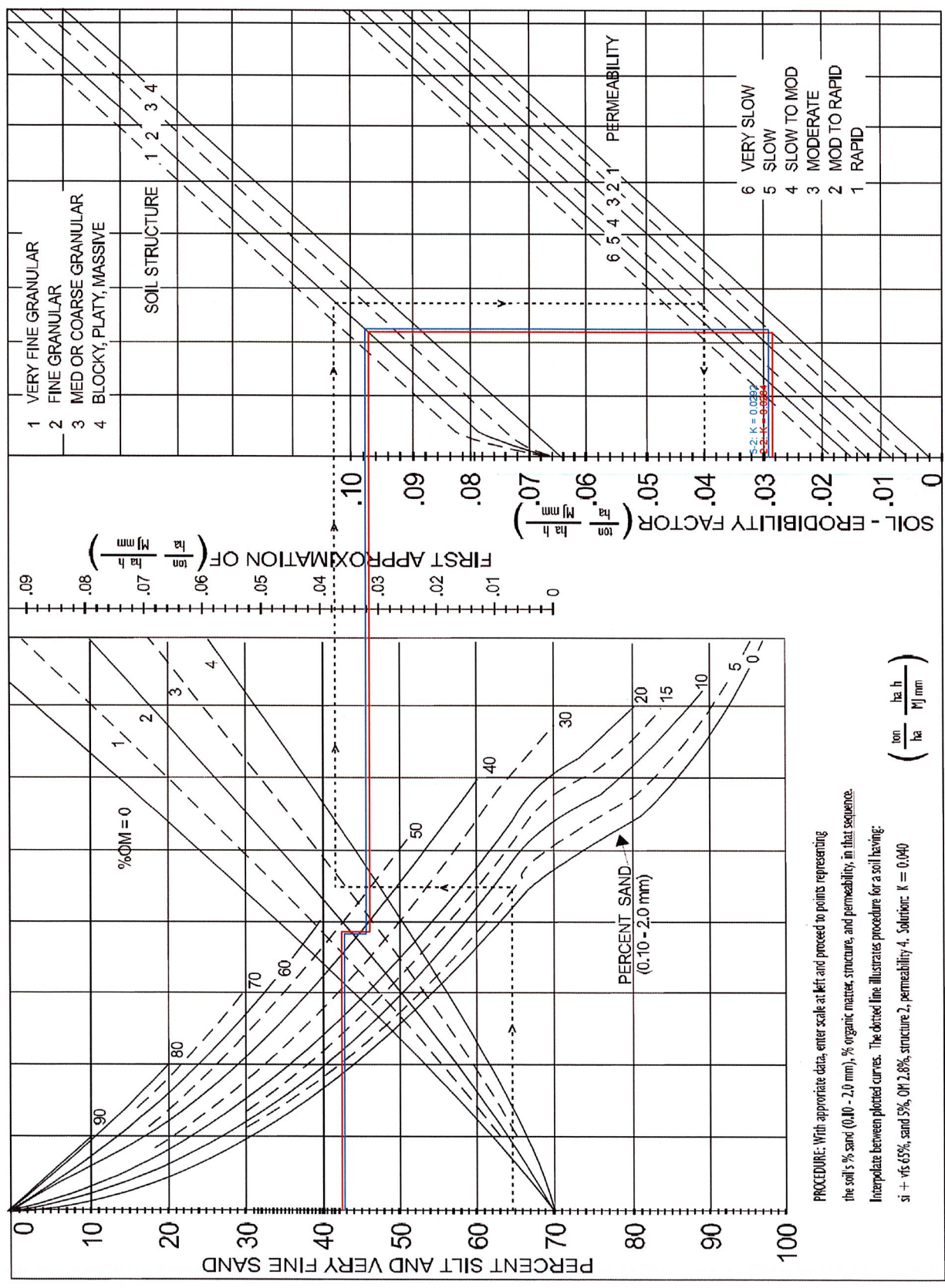


Brian Tingley, E.I.T
Junior Project Engineer

/bt



Asad Shaikh, P.Eng.
Geotechnical Project Engineer

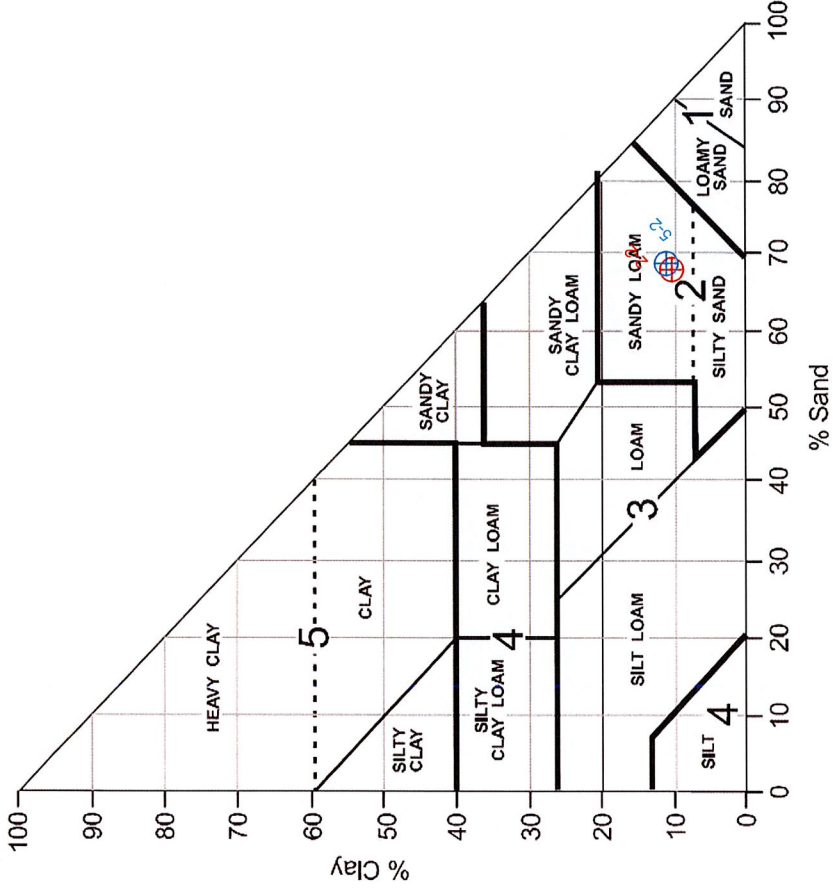


PROCEDURE: With appropriate data, enter scale at left and proceed to points representing the soil's % sand (0.10 - 2.0 mm), % organic matter, structure, and permeability, in that sequence. Interpolate between plotted curves. The dotted line illustrates procedure for a soil having: si + vis 65%, sand 5%, OM 2.8%, structure 2, permeability 4. Solution: $k = 0.040$

GEC Architecture		McINTOSH • LALANI ENGINEERING LTD.	
Drumheller Curling Club		Job Number: ML-8855	Drawing Number: 8855.00.B01
Soil Erodibility Nomograph		Scale: N.T.S.	Date: January 9, 2018



a) Soil Texture Classification



b) Soil Permeability Classification

Client: GEC Architecture

Project: Drumheller Curling Club

Title: Soil Texture & Permeability Classes



McINTOSH • LALANI ENGINEERING LTD.

Job Number

ML-8855

Drawing Number

8855.00.B02

Scale:

N.T.S.

Date:

January 9, 2018



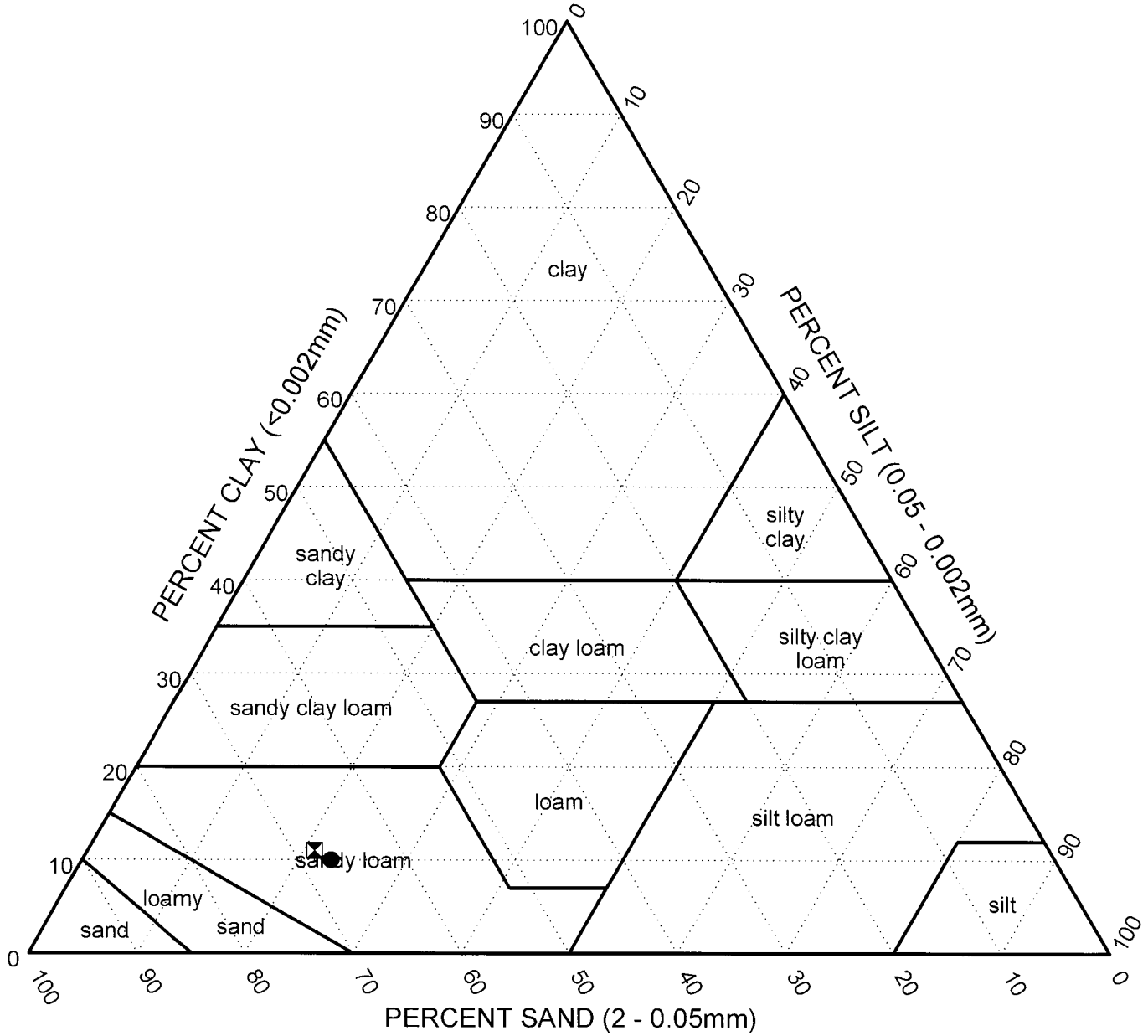
ERODIBILITY WORKSHEET

CLIENT GEC Architecture Ltd.

PROJECT NAME Drumheller Curling Club

PROJECT NUMBER ML-8855

PROJECT LOCATION _____



Borehole	Depth (ft)		USDA Classification	Textural Class	Permeability Class	Org. Cont. (%)	Silt (%)	Clay (%)	VFS (%)	Other Sand (%)	Gravel (%)
● 2	3.5	2-2	SANDY LOAM	2	2	2.6	22.4	10.2	20.0	47.4	0.3
⊠ 5	3.5	5-2	SANDY LOAM	2	2	2.4	21.0	11.0	21.9	46.1	0.7

If the percentage of the total sample retained above the 2 mm sieve is greater than 20%, subtract 1 from the permeability class shown above.

Fractions normalized to 100% passing the 2mm (#10) sieve



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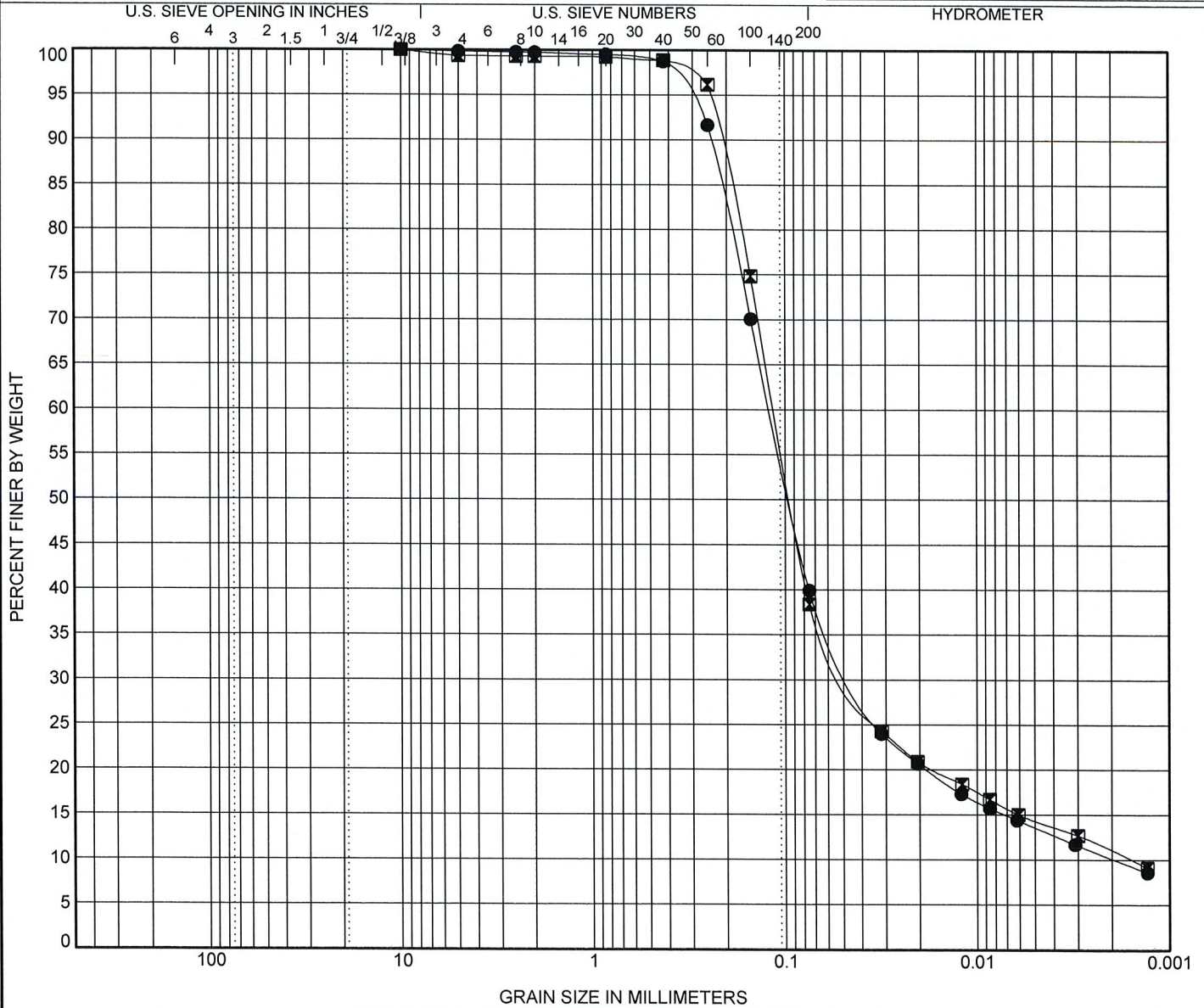
USDA GRAIN SIZE DISTRIBUTION

CLIENT GEC Architecture Ltd.

PROJECT NAME Drumheller Curling Club


PROJECT NUMBER ML-8855

PROJECT LOCATION _____



COBBLES	GRAVEL		OTHER SAND	VERY FINE SAND, SILT OR CLAY
	coarse	fine		

Specimen Identification	%Gravel	%OTHER SAND	%VFS	%Silt	%Clay
● BH-2 1.1 (m)	0.3	47.3	20.0	22.3	10.1
☒ BH-5 1.1 (m)	0.7	45.8	21.7	20.8	11.0

Reviewed By: 

Data presented hereon is for the sole use of the stipulated client. ML is not responsible nor can be held liable for suse made of this report by any other party, with or without the knowledge of ML.

The testing services reported herein have been performed by an ML technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, ML will provide it upon written request.

USDA GRAIN SIZE DISTRIBUTION 8855 DRUMHELLER CURLING CLUB.GPJ GINT CANADA LAB.GDT 21/2/19

Project: Drumheller Curling Club			Drilling Information:			Borehole No.:1						
Client: GEC Architecture Ltd.			All Service Drilling Inc			Project No.:ML-8855						
			CME 55 track SS-Auger			Elevation:						
SAMPLE TYPE		■ SHELBY TUBE	▣ CORE SAMPLE	⊗ SPT SAMPLE	☞ GRAB SAMPLE	▩ AUGER SAMPLE	▨ NO RECOVERY					
BACKFILL TYPE		■ BENTONITE	▣ PEA GRAVEL	▨ SLOUGH	☞ GROUT	▨ DRILL CUTTINGS	▣ SAND					
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTICITY INDEX		POCKETPEN (kPa)	OTHER DATA	Well 1" SLOTTED PIEZOMETER	Elevation (m)
							PLASTIC	LIQUID				
0		TOPSOIL - dark brown organics, trace rubble approx. 450 mm thick.		1-1	TPSL							
0.5		Silty SAND - fine grain, loose, damp, trace coal, light to medium brown.		1-2		6.8						
1.5		- trace roots.		1-3	SM	7.8						
2.5		- trace clay, moist, trace oxides.		1-4								
3.5				1-5		2-2-3		24.1				
4.0		Sandy GRAVEL - coarse grain, fine gravel, well sorted, compact, moist, medium brown.		1-6								
5.0		- coarse gravel, wet.		1-7		8-16-12		12.4				
6.0				1-8								
7.0				1-9	GWS	5-14-20		16.7				
8.0		- trace organics, med grey.		1-10								
8.5				1-11		11-15-13		19.0				
9.1		END OF HOLE at a depth of 9.1 m. Slough to a depth of 6.1 m. 25 mm PVC standpipe installed to a depth of 9.1 m with 3.0 m slotted. Wet upon completion.		1-12								
9.1		Water Levels: Sept 25, 2018: 4.67 m EOH: 8.80 m										

ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB GPJ M-L STANDARD GDT 21/2/19



McIntosh Lalani Engineering
Calgary, AB
(403) 291-2345

Logged By: RC	Completion Depth: 30 ft
Reviewed By: Asad Shaikh	Drilled on: 9/14/2018
Groundwater Depth: m	Page 1 of 1

Project: Drumheller Curling Club			Drilling Information:			Borehole No.:2								
Client: GEC Architecture Ltd.			All Service Drilling Inc			Project No.:ML-8855								
			RK-10 SS-Auger			Elevation:								
SAMPLE TYPE		■ SHELBY TUBE	■ CORE SAMPLE	⊗ SPT SAMPLE	☞ GRAB SAMPLE	■ AUGER SAMPLE	□ NO RECOVERY							
BACKFILL TYPE		■ BENTONITE	□ PEA GRAVEL	▨ SLOUGH	☞ GROUT	▨ DRILL CUTTINGS	□ SAND							
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTIC M.C. LIQUID		OTHER DATA	Well '2' SLOTTED PIEZOMETER	Well '2-B' SLOTTED PIEZOMETER	Elevation (m)		
							10	20					30	40
							● BLOW COUNT	● POCKETPEN (kPa)						
							10	20	30	40				
							80	160	240	320				
0		TOPSOIL - dark brown organics, trace rubble approx. 400 mm thick.	■	2-1	TPSL									
1		Silty Sand FILL - fine grain, loose, damp, medium brown. - coal approx. 150 mm thick, trace rubble, trace gravel, trace roots.	⊗	2-2	FILL	4.7								
2		trace oxides, trace clay.	⊗	2-3	FILL	14.8								
3		Silty SAND - fine grain, loose, wet, trace oxides, trace roots, medium brown.	⊗	2-4	FILL	22.2								
4		Sandy GRAVEL - coarse grain, well sorted, wet, medium brown/orange. - no recovery in split spoon.	■	2-5	SM	7.8								
5		- no recovery in split spoon.	■	2-6	SM	11.9								
6		Silty CLAY (Till) - trace sand and gravel, soft, wet, low plastic, trace oxide, trace coal, medium brown.	⊗	2-7	SM	17.9								
7		- no recovery in split spoon.	⊗	2-8	GWS	23.5								
8		Silty SAND - trace gravel, some clay, loose, wet, medium blue/grey.	⊗	2-9	CL-ML	27.2								
9		Silty CLAY (Till) - trace sand and gravel, stiff, moist-wet, low plastic, trace coal, medium blue/grey.	⊗	2-10	SM	16.5								
10		- medium to high plastic, damp, medium grey.	⊗	2-11	SM	28.2								
11		- no recovery in split spoon.	⊗	2-12	SM	27.7								
12			⊗	2-13	SM									
13			⊗	2-14	SM									
14			⊗	2-15	SM									
15			⊗	2-16	CL-ML									
16			⊗	2-17	CL-ML									
17			⊗	2-18	CL-ML									
18			⊗	2-19	CL-ML									
19			⊗	2-20	CL-ML									
20		END OF HOLE at a depth of 15.2 m. Slough to a depth of 11.8 m. 25 mm PVC standpipe installed to a depth of 14.4 m with 1.5 m slotted. Wet upon completion.												
21		WELL B: 25 mm PVC standpipe installed, (nested with 1 in same well) to a depth of 7.6 m with 1.5 m slotted. Wet upon completion.												
22		Water Levels: Sept 25, 2018: 11.58 m EOH: 12.78 m												
23		Well B: Sept 25, 2018: 6.12 m EOH: 7.57 m												
ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ M-L STANDARD.GDT 21/2/19														
						McIntosh Lalani Engineering			Logged By: RC			Completion Depth: 50 ft		
						Calgary, AB			Reviewed By: Asad Shaikh			Drilled on: 9/13/2018		
						(403) 291-2345			Groundwater Depth: m			Page 1 of 1		

Project: Drumheller Curling Club		Drilling Information:		Borehole No.:3							
Client: GEC Architecture Ltd.		All Service Drilling Inc		Project No.:ML-8855							
		CME 55 track SS-Auger		Elevation:							
SAMPLE TYPE		<input checked="" type="checkbox"/> SHELBY TUBE <input checked="" type="checkbox"/> CORE SAMPLE <input checked="" type="checkbox"/> SPT SAMPLE <input type="checkbox"/> GRAB SAMPLE <input type="checkbox"/> AUGER SAMPLE <input type="checkbox"/> NO RECOVERY									
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND									
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTIC M.C. LIQUID 10 20 30 40	BLOW COUNT 10 20 30 40	OTHER DATA	Well 3" SLOTTED PIEZOMETER	Elevation (m)
0		ASPHALT - approx. 50 mm thick.			ASPH						
0-1		Silty Sand FILL - trace gravel, trace clay, loose, damp, trace rubble, dark brown.		3-1	FILL						
1-2		Silty SAND - medium grain, trace clay, loose, damp, light to medium brown. - trace organics in split spoon.		3-2	1-1-3	21.4					
2-3		- compact, moist.		3-3	SM						
3-4				3-4	3-5-11	14.6					
4-5		Sandy GRAVEL - coarse grain, well sorted, compact, damp, medium brown, dark orange.		3-5							
5-6		- trace cobbles, wet.		3-6	15-20-21	10.2					
6-7				3-7	GWS						
7-8				3-8	3-8-13	12.9					
8-9		Silty SAND - fine grain, trace clay, loose, wet, medium grey.		3-9							
9-10				3-10	1-4-4	22.5					
10-11				3-11							
11				3-12	SM	27.8					
		END OF HOLE at a depth of 9.1 m. Slough to a depth of 6.1 m. 25 mm PVC standpipe installed to a depth of 6.1 m with 3.0 m slotted. Wet upon completion.									
		Water Levels: Sept 25, 2018: 4.57 m EOH: 5.92 m									

ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ ML STANDARD.GDT 21/2/19



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Logged By: RC
 Reviewed By: Asad Shaikh
 Groundwater Depth: m

Completion Depth: 30 ft
 Drilled on: 9/14/2018
 Page 1 of 1

Project: Drumheller Curling Club			Drilling Information:			Borehole No.:4						
Client: GEC Architecture Ltd.			All Service Drilling Inc			Project No.:ML-8855						
			CME 55 track SS-Auger			Elevation:						
SAMPLE TYPE		■ SHELBY TUBE	▣ CORE SAMPLE	⊗ SPT SAMPLE	✎ GRAB SAMPLE	▩ AUGER SAMPLE	▨ NO RECOVERY					
BACKFILL TYPE		■ BENTONITE	▣ PEA GRAVEL	▨ SLOUGH	✎ GROUT	▩ DRILL CUTTINGS	▨ SAND					
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTICITY INDEX		POCKETPEN (kPa)	OTHER DATA	Well 4' SLOTTED PIEZOMETER	Elevation (m)
							PLASTIC	M.C. LIQUID				
0		ASPHALT - approx. 50 mm thick.			ASPH							
0		Silty Sand FILL - trace gravel, trace clay, loose, damp, trace rubble, dark brown.	▣	4-1	FILL							
0.5		Silty SAND - fine grain, loose, damp, trace roots, light brown.	▣	4-2			12.9					
1.5		- trace clay, moist.	⊗	4-3		2-2-2						
2.5			▣	4-4			23.9					
3.5			⊗	4-5	SM	3-2-3	21.7					
4.5			▣	4-6								
4.5		Sandy GRAVEL - coarse grain, well sorted, compact, damp, medium brown, dark orange.	⊗	4-7		11-20-18	9.8					
5.5		- wet, trace cobbles.	▣	4-8								
6.5			⊗	4-9	GWS	2-4-11	15.4					
7.5		Silty SAND - fine grain, trace gravel, loose, wet, medium grey/green.	▣	4-10								
8.5			⊗	4-11	SM	3-4-5	26.3					
9.5		- trace organics.	▣	4-12			20.5					
9.1		END OF HOLE at a depth of 9.1 m. Slough to a depth of 6.1 m. 25 mm PVC standpipe installed to a depth of 7.0 m with 3.0 m slotted. Wet upon completion.										
		Water Levels: Sept 25, 2018: 5.08 m EOH: 6.92 m										

ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ M-L STANDARD.GDT 2/12/19



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Calgary, AB
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Logged By: RC

Reviewed By: Asad Shaikh

Groundwater Depth: m

Completion Depth: 30 ft

Drilled on: 9/14/2018

Page 1 of 1

Project: Drumheller Curling Club			Drilling Information:			Borehole No.:5					
Client: GEC Architecture Ltd.			All Service Drilling Inc			Project No.:ML-8855					
			CME 55 track SS-Auger			Elevation:					
SAMPLE TYPE		■ SHELBY TUBE	▣ CORE SAMPLE	⊗ SPT SAMPLE	Ⓜ GRAB SAMPLE	▩ AUGER SAMPLE	▨ NO RECOVERY				
BACKFILL TYPE		■ BENTONITE	▣ PEA GRAVEL	▨ SLOUGH	Ⓜ GROUT	▨ DRILL CUTTINGS	⊗ SAND				
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTIC M.C. LIQUID		OTHER DATA	Well 15' SLOTTED PIEZOMETER	Elevation (m)
							10 20 30 40	80 160 240 320			
0		ASPHALT - approx. 50 mm thick.	■	5-1	ASPH						
0-1		Silty Sand FILL - trace gravel, trace clay, loose, damp, trace rubble, dark brown.	■	5-2	FILL	6.5			Organic Content = 2.4% [SO ₂] = 0.082%		
1-2		Silty SAND - fine grain, loose, damp, trace roots, light brown.	■	5-3		9.4					
2-3		- trace clay, moist.	⊗	5-4	SM	2-2-2					
3-4			⊗	5-5		3-3-4	15.5				
4-5		Sandy GRAVEL - coarse grain, well sorted, compact, damp, medium brown, dark orange.	■	5-6		8-15-15	8.0				
5-6		- wet, trace cobbles, trace organics.	■	5-8	GWS						
6-7			⊗	5-9		7-7-8	13.7				
7-8		Silty SAND - fine grain, some clay, loose, wet, medium grey.	■	5-10	SM			34.2			
8-9		Sandy GRAVEL - coarse grain, well sorted, compact, damp, trace cobbles, medium brown, dark orange.	■	5-11		5-6-10					
9-10		- no recovery in split spoon, no recovery on auger.	■	5-12	GWS	20-15-15					
10-11		- no recovery on auger.	■	5-13		6-7-10	8.4				
11-12		Shale BEDROCK - weathered, weak, damp, light grey.	■	5-14	BE			23.8			
12-13			■	5-15		24-25-16					
13-14		Coal BEDROCK - weathered weak, wet, black.	■	5-17	BE			35.0			
14-15			■	5-18		14-20-27					
14-15		END OF HOLE at a depth of 13.7 m. Slough to a depth of 6.1 m. 25 mm PVC standpipe installed to a depth of 8.2 m with 3.0 m slotted. Wet upon completion.									
		Water Levels: Sept 25, 2018: 5.46 m EOH: 8.25 m									

ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ ML STANDARD.GDT 21/12/19



McIntosh Lalani Engineering
Calgary, AB
(403) 291-2345

Logged By: RC
Reviewed By: Asad Shaikh
Groundwater Depth: m

Completion Depth: 45 ft
Drilled on: 9/14/2018
Page 1 of 1

Project: Drumheller Curling Club		Drilling Information:		Borehole No.:6							
Client: GEC Architecture Ltd.		All Service Drilling Inc		Project No.:ML-8855							
		CME 55 track SS-Auger		Elevation:							
SAMPLE TYPE		■ SHELBY TUBE	■ CORE SAMPLE	⊗ SPT SAMPLE	☞ GRAB SAMPLE	▨ AUGER SAMPLE	▨ NO RECOVERY				
BACKFILL TYPE		■ BENTONITE	□ PEA GRAVEL	▨ SLOUGH	☞ GROUT	▨ DRILL CUTTINGS	□ SAND				
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTIC M.C. LIQUID 10 20 30 40	■ BLOW COUNT ■ 10 20 30 40	OTHER DATA	Well '6' SLOTTED PIEZOMETER	Elevation (m)
0	▨	ASPHALT - approx. 50 mm thick.	▨	6-1	ASPH FILL						
0	▨	Silty Sand FILL - trace gravel, trace clay, loose, damp, trace rubble, dark brown.	▨	6-1							
1	▨	Silty SAND - fine grain, loose, damp, trace roots, light brown.	▨	6-2	SM	3-4-3	10.6	■			
2	▨		▨	6-3							
3	▨	- trace clay.	▨	6-4		3-4-6	21.5	■			
4	▨	Sandy GRAVEL - coarse grain, well sorted, compact, damp, medium brown, dark orange.	▨	6-5							
5	▨	- wet, trace cobbles.	▨	6-6		10-14-16	8.4	■			
6	▨		▨	6-7	GWS		13.3	■			
7	▨		▨	6-8		7-12-12		■			
8	▨	Silty CLAY - trace gravel, low plastic, firm, wet, medium grey. no recovery in split spoon.	▨	6-9			18.8	■			
9	▨		▨	6-10	SM	5-3-3	30.1	■			
9.1		END OF HOLE at a depth of 9.1 m. Slough to a depth of 6.1 m. 25 mm PVC standpipe installed to a depth of 6.1 m with 3.0 m slotted. Wet upon completion.									
		Water Levels: Sept 25, 2018: 5.38 m EOH: 6.07 m									

ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ M.L. STANDARD.GDT 21/2/19



McIntosh Lalani Engineering
 Calgary, AB
 (403) 291-2345

Logged By: RC	Completion Depth: 30 ft
Reviewed By: Asad Shaikh	Drilled on: 9/14/2018
Groundwater Depth: m	Page 1 of 1

Project: Drumheller Curling Club		Drilling Information:		Borehole No.:7								
Client: GEC Architecture Ltd.		All Service Drilling Inc		Project No.:ML-8855								
		RK-10 SS-Auger		Elevation:								
SAMPLE TYPE		■ SHELBY TUBE	■ CORE SAMPLE	⊗ SPT SAMPLE	☞ GRAB SAMPLE	■ AUGER SAMPLE	□ NO RECOVERY					
BACKFILL TYPE		■ BENTONITE	□ PEA GRAVEL	□ SLOUGH	■ GROUT	□ DRILL CUTTINGS	□ SAND					
Depth (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	USCS	BLOWS /150 mm	PLASTICITY INDEX		POCKETPEN (kPa)	OTHER DATA	Well 7' SLOTTED PIEZOMETER	Elevation (m)
							PLASTIC	LIQUID				
0		TOPSOIL - dark brown organics, trace rubble approx. 450 mm thick. over clayey silt loam	■	7-1	TPSL							
1		Silty SAND - trace gravel, loose, damp, trace roots, light brown.	■	7-2		7.8						
2		- trace coal.	⊗	7-3		2-3-3						
3			■	7-4	SM	19.5						
4			⊗	7-5		3-3-4						
5		Sandy GRAVEL - coarse grain, well sorted, compact, wet, trace cobbles, medium brown, dark orange.	⊗	7-6		10.0						
6			⊗	7-7		5-10-13						
7		Silty CLAY - trace sand and gravel, soft, moist, low plastic, medium brown.	⊗	7-8	GWS	13.7						
8			⊗	7-9	CL-ML	21.3						
9		Sandy GRAVEL - some clay, coarse, compact, medium brown.	⊗	7-10		9-8-10						
10		Silty CLAY - trace sand and coarse gravel, stiff, moist, low plastic, medium grey.	⊗	7-11		17.5						
11		- no recovery in split spoon.	⊗	7-12								
12			⊗	7-13	CL-ML	16.0						
13		- no recovery in split spoon.	⊗	7-14		4-6-8						
14			■			19.0						
		END OF HOLE at a depth of 12.2 m. Slough to a depth of 10.6 m. 25 mm PVC standpipe installed to a depth of 12.2 m with 3.0 m slotted. Wet upon completion.										
		Water Levels: Sept 25, 2018: 9.68 m EOH: 11.82 m										
		[SO ₄] = 0.041%										

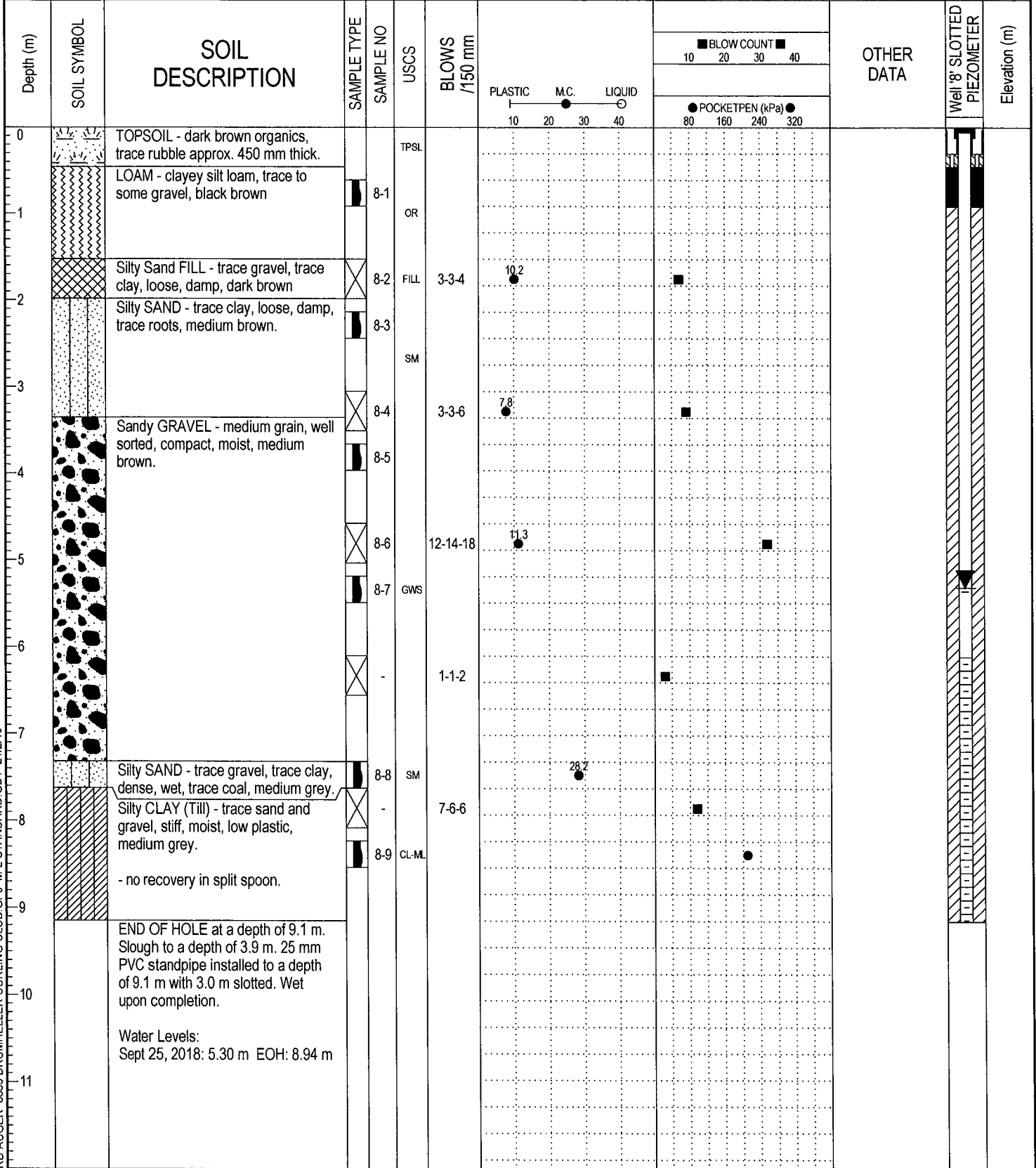
ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ ML STANDARD.GDT 21/2/19



McIntosh Lalani Engineering
Calgary, AB
(403) 291-2345

Logged By: RC	Completion Depth: 40 ft
Reviewed By: Asad Shaikh	Drilled on: 9/13/2018
Groundwater Depth: m	Page 1 of 1

Project: Drumheller Curling Club		Drilling Information:		Borehole No.:8		
Client: GEC Architecture Ltd.		All Service Drilling Inc		Project No.:ML-8855		
		CME 55 track SS-Auger		Elevation:		
SAMPLE TYPE	■ SHELBY TUBE	▣ CORE SAMPLE	⊠ SPT SAMPLE	☞ GRAB SAMPLE	▤ AUGER SAMPLE	▨ NO RECOVERY
BACKFILL TYPE	■ BENTONITE	▨ PEA GRAVEL	▨ SLOUGH	☞ GROUT	▨ DRILL CUTTINGS	▨ SAND



ML STANDARD AUGER 8855 DRUMHELLER CURLING CLUB.GPJ M-L STANDARD.GDT 21/2/19



McIntosh Lalani Engineering
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Logged By: RC
Reviewed By: Asad Shaikh
Groundwater Depth: m

Completion Depth: 30 ft
Drilled on: 9/14/2018
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