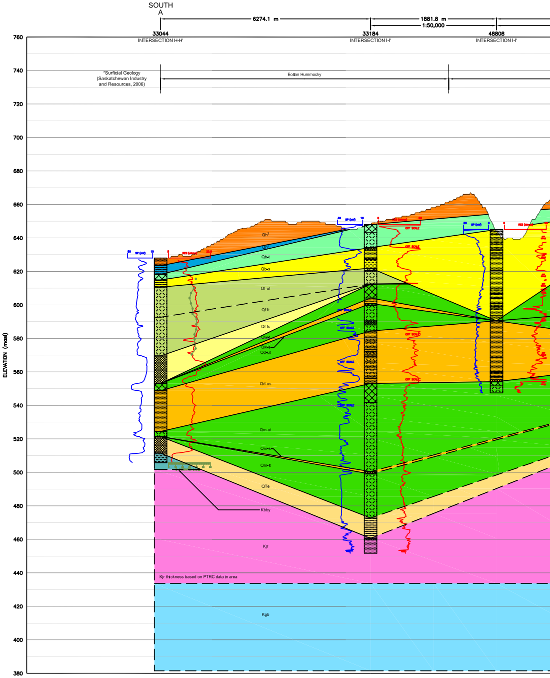
SASKATOON AREA

TIME				STRATIGRAPHY				LITHOLOGY		SYMBOL				
PERIOD	EPOCH	STAGE / AGE (Ma)		GROUP		FORMATION	UNIT OR MEMBER							
QUATERNARY	Holocene 0.01			Saskatoon		Surficial Stratified Deposits	Alluvium	Silt, Sand, Gravel	Clay, Silt, Sand	Qa^3	Qa^4	Qssd		Q
								Silt, Sand, Gravel	Clay, Silt, Sand	Qa^1	Qa^2			
	PLEISTOCENE	Late Pleistocene	Late Wisconsin 0.023 to 0.034				Haultain	Silt, Sand, Gravel	Clay, Silt, Sand	Qh^3	Qh^4			
								Silt, Sand, Gravel	Clay, Silt, Sand	Qh^1	Qh^2			
						Battleford		Till		Qb-t		Qb	Qsk	
								Gravel, Sand, Silt, Clay		Qb-s				
			Early Wisconsin 0.1			Floral	Upper	Till		Qf-ut		Qf		
			Sangamon 0.2				Riddell (Middle)	Gravel, Sand		Qf-ms				
			Illinoian 0.6				Lower	Till		Qf-lt				
								Gravel, Sand, Silt, Clay		Qf-ls				
								Till		Qf-bt				
		Middle Pleistocene	Pre-Illinoian	Sutherland		Warman		Till		Qw-t		Qw	Qsu	
							0.64	Gravel, Sand, Silt, Clay		Qw-s				
						Dundurn	Upper	Till		Qd-ut		Qd		
							0.70	Gravel, Sand, Silt, Clay		Qd-us				
							Lower	Till		Qd-lt				
								Gravel, Sand, Silt, Clay		Qd-ls				
							0.78	Till		Qd-bt				
		Early Pleistocene				Mennon	Upper	Till		Qm-ut		Qm		
								Gravel, Sand, Silt, Clay		Qm-s				
							Lower	Till		Qm-lt				
			1.8	Empress			Upper	Gravel, Sand, Silt, Clay (Proglacial)		Qe		QTe		
TERTIARY	Neogene	Pliocene					Lower	Chert and Quartzite Sand on Gravel (Preglacial)		Te				
CRETACEOUS	Upper Cretaceous	Maastrichtian 71		Montana		Bearpaw	Aquadell	Silt and Clay		Kbaq		Kb		
							Cruikshank	Sand and Silt		Kbc				
		Campanian 84					Snakebite	Silt and Clay		Kbs				
							Ardkenneth	Sand and Silt		Kba				
							Beechy	Silt and Clay		Kbby				
						Judith River	Oldman	Sand and Silt		Ko		Kjr		
							Foremost	Sand and Silt		Kfm				
						Lea Park	Grizzly Bear	Silt and Clay		Kgb		Klp		
							Ribstone Creek	Sand and Silt		Krc				
								Silt and Clay		Klp				
		Santonian 86				Alderson (Milk River)		Silt and Clay		Kal				
				Colorado	Upper	First White Speckled Shale		Silt and Clay (Speckled)		Kfws		Kc		
		Coniacian 89				Niobrara		Silt and Clay		Kn				
		Turonian 93				Carlile		Silt and Clay		Kcl				
						Second White Speckled Shale		Silt and Clay (Speckled)		Ksws				
		Cenomanian 99			Lower	Belle Fourche		Silt and Clay		Kbf				
						Fish Scales		Silt and Clay (Fish Debris)		Kfs				
	Lower Cretaceous	Albian				West Gate		Silt and Clay		Kwg				
						Viking		Sand and Silt		Kv				
						Joli Fou		Silt and Clay		Kjf				
				Mannville (Blairmore) (Swan Hills)						Km				

〰 Major unconformity

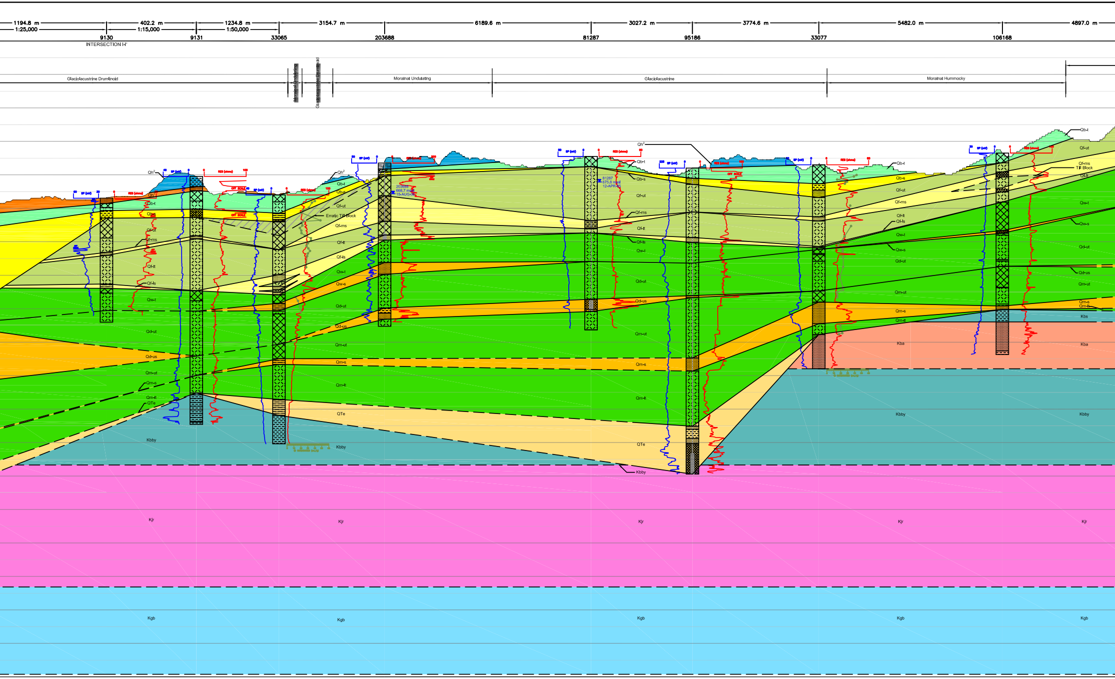
Lithology

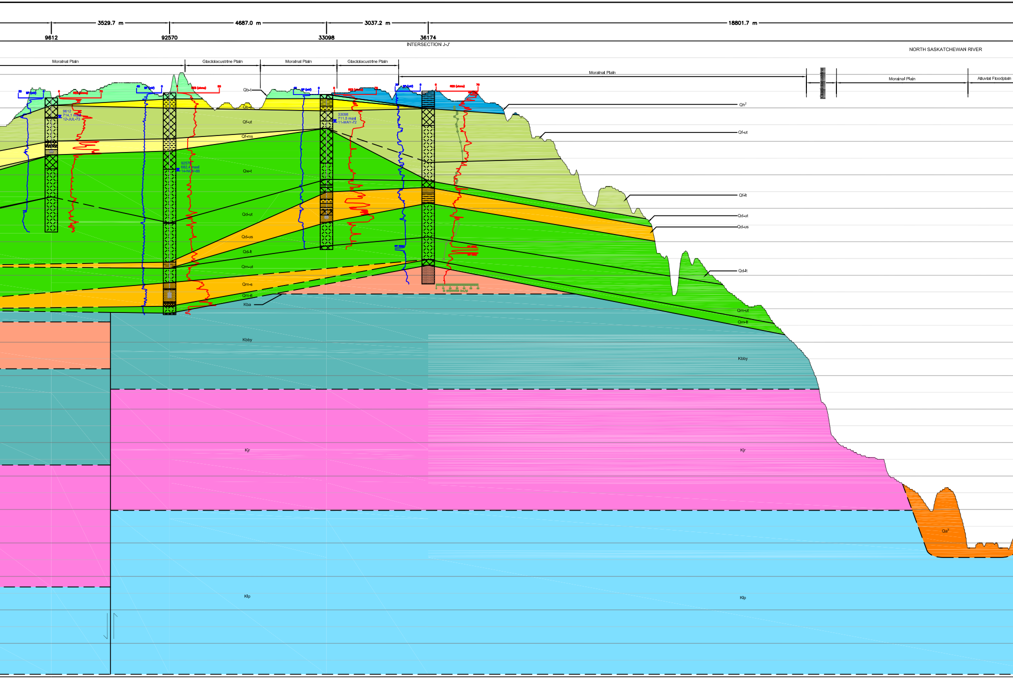
- Fill
- Topsoil
- Clay or Shale
- Silt
- Sand
- Gravel
- Oxidized Till
- Unoxidized Till

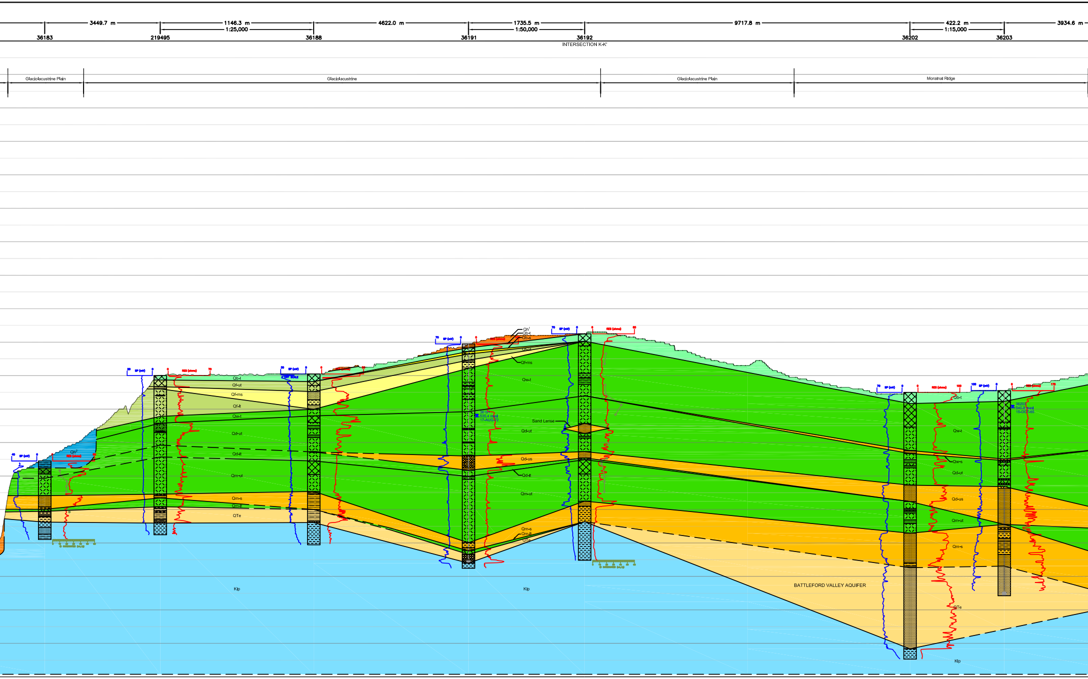

SOUTH
A
6274.1 m
1881.8 m
1:50,000
33044
INTERSECTION H-H'
33184
INTERSECTION I-I'
48808
INTERSECTION I-I'
*Surficial Geology (Saskatchewan Industry and Resources, 2006)
Eolian Hummocky
ELEVATION (masl)
760
740
720
700
680
660
640
620
600
580
560
540
520
500
480
460
440
420
400
380
SP (mV)
RES (ohms)
OFF SCALE
Qh3
Qh2
Qb-t
Qb-s
Qf-ut
Qf-lt
Qf-ls
Qw-t
Qw-s
Qd-ut
Qd-us
Qm-ut
Qm-s
Qm-lt
QTe
Kbby
Kjr
Kjr thickness based on PTRC data in area
Kgb

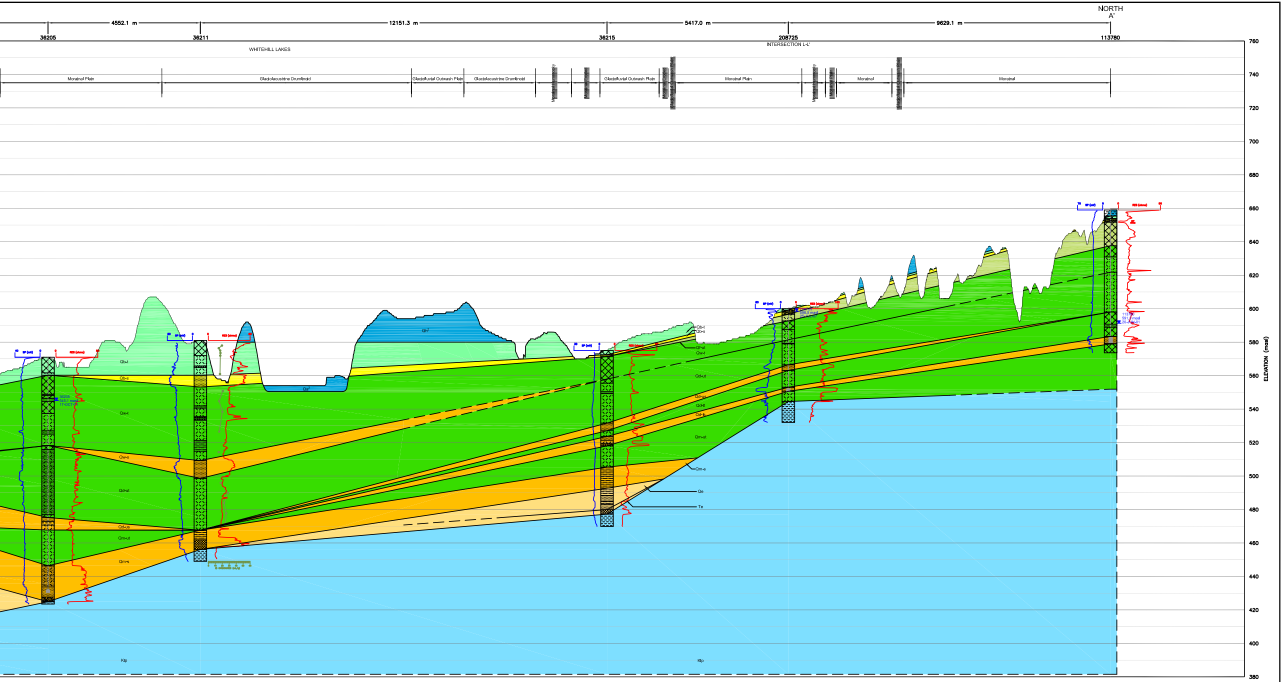
LIMITATIONS

1) EXCEPT AT BOREHOLE SITES WHERE GEOLOGIC LOGS ARE AVAILABLE, GEOLOGIC CONTACTS ARE INFERRED AND REPRESENT GEOLOGIC MODELS THAT ARE BELIEVED TO BEST FIT THE INFORMATION.
2) INTERPRETATIONS BETWEEN HOLES ARE LINEAR AND MAY NOT EXACTLY MATCH INTERPOLATIONS FROM OTHER MAPS, PARTICULARLY WHERE BOREHOLES DO NOT INTERSECT ENTIRE STRATIGRAPHIC PROFILE.
3) NEITHER MDH ENGINEERED SOLUTIONS CORP. OR THE SASKATCHEWAN WATERSHED AUTHORITY WILL BE LIABLE FOR ANY DECISIONS BASED ON OR INFLUENCED BY DATA AND INTERPRETATIONS PROVIDED ON THIS CROSS-SECTION.
4) NO INTERPRETATIONS OF SEDIMENTS BELOW Klp MADE UNLESS ENCOUNTERED IN A BOREHOLE USED ON THE CROSS-SECTION.


1194.8 m
1:25,000
402.2 m
1:15,000
1234.8 m
1:50,000
3154.7 m
6189.6 m
3027.2 m
3774.6 m
5482.0 m
4897.0 m
9130
INTERSECTION I-I'
9131
33065
203688
81287
95186
33077
106168
Glaciolacustrine Drumlinoid
Morainal Undulating
Glaciolacustrine Drumlinoid
Morainal Undulating
Glaciolacustrine
Morainal Hummocky
SP (mV)
RES (ohms)
OFF SCALE
Qh²
Qb-t
Qb-s
Qf-ut
Qf-ms
Qf-lt
Qf-ls
Qw-t
Qw-s
Qd-ut
Qd-us
Qm-ut
Qm-s
Qm-lt
QTe
Erratic Till Block
Till Block
203688
668.7 masl
15-AUG-06
81287
675.8 masl
12-APR-85
Kbs
Kba
Kbby
Kjr
Kgb


3529.7 m
4687.0 m
3037.2 m
18801.7 m
9612
92570
33098
36174
INTERSECTION J-J'
NORTH SASKATCHEWAN RIVER
Morainal Plain
Glaciolacustrine Plain
Morainal Plain
Glaciolacustrine Plain
Morainal Plain
Glaciolacustrine
Morainal Plain
Alluvial Floodplain
SP (mV)
RES (ohms)
9612
714.1 masl
12-JUL-73
33098
711.5 masl
11-MAY-72
92570
682.4 masl
14-NOV-88
Qb-t
Qb-s
Qf-ut
Qf-ms
Qw-t
Qd-ut
Qd-us
Qd-lt
Qm-ut
Qm-s
Qm-lt
Kba
Kbby
Kjr
Klp
Qh2
Qf-ut
Qf-lt
Qd-ut
Qd-us
Qd-lt
Qm-ut
Qm-lt
Kbby
Kjr
Klp
Qa2


3449.7 m
1146.3 m
1:25,000
4622.0 m
1735.5 m
1:50,000
9717.8 m
422.2 m
1:15,000
3934.6 m
36183
219495
36188
36191
36192
INTERSECTION K-K'
36202
36203
Glaciolacustrine Plain
Glaciolacustrine
Glaciolacustrine Plain
Morainal Ridge
SP (mV)
RES (ohms)
Qh¹
Qh²
Qb-t
Qb-s
Qf-ut
Qf-ms
Qf-lt
Qw-t
Qw-s
Qd-ut
Qd-us
Qd-lt
Qm-ut
Qm-s
Qm-lt
QTe
Klp
Sand Lense
36191
535.4 masl
17-AUG-72
36203
540.8 masl
15-OCT-65
BATTLEFORD VALLEY AQUIFER


NORTH
A'
4552.1 m
12151.3 m
5417.0 m
9629.1 m
36205
36211
36215
208725
INTERSECTION L-L'
113780
WHITEHILL LAKES
Morainal Plain
Glaciolacustrine Drumlinoid
Glaciofluvial Outwash Plain
Glaciolacustrine Drumlinoid
Morainal Hummocky
Morainal Eroded
Glaciofluvial Outwash Plain
Morainal Eroded
Glaciofluvial Outwash Plain
Morainal Plain
Morainal Hummocky
Morainal Plain
Morainal
Glaciofluvial Outwash Plain
Morainal
760
740
720
700
680
660
640
620
600
580
560
540
520
500
480
460
440
420
400
380
ELEVATION (masl)
SP (mV)
RES (ohms)
36205
545.1 masl
17-OCT-71
208725
598.5 masl
25-JUL-07
113780
591.2 masl
20-JUN-01
Qb-t
Qb-s
Qw-t
Qw-s
Qd-ut
Qd-us
Qm-ut
Qm-s
Qh
Qa
Qf-ut
Qd-lt
Qd-ls
Qe
Te
Klp

REVISIONS								DRAWING STATUS	DATE			
								PRELIMINARY		SCALE:	H 1:200,000 V 1:4000	DATE
								DESIGN REPORT		GEOLOGY BY:	R. NORMAN, P.Geo.	09–SEP–10
								APPROVED FOR TENDER		DRAWN BY:	A. COLE / E. OVCINA	25–JAN–11
								APPROVED FOR CONSTRUCTION		CHECKED BY:	A. KARVONEN, M.Sc., P.Eng., P.Geo.	25–OCT–10
	No.	DATE	DESCRIPTION	GEO.	DRN.	CHK.	APP.	RECORD OF CONSTRUCTION		APPROVED BY:	G. POTTER / A. KARVONEN	25–JAN–11

CLIENT
Saskatchewan
Watershed
Authority

PRODUCED BY
MDH
ENGINEERED SOLUTIONS

TITLE
CROSS SECTION A–A'

PROJECT No.	M1890–1030010	**APPENDIX**	C
DRAWING No.	M1890–62–1	**REV.**	△