

APPENDIX 'B'
ADDITIONAL GEOTECHNICAL
INVESTIGATION
(FEB 2020)

APPENDIX 'B' – ADDITIONAL GEOTECHNICAL INVESTIGATION

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This geotechnical report provides further information to the Bidder regarding topsoil thickness and geotechnical conditions on site.



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2020/02/03 10:59 AM By: Boughton, Lee

ORIGINAL SHEET - ISO 11x17 - v17.05

2020-02-03
123314754



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www.stantec.com

Legend

 APPROXIMATE TESTHOLE LOCATION

Notes

Client/Project

CITY OF WINNIPEG
ST. BONIFACE INDUSTRIAL PARK
WINNIPEG, MB

Figure No.

1

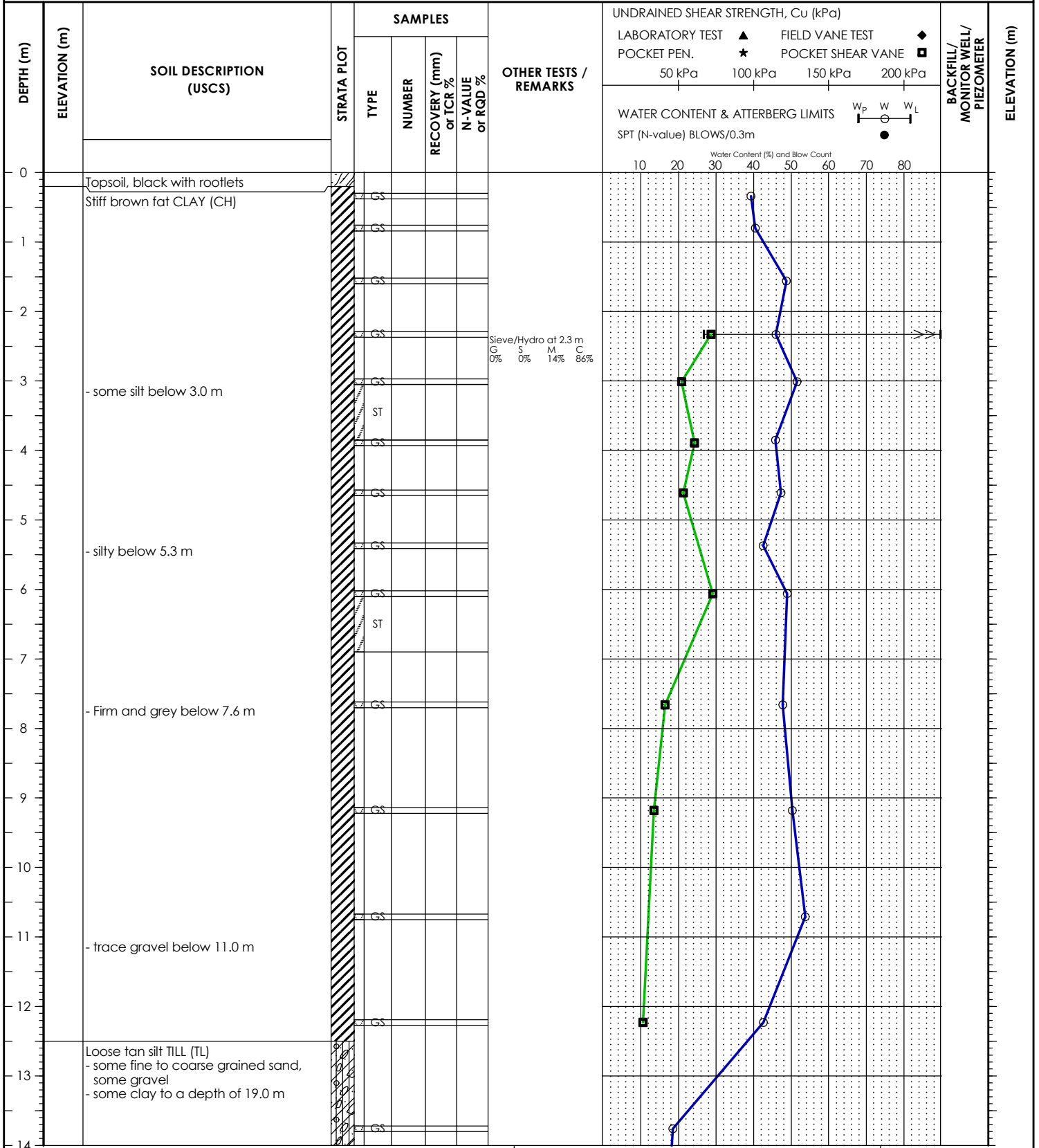
Title

TESTHOLE LOCATION PLAN

Table 3 – Topsoil Thickness

Testhole No.	Topsoil Thickness (mm)	Testhole No.	Topsoil Thickness (mm)
TH01	200	TH11	130
TH02	150	TH12	100
TH03	100	TH13	100
TH04	130	TH14	80
TH05	110	TH15	300
TH06	150	TH16	130
TH07	100	TH17	200
TH08	130	TH18	350
TH09	100	TH19	150
TH10	80		

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526457.0N 640892.0E DATUM: NAD83
 DATE BORED: Jan 20, 2020 to Jan 20, 2020 WATER LEVEL: 7.9 m



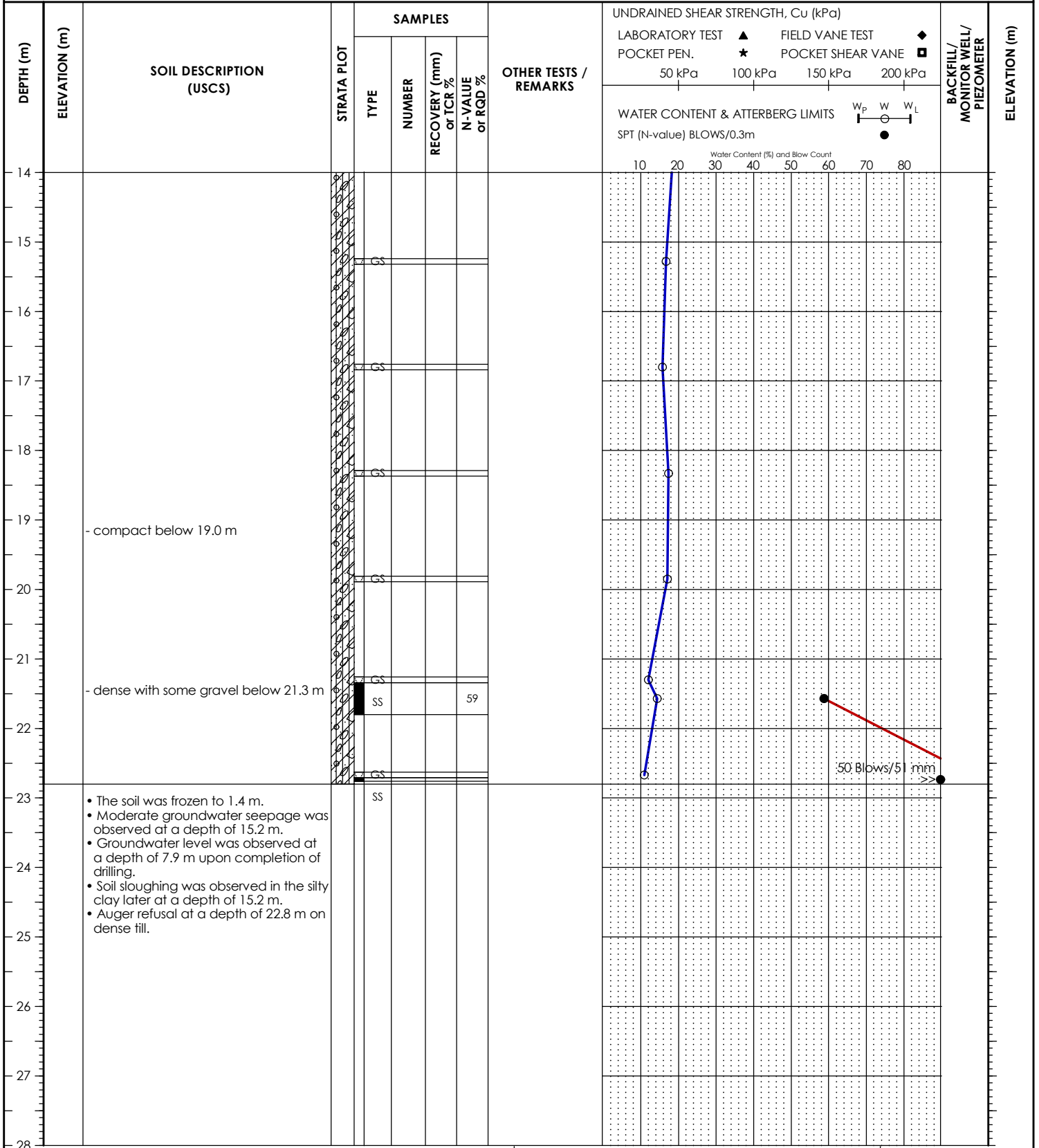
Sieve/Hydro at 2.3 m
 G S M C
 0% 0% 14% 86%

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 22.8 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 2

Printed Feb 11 2020 17:8:49 STANTEC GEO 201 6 LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526457.0N 640892.0E DATUM: NAD83
 DATE BORED: Jan 20, 2020 to Jan 20, 2020 WATER LEVEL: 7.9 m



Printed Feb 11 2020 17:8:49 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 22.8 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 2 of 2

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526522.0N 640378.0E DATUM: NAD83
 DATE BORED: Jan 20, 2020 to Jan 20, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)												
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 												

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.61 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

Printed Feb 11 2020 17:48:51 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526444.0N 640383.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)								BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)					
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa	150 kPa	200 kPa	LABORATORY TEST ▲	FIELD VANE TEST ◆	POCKET PEN. ★	POCKET SHEAR VANE ◻							
0		Topsoil							<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>WATER CONTENT & ATTERBERG LIMITS</p> <p>SPT (N-value) BLOWS/0.3m</p> <p style="text-align: center;"> <small>Water Content (%) and Blow Count</small> 10 20 30 40 50 60 70 80 </p> </div> <div style="width: 45%; text-align: right;"> <p>W_p W W_L</p> </div> </div>														
		Stiff brown fat CLAY (CH)		GS																			
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.30 m. Soil was frozen to the depth explored. 		GS																			

BACKFILL SYMBOL ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L.
 Completion Depth: 0.3 m Page 1 of 1

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526330.0N 640431.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)					BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa	150 kPa	200 kPa			
0		Topsoil													
		Stiff black fat CLAY (CH)		GS											
				GS											
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.91 m. Soil was frozen to the depth explored. 													
2															

BACKFILL SYMBOL	ASPHALT	GROUT	CONCRETE
BENTONITE	DRILL CUTTINGS	SAND	SLOUGH

Drilling Contractor: Maple Leaf Drilling	Logged By: I.M.
Drilling Method: SSA	Reviewed By: F.F.L
Completion Depth: 0.91 m	Page 1 of 1

Printed Feb 11 2020 17:8:52 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526215.0N 640475.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)		GS										
				GS										
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 												
1														
2														

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.61 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526487.0N 640577.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff brown CLAY (CH)		GS										
				GS										
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.76 m. Soil was frozen to the depth explored. 												
2														

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.76 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526430.0N 640600.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)		WATER CONTENT & ATTERBERG LIMITS SPT (N-value) BLOWS/0.3m	BACKFILL/ MONITOR WELL/ PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TC% N-VALUE or RQD %			LABORATORY TEST POCKET PEN. 50 kPa	FIELD VANE TEST POCKET SHEAR VANE 100 kPa 150 kPa 200 kPa			
0		Topsoil		GS									
		Stiff brown fat CLAY (CH)		GS									
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.30 m. Soil was frozen to the depth explored. 											

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L.
 Completion Depth: 0.3 m Page 1 of 1

Printed Feb 11 2020 17:8:54 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526314.0N 640597.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)		GS										
				GS										
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.76 m. Soil was frozen to the depth explored. 												
2														

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L
 Completion Depth: 0.76 m Page 1 of 1

Printed Feb 11 2020 17:8:54 STANTEC GEO 2016 LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526241.0N 640600.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil		GS										
		Stiff black fat CLAY (CH)		GS										
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 												

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L
 Completion Depth: 0.61 m Page 1 of 1

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526167.0N 640636.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)								BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa	150 kPa	200 kPa	LABORATORY TEST ▲	FIELD VANE TEST ◆	POCKET PEN. ★	POCKET SHEAR VANE ◻		
0		Topsoil		GS														219.3
		Stiff black fat CLAY (CH)		GS														
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 																

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L
 Completion Depth: 0.61 m Page 1 of 1

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526419.0N 640778.0E DATUM: NAD83
 DATE BORED: Jan 20, 2020 to Jan 20, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black CLAY (CH)		GS										
				GS										
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 												

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.61 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

Printed Feb 11 2020 17:8:56 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526278.0N 640759.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)												
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.46 m. Soil was frozen to the depth explored. 												

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.46 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

Printed Feb 11 2020 17:8:57 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526199.0N 640813.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)		BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST		
0		Topsoil		GS								
		Stiff black fat CLAY (CH)		GS								94.24
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.46 m. Soil was frozen to the depth explored. 										

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.46 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

Printed Feb 11 2020 17:8:58 STANTEC GEO 201 6 LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526373.0N 641027.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)		GS										
				GS										
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.76 m. Soil was frozen to the depth explored. 												
2														

BACKFILL SYMBOL: ASPHALT, BENTONITE, DRILL CUTTINGS, GROUT, SAND, CONCRETE, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.76 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

Printed Feb 11 2020 17:8:58 STANTEC GEO 2016 LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526304.0N 641022.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
			GS											
		Stiff black fat CLAY (CH)												
			GS											
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.91 m. Soil was frozen to the depth explored. 												
2														

BACKFILL SYMBOL ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L
 Completion Depth: 0.91 m Page 1 of 1

Printed Feb 11 2020 17:8:59 STANTEC GEO 201 & LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526242.0N 640947.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)		GS										
				GS										
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 												

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.61 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

Printed Feb 11 2020 17:9:0 STANTEC GEO 2016 LINES 123314754_ST_BONIFACE_20200128.GPJ GINT_1233_SOIL_2018_DATA_TEMP_REV2.GDT 2/11/20

CLIENT: Stantec Consulting Ltd. BH COORDINATES PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park [UTM] BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba 5526169.0N 641058.0E DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, C_u (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)												
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.76 m. Soil was frozen to the depth explored. 												
2														

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE
 BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling
 Drilling Method: SSA
 Completion Depth: 0.76 m
 Logged By: I.M.
 Reviewed By: F.F.L.
 Page 1 of 1

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CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526286.0N 641140.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		POCKET PEN. 50 kPa	FIELD VANE TEST 100 kPa	POCKET SHEAR VANE 150 kPa	200 kPa		
0		Topsoil												
		Stiff black fat CLAY (CH)		GS										
				GS										
1		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.76 m. Soil was frozen to the depth explored. 												
2														

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L
 Completion Depth: 0.76 m Page 1 of 1

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CLIENT: Stantec Consulting Ltd. BH COORDINATES: [UTM] PROJECT NO.: 123314754
 PROJECT: St. Boniface Industrial Park 5526202.0N 641174.0E BH ELEVATION: N/A
 LOCATION: Winnipeg, Manitoba DATUM: NAD83
 DATE BORED: Jan 21, 2020 to Jan 21, 2020 WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL / MONITOR WELL / PIEZOMETER	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		LABORATORY TEST	FIELD VANE TEST	POCKET PEN.	POCKET SHEAR VANE		
0		Topsoil												
		Stiff black fat CLAY (CH)		GS										
				GS										
		<ul style="list-style-type: none"> No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole terminated at a depth of 0.61 m. Soil was frozen to the depth explored. 												
1														
2														

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Logged By: I.M.
 Drilling Method: SSA Reviewed By: F.F.L.
 Completion Depth: 0.61 m Page 1 of 1

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