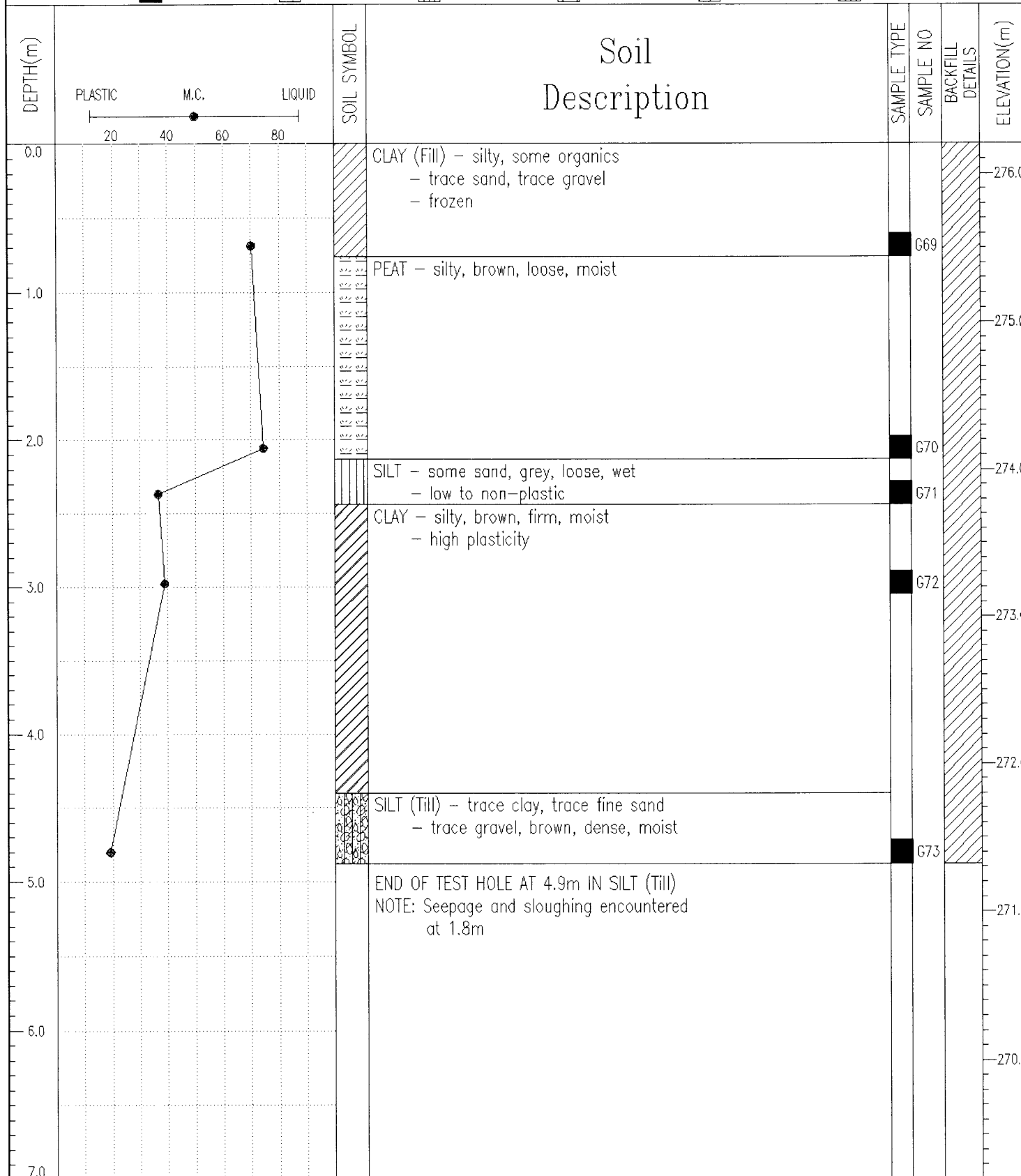


APPENDIX A

TEST HOLE LOGS

PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING	TEST HOLE NO: 43.56S
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA	PROJECT NO: D265 152 12 01
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON	ELEVATION: 276.2 (m)
SAMPLE TYPE	☒ Grab Sample	☐ Shelby Tube	☐ Lab Submitted
	☐ No Recovery	☐ Split Spoon	☐ Wire Line-Type
BACKFILL TYPE	☒ BENTONITE	☐ PEA GRAVEL	☐ SLOUGH
	☐ GROUT	☐ DRILL CUTTINGS	☐ SAND



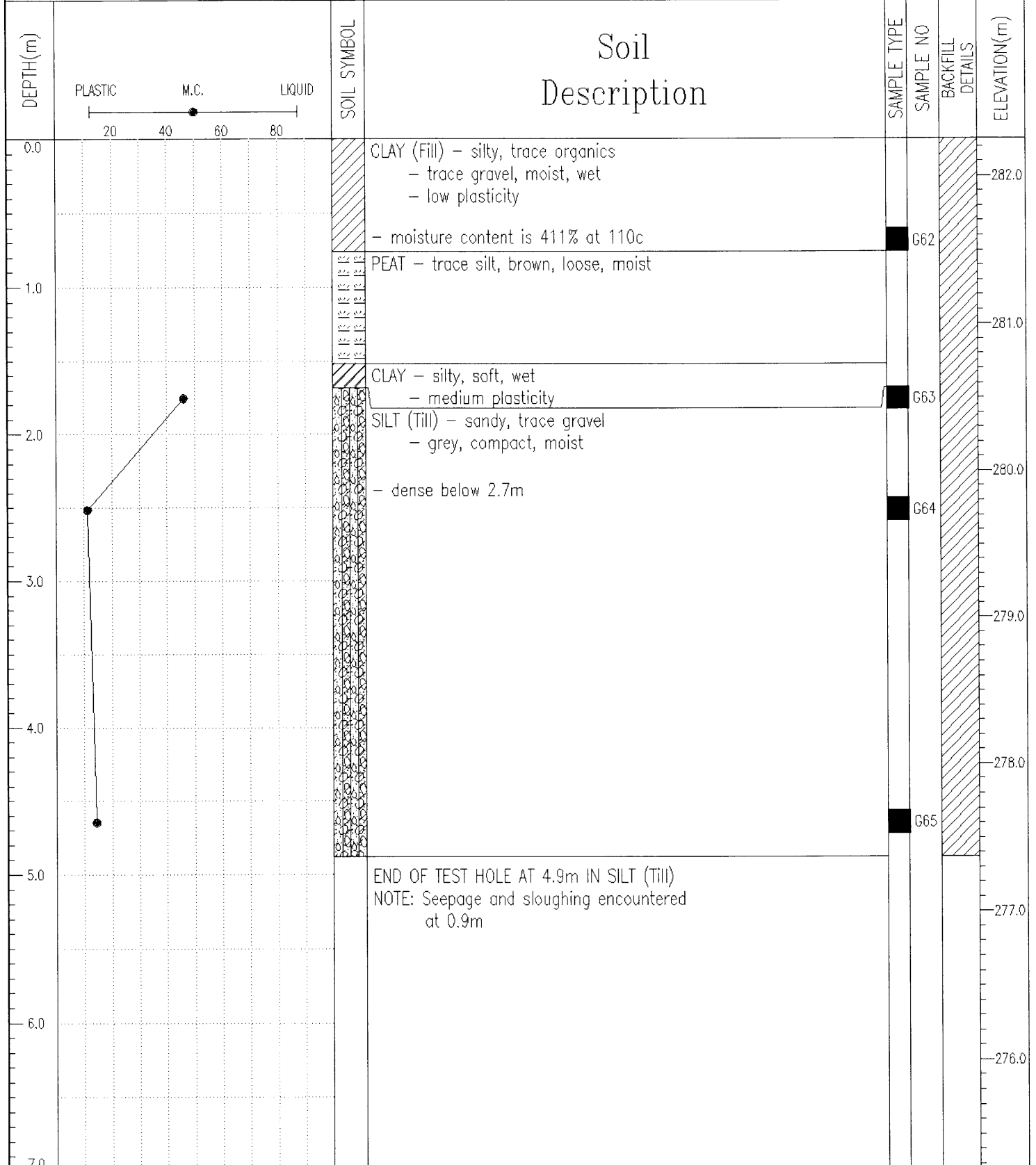
UMA Engineering Ltd. Winnipeg, Manitoba	LOGGED BY: RS	COMPLETION DEPTH: 4.9 m
	REVIEWED BY: JET	COMPLETE: 03/16/01
	Fig. No:	Page 1 of 1

PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 47.23S	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON		ELEVATION: 280.93 (m)	
SAMPLE TYPE	☒ Grab Sample	☒ Shelby Tube	☒ Lab Submitted	☐ No Recovery	☐ Split Spoon
	☐ Wire Line-Type				
BACKFILL TYPE	☒ BENTONITE	☐ PEA GRAVEL	☐ SLOUGH	☐ GROUT	☐ DRILL CUTTINGS
	☐ SAND				

DEPTH(m)	SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	BACKFILL DETAILS	ELEVATION(m)
0.0	CLAY (Fill) - silty, trace organics, - trace gravel - frozen					280.0
1.0	SILT - clayey, trace sand - grey, loose, moist to wet - low to non-plastic		☒	G66		280.0
2.0	SILT (Till) - sandy, trace gravel - brown, compact, moist to wet		☒	G67		279.0
3.0	- dense, moist below 2.8m		☒	G68		278.0
4.0						277.0
5.0		END OF TEST HOLE AT 4.9m IN SILT (Till) NOTE: Seepage and sloughing encountered at 1.2m				276.0
6.0						275.0
7.0						274.0

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PROJECT: SLA M43-70, SIPHON REPAIRS	DRILLED BY: PADDOCK DRILING	TEST HOLE NO: 48.24S
CLIENT: THE CITY OF WINNIPEG - WWD	DRILL TYPE: SS ACKER C/W 129mm SSA	PROJECT NO: D265 152 12 01
PROJECT ENGINEER: JET	LOCATION: SOUTH END OF SIPHON	ELEVATION: 282.25 (m)
SAMPLE TYPE ☒ Grab Sample ☐ Shelby Tube ☒ Lab Submitted ☐ No Recovery ☐ Split Spoon ☐ Wire Line-Type		
BACKFILL TYPE ☒ BENTONITE ☐ PEA GRAVEL ☐ SLOUGH ☐ GROUT ☐ DRILL CUTTINGS ☐ SAND		



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LOGGED BY: RS	COMPLETION DEPTH: 4.9 m
REVIEWED BY: JET	COMPLETE: 03/16/01
Fig. No:	Page 1 of 1

PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 49.26N	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: NORTH END OF SIPHON		ELEVATION: 100 (m)	
SAMPLE TYPE ☒ Grab Sample ☐ Shelby Tube ☐ Lab Submitted ☐ No Recovery ☐ Split Spoon ☐ Wire Line-Type					
BACKFILL TYPE ☒ BENTONITE ☐ PEA GRAVEL ☐ SLOUGH ☐ GROUT ☐ DRILL CUTTINGS ☐ SAND					

DEPTH(m)	SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	BACKFILL DETAILS	ELEVATION(m)
0.0	PLASTIC M.C. LIQUID 20 40 60 80					100.0
		PEAT - trace sand, wet				
1.0						99.0
		SILT - trace sand, trace organics - grey, wet - low to non-plastic	☒	G57		
2.0						98.0
		SILT (Till) - sandy, trace gravel - grey, loose, wet - dense below 2.3m				
3.0						97.0
			☒	G58		
4.0						96.0
			☒	G59		
5.0						95.0
		END OF TEST HOLE AT 4.9m IN SILT (Till). NOTE: Seepage and sloughing encountered at 1.8m				
6.0						94.0
7.0						93.0

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PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 49.26S	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON		ELEVATION: 100 (m)	
SAMPLE TYPE ☒ Grab Sample ☐ Shelby Tube ☒ Lab Submitted ☐ No Recovery ☐ Split Spoon ☐ Wire Line-Type					
BACKFILL TYPE ☒ BENTONITE ☐ PEA GRAVEL ☐ SLOUGH ☐ GROUT ☐ DRILL CUTTINGS ☐ SAND					

DEPTH(m)		SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	BACKFILL DETAILS	ELEVATION(m)
0.0			CLAY (Fill) - silty, trace gravel, moist - medium plasticity				100.0
1.0				☒	G60		99.0
2.0			PEAT - brown, moist to wet				
3.0			SILT - sandy, trace gravel - grey, loose, wet				98.0
4.0			- dense below 2.7m	☒	G61		97.0
5.0			- trace recovery below 3.20m (fine sand, trace gravel, wet, loose on auger flights)				96.0
6.0			END OF TEST HOLE AT 4.9m IN SAND? NOTE: Seepage and sloughing encountered at 1.8m				95.0
7.0							94.0
							93.0

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		REVIEWED BY: JET	COMPLETE: 03/16/01
		Fig. No:	Page 1 of 1

PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 50.31S	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON		ELEVATION: 284.7 (m)	
SAMPLE TYPE ☒ Grab Sample ☒ Shelby Tube ☒ Lab Submitted ☒ No Recovery ☒ Split Spoon ☒ Wire Line-Type					
BACKFILL TYPE ☒ BENTONITE ☒ PEA GRAVEL ☒ SLOUGH ☒ GROUT ☒ DRILL CUTTINGS ☒ SAND					

DEPTH(m)	PLASTIC	M.C.	LIQUID	SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	BACKFILL DETAILS	ELEVATION(m)
0.0				CLAY (Fill) – silty, some organics – grey, moist – medium to low plasticity – frozen to 0.5m					284.0
1.0				PEAT – some silt, brown, loose, moist					283.0
2.0				SAND – silty, grey, loose, wet – well graded					282.0
3.0				SILT – sandy, grey, loose, wet – low to non-plastic					281.0
4.0				SILT AND CLAY (Till) – sandy, trace gravel – grey, dense, moist					280.0
5.0				END OF TEST HOLE AT 4.6m IN SILT AND CLAY (Till). NOTE: Seepage and sloughing encountered at 1.8m					279.0
6.0									278.0
7.0									

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PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 52.31S	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON		ELEVATION: 286.93 (m)	
SAMPLE TYPE ☒ Grab Sample ☐ Shelby Tube ☐ Lab Submitted ☐ No Recovery ☐ Split Spoon ☐ Wire Line-Type					
BACKFILL TYPE ☒ BENTONITE ☐ PEA GRAVEL ☐ SLOUGH ☐ GROUT ☐ DRILL CUTTINGS ☐ SAND					

DEPTH(m)		SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	ELEVATION(m)
0.0			CLAY (Fill) - silty, some organics - trace gravel, grey - frozen			
1.0			PEAT - some silt, brown, loose, moist			286.0
2.0			SAND - silty, grey - loose, wet - well graded	☒	G52	285.0
3.0			CLAY - silty, grey - stiff, moist - medium to high plasticity	☒	G53	284.0
4.0			SILT AND CLAY (Till) - trace gravel - grey, dense, moist	☒	G54	283.0
5.0		END OF TEST HOLE AT 4.6m IN SILT AND CLAY (Till). NOTE: Seepage and sloughing encountered at 2.1m.				282.0
6.0						281.0
7.0						280.0

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	REVIEWED BY: JET	COMPLETE: 03/15/01
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PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 53.75S	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON		ELEVATION: 287.98 (m)	
SAMPLE TYPE	☒ Grab Sample	☐ Shelby Tube	☐ Lab Submitted	☐ No Recovery	☐ Split Spoon
BACKFILL TYPE	☒ BENTONITE	☐ PEA GRAVEL	☐ SLOUGH	☐ GROUT	☐ DRILL CUTTINGS
				☐ Wire Line-Type	☐ SAND

DEPTH(m)	PLASTIC	M.C.	LIQUID	SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	BACKFILL DETAILS	ELEVATION(m)
0.0					PEAT - silty, brown, loose, moist				
1.0									287.0
					SAND - some silt, brown, compact, wet - well graded	☒	G48		
2.0					CLAY - silty, grey - stiff, moist - high plasticity	☒	G49		286.0
3.0					SILT AND SAND - brown, dense, moist to wet - sandy, loose, wet below 3.1m	☒	G50		285.0
4.0					SAND (Till) - silty, trace gravel - grey, very dense, wet	☒	G51		284.0
5.0					END OF TEST HOLE AT 4.6m IN SAND (Till). NOTE: Seepage and sloughing encountered at 1.5m				283.0
6.0									282.0
7.0									281.0

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		REVIEWED BY: JET	COMPLETE: 03/15/01
		Fig. No:	Page 1 of 1

PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 55.23N	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: NORTH END OF SIPHON		ELEVATION: 290.05 (m)	
SAMPLE TYPE ☒ Grab Sample ☒ Shelby Tube ☒ Lab Submitted ☒ No Recovery ☒ Split Spoon ☒ Wire Line-Type					
BACKFILL TYPE ☒ BENTONITE ☒ PEA GRAVEL ☒ SLOUGH ☒ GROUT ☒ DRILL CUTTINGS ☒ SAND					

DEPTH(m)		SOIL SYMBOL	Soil Description	SAMPLE TYPE	SAMPLE NO	BACKFILL DETAILS	ELEVATION(m)
0.0		CLAY (Fill) - silty, some organics - trace gravel, brown					290.0
1.0		PEAT - silty, brown, loose, moist					289.0
2.0		SAND - trace silt, brown, compact, wet - poorly graded CLAY - silty, grey - stiff, moist - high plasticity					288.0
3.0							287.0
4.0		- firm below 4.0m					286.0
5.0		SILT (Till) - sandy, trace gravel - grey, dense, moist					285.0
6.0		END OF TEST HOLE AT 4.6m IN SILT (Till). NOTE: Seepage and sloughing encountered at 1.8m.					284.0
7.0							

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PROJECT: SLA M43-70, SIPHON REPAIRS		DRILLED BY: PADDOCK DRILING		TEST HOLE NO: 55.23S	
CLIENT: THE CITY OF WINNIPEG - WWD		DRILL TYPE: SS ACKER C/W 129mm SSA		PROJECT NO: D265 152 12 01	
PROJECT ENGINEER: JET		LOCATION: SOUTH END OF SIPHON		ELEVATION: 290.12 (m)	
SAMPLE TYPE ☒ Grab Sample		☐ Shelby Tube	☐ Lab Submitted	☐ No Recovery	☐ Split Spoon
BACKFILL TYPE ☒ BENTONITE		☐ PEA GRAVEL	☐ SLOUGH	☐ GROUT	☐ DRILL CUTTINGS
				☐ Wire Line-Type	☐ SAND

DEPTH(m)

PLASTIC M.C. LIQUID

20 40 60 80

Soil Description

SAMPLE TYPE

SAMPLE NO

ELEVATION(m)

0.0		CLAY (Fill) - silty, trace gravel - some organics, grey and brown			290.0
1.0		PEAT - some silt, brown, loose, moist			289.0
2.0		SAND - trace silt, grey - compact, wet - poorly graded		G43	288.0
3.0		CLAY - silty, grey - stiff, moist - medium to high plasticity		G44	287.0
4.0		- firm, moist to wet below 3.35m		G45	286.0
5.0		SILT (Till) - sandy, trace silt inclusions - trace gravel, grey - dense, moist		G46	285.0
6.0				G47	284.0
7.0		END OF TEST HOLE AT 6.1m IN SILT (Till). NOTE: Seepage and sloughing encountered at 1.7m.			

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REVIEWED BY: JET	COMPLETE: 03/15/01
Fig. No:	Page 1 of 1