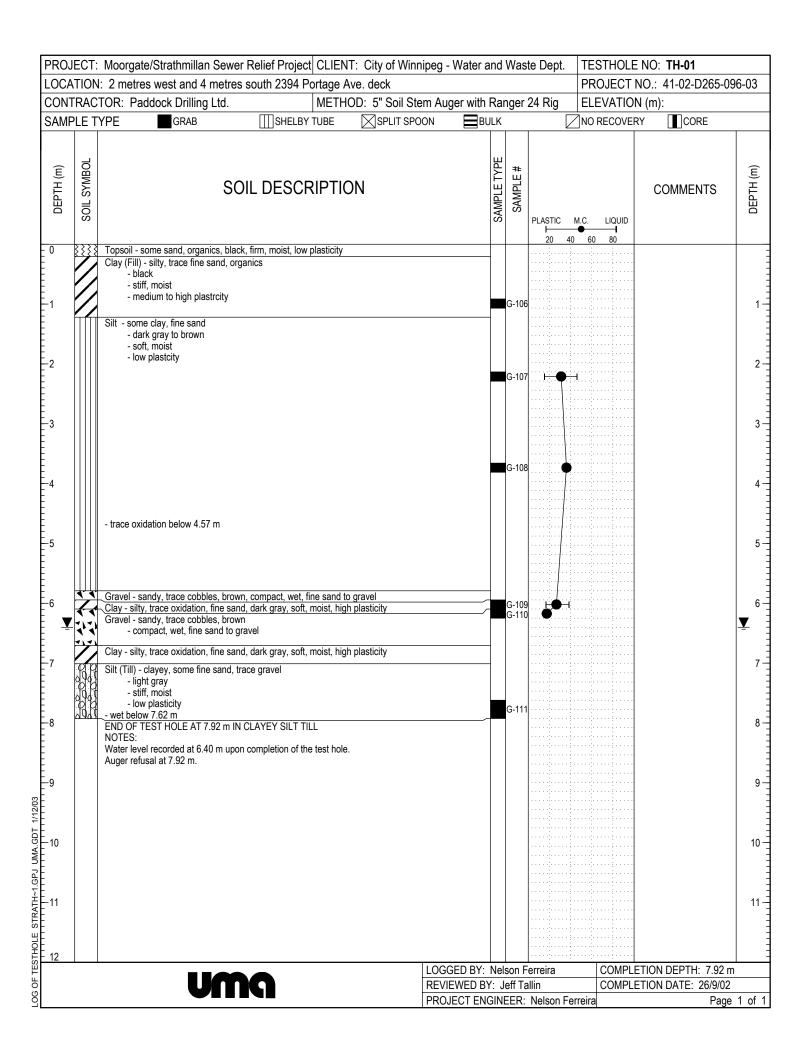
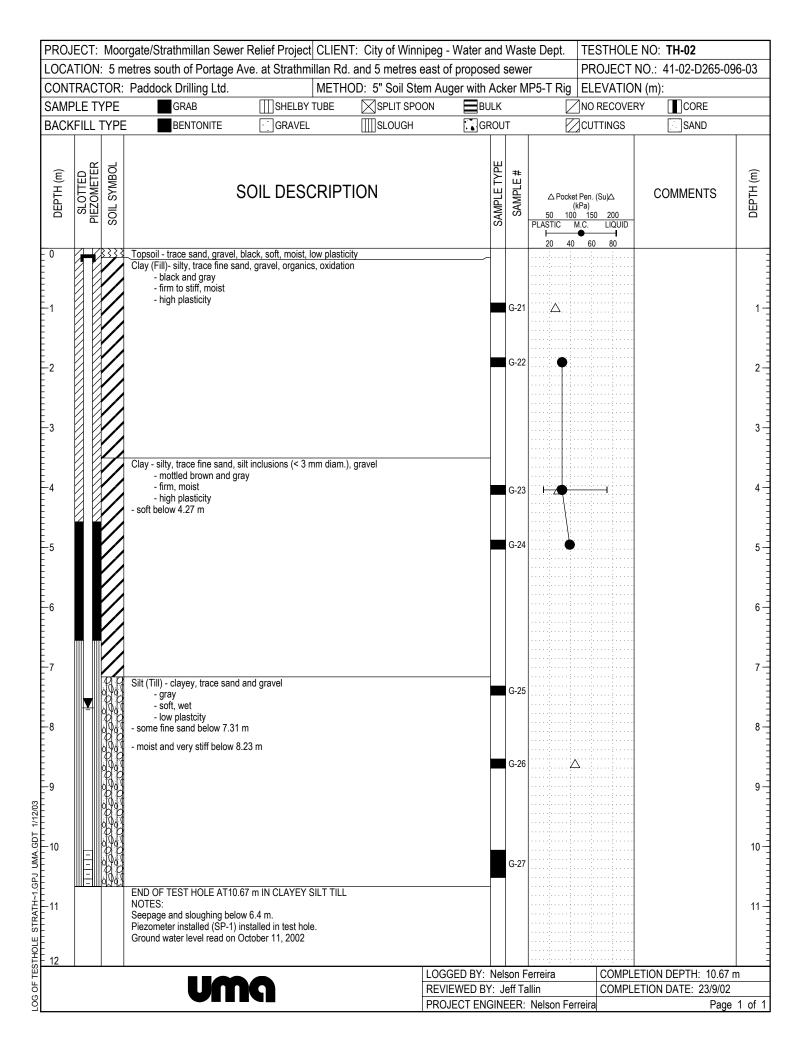
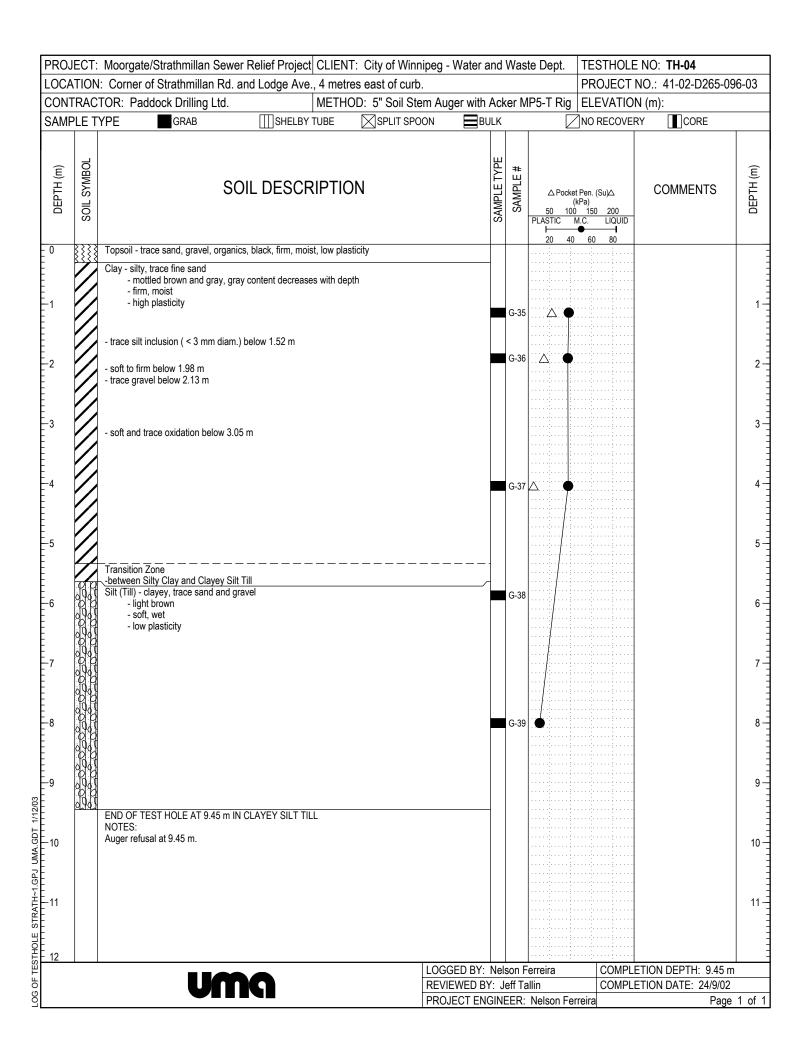
APPENDIX A TEST HOLE LOGS





PROJECT: Moorgate	- Water and	Was	te Dept. TE	TESTHOLE NO: TH-03				
LOCATION: 50 metres north of Portage Ave. and 3 metres west of Strathmillan Rd. cu						PROJECT NO.: 41-02-D265-096-03		
CONTRACTOR: Pade		Ranger 24 Rig ELEVATION (m):						
SAMPLE TYPE	BULK			RECOVER				
BACKFILL TYPE	BENTONITE : GRAVEL	SLOUGH	GROU	T	⊠cı	ITTINGS	SAND	
DEPTH (m) SLOTTED PIEZOMETER SLOTTED PIEZOMETER SOIL SYMBOL		CRIPTION	SAMPLE TYPE	SAMPLE #	△ Pocket Pen (kPa) 50 100 15 PLASTIC M.C. I — — 20 40 6	50 200 LIQUID	COMMENTS	DEPTH (m)
	Clay (Fill)- silty, some gravel, trace fine sar - black and gray - firm to stiff, moist - medium plasticity Gravel (Fill) - black and light brown - loose, wet - 20 mm down Clay - silty, trace fine sand - black - soft to firm, moist - high plasticity Clay - silty, trace fine sand, silt inclusions (mottled brown and gray - soft, moist - high plasticity			G-28 G-29 G-30				1- 2- 3-
	Silt (Till) - clayey, trace sand, gravel, cobbl - gray - soft, wet - low plasticity	les		G-32				5-
-7	- moist below 7.32 m			G-33				8 - 9 -
1/12/03 OFTESTHOLE STRATH-1/GPJ UMA GDT 1/12/03 TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	END OF TEST HOLE AT 10.36 m IN CLA' NOTES: Auger refusal at 10.36 m. Piezometer installed (SP-2, SP-3) installed Ground water level measured on October	l in test hole. 11, 2002. Both wells were dry.	OCED DV. N				ETION DEPTH 40.00	11 -
OF T	UMG						ETION DEPTH: 10.36 r ETION DATE: 23/9/02	П
) OG							1 of 1	



PROJECT: Moorgate/Strathmillan Sewer Relief Project CLIENT: City of Winnipeg - Water ar							nd	Was	te Dept.	TESTHOL	E NO: TH-24	
LOCATION: Strathmillan Ave., exisiting outfall location, top of river bank										NO.: 41-02-D265-09	96-03	
CONTRACTOR: Paddock Drilling Ltd. METHOD: 7" Solid Stem Auger with							ange	24 Rig	ELEVATIO	• ,		
	SAMPLE TYPE GRAB SHELBY TUBE SPLIT SPOON BUL									NO RECOVE		
BACKFILL TYPE BENTONITE GRAVEL SLOUGH GRC						ROU	T	Ł	CUTTINGS	SAND	1	
	SLOTTED PIEZOMETER	SOIL SYMBOL		SOIL DESCRIP			SAMPLE TYPE	SAMPLE#	PLASTIC I	M.C. LIQUID 0 60 80	COMMENTS	DEPTH (m)
0 1 2 3 4 4 5 5 7 1 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10				to some fine sand and oxidity 9 m In thick) between 2.72 and 2 m In brown-gray, compact, many compact, co	2.92 m noist proganics, dense, moist, le	ow plasticity		S-112 S-113 S-114 T-115 S-116 S-117 S-118 S-119 S-120 S-121 S-122			- Shelby Tube sample could not be tested due to the nature of the material (low plasticity)	1
100 OF TESTHOLE STRATH-1.GFJ UMA.GDT 7/12/03												11-
ES LES					LO	GGED BY:	Nel	son F	erreira		ETION DEPTH: 5.49 m	<u> </u>
9	UMA REVIEWED BY						D BY: Jeff Tallin COMPLETION DATE: 30/9/02					
의	PROJECT ENG					GIN	EER:	Nelson F	rreira Page 1 d			

COMMEATOR: Paddock Drilling Ltd. METHOD: 7* Solid Stem Auger with Acker SS ELEVATION (m): SAMPLE TYPE SRAB SHELRY TUBE SPILL STOOL BULK NO NO RECOVERY CORD. SAMPLE TYPE SENTONTE GRAB SHELRY TUBE SENTONTE GRAD SHELL STOOL BULK NO NO RECOVERY CORD. SOIL DESCRIPTION SHELL STOOL STO	PROJECT: Moorgate/Strathmillan Sewer Relief Project CLIENT: City of Winnipeg - Water and Waste Dept.							ept.	TESTHOLE NO: TH-25					
SAMPLE TYPE DENTONITE GRAVEL SOLDER S	LOCATION: Strathmillan Rd., exisiting outfall location, top of river bank													
BACKFILL TYPE SENTONITE GRAVEL SOUGH CAPOLITIONS SAND SOIL DESCRIPTION SAND APPLICATION SOURCE SOUR	·							er SS		. ,				
SOIL DESCRIPTION SOIL DESCRIP														
Topoci-trace fine send organcis, codetion, brown and black finn, notal, loop pleaked) Clay (Alluvia): sity, trace fine send, codetion, organics, brown sent, most under platedy such scale biocylinable send, send to code at 0.79 in send to code at	BACKFILL TYP	E BENTONITE	GRAVEL	GRAVEL SLO			GH GROUT			CUTTINGS	SAND	1		
- firm, most Low plasticity - super Nat cooling tractures, trace to some fine send, medium gray believe in 27 m - some oxidation along fractures, trace to some fine send, medium gray believe in 27 m - some oxidation along fractures, trace to some fine send, medium gray believe in 27 m - some oxidation along fractures, trace to some fine send, medium gray believe in 27 m - some oxidation along fractures, trace to some fine send, medium gray believe in 27 m - some oxidation along fractures, trace to some fine send, medium gray believe in 28 m - some oxidation along fractures, trace to some fine send, medium gray believe in 28 m - some oxidation along fractures, trace to some fine send, medium gray believe in 28 m - some oxidation along fractures, trace to some fine send, medium gray believe in 28 m - some oxidation along fractures, trace to some fine send, medium gray believe in 28 m - some oxidation along fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace to some send, grayel in 17 m - some oxidation gray fractures, trace trace gray fractures, grayel in 17 m - some oxidation gray fractures, grayel in 17 m - some oxidation gray fractures, gray fractures, grayel in 17 m - some oxi			SCRIPTION 3 Make		(kPa) 50 100 150 200 ■ Total Unit W■ (kN/m³) 17 19 21 23 50 PLASTIC M.C. LIQUID			(kf <u>0 100</u> + Torvai (kf	Pa) 150 200 ne (Su)+ Pa)	COMMENTS	DEРТН (m)			
Color (Aluma)-sity, trace fine sand, outdation, organics, brown -och, most, medium grasticity, trace to bid bid ships of the sand of the s				lack	S-176							-		
dark gray -soft, moist to wet, low plasticity -trace gravels, cobbles below 2.29 m -soft, moist to wet, low plasticity -trace gravels, cobbles below 2.29 m -soft, moist to wet, low plasticity -trace gravels, cobbles below 2.29 m -soft, moist to wet, low plasticity -trace gravels, cobbles below 2.29 m -soft, moist to wet, low plasticity -low plasticity -low plasticity -brune gravel -legit gray -brune gravel -cobble	<u>-</u> 1	- soft, moist, medium pl - auger hit a cobble at 0.76 m - some oxidation along fractul gray below 1.27 m	asticity, trace blocky/friable es, trace to some fine sand	, medium	T-178			+	X		0.67 m and 0.88 m	1-		
Sitt (Till) - clayer, trace to some sand, gravel - soft, wet - soft wet - sof	-2	dark gray - soft, moist to wet, low	plasticity	anics,	S-180						refusal at 2.29 m,	2		
LOGGED RY: Nelson Ferreira COMPLETION DEPTH: 5.49 m		Silt (Till) - clayey, trace to son - light gray - soft, wet - low plasticity stiff and moist below 3.35 m END OF TEST HOLES AT 5. NOTES: Auger refusal at 5.49 m Seepage and sloughing belov Piezometer Installed (SP-13)	ne sand, gravel 49 m IN CLAYEY SILT TILL v 3.05 m in test hole.								switched to solid stem	3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 11 - 11 - 11 - 11 - 11		
LOGGED BY: Nelson Ferreira COMPLETION DEPTH: 5.49 m REVIEWED BY: Jeff Tallin COMPLETION DATE: 11/10/02	2											-		
REVIEWED BY: Jeff Tallin COMPLETION DATE: 11/10/02									a					
PROJECT ENGINEER: Nelson Ferreira Page 1 of	3	UIII												

