APPENDIX 'A'

GEOTECHNICAL REPORT

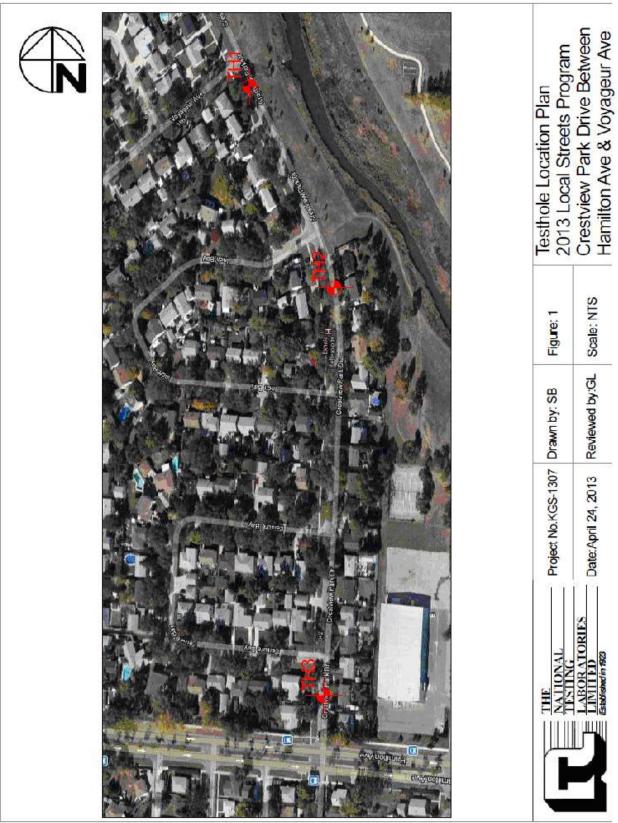
APPENDIX 'A' - GEOTECHNICAL REPORT

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The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

Test Hole Locations



Scale: NTS

Reviewed by:GL

Date: April 24, 2013

2

Summary of Core Samples



	sis Atterberg Limits	Clay Liquid Plastic Plasticity (%) Limit Limit Index	70.0 82 23 59		69.7 82 27 55
	Particle Size Analysis	Silt (%)	23.6		20.9
	irticle Si	I Sand (%)	5.7		7.1
	På	Gravel (%)	0.7		2.3
	Moisture	Depth (m) Content (%)	47	ı	40
Щ	Sample	Depth (m)	9.0		0.6
YAGEUR AVENL	Sample	Description	Clay		Clay Fill
PROGRAM V AVENUE & VO TIGATION	nt Structure aterial	Thickness (mm)	50		50
TABLE 1 LUCAL STRETS PRC TECHNICAN INVESTIG TECHNICAL INVESTIG Pavement 8 Materi (mm) Type Crushed Limestone				Crushed Limestone	
TABLE 1 2013 LOCAL STREET K DRIVE BETWEEN HAMILT GEOTECHNICAL INV GEOTECHNICAL INV Bent Surface Paver Thickness (mm) Type 170 Crusher 165 -			145		
RESTVIEW PAR	2013 LC ESTVIEW PARK DRIVE BETT GEOTE Pavement Surface Thickness (r Concrete 170 Concrete 165			Concrete	
СR	Toothool Longing		Northbound Crestview Park Drive between Voyageur Avenue & Inch Bay north 22.2 m south from south corner of Voyageur Ave & Crestview Park Drive 6.0 m east from west curb	Northbound Crestview Park Drive between Inch Bay north & Inch Bay south 57.5 m N from northwest corner of Inch Bay South & Crestview Park Drive 5.4 m east from west curb	Northbound Crestview Park Drive between Leisure Bay South & Hamilton Avenue 36.8 m N from northeast corner of Hamilton & Crestview Park Drive 2.0 m west from east curb
	Tootholo ID		TH1	TH2	TH3

Proje Clier Dri∎i Dri∎i	ect Loca nt: KGS ng Con ng Meth	TESTHOLE TH1 ne: 2013 Local Streets Program ation: Crestview Park Drive Between Hamilton Ave and Voyageur Av Group Inc. tractor: Active Drilling and Piling hod: 125 mm Solid Stem Auger cation: 22.2 m S from south corner of Voyageur Ave & Crestview Pa		De Lo Re	epth o oggeo eview	of Te d by: red b	THE NATION TESTING LABORA LABORA INHITEI Extension Sothea Sothea y: Germ t from w	, 20 2.0 r Bun nan L	13 m 1 Leal	
Depth (m)	Symbol	Description		Distri	le Size	1	● W PI	(%	Cont %) L	
			Gravel (%)	Sand (%)	Silt (%)	Clay (%)	25	50	75	100
		Concrete	* 1 * * * * * *	* * * * * * * *					• • • • • • • • •	1 * * * * * * * * * * *
		Crushed Limestone								····
- 0,5 -		Clay Fill - brown, firm, moist, high plasticity - trace fine to coarse sand - trace fine gravel						κφ 	• • • • • • • • •	· · · · · · · · · · · · · · · · · · ·
- 0.5 -		-								
		Clay - brown, stiff, moist, high plasticity - trace fine to coarse sand - trace fine gravel	0.7	5.7	23.6	70.0		•47		
		- some silt						•46		····
				12.4.8.9.5.3		1 \$1 + 6 + 8 ± 1	 > 0 K 4 K 0 [5 4] 		 	
								939 		
- 1,5 -										
			0 4 P 4 8 9 1	1 (* 19 % (K % (* 19 4	5 % 3 5 4 %	12(1-5)0-5 (0)		939	***	1 3 5 1 5 5 5 1 5 1
							· · · · · · · · · · · · · · · · · · ·	37		1 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
								ini i	i i i i i i i i i i i i i i i i i i i	
- 2.0 -		 No groundwater seepage or soil sloughing was observed during or Testhole terminated at a depth of 2.0 m. 	r upo	n cor	nplet	tion c	f drilling	.		

Proje Clien Dri l i Dri l i	ect Loca nt: KGS ng Con ng Met	TESTHOLE TH2 ne: 2013 Local Streets Program ation: Crestview Park Drive Between Hamilton Ave and Voyageur Ave Group Inc. tractor: Active Drilling and Piling hod: 125 mm Solid Stem Auger cation: 57.5 m N from northwest corner of Inch Bay South & Crestview P	THE NATIONAL NATIONE NATIONE NATIONE Nation Nation
Depth (m)	Symbo	Description	● Water Content (%)
		Concrete Clay Fi - brown, firm, moist, high plasticity - trace fine to coarse sand - trace fine gravel	25 50 75 100
- 0.5		Clay - brown, stiff, moist, high plasticity	•37
• 1,0 - - -			•29
- 1,5 - - - -			•4p
- 2,0		 No groundwater seepage or soil sloughing was observed during or upo Testhole terminated at a depth of 2.0 m. 	n completion of drilling.

		TESTHOLE TH3		ſ	I		THE NATIONAL TESTING LABORAT LIMITED	ORIES		
Proje Clier Dri∎i Dri∎i	ect Loca nt: KGS ng Con ng Meti	ne: 2013 Local Streets Program ation: Crestview Park Drive Between Hamilton Ave and Voyageur Av Group Inc. tractor: Active Drilling and Piling hod: 125 mm Solid Stem Auger cation: 36.8 m N from northeast corner of Hamilton & Crestview Par		De Lo Re	epth o oggeo eview	of Te i by: ved b	: April 9, sthole: 2 Sothea E y: Germa from eas	.0 m 3un In Le	a	
Depth (m)	Symbol	Description		Partic Distri			● Wa PL	ter Co (%)	onter	nt
			Gravel (%)	Sand (%)	Silt (%)	Clay (%)	25 E	50 7	- T 75 11	00
		Concrete Crushed Limestone								T
		 20 mm max size aggregate Clay Fill brown, firm, moist, high plasticity trace fine to coarse sand 	* • * • • • •			* * * * * * * *	••••••	4		
- 0,5 -		- trace fine gravel - some silt	2.3	7.1	20.9	69.7	·····			
		Clay - black, firm, moist, high plasticity - brown below 1.2 m							 	
- 1,0 -							•33	 	 	
							•31			
									l 	
- 1,5 -			******				•••			
							•3	8 	 	
- 2,0 -		 No groundwater seepage or soil sloughing was observed during or Testhole terminated at a depth of 2.0 m. 	r upo	n cor	nplet	l tion o	f drilling.			

Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3

Geotechnical Report for Leila Avenue

Test Hole Locations



Template Version: C420130321 - RW

Summary of Core Samples



TABLE 1 2013 LOCAL STREETS PROGRAM LEILA AVENUE BETWEEN MAIN STREET AND MARYMOUND WAY GEOTECHNICAL INVESTIGATION

	Transford I acation			ι. Μ	Material	Sample	Sample	Moisture	8					wanted cours	
	Lestion Foration	Type	Thickness (mm)	Type	Thickness (mm)	Description		$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Gravel (%)	Sand (%)	Silt (%)	Clay L (%) 1	iquid Pla imit Li		Plasticity Index
Ea 13	Eastbound Leila Avenue	Asphalt	99				:						:		
	1.7 m north from southwest contrier or marginourid yyay & Letta Averate 1.7 m north from south curb	Concrete	120	ı	,	4	4	e	•	•			,		,
Ea 27	Eastbound Leila Avenue	Asphalt	30			, internet	9	00	6	6 66 6 6 6		75 12		ac	63
	24-3 in west right southest writer of maryinautia way a Letta Avenue 0.7 m north from south curb	Concrete	145	ł	\$	Ciay	2	70	S			2		0	ŝ
Ea 10	Eastbound Leila Avenue 10.4 minute from construct Announced Minute 91 pilo Avenue	Asphalt	30										:		
	13-4 In west noil southest writer of maryinatin way a Lena Avenue 2.0 m north from south curb	Concrete	165		*					,	,				,

Proje Clien Dri l in Dri l in	ect Loca It: KGS ng Con ng Meth	TESTHOLE TH1 Date D ne: 2013 Local Streets Program Date D ation: Leila Avenue Between Main Street and Marymound Way Depth d Group Inc. Logged tractor: Active Drilling and Piling Review nod: 125 mm Solid Stem Auger Test from southwest corner of Marymound Way & Leila Avenue, 1	of Te by: ed b	: Ap stho Soth y: Go	le: 2. iea B erma	0 m un n Le	al	cur
Depth (m)	Symbo	Description	Sample Type		● Wat	er Co (%)	ontei	nt
-	450.0	Asphalt	+	2	5 5	0 7	5 1	00
-		Concrete						
-		Clay Fi∎	BS		•35		anan.	ļ
-		 black, firm, moist, medium plasticity some fine to coarse sand 	ЛВS	1,111,127,127,127	•3			i †
-		- trace fine gravel						
0.5 -		Clay - brown, stiff, moist, high plasticity		L	 			
		- some silt below 1.7 m	BS		•36			
			вэ		•30			İ
				033.020				
1					[]			Ì I
			BS	11111	•33			†
1,0 -								<u>+</u> -
-				*****	*****		* * * * * * *	
			BS		•31			ļ
-					[] [1 1
-								
1,5 -			BS	L	•31			
-								ļ
-								ļ
			5855					
			BS		•33			
2,0 -								
		 No groundwater seepage or soil sloughing was observed during or upon complet Testhole terminated to a depth of 2.0 m. 	ion c	of dril	ling.			

Page 1 of 1

THE NATIONAL **TESTHOLE TH2** TESTING LABORATORIES LIMITED Project Name: 2013 Local Streets Program Date Drilled: April 9, 2013 Project Location: Leila Avenue Between Main Street and Marymound Way Depth of Testhole: 2.0 m Client: KGS Group Inc. Logged by: Sothea Bun Drilling Contractor: Active Drilling and Piling Reviewed by: German Lea Drilling Method: 125 mm Solid Stem Auger Testhole Location: 94.9 m west from southwest corner of Marymound Way & Leila Avenue, 0.7 m north from south curb Sample Type Symbo Depth (m) Particle Size Water Content Description Distribution (%) Gravel (%) Sand (%) Clay (%) Silt (%) 25 50 75 100 Asphalt Concrete Clay Fi BS •32 - brown, firm, moist, medium plasticity - trace fine to medium sand BS •33 Clay - brown, stiff, moist, high plasticity - trace fine to coarse sand 0.5 - some silt 0.0 BS 2.2 22.2 75.6 032 BS •31 1,0 BS •34 1,5 BS •31 BS •37 2,0 · No groundwater seepage or soil sloughing was observed during or upon completion of drilling. . Testhole terminated to a depth of 2.0 m.

		TESTHOLE TH3		THE NATI TEST LABC LIMI	ONAL ING RATO IED	RIES		
Proje Clier Dri i i	ect Loca nt: KGS ng Con ng Meti	e: 2013 Local Streets Program Date ation: Leila Avenue Between Main Street and Marymound Way Depth Group Inc. Logg tractor: Active Drilling and Piling Revie nod: 125 mm Solid Stem Auger cation: 19.4 m west from southwest corner of Marymound Way & Leila Avenue, 2	of Te d by: wed b	sthol Soth by: Ge	e: 2.0 ea Bi ermar) m un 1 Lea	al	urb
Depth (m)	Symbol	Description	Sample Type			(%)		
	e 6 4 . e .	Asphalt		2	5 50) 7	5 1	00
		Concrete	~					
			88					ļ
		Clay Fi∎ - brown, firm, moist, medium plasticity			•31			
		\ - trace fine to medium sand	_∕ ^{BS}		•33			
- 0.5 -		Clay - brown, stiff, moist, high plasticity - some silt				 		1
			BS	*****	•33			
				• • • • • •				
						i		ļ
			BS		•311			
- 1,0 -			00	' i	•31	į		i
1,0								
-					*****			
-			BS		•32			
								
- 1,5 -			BS			 		
			00		-33			ļ
-				1.1.1.2.1.0				
-			BS	* * * * * * *	•34			
					·····	ļ		¦
- 2,0 -								!
· -		 No groundwater seepage or soil sloughing was observed during or upon compl Testhole terminated to a depth of 2,0 m, 	etion o	of drill	ing.			
9.5								
Page 1	l of 1							

Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2

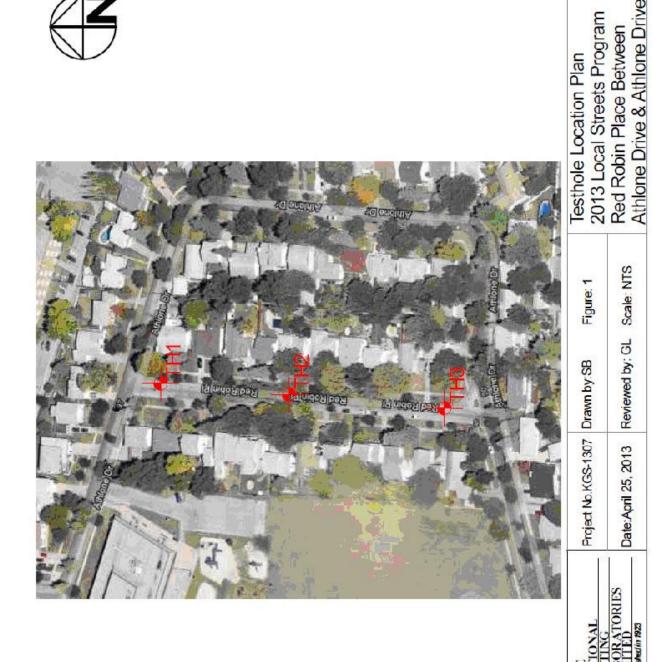


Core sample from Testhole TH3

Geotechnical Report for Red Robin Place



Test Hole Locations



Template Version: C420130321 - RW

Summary of Core Samples

		RED ROBIN	TABLE 1 2013 LOCAL STREETS PROGRAM RED ROBIN PLACE BETWEEN ATHLONE DRIVE GEOTECHNICAL INVESTIGATION	TABLE 1 2013 LOCAL STREETS PROGRAM CE BETWEEN ATHLONE DRIVE 3, A GEOTECHNICAL INVESTIGATION	ROGRAM DRIVE & ATHLC IGATION	DRIVE									
C. alother	Taseforta I a construct	Pavemei	Pavement Surface	Paveme: Ma	Pavement Structure Material	Sample	Sample	Moisture	Partic	Particle Size Analysis	Vnalysis		Ψ	Atterberg Limits	1ts
n aoinsai		Type	Thickness (mm)	Type	Thickness (mm)	Description	Depth (m)	Depth (m) Content (%)	Gravel (%)	Sand (%)	silt (%)	Clay (%)	Sitt Clay Liquid Plastic (%) (%) Limit Limit		Plasticity Index
Ħ	Northbound Red Robh Place 16.7 m south from northeast comer of Athlone Drive north & Red Robin Place 2.1 m west from east ourb	Concrete	140	8	ä	Canto Canto	0.6	×	0.0	24.6	28.1	47.3	49	8	8
2HL	Monthbound Red Robin Place 105.2 m South from northeast corner of Athlone Drive north & Red Robin Place 1.8 m west from east ourb	Concrete	\$	3	ł	¥	\$	3	¥	3	×	¥	8	×	ş
148	Northbound Red Robin Place 24.0 m north from southwest comer of Athlone Drive south & Red Robin Place 5.6 m east from west ourb	Concrete	165	3	ĸ	Sitty Clary	6°.0	8	0.2	11.2	32.6	0.88	R	8	47

Proje Clien Dri∎in Dri∎in	ect Loca it: KGS ng Con ng Meti	TESTHOLE TH1 e: 2013 Local Streets Program ation: Red Robin Place Between Athlone Drive & Athlone Drive Group Inc. tractor: Active Drilling and Piling nod: 125 mm Solid Stem Auger cation: 16,7 m S from northeast corner of Athlone Drive north		Bak	De Lo Re	epth o oggeo eview	of Te d by: /ed b	: April sthole Sothe y: Ger	6 10 9, 201 : 2.0 m a Bun man Lu	3 n eal
Depth (m)	Symbol	Description	Sample Type	Gravel	Partic Distri	le Size bution	e	•		Content
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Concrete		(%)	(%)	(%)	(%)	25	50	75 100
-		 polyethylene vapor barrier below concrete Clay Fill black, firm, moist, medium plasticity 	BS	× • × • • • •			* * * * * *		28	
-		- trace organic material - some fine to coarse sand - brown below 0,3 m - some silt	BS	x * * * * * *				¢2	4	
0.5 -			BS	. 0,0	24,6	28,1	47,3		•34	
-		Silty Clay	BS						•37	
1,0 -		 tan, firm, moist, high plasticity soft below 0.9 m brown, stiff, high plasticity below 1.2 m some fine to coarse sand trace fine gravel 	BS	· · · · · · · ·					∎34	
-				N F S 8 S 8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$				1 K H K K K K K K K K K K K K K K K K K	
			BS					¢2	5	
-				× • • • • •						
1,5 -			BS		+			•	26	
-									- E S-P S F S R S E S	
-			BS				*****	•2	26 	
2,0 -	BAXA (No groundwater seepage or soil sloughing was observed de Testhole terminated at a depth of 2,0 m. 	uring a	r up	l on co	l mple	tion (of drilli	! ng.	<u> </u>
-										

Project Loc Client: KGS Dri∎ing Con Dri∎ing Met	TESTHOLE TH2 e: 2013 Local Streets Program ation: Red Robin Place Between Athlone Drive & Athlone Drive Group Inc. tractor: Active Drilling and Piling hod: 125 mm Solid Stem Auger cation: 105.2 m S from northeast corner of Athlone Drive north & Red Rob	Date Drilled Depth of Te Logged by: Reviewed b	THE NATIONAL TESTING LABORATORIES LIMITED EXEMPTION 1020 : April 9, 2013 sthole: 2.0 m Sothea Bun y: German Leal m west from east curl
Depth (m) Symbol	Description	Sample Type	● Water Content (%)
	Concrete - polyethylene vapor barrier below concrete Clay Fil - black, firm, moist, medium plasticity - some fine to coarse sand - trace fine gravel Silty Clay - tan, soft, moist, high plasticity - trace fine to medium sand - brown, stiff below 0.8 m - some fine to coarse sand below 1.2 m - trace fine gravel • No groundwater seepage or soil sloughing was observed during or upor • Testhole terminated at a depth of 2.0 m.	BS BS BS BS BS BS BS BS BS	 ◆26 ◆23 ◆23 ◆23 ◆23 ◆23 ◆23 ◆23 ◆23 ◆18 ◆18

Appendix 'A' Page 19 of 43

Proje Clier Dri∎i Dri∎i	ect Loca nt: KGS ing Cont ing Meth	TESTHOLE TH3 e: 2013 Local Streets Program tion: Red Robin Place Between Athlone Drive & Athlone D Group Inc. ractor: Active Drilling and Piling rod: 125 mm Solid Stem Auger cation: 24.0 m N from southwest corner of Athlone Drive so		ed Ro	De Lo Re	pth o ggeo view	of Tes I by: red by	ATTO TESTIN LABOR LABOR LABOR LABOR Sofhei Sothei y: Gern m east	9, 2 2.0 a Bu man	2013) m un 1 Lea	a	cu
Depth (m)	Symbol	Description	Sample Type		Particl Distril			• \		er Co (%)	onten	ıt
			Sa	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	25	۲ 50) 7		00
		Concrete - polyethylene vapor barrier below concrete		••••								
-		Clay Fill - black, firm, moist, medium plasticity - some fine to coarse sand - trace fine gravel	BS		0 0 0 0 0 0 0 0 0 0				•36 •38			
0.5 -				· · · · · · · · ·		+ + + + + + +		· · · · · · · · · · · · ·	· · · · • • • •	· · · · · · ·		• • • •
-		City Class	BS	******			*****		30 1	X M A 31 A X M A 31 A 31 A X M		
		Silty Clay - black, firm, moist, high plasticity - brown, stiff below 1.2 m - some fine to coarse sand	BS	0,2	11,2	32,6	56,0		•38			
1,0 -		- trace fine grave			* * * * * 3.4			X * * * * * * * * *				
-			BS					•	31			
1,5 -			BS					•	33			
-					0 3 4 6 4 2 4				· · · · · ·	* 1 1 7 1 1	******	
-			BS					••••••	7			• • • • •
2,0 -		 No groundwater seepage or soil sloughing was observed Testhole terminated at a depth of 2.0 m. 	d during o	l or upc	on co	mple	tion o	l ! of drillin	ng.			
-												

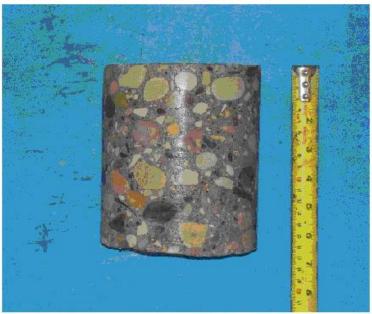
Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3

Geotechnical Report for Argate Drive

Test Hole Locations

	Testhole Location Plan 2013 Local Streets Program	Argate Drive Between Jefferson Ave & Leahcrest Cres.
	Testhole Local 2013 Local	Argate Driv
	B Figure: 1	y: GL Scale; NTS
Ana 1007 Angate Br Angate Ar	1307 Drawn by: SB	113 Reviewed by: GL
	- Project No.KGS-1307	Date: April 13, 2013
	THE NATIONAL TESTING	LABORATORIES LUMITED Eseblichedin 1923

Summary of Core Samples

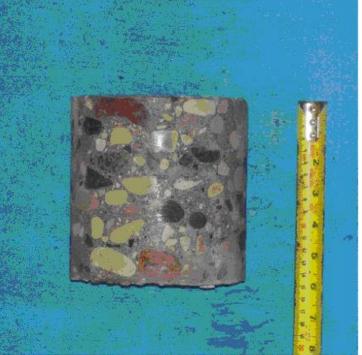
	-	RGATE DRIVE	TABLE 1 2013 LOCAL STREETS PROGRAM ARGATE DRIVE BETWEEN JEFERSON AYENLE & LEAHCREST CRESCENT GEOTECHNICAL INVESTIGATION	TABLE 1 2013 LOCAL STREETS PROGRAM MEEN JEFERSON AVENUE & LEA GEOTECHNICAL INVESTIGATION	ROGRAM NUE & LEAHCRE IIGATION	ST CRESCENT									
Tootholo ID	Tanifacia	Paveme	Pavement Surface	Pavemer	Pavement Structure Material	Sample	Sample	Moisture	Partic	Particle Size Analysis	nalysis	<u> </u>	Atte	Atterberg Limits	its
aoinea		Type	Thickness (mm)	Type	Thickness (mm)	Description	Depth (m)	Content (%)	Gravel (%)	Sand (%)	Silt (%)	Clay L (%)	Liquid Plastic Limit Limit	Plastic I Limit	Plasticity Index
TH1	Southbound Argate Drive between Jefferson Ave & Bachman Bay north 34.4 m south from southwest comer of Jefferson Ave & Argate Drive 1.6 m east from west curb	Concrete	150	Crushed Limestone	610	Silty Clay	6.0	24	12	8.3	32.4	58.1	60	20	40
TH2	Northbound Argate Drive between Bachman Bay north & Bachman Bay south 23.0 m north from northeast corner of Bachman Bay south & Argate Drive 2.0 m west from east curb	Concrete	140	Crushed Limestone	620			•							
TH3	Northbound Argate Drive between Bachman Bay south & Le ahrcest Crescent 28.0 m north from northeast corner of Argate Drive & Leahcrest Crescent 2.1 m west from east curb	Concrete	160	Crushed Limestone	600	Clayey Silt	6.0	17	1.1	8.7	69.8 20.4	20.4	23	15	8

Pro Clie Dri Dri	oject Loc ent: KG lling Co lling Me	TESTHOLE TH1 me: 2013 Local Streets Program cation: Argate Drive btw Jefferson Avenue & Leahcrest Crescent S Group Inc. Intractor: Active Drilling and Piling ethod: 125 mm Solid Stem Auger location: 34,4 m south from SW corner of Jefferson Ave & Argate		Dept Logg Revi	h of jed b ewed	Testl by: So d by:	hole: othea Gerr	5, 20 2.0 r a Bun man L	13 n n _ea l	G ATOR D • 1925	IES	
Depth (m)	Symbol	Description	Sample Type	Gravel	Distri	le Size bution	Clay		● Wa PL ┣─	ter C (%)	onte LL — I	nt
	to factor	Concrete		(%)	-(%)	(%)	(%)	2	5 6	50 7	/5 1	100
		Crushed Limestone	BS		* * * * * * *			•4				
		- 20 mm maximum aggregate size	BS					•6…				
- 0.5 -			BS					•6				
		Silty Clay - brown, firm, moist, high plasticity - trace fine gravel - trace fine to coarse sand	BS	1.2	.8.3	32.4	58.1		24			
		Clayey Silt	BS						21			
		- tan, soft, moist, low plasticity										
- 1,5 -			BS	~			2 ~ 2 4 5 4 2	•	20			
			BS					•	21		 	
- 2,0 - 		 No groundwater seepage or soil sloughing was observed during Testhole terminated at a depth of 2,0 m. 	g oi	r upo	n coi	 mplet	l tion c	l of dril	ling.	1	I	1

		TESTHOLE TH2	C	THE NATIONAL TESTING LABORATORIES LIMITED
Pro Clie Dri Dri	oject Lo ent: KG Iling Co Iling Me	Imme: 2013 Local Streets Program Date Drilled: cation: Argate Drive btw Jefferson Avenue & Leahcrest Crescent Depth of Test S Group Inc. Logged by: S ontractor: Active Drilling and Piling Reviewed by: ethod: 125 mm Solid Stem Auger	hole: othea Gerr	2.0 m a Bun nan Leal
Depth (m)	Symbol	Description	Sample Type	
	ta sha ta	Concrete		
	0000	Crushed Limestone		
	200	- 20 mm maximum aggregate size	BS	93
			BS	•5
	000			
- 0.5 -	200			
	000		85	•4•**
	00			
		Clay Fi∎		
		- brown, stiff, moist, high plasticity - some fine to coarse sand	BS	•20
- 1,0 -		- trace fine gravel		
			BS	•26
		Clay		
		- grey, stiff, moist, high plasticity		
			BS	•25
- 1,5 -		Clayey Silt		
		- tan, soft, moist, low plasticity		
			BS	●27
- 2,0 - 		 No groundwater seepage or soil sloughing was observed during or upon comple Testhole terminated at a depth of 2,0 m. 	tion o	ı i i i i of drilling.
 	-			
Page 1	1 of 1			

Pro	piect Na	TESTHOLE TH3		Date	Drill				IMITE Sector	VAL G ATOR D 1923	IES	
Pro Clia Dri Dri	oject Lo ent: KG Iling Co Iling Me	cation: Argate Drive btw Jefferson Avenue & Leahcrest Crescen S Group Inc. ontractor: Active Drilling and Piling othod: 125 mm Solid Stem Auger		Dept Logg Revi	th of ged b ewed	Testl by: So d by:	hole: othea Gern	2.0 i Bur nan l	m 1 Lea l			
Depth (m)	stho l e L loquing	ocation: 28.0 m north from NE corner of Argate Drive & Leahcre: Description	Sample Type		Partic		8	t froi		ter Co		nt
Ğ	Syı		Samp	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	2	PL ┣─	(%) 50 7	- LL 1 /5 1/	00
		Concrete Crushed Limestone	-	*****		* * * * * * *						
		- 20 mm maximum aggregate size	BS BS					•9* •7··	 			
- 0.5 -			BS	2 2 X 3 4 X		< X 2 X 2 X 0		•7	 *****		 , 	
		Clayey Silt - tan, soft, moist, low plasticity		****							 	
- 1,0 -		 trace fine gravel trace fine to coarse sand 	BS	- 1,1* 	8,7	69,8	20,4	••••	7 			
			BS					•	5			
- 1,5 -			BS						21	 	 	
		Silty Clay - grey, firm, moist, high plasticity		*****				*****			 	
		- grey, inn, moisi, nign plasticity	BS						23		 	
- 2,0 -		 No groundwater seepage or soil sloughing was observed durin Testhole terminated at a depth of 2.0 m. 	ig o	r upo	n cor	mplet	tion o	f dril	ling.	L		
2,5 Page 1	1 of 1											

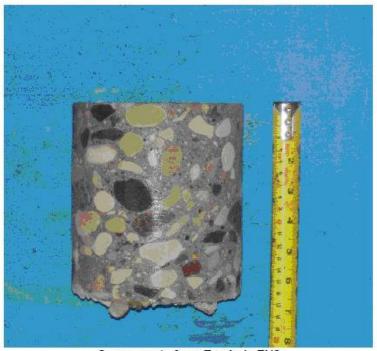
Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3

Geotechnical Report for Leahcrest Crescent

Test Hole Locations



Summary of Core Samples

		LEAHCREST C	TABLE 1 2013 LOCAL STREETS PROGRAM LEAHCREST CRESCENT BETWEEN ARGATE DRIVE AND ANGLIA AVENUE GEOTECHNICAL INVESTIGATION	TABLE 1 2013 LOCAL STREETS PROGRAM ENT BETWEEN ARGATE DRIVE AN GEOTECHNICAL INVESTIGATION	ROGRAM DRIVE AND ANO IGATION	SLIA AVENUE									
Tootholo ID	Tantheda I constitute	Paveme	Pavement Surface	Paveme	Pavement Structure Material	Sample	Sample	Moisture	Partic	Particle Size Analysis	nalysis		Atte	Atterberg Limits	\$
TI AIOLINSA I		Type	Thickness (mm)	Type	Thickness (mm)	Description	Depth (m)	Depth (m) Content (%) Gravel (%)	\vdash	Sand (%)	Silt C	Clay L (%) 1	Liquid P Limit	Plastic F Limit	Plasticity Index
TH1	Westbound Leahcrest Crescent between Argate Drive & Baker Bay north 44.0 m east from northeast corner of Argate Drive & Leahcrest Crescent 1.5 m south from north curb	Concrete	160	Crushed Limestone	450	Sit	6.0	22	0.2	32 7	78.2	18.4	24	16	8
TH2	Northbound Leahcreat Crescent between Argate Drive & Baker Bay north 45.0 m north from northwest comer of Leahcrest Crescent & Baker Bay north 4.9 m east from west curb	Concrete	170	Crushed Limestone	440		•								
TH3	Northbound Leahcrest Cressent between Baker Bay north and Baker Bay south 31.1 m north from northeast corner of Leahcrest Crescent & Anglia Avenue 2.4 m west from east curb	Concrete	165	Crushed Limestone	520	Clayey Silt	0.9	36	1.6	8.6	51.0 3	38.8	37	16	21

Pro Clia Dri Dri	oject Loc ent: KG Iling Co Iling Me	me: 2013 Local Streets Program cation: Leahcrest Crescent between Argate Drive & Anglia Aven S Group Inc. ntractor: Active Drilling and Piling thod: 125mm Solid Stem Auger ocation: 44.0m east from NE corner of Argate Drive & Leahcres	ue	Dept Logg Revi	h of j ed b ewec	y: Sc I by:	nole: othea Gern	2.0 r Bun nan L	n Lea			
Depth (m)	Symbol	Description	Sample Type		Distri	le Size bution	1		● Wa PL	iter C (%)	onter	ıt
				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	2	5	50 7	75 10	00
		Concrete Crushed Limestone - 50 mm maximum aggregate size	BS					•8				
		Silt - tan, soft, moist, low plasticity - trace fine gravel - trace fine to coarse sand - some clay	BS			78,2	18,4	· · · · · · · ·	23.			
- 1.0 - 			BS					••••••	22		** 	
- 1.5 - 			BS						23			
- 2,0 -		 No groundwater seepage or soil sloughing was observed durir Testhole terminated at a depth of 2,0 m. 	BS ng oi	upo	n cor	nplet	ion o		ing.			

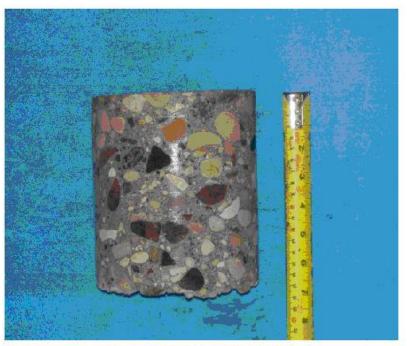
		TESTHOLE TH2		THE NATIONAL TESTING LABORATORIES LIMITED Exception 1922
Proj Clie Drill Drill	ject Loo ent: KG ling Co ling Me	cation: Leahcrest Crescent between Argate Drive & Anglia Avenue Depth S Group Inc. Logge	rilled: April of Testhole: d by: Sothea ved by: Gerr north, 4.9 m	2.0 m a Bun nan Leal
Depth (m)	Symbol	Description	Sample Type	● Water Content (%) 25 50 75 100
		Concrete		
<u>e 'stre 'aker</u>		Crushed Limestone - 20 mm maximum aggregate size		●6 ······
- 0.5 -		Clay	BS	• • • • • • • • • • • • • • • • • • • •
+		- brown, firm, moist, high plasticity	BS	• • • • • • • • • • • • • • • • • • •
1,0 -				
		Silt - tan, soft, moist, low plasticity - some clay	BS	•24
1,5 -			BS	
-			BS	● 22
- 2,0 -		 No groundwater seepage or soil sloughing was observed during or upon Testhole terminated at a depth of 2,0 m. 	completion o	I I I I I
- 2,5 Page 1				

Pro Clia Dri Dri	oject Lo ent: KG Iling Co Iling Me	TESTHOLE TH3 Ime: 2013 Local Streets Program cation: Leahcrest Crescent between Argate Drive & Anglia Ave S Group Inc. ontractor: Active Drilling and Piling ethod: 125 mm Solid Stem Auger Location: 31.1 m north from NE corner of Leahcrest Crescent &		Dept Logo Revi	h of ged b ewed	Testi by: So d by:	hole: othea Gerr	5, 2013 2.0 m a Bun man Lea l	NG LA TOR E D n 1922		
Depth (m)	Symbol	Description	Sample Type	Gravel		le Size butior		● Wa PL	nter C (%)	onter 	nt
	e. 5. 4. e.	Concrete		(%)	(%)	(%)	(%)	25	50 7 T	75 1 1	00
		Confilere		******							
		Crushed Limestone	BS					•6			ļ
		- 20 mm maximum aggregate size	BS					•6 · · · · · · ·	.j	<u>.</u>	į
<u></u>	S°C			*****		******	******				
- 0.5 -	00.			L		L				ļ	Ļ
-			BS	******		*****				(.	
	NVV	Clayey Silt	_								
L .		 tan, firm, moist, medium plasticity 									
 .		- trace fine gravel - trace fine to coarse sand	BS		8.6	51.0	38.8		 6	 	
- 1,0 -		Silt - tan, soft, moist, low plasticity				L	L		 		ļ
		tan, con, molet, for producing								 	
			BS					•23			1
									1		1
						******			1	1	1
- 1,5 -			BS		† — —		1	•21	+ 		+
-				> 4 X 4 X 4 1	*****					******	
-						0 1 4 1 1 4 1 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 0 × 0 × 1
			BS	*****		******		¢23			
- 2,0 - 		 No groundwater seepage or soil sloughing was observed dur Testhole terminated at a depth of 2,0 m. 	ing o	r upo	n coi	mplet	tion c	f drilling.	-		I
2,5 Page 1	1 of 1										

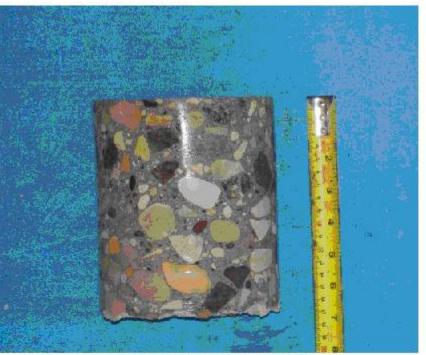
Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2

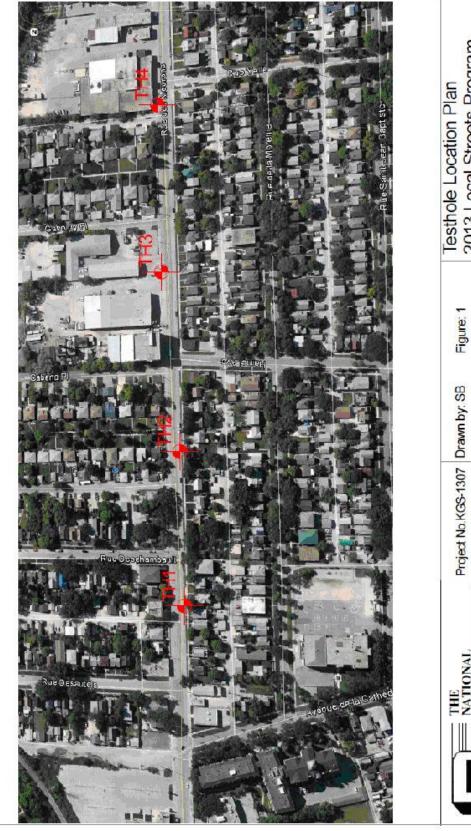


Core sample from Testhole TH3

Geotechnical Report for Rue Des Meurons

Test Hole Locations





Rue Desautels and Bertrand St

Scale: NTS

Reviewed by: GL

Date: April 13, 2013

NNO

2013 Local Streets Program Rue Des Meurons Between

Template Version: C420130321 - RW

Summary of Core Samples



		RUE DES MEUR	TABLE 1 2013 LOCAL STREETS PROGRAM RUE DES MEURONG BETVEEN RUE DESAUTEL S AND BERTRAND STREET GEOTECHNICAL INVESTIGATION	TABLE 1 STREETS PROG UE DESAUTELS ICAL INVESTIGA	RAM AND BERTRAN TION	4D STREET									
	T and a to a construct	nemeved	Pavement Surface	Pavemen	Pavement Structure Material	Sample	Sample	Moisture	Parti	Particle Size Analysis	Vnalysis		Atter	Attenberg Limits	2
		Type	Thickness (mm)	type	Thickness (mm)	Description	Depth (m)	Content (%)	Gravel (%)	Sad Sad	S S	Clay	Liquid Pi Limit L	Plastic P Limit	Plasticity Index
ž	Southbound Rue Des Mourons between Rue Desauteis & Rue Deschambault	Asphali	81												
Ē	0.0 Et a quarti racet autoritedas contrer os rues ureseuvers o ures enertoria nue 11.1 m west from east curb	Concrete	011			8		÷	•		•	,		ŧ	,
ş	Southbound Rue Des Meurons between Cabana PI & Hamel Ave.	Asphalt	8			1	8	ŝ	e c		000	4 C 0	Ŗ	5	2
ğ	r our in moren som manimers comer or manier Ave. A ures mealons rue 1.8 m east from west curb	Concrete	5 <u>8</u>	\$	×	vay	2	5	2			e e	ę	5	5
52	Northbound Rue Des Meurons between Hamel Ave. & Gaboury PI.	Asphalt	\$\$:		·							
2	oour in sourch sources ourree or maner Ave. A uses meanors rue 12.4 m east from west outb	Concrete	200	s	,	ł	÷	,	,	;	,	,	,		a .
1H4	Northbound Rue Des Meurons between Caboury PI. & Rue Yeile 13.1 m north from northwest comer of Rue Yeile & Des Meurons Rue 12.8 m east from west curb	Asphalt	215	Granular	8	S.	60	8	0.1	5 3	203	74.4	8	28	\$

		TESTHOLE TH1	τ	THE NATIONAL TESTING LABORATORIES LIMITED ERBBRIGHT RZZ
Proje Clien Dri l i Dri l i	ect Loca nt: KGS ng Con ng Meth	ne: 2013 Local Streets Program ation: Rue Des Meurons Between Rue Desautels & Bertrand Street Group Inc. tractor: Active Drilling and Piling hod: 125 mm Solid Stem Auger cation: 67.8 m south from SE corner of Rue Desautels & Rue Des Meuron	Depth of Te Logged by: Reviewed b	: April 4, 2013 sthole: 2.0 m Sothea Bun y: German Leal t from east curb
Depth (m)	Symbol	Description	Sample Type	• Water Content (%)
		Asphalt		25 50 75 100
8 8 1 8 85		Concrete		
- 0.5 -		Clay Fill - brown, soft, moist, medium plasticity - some medium to coarse sand - trace fine to coarse gravel	BS	•26
			BS	
		Clay - brown, firm, moist, high plasticity - silty below 1.8 m		
- 1,0 -			BS	++
8 87 8 87			BS	•36
- 1,5 -			BS	
			BS	•42
2,0 -				
-17		 No groundwater seepage or soil sloughing was observed during or upor Testhole terminated at a depth of 2,0 m. 	n completion c	f drilling.
2 2 <u>1</u> 8 8 <u>1</u>				
2,5	1 of 1			

Proje Clier Dri∎i Dri∎i	TESTHOLE TH2 THE MATIONAL INFORMAL INF											
Depth (m)	Symbol	Description	Sample Type		Particle Size Distribution			● Water Content (%) PL LL				
			ļ	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	25	5	07	5 1	00
		Asphalt / Concrete						· · · · · · · · · · · · · · · · · · ·	•••••			
		Clay Fi∎ - brown, soft, moist, high plasticity - trace fine gravel - trace medium to coarse sand	BS	*****				•	28			
- 0.5 -		- some silt - firm below 0.3 m	BS	0,6	8.8	28.0	62.6	· · · · · · · ·	31			
		Clay - brown, firm, moist, high plasticity	BS						30			
		- some silt below 1.2 m	BS					· · · · · · · · ·	30		 	
		Clayey Silt - tan, soft, moist, low plasticity	BS	* * * * * * * *			• • • • • • •		31			
- 1,5 -			BS						3			* * * * * * * * * * * * * * * * *
		Clay - brown, stiff, moist, high plasticity - some silt	BS	******					•35		 	
- 2,0 -		 No groundwater seepage or soil sloughing was observed durin Testhole terminated at a depth of 2,0 m. 	g o	r upo	n coi	mplet	ion a	ı i	ng.		L	

		TESTHOLE TH3		THE NATIONAL TESTING LABORATORIES LIMITED Externel 102					
Proje Clien Dri∎i Dri∎i	nt: KGS ng Con ng Meti	and Street The street Des Meurons, 12.4 m east from west curb	of Testhole: 2.0 m d by: Sothea Bun red by: German Leal						
Depth (m)	Symbol	Description	Sample Type	(%)					
	232.2	Asphalt		25 50 75 100					
		Concrete							
- 0.5 -		Clay Fi∎ - brown, soft, moist, low plasticity - some fine to coarse sand - trace fine to coarse gravel	BS	●44 · · · · · · · · · · · · · · · · · ·					
			BS	48					
		Clayey Silt - tan, firm, moist, low plasticity	BS	•36					
		- tan, inn, moist, iow prasticity	BS	•30					
- 1,5 -			BS						
			BS	•••••••••••••••••••••••••••••••••••••••					
- 2,0 - 		 No groundwater seepage or soil sloughing was observed during or upon co Testhole terminated at a depth of 2.0 m. 	ompletion c	f drilling.					
25									
Page 1	1 of 1								

TESTHOLE TH4 Project Name: 2013 Local Streets Program Project Location: Rue Des Meurons Between Rue Desautels & Bertrand Street Client: KGS Group Inc. Drilling Contractor: Active Drilling and Piling Drilling Method: 125 mm Solid Stem Auger Testhole Location: 13.1 m north from NW corner of Rue Yelle & Rue Des Meurons			ns, 1	The Instant Mattional Hattional TESTING Laboratories LimiteD Date Drilled: April 4, 2013 Depth of Testhole: 2.0 m Logged by: Sothea Bun Reviewed by: German Leal ns, 12.8 m east from west curb									
Depth (m)	Symbol	Description	Sample Tvne	Particle Size Distribution				● Water Content (%) PL LL					
				Grave (%)	I Sand (%)	Silt (%)	Clay (%)	2	5 50	75 1			
-		Asphalt		*****		*****		· · · · · ·			ļ		
-		Granular		· · · · · ·					İ.		j.		
-		- max 25 mm aggregate size - some clay	/ B:	\$					•38		Ť		
0.5 -		Clay Fill - brown, firm, moist, high plasticity									ļ		
		- some medium to coarse sand	В	\$. •65	-		
_		Clay - brown, firm, moist, high plasticity - trace fine gravel									+		
-		- trace fine to coarse sand - some silt						•••••	·····	· · · · · · · · · · · · · · · · · · ·	Ť		
1.0 -		- stiff below 1.5 m - trace silt below 1.8 m	B	5 0,1	5,3	20,2	74,4		<u> ●37</u> 		1 		
-				*****			******				_		
-			B						•32		-		
-				••••									
1,5 -			B	s	+			+ 	•31		+		
-											Ì		
_			в	5			******	******	•32 ···		 		
-									 	 			
2,0 -										<u> </u>			
-		 No groundwater seepage or soil sloughing was observe Testhole terminated at a depth of 2,0 m. 	ed during o	or upo	on coi	nplet	ion o	f drill	ing.				

Pavement Core Photos



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3



Core sample from Testhole TH4