APPENDIX 'A' GEOTECHNICAL REPORT

Table 1
Summary of Pavement Structure

File No.: 08-035-02

Genivar
2008 - 2009 Streets Reconstruction Program – Pavement Coring and Geotechnical Investigations

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Depth (m)	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
1	Desautels / Deschambault Streets Alley	-	-	Sandy Granular Fill	50	Silty Sand (fill)	0.15	12.7							
							0.50	12.2							
						Clayey Silt (fill)	0.76	41.8							
						Clay	1.00	39.6							
							1.52	41.3							
							1.83	38.6							
							2.13	42.7							
2	Desautels / Deschambault Streets Alley	-	-	Sandy Granular Fill	100	Silty Sand (fill)	0.15	11.3							
						Clayey Silt (fill)	0.50	24.7							
							0.76	26.3	0.0	10.2	51.3	38.5	46.0	22.0	24.0
						Clay	1.00	37.8							
							1.52	36.4							
							1.83	40.2							
							2.13	38.7							

Table 1
Summary of Pavement Structure

File No.: 08-035-02

Genivar
2008 - 2009 Streets Reconstruction Program – Pavement Coring and Geotechnical Investigations

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Depth (m)	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
3	Desautels / Deschambault Streets Alley	-	-	Sandy Granular Fill	50	Silty Sand (fill)	0.15	15.6							
						Clayey Silt (fill)	0.50	39.1							
							0.76	47.0							
						Clay	1.00	34.7							
							1.52	34.7							
							1.83	43.3							
							2.13	43.5							
4	Desautels / Deschambault Streets Alley	-	-	Sandy Granular Fill	75	Silty Sand (fill)	0.15	10.6							
							0.50	17.6	0.0	45.2	33.5	21.3	36.2	23.1	13.1
						Clayey Silt (fill)	0.76	38.3							
						Clay	1.00	35.4							
							1.52	36.3							
							1.83	40.2							
							2.13	42.2							

Table 1
Summary of Pavement Structure

File No.: 08-035-02

Genivar
2008 – 2009 Streets Reconstruction Program – Pavement Coring and Geotechnical Investigations

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Depth (m)	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
5	Desautels / Deschambault Streets Alley	-	-	Sandy Granular Fill	25	Silty Sand (fill)	0.15	16.6							
						Clayey Silt (fill)	0.50	29.8							
							0.76	36.4							
						Clay	1.00	30.4							
							1.52	32.2							
							1.83	40.2							
						Silty Clay	2.13	38.5							

PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH01**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Guay & Morier Backlane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube | No Recovery | SPT (N) | Grab Sample | Split-Pen | Core

BACKFILL TYPE: Bentonite | Pea Gravel | Drill Cuttings | Grout | Slough | Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0			CLAY (FILL) - some silt, trace sand and gravel, medium plastic, moist, stiff, dark brown		1			0
		CI			2			
			CLAY - silty, trace sand, high plastic, moist, stiff, brownish grey		3			
1					4			1
		CH			5			
		ML	SILT - clayey, trace sand, low plastic, moist, firm, brown		6			
			CLAY - silty, high plastic, damp, very stiff, greyish brown		7			
2		CH						2
			- moist, stiff below 2.3m		8			
			TEST HOLE TERMINATED AT 2.4m BELOW EXISTING GROUND SURFACE.					
			NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					
3								3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH02**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Guay & Morier Backlane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0		CI	CLAY (FILL) - some silt, sand and gravel, medium plastic, moist, stiff, dark brown, some organics		1			0
		CH	CLAY - silty, trace sand, high plastic, moist, stiff to very stiff, dark brownish grey		2		Hydrometer Analysis Results: Sample #2 (0.5m) Gravel = 0% Sand = 3% Silt = 36% Clay = 61%	
1			- stiff below 0.9m		3			1
		ML	SILT - some clay, trace sand, low plastic, very moist, soft, light brown		4			
			- clayey, firm below 1.4m		5			
			- very soft below 2.0m		6			
2					7			2
		CH	CLAY - silty, high plastic, moist, stiff, greyish brown		8			
3			TEST HOLE TERMINATED AT 2.7m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH03**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Guay & Morier Backlane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube | No Recovery | SPT (N) | Grab Sample | Split-Pen | Core

BACKFILL TYPE: Bentonite | Pea Gravel | Drill Cuttings | Grout | Slough | Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0			CLAY (FILL) - some silt, sand and gravel, medium plastic, moist, stiff, dark grey, trace organics		1			0
		CI			2			
			CLAY - silty, trace sand, high plastic, moist, firm, dark greyish brown		3			
1		CH			4		Hydrometer Analysis Results: Sample #4 (1.1m) Gravel = 0% Sand = 1% Silt = 31% Clay = 68%	1
			SILT - clayey, trace sand, low plastic, very moist to wet, soft, brown		5			
		ML			6			
2			CLAY - silty, high plastic, moist, stiff, brown		7			2
		CH			8			
			TEST HOLE TERMINATED AT 2.4m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					
3								3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH04**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Guay & Morier Backlane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0			CLAY (FILL) - some silt, sand and gravel, medium plastic, damp, firm, dark greyish brown, trace organics		1			0
		CI	- very stiff below 0.5m		2			
1			CLAY - silty, trace sand, high plastic, moist, stiff, brownish grey		3			1
		CH			4			
					5			
					6			
2			SILT - clayey, trace sand, low plastic, very moist to wet, firm, light brown		7			2
		ML			8			
			CLAY - silty, high plastic, moist, firm to stiff, brown		9			
3		CH	TEST HOLE TERMINATED AT 3.1m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH01**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Handyside & Bank Back Lane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0		CI	CLAY (FILL) - silty, some sand and gravel, medium plastic, damp, very stiff, dark grey, trace organics - trace sand, moist, stiff, some organics below 0.2m		1 2			0
		CH	CLAY - silty, trace sand, high plastic, moist, stiff, greyish brown		3 4			
1			- firm to stiff, light greyish brown below 1.1m		5			1
		ML	SILT - clayey, trace sand, low to medium plastic, very moist to wet, very soft, light brown		6 7			
2					8			2
		CH	CLAY - silty, high plastic, moist, stiff, brownish grey		9			
3			TEST HOLE TERMINATED AT 3.1m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH02**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Handyside & Bank Back Lane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0			CLAY (FILL) - some silt, sand and gravel, medium plastic, moist, stiff, brown		1			0
		CI						
			ORGANIC CLAY - some silt, medium to high plastic, moist, very stiff, greyish black		2			
		OH						
			CLAY - some silt, trace sand, high plastic, moist, stiff, brown		3		Hydrometer Analysis Results: Sample #3 (0.8m) Gravel = 0% Sand = 3% Silt = 25% Clay = 72%	
		CH						
1			SILT - clayey, trace sand, low to medium plastic, very moist, soft, brown		4			1
			- clayey, firm below 1.4m		5			
		ML						
			CLAY - silty, high plastic, damp to moist, very stiff, brown		6			
			- moist, stiff below 2.1m		7			
2								2
		CH			8			
3			TEST HOLE TERMINATED AT 3.1m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH03**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Handyside & Bank Back Lane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0		CI	CLAY (FILL) - some silt, trace sand and gravel, medium plastic, moist, stiff, dark brown		1			0
		OH	ORGANIC CLAY - some silt, medium to high plastic, damp to moist, very stiff, black		2			
1		ML	SILT- clayey, trace sand, low to medium plastic, very moist, very soft, brown - clayey, light grey below 1.1m		3 4			1
					5			
2		CH	CLAY - silty, high plastic, moist, stiff, greyish brown		6 7			2
					8			
3			TEST HOLE TERMINATED AT 2.4m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH04**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Handyside & Bank Back Lane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0			CLAY (FILL) - some silt, sand and gravel, medium plastic, moist, stiff, dark grey, trace organics		1			0
		CI						
			ORGANIC CLAY - some silt, medium to high plastic, moist, very stiff, black		2			
		OH						
			SILT - clayey, trace sand, low to medium plastic, very moist to wet, very soft, brown		3			
1					4			1
		ML	- clayey below 1.4m		5			
			CLAY - silty, high plastic, moist, stiff, greyish brown		6			
2			- very stiff below 2.0m		7			2
		CH	- moist, stiff at 2.3m		8			
			TEST HOLE TERMINATED AT 2.4m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					
3								3
4								

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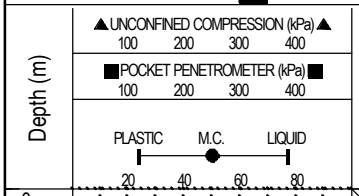
PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH05**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Handyside & Bank Back Lane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube | No Recovery | SPT (N) | Grab Sample | Split-Pen | Core

BACKFILL TYPE: Bentonite | Pea Gravel | Drill Cuttings | Grout | Slough | Sand



Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0			CLAY (FILL) - some silt, trace sand and gravel, medium plastic, damp, very stiff, dark grey, some organics		1			0
		CI						
			CLAY - some silt, trace sand, high plastic, damp, very stiff, grey, trace organics		2			
		CH						
			SILT - clayey, trace sand, medium plastic, very moist, very soft, light brown		3		Hydrometer Analysis Results: Sample #3 (0.8m) Gravel = 0% Sand = 2% Silt = 50% Clay = 48%	
1		CI			4			1
			CLAY - silty, high plastic, moist, very stiff, brown		5			
			- stiff below 1.7m		6			
		CH						
2					7			2
			- firm, occasional silt inclusions at 2.3m		8			
			TEST HOLE TERMINATED AT 2.4m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					
3								3
4								

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PROJECT: Geotechnical Street Testing Program	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: **TH06**
CLIENT: Genivar	DRILL TYPE: B40	PROJECT NO: WX10455
LOCATION: Handyside & Bank Back Lane	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Slough; Sand

▲UNCONFINED COMPRESSION (kPa)▲ 100 200 300 400

■POCKET PENETROMETER (kPa)■ 100 200 300 400

PLASTIC M.C. LIQUID 20 40 60 80

Depth (m)	SOIL SYMBOL	MUSCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	SPT (N)	COMMENTS	Depth (m)
0		CI	CLAY (FILL) - some silt, sand and gravel, medium plastic, moist, stiff, greyish black, some organics		1			0
			CLAY - some silt, trace sand, high plastic, moist, stiff, greyish brown, trace organics		2			
					3			
1		CH	- very stiff below 1.1m		4			1
					5			
		ML	SILT - clayey, trace sand, low to medium plastic, very moist to wet, very soft, brown		6			
2					7			2
		CH	CLAY - silty, high plastic, moist, stiff, greyish brown		8			
			TEST HOLE TERMINATED AT 2.4m BELOW EXISTING GROUND SURFACE. NOTES: No sloughing or seepage during drilling. Test hole backfilled with bentonite and auger cuttings.					
3								3
4								

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