SOIL-MAT ENGINEERS & CONSULTANTS LTD.

401 Grays Road · Hamilton, ON · L8E 2Z3

www.soil-mat.ca info@soil-mat.ca 905.318.7440 / 800.243.1922 (*toll free*) 905.318.7455

PROJECT NO.: SM 231080-E March 27, 2024

RIMKUS
2121 Argentia Road, 4th Floor
Mississauga, Ontario
L5N 2X4

Attention: Hanish Chundi, M. Eng., EIT
Project Coordinator

SOIL CHARACTERISATION REPORT
PROPOSED PAVEMENT RECONSTRUCTION
1292 CANNON STREET EAST
HAMILTON, ONTARIO

Dear Mr. Chundi,

Further to your authorisation, SOIL-MAT ENGINEERS & CONSULTANTS LTD. has completed our soil characterisation program for the above noted project. Our formal comments with respect to the off-site disposal/re-use of surplus soils on an off-site property are summarised herein.

BACKGROUND

We understand that the project will involve the reconstruction of the asphalt play area at Queen Mary Elementary School, located at 1292 Cannon Street East in Hamilton, Ontario. At this time an estimate of surplus soil which may be generated, if any, is unknown, however is expected to be minimal, on the order of a few hundred metres, and only expected to be necessary in the event that a full depth reconstruction is pursued.

The purpose of this soil characterisation testing is to assess the environmental characteristics of the site's subsurface soils, and provide our preliminary comments and recommendations with respect to the off-site disposal of surplus soils during construction in accordance with Regulation 406/19.

ASSESSMENT OF PAST USES

Based on a desktop review of the area including available aerial images, etc., and our observations during our fieldwork, The subject project area is consist of asphalt paved play area within the Queens Mary Elementary School property, on the west side of the school building, located at 1292 Cannon Street East in Hamilton, Ontario. The site is bounded to the north by Cannon Street East, to the east by residential properties, to the south by Roxborough Avenue and to the west by Province Street North. The site is within a residential area of Hamilton, with the surrounding lands comprised of dwellings with a park to the south.

Given the anticipated low volume of excess soil expected, as well as the surrounding area consisting of primarily residential and parkland uses, it is our opinion that the subject site would be considered 'low risk', and as such would be exempt from the requirements to file a notice in the Registry, and by extension required to prepare a formal Assessment of Past Uses [APU], Sampling and Analysis Plan [SAP], and Excess Soil Destination Assessment Report [ESDAR], as per Section 8, as follows:

Notice to be filed on Registry

> ***8.*** *(1) Subject to subsections (2) and (3), the project leader for a project, respecting a project area described in subsection (1.1), shall ensure that, before removing from the project area soil that will become excess soil once removed, a notice is filed in the Registry setting out the information listed in Schedule 1. O. Reg. 406/19, s. 8 (1); O. Reg. 555/22, s. 2 (1).*
>
> *(1.1) A project area to which subsection (1) applies is one that meets any of the following criteria:*
>
> *1. After making reasonable efforts to take into consideration any past reports about past uses and activities respecting the project area, the project leader is of the opinion that the project area is or has ever been, in whole or in part, an enhanced investigation project area, except if,*
>
> *i. a record of site condition has been filed in respect of the enhanced investigation project area under Part XV.1 of the Act and the record of site condition does not contain a certification made under subparagraph 4 ii of subsection 168.4 (1) of the Act in respect of a risk assessment, and*
>
> *ii. no part of the project area has been used as an enhanced investigation project area since the filing of the record of site condition mentioned in subparagraph.*
>
> *2. Any part of the project area is located in an area of settlement within the meaning of the* Planning Act *and the amount of soil to be removed*

from the project area is 2,000 m^3 or more, unless the whole project area is currently used for, or in the case of an unused area, its most recent use was for, any of the following within the meaning of Ontario Regulation 153/04:

i. A residential use.
ii. An institutional use.
iii. A parkland use.
iv. An agricultural or other use.

As such, it is not required to prepare a formal APU, SAP, and ESDAR, or meet the specific sampling frequency as outlined in the Regulation to support the off-site reuse of the subject material. Regardless, this assessment has been conducted as part of our investigation and sampling program.

SAMPLING AND ANALYSIS PLAN

Based on our assessment of the site as detailed above, as well as the requirements of Ontario Regulation 406/19, the recovered samples were submitted for a standard panel of metal and inorganic parameters [M&I], petroleum hydrocarbons [PHCs] including benzene, toluene, ethylbenzene, and xylenes [BTEX], volatile organic compounds [VOCs], polycyclic aromatic hydrocarbons [PAHs], as well as synthetic precipitation leachate procedure [SPLP] testing for metals, and VOCs.

As noted above, an estimate of excess soil to be generated, if any, is not known, however is expected to be minimal, on the order of a few hundred cubic metres. As such, it is our opinion that the submission of three [3] samples for the parameters noted above is considered reasonable and sufficient to characterise the subsurface soils for the purpose of off-site disposal. It is noted that during sampling, limited sample recovered resulted in multiple samples being required to cover the requested testing as outlined above. It is also noted that depending on field screening during construction and the requirements of receiving sites, additional testing may be required.

SITE VISIT AND SOIL SAMPLING

As part of our concurrent geotechnical investigation fieldwork, a representative of SOIL-MAT ENGINEERS visited the site on February 9, 2024 and recovered a total of three [3] samples from boreholes advanced at the locations illustrated in the attached Drawing No. 1, Borehole Location Plan. The samples were recovered from borings and examined in the field for visual and olfactory evidence of potential impacts such as unusual staining and/or odours, etc., with no obviously evidence noted. The soil samples were sealed in pre-cleaned wide mouth, amber glass sample jars and/or vials pre-charged with methanol preservative as supplied by the laboratory, and

stored/transported in a cooler and kept under ice packs. New disposable sampling gloves were used for the collection of each soil sample with care given to not make contact with the previous samples and gloves.

LABORATORY ANALYTICAL TESTING

The secured soil samples were submitted AGAT Laboratories [AGAT], [an accredited Canadian Environmental Laboratory] for the specific parameters identified above. As noted above, given the limited sample recovery, multiple samples were utilised to complete the requested testing:

Summary of Sample Analyses

Sample ID	M&I	PHCs + BTEX	VOCs	PAHs	SPLP metals	SPLP VOCs
BH1 SS2				✓		
BH1 SS3	✓	✓	✓			
BH2 SS2					✓	
BH2 SS3				✓		✓
BH3 SS1	✓	✓	✓			✓
BH3 SS2					✓	
BH4 SS1						✓
BH4 SS2	✓					
BH5 SS1				✓		
BH5 SS2		✓	✓			

The laboratory analytical test results received in our office were compared with the applicable Excess Soil Quality Standards under Ontario Regulation 406/19: On-Site and Excess Soil Management, outlined as follows:

- **ONTARIO REGULATION 406/19 – TABLE 1**: Full Depth Background Site Condition Standards Residential/Parkland/Institutional and Industrial/Commercial/Community [RPI and ICC] land use.
- **ONTARIO REGULATION 406/19 – TABLE 2.1**: Full Depth Excess Soil Quality Standards Residential/Parkland/Institutional [RPI] and Industrial/Commercial/Community [ICC] land use in a potable groundwater condition.

- **ONTARIO REGULATION 406/19 – TABLE 3.1**: Full Depth Excess Soil Quality Standards Residential/Parkland/Institutional [RPI] and Industrial/Commercial/Community [ICC] land use in a non-potable groundwater condition.

The results of this laboratory testing are presented in the attached AGAT Certificates of Analysis [AGAT Work Order Numbers: 24T119947], and are summarized as follows:

1. The submitted samples were found to exceed the Table 1 [RPI/ICC] standards for various metal parameters including Barium, Beryllium, Boron, Cadmium, Selenium, Uranium, Zinc, as well as Electrical Conductivity [EC] and Sodium Absorption Ratio [SAR].
2. The submitted samples were found to exceed the Table 2.1 [RPI] standards for various metal parameters including Barium, Beryllium, Hot Water Soluble Boron [HWSB], Cadmium, Zinc, as well as EC and SAR.
3. The submitted samples were found to exceed the Table 3.1 [RPI] standards for various metal parameters including Barium, Beryllium, HWSB, Cadmium, Zinc, as well as EC and SAR.
4. The submitted samples were found to exceed the Table 2.1 [ICC] standards for various metal parameters including Hot Water Soluble Boron, Zinc, as well as EC and SAR.
5. The submitted samples were found to exceed the Table 3.1 [ICC] standards for various metal parameters including Hot Water Soluble Boron, Cadmium, Zinc, as well as EC.
6. The soil sample(s) secured for laboratory analytical testing are believed to be representative of the soil condition at the sample locations only. This office should be contacted to reassess the environmental characteristics of the soil if any unusual staining or odours are observed during future construction activities.

The results of this analytical testing have been summarised as follows:

SUMMARY OF ANALYTICAL RESULTS

Sample	Table 1	Table 2.1		Table 3.1	
	RPI/ICC	RPI	ICC	RPI	ICC
BH1 SS2	✓	✓	✓	✓	✓
BH1 SS3	Barium, EC	EC	✓	EC	✓
BH2 SS2	✓	✓	✓	✓	✓
BH2 SS3	✓	✓	✓	✓	✓

BH3 SS1	Boron, Cadmium, Zinc, EC, SAR	Cadmium, Zinc, EC, SAR	Cadmium, Zinc, EC	Cadmium, Zinc, EC, SAR	Cadmium, Zinc, EC
BH3 SS2	✓	✓	✓	✓	✓
BH4 SS1	✓	✓	✓	✓	✓
BH4 SS2	Barium, Beryllium, Boron, Selenium, Uranium, EC	Barium, Beryllium, HWSB, EC	HWSB, EC	Barium, Beryllium, HWSB, EC	HWSB, EC
BH5 SS1	✓	✓	✓	✓	✓
BH5 SS2	✓	✓	✓	✓	✓

✓- Denotes the sample meets the standard for the respective table for the parameters tested

ENVIRONMENTAL CONSIDERATIONS FOR SOIL REUSE

As the tested material was found to exceed the Table 1, 2.1, and 3.1 [RPI and ICC] standards for various parameters, surplus soil from the subject site should not be accepted at an off site RPI or ICC property subject to Table 1, 2.1, or 3.1 standards. Additional testing may server to provide vertical and lateral delineation of the noted exceedances, may not be effective in providing significant delineation.

As such, to eliminate the need to dispose of material at a registered waste facility, a partial depth reconstruction may be preferred for the proposed parking lot reconstruction. In the event that excess soil is generated and is to be disposed of at a registered waste facility, additional PCB and TCLP testing may be required.

GEOTECHNICAL CONSIDERATIONS FOR SOIL REUSE

The sampled material was noted to consist of granular fill material associated with the existing pavement structure, to cohesive silty clay/clayey silt soils. Select portions of these materials are generally suitable for use as engineered fill, trench backfill, etc., provided the material is free of organics, construction debris, and the moisture content can be controlled to within 3 per cent of its standard Proctor optimum moisture content. Some selective sorting of the excavated material, to remove deleterious materials should be expected to be required.

GENERAL COMMENTS

It is noted that the subsurface soil conditions described are based on our observations at the borehole locations only. In the event that the conditions encountered differ from those described above, SOIL-MAT should be retained to further assess the geotechnical and environmental aspects of the site.

The material in this report reflects SOIL-MAT ENGINEERS' best judgement in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. SOIL-MAT ENGINEERS accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

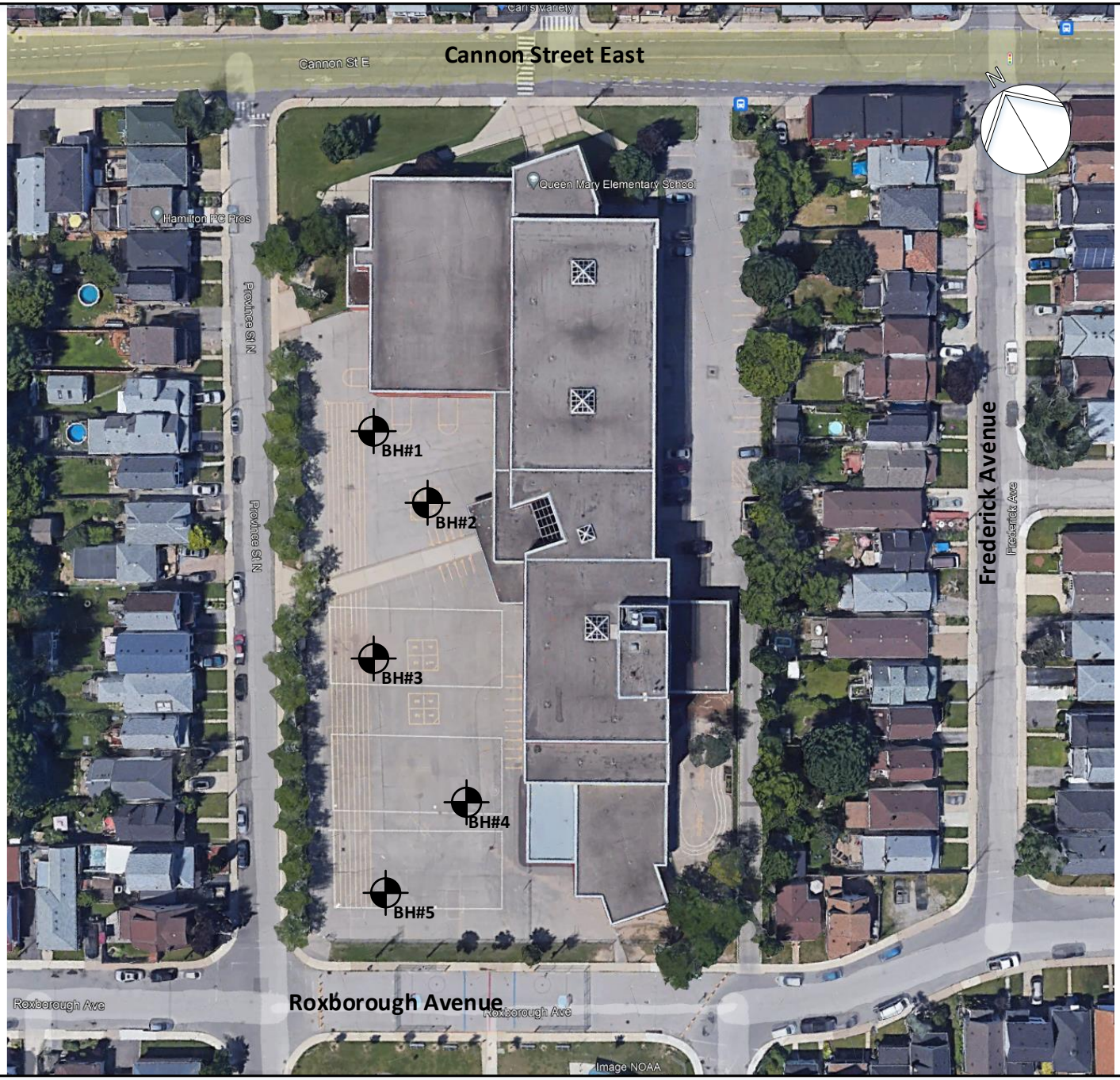
We trust this is satisfactory for your purposes. Please feel free to contact our Office if you have any questions, or we may be of further service to you.

Yours very truly,
SOIL-MAT ENGINEERS & CONSULTANTS LTD.

Kyle Richardson, P.Eng., QPESA
Project Engineer

Enclosures: Drawing No. 1, Borehole Location Plan
Log of Borehole Nos. 1 to 10, inclusive
AGAT Certificate of Analysis 24T123947

Distribution: Rimkus [pdf]



LEGEND

BH# Borehole Location

NOTES

1. This drawing should be read in conjunction with SOIL-MAT ENGINEERS & CONSULTANTS LTD. Report No. SM 231080-G

2. Borehole locations are approximate.

SOIL-MAT

ENGINEERS & CONSULTANTS LTD.

Proposed Pavement Reconstruction
1292 Cannon Street East
Hamilton, Ontario

Borehole Location Plan

Project No. SM 231080-G

Date: February 2024

Drawn: RM

Checked: KR

Drawing No. 1

Log of Borehole No. 1

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 4788827
E: 596292

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	SAMPLE Number	SAMPLE Blow Counts	SAMPLE Blows/300mm	SAMPLE Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	0.00	Ground Surface								
0 – 1	0.00 to -0.56	**Pavement Structure** Approximately 65 millimetres of asphaltic concrete overlaying 500 millimetres of compact granular base.		SS	1	12,12,11,6	23			
1 – 2	-0.56 to -1.44	**Sand and Gravel Fill** Brown, occasional construction debris, compact.		SS	2	8,10,7,8 Wet Spoon	17			
2 – 3	-1.44 to -2.13	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragment, very stiff.		SS	3	5,13,20,50/5" Wet	33			
3	-2.13	End of Borehole Spoond refusal on assumed bedrock								

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 2.1 metres.

2. Borehole was recorded as 'wet' at a depth of 1.4 metres and caved to a depth of 0.9 metres upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

Log of Borehole No. 2

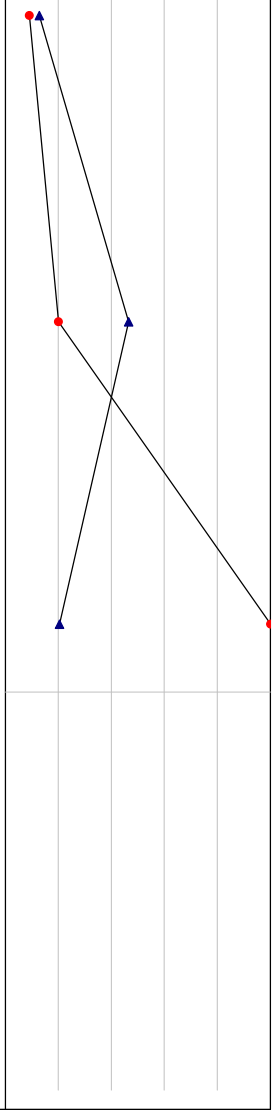
Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 478825
E: 596300

Depth (ft)	Depth (m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		0.00	Ground Surface							
0	0		**Pavement Structure** Approximately 40 millimetres of asphaltic concrete overlaying 650 millimetres of compact granular base.	SS	1	8,4,5,4	9			
		-0.68	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragments, very stiff to hard..							
3	1			SS	2	3,6,14,18	20			
6	2	-2.13		SS	3	7,25,50/4"	100			
			End of Borehole Spoon refusal on assumed bedrock							

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)



1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 2.1 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

Log of Borehole No. 3

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 4788736
E: 596294

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	SAMPLE Number	SAMPLE Blow Counts	SAMPLE Blows/300mm	SAMPLE Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	0.00	Ground Surface								
0 – 1		**Pavement Structure** Approximately 50 millimetres of asphaltic concrete overlaying 300 millimetres of compact granular base.		SS	1	7,4,3,6	7			
1 – 2 / 1	-0.36	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragment, firm to very siff.								
2 – 3				SS	2	4,12,15,23 Wet Spoon	27			
3 – 4	-1.37	End of Borehole Spoon refusal on assumed bedrock								
4 – 5 / 2		1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 1.3 metres.								
5 – 6		2. Borehole was recorded as open and 'wet' at a depth of 0.6 metres upon completion and backfilled as per Ontario Regulation 903.								
6 – 7		3. Soil samples will be discarded after 3 months unless otherwise directed by our client.								
7 – 8										
8 – 9										

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

Log of Borehole No. 4

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 596300
E: 4788755

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	0.00	Ground Surface							
0–1 / 0	0.00	**Pavement Structure** Approximately 40 millimetres of asphaltic concrete overlaying approximately 300 millimetres of compact granular base.							
1–4 / 0–1		**Sand and Gravel Fill** Brown, compact.	SS	1	7,10,12,23	22			
3–4 / 1			SS	2	12,19,16,11 Wet Spoon	35			
	-1.37	End of Borehole							

1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 1.3 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

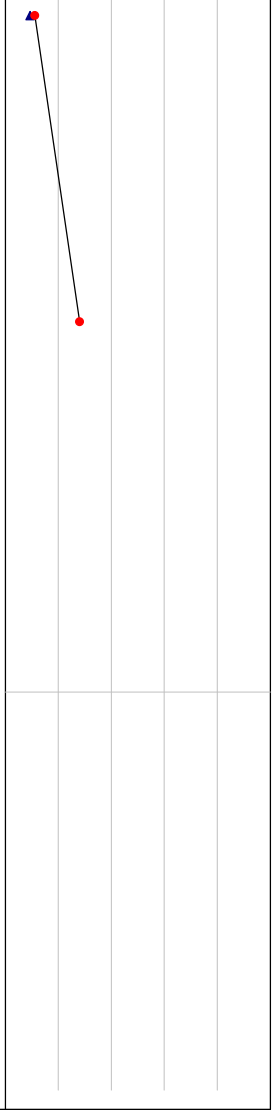
Log of Borehole No. 5

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 596275
E: 4788745

Depth (ft)	Depth (m)	Elevation (m)	Description	Well Data	SAMPLE Type	SAMPLE Number	SAMPLE Blow Counts	SAMPLE Blows/300mm	SAMPLE Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		0.00	Ground Surface								
0	0		**Pavement Structure** Approximately 40 millimetres of asphaltic concrete overlaying 450 millimetres of compact granular base.		SS	1	10,8,3,4	11			
		-0.50	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragments, stiff to very stiff.								
3	1				SS	2	7,13,15,16	28			
		-1.37	End of Borehole Spoon refusal on assumed bedrock								
6	2		1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 1.1 metres. 2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903. 3. Soil samples will be discarded after 3 months unless otherwise directed by our client.								

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Sheet: 1 of 1

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT
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HAMILTON, ON L8E 2Z3
(905) 318-7440

ATTENTION TO: Ishan Chauhan; Nathan Sears

PROJECT: 231080

AGAT WORK ORDER: 24T123947

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Mar 01, 2024

PAGES (INCLUDING COVER): 25

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

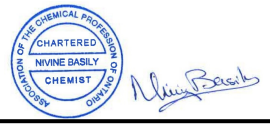
O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

		SAMPLE DESCRIPTION:		BH1 SS3	BH3 SS1	BH4 SS2
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-02-24	2024-02-24	2024-02-24 12:00
Parameter	Unit	G / S	RDL	5677461	5677464	5677466
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	6	5	4
Barium	µg/g	220	2.0	**276**	133	**505**
Beryllium	µg/g	2.5	0.5	0.9	1.5	**6.0**
Boron	µg/g	36	5	32	**39**	**51**
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.35	0.26	2.20
Cadmium	µg/g	1.2	0.5	<0.5	**2.0**	<0.5
Chromium	µg/g	70	5	47	35	21
Cobalt	µg/g	21	0.8	14.7	19.0	4.8
Copper	µg/g	92	1.0	9.7	13.9	7.8
Lead	µg/g	120	1	15	66	13
Molybdenum	µg/g	2	0.5	0.9	1.2	1.4
Nickel	µg/g	82	1	30	39	7
Selenium	µg/g	1.5	0.8	<0.8	<0.8	**2.3**
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.64	1.42	**2.97**
Vanadium	µg/g	86	2.0	30.8	40.5	17.0
Zinc	µg/g	290	5	197	**757**	157
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2
Cyanide, WAD	µg/g	0.051	0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	**0.913**	**1.84**	**3.83**
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	1.49	**5.68**	2.16
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.35	7.25	8.95

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2024-02-26 **DATE REPORTED: 2024-03-01**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5677461-5677466 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 406/19 - SPLP Metals

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

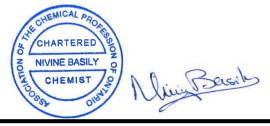
		SAMPLE DESCRIPTION:		BH2 SS2	BH5 SS2	BH3 SS2
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-02-24	2024-02-24 12:00	2024-02-24
Parameter	Unit	G / S	RDL	5677462	5677468	5677485
Antimony Leachate	µg/L	-	0.6	<0.6	<0.6	<0.6
Arsenic Leachate	µg/L	-	5	<5	<5	<5
Barium Leachate	µg/L	-	100	<100	<100	<100
Beryllium Leachate	µg/L	-	0.8	<0.8	<0.8	<0.8
Boron Leachate	µg/L	-	500	<500	<500	<500
Cadmium Leachate	µg/L	-	0.20	<0.20	<0.20	<0.20
Chromium Leachate	µg/L	-	10	<10	<10	<10
Cobalt Leachate	µg/L	-	0.3	<0.3	<0.3	<0.3
Copper Leachate	µg/L	-	6.9	<6.9	<6.9	<6.9
Lead Leachate	µg/L	-	1.0	<1.0	<1.0	<1.0
Molybdenum Leachate	µg/L	23	1.5	2.4	2.2	1.9
Nickel Leachate	µg/L	-	10	<10	<10	<10
Selenium Leachate	µg/L	-	5.0	<5.0	<5.0	<5.0
Silver Leachate	µg/L	0.3	0.10	<0.10	<0.10	<0.10
Thallium Leachate	µg/L	2	0.5	<0.5	<0.5	<0.5
Uranium Leachate	µg/L	-	2	<2	<2	<2
Vanadium Leachate	µg/L	-	0.6	<0.6	<0.6	0.9
Zinc Leachate	µg/L	-	20	<20	<20	<20

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5677462-5677485 Leachate for metal testing was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

		SAMPLE DESCRIPTION:		BH1 SS2	BH2 SS3	BH5 SS1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-02-24	2024-02-24	2024-02-24 12:00
Parameter	**Unit**	**G / S**	**RDL**	**5677460**	**5677463**	**5677467**
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	15.6	11.8	9.0
Surrogate	**Unit**	**Acceptable Limits**				
Naphthalene-d8	%	50-140		104	88	71
Acridine-d9	%	50-140		74	91	74
Terphenyl-d14	%	50-140		83	88	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5677460-5677467 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 153(511) - PHCs F1 - F4 (with VOC) (Soil)

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

				SAMPLE DESCRIPTION:	BH1 SS3	BH3 SS1	BH5 SS2
				SAMPLE TYPE:	Soil	Soil	Soil
				DATE SAMPLED:	2024-02-24	2024-02-24	2024-02-24 12:00
Parameter	**Unit**	**G / S**	**RDL**		**5677461**	**5677464**	**5677468**
F1 (C6 to C10)	µg/g		5		<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5		<5	<5	<5
F2 (C10 to C16)	µg/g	10	10		<10	<10	<10
F3 (C16 to C34)	µg/g	240	50		<50	<50	<50
F4 (C34 to C50)	µg/g	120	50		<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50		NA	NA	NA
Moisture Content	%		0.1		13.8	13.8	9.6
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	%	50-140			96	95	96
Terphenyl	%	60-140			90	72	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5677461-5677468 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

		SAMPLE DESCRIPTION:		BH1 SS3	BH3 SS1	BH5 SS2
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-02-24	2024-02-24	2024-02-24 12:00
Parameter	Unit	G / S	RDL	5677461	5677464	5677468
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05

Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 153(511) - VOCs (with PHC) (Soil)

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

				SAMPLE DESCRIPTION:	BH1 SS3	BH3 SS1	BH5 SS2
				SAMPLE TYPE:	Soil	Soil	Soil
				DATE SAMPLED:	2024-02-24	2024-02-24	2024-02-24 12:00
Parameter	**Unit**	**G / S**	**RDL**		**5677461**	**5677464**	**5677468**
m & p-Xylene	ug/g		0.05		<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05		<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05		<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05		<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05		<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05		<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05		<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05		<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05		<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.05		<0.05	<0.05	<0.05
n-Hexane	µg/g	0.05	0.05		<0.05	<0.05	<0.05
Moisture Content	%		0.1		13.8	13.8	9.6
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	% Recovery	50-140			96	95	96
4-Bromofluorobenzene	% Recovery	50-140			88	96	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5677461-5677468 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

O. Reg. 406/19 - SPLP VOCs

DATE RECEIVED: 2024-02-26

DATE REPORTED: 2024-03-01

				SAMPLE DESCRIPTION:	BH2 SS3	BH3 SS1	BH4 SS1
				SAMPLE TYPE:	Soil	Soil	Soil
				DATE SAMPLED:	2024-02-24	2024-02-24	2024-02-24 12:00
Parameter	**Unit**	**G / S**	**RDL**		**5677463**	**5677464**	**5677465**
Bromomethane Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
1,1-Dichloroethylene Leachate	µg/L	0.5	0.30		<0.30	<0.30	<0.30
Trans 1,2-Dichloroethylene Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
1,1-Dichloroethane Leachate	µg/L	0.5	0.30		<0.30	<0.30	<0.30
Cis 1,2-Dichloroethylene Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
Chloroform Leachate	µg/L	1	0.20		<0.20	<0.20	<0.20
1,2-Dichloroethane Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
Carbon Tetrachloride Leachate	µg/L	0.2	0.20		<0.20	<0.20	<0.20
1,2-Dichloropropane Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
Trichloroethylene Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
1,1,2-Trichloroethane Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
Ethylene Dibromide Leachate	µg/L	0.2	0.10		<0.10	<0.10	<0.10
Tetrachloroethylene Leachate	µg/L	0.5	0.20		<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane Leachate	µg/L	0.5	0.10		<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane Leachate	µg/L	0.5	0.10		<0.10	<0.10	<0.10
1,4-Dichlorobenzene Leachate	µg/L	0.5	0.10		<0.10	<0.10	<0.10
1,2-Dichlorobenzene Leachate	µg/L	0.55	0.10		<0.10	<0.10	<0.10
1,3-Dichloropropene Total Leachate	µg/L	0.5	0.30		<0.30	<0.30	<0.30
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	% Recovery	50-140			98	95	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 406/19 TABLE 1: Full Depth Background Site Condition - RPIC
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5677463-5677465 Leachate was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP. This is a validated, unaccredited procedure.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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Exceedance Summary

AGAT WORK ORDER: 24T123947

PROJECT: 231080

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
5677461	BH1 SS3	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	µg/g	220	276
5677461	BH1 SS3	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.913
5677464	BH3 SS1	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Boron	µg/g	36	39
5677464	BH3 SS1	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Cadmium	µg/g	1.2	2.0
5677464	BH3 SS1	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	1.84
5677464	BH3 SS1	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	5.68
5677464	BH3 SS1	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	290	757
5677466	BH4 SS2	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	µg/g	220	505
5677466	BH4 SS2	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Beryllium	µg/g	2.5	6.0
5677466	BH4 SS2	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Boron	µg/g	36	51
5677466	BH4 SS2	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	3.83
5677466	BH4 SS2	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Selenium	µg/g	1.5	2.3
5677466	BH4 SS2	ON 406/19 T1 RPIC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Uranium	µg/g	2.5	2.97

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Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 24T123947

PROJECT: 231080

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

Soil Analysis

RPT Date: Mar 01, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	5671085		<0.8	<0.8	NA	< 0.8	75%	70%	130%	102%	80%	120%	101%	70%	130%
Arsenic	5671085		4	4	NA	< 1	110%	70%	130%	100%	80%	120%	105%	70%	130%
Barium	5671085		150	165	9.5%	< 2.0	112%	70%	130%	98%	80%	120%	114%	70%	130%
Beryllium	5671085		0.9	0.9	NA	< 0.5	109%	70%	130%	105%	80%	120%	118%	70%	130%
Boron	5671085		12	13	NA	< 5	90%	70%	130%	98%	80%	120%	102%	70%	130%
Boron (Hot Water Soluble)	5685165		<0.10	<0.10	NA	< 0.10	111%	60%	140%	103%	70%	130%	97%	60%	140%
Cadmium	5671085		<0.5	<0.5	NA	< 0.5	91%	70%	130%	98%	80%	120%	92%	70%	130%
Chromium	5671085		34	37	8.5%	< 5	120%	70%	130%	98%	80%	120%	98%	70%	130%
Cobalt	5671085		11.4	12.4	8.4%	< 0.8	112%	70%	130%	101%	80%	120%	106%	70%	130%
Copper	5671085		21.4	22.9	6.8%	< 1.0	107%	70%	130%	96%	80%	120%	104%	70%	130%
Lead	5671085		11	12	8.7%	< 1	108%	70%	130%	94%	80%	120%	91%	70%	130%
Molybdenum	5671085		<0.5	<0.5	NA	< 0.5	118%	70%	130%	112%	80%	120%	109%	70%	130%
Nickel	5671085		22	25	12.8%	< 1	109%	70%	130%	94%	80%	120%	101%	70%	130%
Selenium	5671085		<0.8	<0.8	NA	< 0.8	99%	70%	130%	104%	80%	120%	104%	70%	130%
Silver	5671085		<0.5	<0.5	NA	< 0.5	112%	70%	130%	95%	80%	120%	88%	70%	130%
Thallium	5671085		<0.5	<0.5	NA	< 0.5	117%	70%	130%	101%	80%	120%	98%	70%	130%
Uranium	5671085		0.69	0.72	NA	< 0.50	110%	70%	130%	97%	80%	120%	101%	70%	130%
Vanadium	5671085		49.0	53.4	8.6%	< 2.0	81%	70%	130%	95%	80%	120%	111%	70%	130%
Zinc	5671085		67	74	9.9%	< 5	113%	70%	130%	98%	80%	120%	101%	70%	130%
Chromium, Hexavalent	5671544		<0.2	<0.2	NA	< 0.2	86%	70%	130%	98%	80%	120%	71%	70%	130%
Cyanide, WAD	5671527		<0.040	<0.040	NA	< 0.040	91%	70%	130%	96%	80%	120%	92%	70%	130%
Mercury	5671085		<0.10	<0.10	NA	< 0.10	115%	70%	130%	109%	80%	120%	108%	70%	130%
Electrical Conductivity (2:1)	5685165		0.553	0.530	4.2%	< 0.005	104%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	5671085		0.359	0.359	0.0%	NA									
pH, 2:1 CaCl2 Extraction	5671553		6.49	6.74	3.8%	NA	100%	80%	120%						

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
Duplicate NA: results are under 5X the RDL and will not be calculated.

O. Reg. 406/19 - SPLP Metals															
Antimony Leachate	5677725		<0.6	<0.6	NA	< 0.6	100%	70%	130%	94%	80%	120%	94%	70%	130%
Arsenic Leachate	5677725		<5	<5	NA	< 5	102%	70%	130%	107%	80%	120%	102%	70%	130%
Barium Leachate	5677725		<100	<100	NA	< 100	99%	70%	130%	97%	80%	120%	92%	70%	130%
Beryllium Leachate	5677725		<0.8	<0.8	NA	< 0.8	102%	70%	130%	123%	80%	120%	119%	70%	130%
Boron Leachate	5677725		<500	<500	NA	< 500	101%	70%	130%	118%	80%	120%	113%	70%	130%
Cadmium Leachate	5677725		<0.20	<0.20	NA	< 0.20	99%	70%	130%	99%	80%	120%	96%	70%	130%
Chromium Leachate	5677725		<10	<10	NA	< 10	101%	70%	130%	104%	80%	120%	99%	70%	130%
Cobalt Leachate	5677725		<0.3	<0.3	NA	< 0.3	101%	70%	130%	107%	80%	120%	99%	70%	130%
Copper Leachate	5677725		<6.9	<6.9	NA	< 6.9	100%	70%	130%	106%	80%	120%	103%	70%	130%

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SAMPLING SITE:Hamilton

SAMPLED BY:RM

Soil Analysis (Continued)

RPT Date: Mar 01, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Lead Leachate	5677725		<1.0	<1.0	NA	< 1.0	96%	70%	130%	93%	80%	120%	97%	70%	130%
Molybdenum Leachate	5677725		<1.5	<1.5	NA	< 1.5	100%	70%	130%	111%	80%	120%	115%	70%	130%
Nickel Leachate	5677725		<10	<10	NA	< 10	101%	70%	130%	106%	80%	120%	99%	70%	130%
Selenium Leachate	5677725		<5.0	5.4	NA	< 5.0	96%	70%	130%	105%	80%	120%	103%	70%	130%
Silver Leachate	5677725		<0.10	<0.10	NA	< 0.10	99%	70%	130%	101%	80%	120%	101%	70%	130%
Thallium Leachate	5677725		<0.5	<0.5	NA	< 0.5	95%	70%	130%	95%	80%	120%	94%	70%	130%
Uranium Leachate	5677725		<2	<2	NA	< 2	93%	70%	130%	93%	80%	120%	100%	70%	130%
Vanadium Leachate	5677725		1.3	1.0	NA	< 0.6	101%	70%	130%	98%	80%	120%	95%	70%	130%
Zinc Leachate	5677725		<20	<20	NA	< 20	100%	70%	130%	105%	80%	120%	100%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

Certified By:

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Trace Organics Analysis

RPT Date: Mar 01, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	5637362		<0.05	<0.05	NA	< 0.05	101%	50%	140%	73%	50%	140%	78%	50%	140%
Acenaphthylene	5637362		<0.05	<0.05	NA	< 0.05	102%	50%	140%	73%	50%	140%	73%	50%	140%
Acenaphthene	5637362		<0.05	<0.05	NA	< 0.05	104%	50%	140%	105%	50%	140%	73%	50%	140%
Fluorene	5637362		<0.05	<0.05	NA	< 0.05	103%	50%	140%	103%	50%	140%	73%	50%	140%
Phenanthrene	5637362		<0.05	<0.05	NA	< 0.05	110%	50%	140%	110%	50%	140%	88%	50%	140%
Anthracene	5637362		<0.05	<0.05	NA	< 0.05	105%	50%	140%	95%	50%	140%	73%	50%	140%
Fluoranthene	5637362		<0.05	<0.05	NA	< 0.05	109%	50%	140%	95%	50%	140%	73%	50%	140%
Pyrene	5637362		<0.05	<0.05	NA	< 0.05	106%	50%	140%	103%	50%	140%	83%	50%	140%
Benz(a)anthracene	5637362		<0.05	<0.05	NA	< 0.05	94%	50%	140%	93%	50%	140%	88%	50%	140%
Chrysene	5637362		<0.05	<0.05	NA	< 0.05	108%	50%	140%	83%	50%	140%	75%	50%	140%
Benzo(b)fluoranthene	5637362		<0.05	<0.05	NA	< 0.05	88%	50%	140%	83%	50%	140%	90%	50%	140%
Benzo(k)fluoranthene	5637362		<0.05	<0.05	NA	< 0.05	111%	50%	140%	78%	50%	140%	100%	50%	140%
Benzo(a)pyrene	5637362		<0.05	<0.05	NA	< 0.05	92%	50%	140%	100%	50%	140%	100%	50%	140%
Indeno(1,2,3-cd)pyrene	5637362		<0.05	<0.05	NA	< 0.05	82%	50%	140%	73%	50%	140%	80%	50%	140%
Dibenz(a,h)anthracene	5637362		<0.05	<0.05	NA	< 0.05	81%	50%	140%	75%	50%	140%	75%	50%	140%
Benzo(g,h,i)perylene	5637362		<0.05	<0.05	NA	< 0.05	104%	50%	140%	88%	50%	140%	78%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with VOC) (Soil)															
F1 (C6 to C10)	5677941		<5	<5	NA	< 5	94%	60%	140%	91%	60%	140%	93%	60%	140%
F2 (C10 to C16)	5661165		< 10	< 10	NA	< 10	102%	60%	140%	103%	60%	140%	100%	60%	140%
F3 (C16 to C34)	5661165		< 50	< 50	NA	< 50	102%	60%	140%	116%	60%	140%	124%	60%	140%
F4 (C34 to C50)	5661165		< 50	< 50	NA	< 50	81%	60%	140%	101%	60%	140%	101%	60%	140%
O. Reg. 153(511) - VOCs (with PHC) (Soil)															
Dichlorodifluoromethane	5669007		<0.05	<0.05	NA	< 0.05	107%	50%	140%	63%	50%	140%	113%	50%	140%
Vinyl Chloride	5669007		<0.02	<0.02	NA	< 0.02	71%	50%	140%	106%	50%	140%	107%	50%	140%
Bromomethane	5669007		<0.05	<0.05	NA	< 0.05	119%	50%	140%	103%	50%	140%	104%	50%	140%
Trichlorofluoromethane	5669007		<0.05	<0.05	NA	< 0.05	114%	50%	140%	110%	50%	140%	101%	50%	140%
Acetone	5669007		<0.50	<0.50	NA	< 0.50	92%	50%	140%	92%	50%	140%	103%	50%	140%
1,1-Dichloroethylene	5669007		<0.05	<0.05	NA	< 0.05	103%	50%	140%	114%	60%	130%	81%	50%	140%
Methylene Chloride	5669007		<0.05	<0.05	NA	< 0.05	89%	50%	140%	103%	60%	130%	103%	50%	140%
Trans- 1,2-Dichloroethylene	5669007		<0.05	<0.05	NA	< 0.05	91%	50%	140%	111%	60%	130%	115%	50%	140%
Methyl tert-butyl Ether	5669007		<0.05	<0.05	NA	< 0.05	71%	50%	140%	107%	60%	130%	118%	50%	140%
1,1-Dichloroethane	5669007		<0.02	<0.02	NA	< 0.02	92%	50%	140%	113%	60%	130%	118%	50%	140%
Methyl Ethyl Ketone	5669007		<0.50	<0.50	NA	< 0.50	95%	50%	140%	91%	50%	140%	82%	50%	140%
Cis- 1,2-Dichloroethylene	5669007		<0.02	<0.02	NA	< 0.02	101%	50%	140%	110%	60%	130%	118%	50%	140%
Chloroform	5669007		<0.04	<0.04	NA	< 0.04	99%	50%	140%	112%	60%	130%	115%	50%	140%
1,2-Dichloroethane	5669007		<0.03	<0.03	NA	< 0.03	92%	50%	140%	114%	60%	130%	102%	50%	140%
1,1,1-Trichloroethane	5669007		<0.05	<0.05	NA	< 0.05	72%	50%	140%	85%	60%	130%	90%	50%	140%
Carbon Tetrachloride	5669007		<0.05	<0.05	NA	< 0.05	70%	50%	140%	76%	60%	130%	82%	50%	140%

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Trace Organics Analysis (Continued)

RPT Date: Mar 01, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	5669007		<0.02	<0.02	NA	< 0.02	110%	50%	140%	113%	60%	130%	96%	50%	140%
1,2-Dichloropropane	5669007		<0.03	<0.03	NA	< 0.03	91%	50%	140%	98%	60%	130%	73%	50%	140%
Trichloroethylene	5669007		<0.03	<0.03	NA	< 0.03	108%	50%	140%	109%	60%	130%	101%	50%	140%
Bromodichloromethane	5669007		<0.05	<0.05	NA	< 0.05	78%	50%	140%	102%	60%	130%	77%	50%	140%
Methyl Isobutyl Ketone	5669007		<0.50	<0.50	NA	< 0.50	115%	50%	140%	111%	50%	140%	76%	50%	140%
1,1,2-Trichloroethane	5669007		<0.04	<0.04	NA	< 0.04	106%	50%	140%	118%	60%	130%	89%	50%	140%
Toluene	5669007		<0.05	<0.05	NA	< 0.05	108%	50%	140%	114%	60%	130%	104%	50%	140%
Dibromochloromethane	5669007		<0.05	<0.05	NA	< 0.05	83%	50%	140%	80%	60%	130%	87%	50%	140%
Ethylene Dibromide	5669007		<0.04	<0.04	NA	< 0.04	76%	50%	140%	94%	60%	130%	104%	50%	140%
Tetrachloroethylene	5669007		<0.05	<0.05	NA	< 0.05	89%	50%	140%	99%	60%	130%	100%	50%	140%
1,1,1,2-Tetrachloroethane	5669007		<0.04	<0.04	NA	< 0.04	81%	50%	140%	73%	60%	130%	73%	50%	140%
Chlorobenzene	5669007		<0.05	<0.05	NA	< 0.05	111%	50%	140%	120%	60%	130%	116%	50%	140%
Ethylbenzene	5669007		<0.05	<0.05	NA	< 0.05	72%	50%	140%	89%	60%	130%	80%	50%	140%
m & p-Xylene	5669007		<0.05	<0.05	NA	< 0.05	97%	50%	140%	116%	60%	130%	106%	50%	140%
Bromoform	5669007		<0.05	<0.05	NA	< 0.05	71%	50%	140%	106%	60%	130%	77%	50%	140%
Styrene	5669007		<0.05	<0.05	NA	< 0.05	112%	50%	140%	111%	60%	130%	103%	50%	140%
1,1,2,2-Tetrachloroethane	5669007		<0.05	<0.05	NA	< 0.05	83%	50%	140%	101%	60%	130%	106%	50%	140%
o-Xylene	5669007		<0.05	<0.05	NA	< 0.05	107%	50%	140%	104%	60%	130%	109%	50%	140%
1,3-Dichlorobenzene	5669007		<0.05	<0.05	NA	< 0.05	108%	50%	140%	96%	60%	130%	103%	50%	140%
1,4-Dichlorobenzene	5669007		<0.05	<0.05	NA	< 0.05	104%	50%	140%	101%	60%	130%	102%	50%	140%
1,2-Dichlorobenzene	5669007		<0.05	<0.05	NA	< 0.05	110%	50%	140%	101%	60%	130%	115%	50%	140%
n-Hexane	5669007		<0.05	<0.05	NA	< 0.05	97%	50%	140%	72%	60%	130%	80%	50%	140%
O. Reg. 406/19 - SPLP VOCs															
Bromomethane Leachate	5669007		<0.20	<0.20	NA	< 0.20	119%	50%	140%	103%	50%	140%	104%	50%	140%
1,1-Dichloroethylene Leachate	5669007		<0.30	<0.30	NA	< 0.30	103%	50%	140%	114%	60%	130%	81%	50%	140%
Trans 1,2-Dichloroethylene Leachate	5669007		<0.20	<0.20	NA	< 0.20	91%	50%	140%	111%	60%	130%	115%	50%	140%
1,1-Dichloroethane Leachate	5669007		<0.30	<0.30	NA	< 0.30	92%	50%	140%	113%	60%	130%	118%	50%	140%
Cis 1,2-Dichloroethylene Leachate	5669007		<0.20	<0.20	NA	< 0.20	101%	50%	140%	110%	60%	130%	118%	50%	140%
Chloroform Leachate	5669007		<0.20	<0.20	NA	< 0.20	99%	50%	140%	112%	60%	130%	115%	50%	130%
1,2-Dichloroethane Leachate	5669007		<0.20	<0.20	NA	< 0.20	92%	50%	140%	114%	60%	130%	102%	50%	140%
Carbon Tetrachloride Leachate	5669007		<0.20	<0.20	NA	< 0.20	70%	50%	140%	76%	60%	130%	82%	50%	140%
1,2-Dichloropropane Leachate	5669007		<0.20	<0.20	NA	< 0.20	91%	50%	140%	98%	60%	130%	73%	50%	140%
Trichloroethylene Leachate	5669007		<0.20	<0.20	NA	< 0.20	108%	50%	140%	109%	60%	130%	101%	50%	140%
1,1,2-Trichloroethane Leachate	5669007		<0.20	<0.20	NA	< 0.20	106%	50%	140%	118%	60%	130%	89%	50%	140%
Ethylene Dibromide Leachate	5669007		<0.10	<0.10	NA	< 0.10	76%	50%	140%	94%	60%	130%	104%	50%	140%
Tetrachloroethylene Leachate	5669007		<0.20	<0.20	NA	< 0.20	107%	50%	140%	108%	60%	130%	113%	50%	140%
1,1,1,2-Tetrachloroethane Leachate	5669007		<0.10	<0.10	NA	< 0.10	81%	50%	140%	73%	60%	130%	73%	50%	140%
1,1,2,2-Tetrachloroethane Leachate	5669007		<0.10	<0.10	NA	< 0.10	83%	50%	140%	101%	60%	130%	106%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 24T123947

PROJECT: 231080

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

Trace Organics Analysis (Continued)

RPT Date: Mar 01, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,4-Dichlorobenzene Leachate	5669007		<0.10	<0.10	NA	< 0.10	104%	50%	140%	101%	60%	130%	102%	50%	140%
1,2-Dichlorobenzene Leachate	5669007		<0.10	<0.10	NA	< 0.10	110%	50%	140%	101%	60%	130%	115%	50%	140%

Certified By: N Popnikolof

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QC Exceedance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 24T123947

PROJECT: 231080

ATTENTION TO: Ishan Chauhan; Nathan Sears

RPT Date: Mar 01, 2024		REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Sample Id	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 406/19 - SPLP Metals										
Beryllium Leachate		102%	70%	130%	123%	80%	120%	119%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Method Summary

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ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE
Antimony Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Arsenic Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Barium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Beryllium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

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SAMPLED BY:RM

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Cadmium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Cobalt Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Copper Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Lead Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Molybdenum Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Nickel Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Thallium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Vanadium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Zinc Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 24T123947

PROJECT: 231080

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
Bromomethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trans 1,2-Dichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Cis 1,2-Dichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 24T123947

PROJECT: 231080

ATTENTION TO: Ishan Chauhan; Nathan Sears

SAMPLING SITE:Hamilton

SAMPLED BY:RM

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,2-Dichlorobenzene Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene Total Leachate	VOL-91-5001	modified from EPA 1312, EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 24T123947

Cooler Quantity: 7 [illegible]

Arrival Temperatures: [illegible]

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes: [illegible]

Report Information:

Company: Soil Mat

Contact:

Address: 401 Grays Rd

Phone: Fax:

Reports to be sent to:

1. Email: Ishan Chauhan
2. Email: Madan Seng

Regulatory Requirements:

(Please check all applicable boxes)

- ☐ Regulation 153/04 — Table ___ *Indicate One* — ☐Ind/Com ☐Res/Park ☐Agriculture
- Soil Texture *(Check One)* ☐Coarse ☐Fine
- ☑ Regulation 406 — Table ✓ *Indicate One*
- ☐ Regulation 558
- ☐ CCME
- ☐ Sewer Use — ☐Sanitary ☐Storm — *Region*
- ☐ Prov. Water Quality Objectives (PWQO)
- ☐ Other — *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT

TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 231 08?

Site Location: Hamilton

Sampled By: Rod M'Queen

AGAT Quote #: PO:

Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:

Contact:

Address:

Email:

Sample Matrix Legend

GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y / N	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	BTEX, F1-F4 PHCs	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐M&I ☐VOCs ☐ABNs ☐B(a)P ☐PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☑Metals ☐VOCs ☐SVOCs	Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide							Potentially Hazardous or High Concentration (Y/N)
1. BH1 SS 2	2/24	Am AM/PM	1								✓													
2. BH1 SS 3		AM/PM	3				✓		✓	✓														
3.		AM/PM																						
4. BH 2 SS 2		AM/PM	1												M									
5. BH 2 SS 3		AM/PM	2								✓				Voc									
6.		AM/PM																						
7. BH3 SS1		AM/PM	4				✓		✓	✓					VOC									
8. BH3 SS2		AM/PM	1												M									
9.		AM/PM																						
10. BH4 SS1		Pm AM/PM	1												VOC									
11. BH4 SS2		AM/PM	1				✓																	

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
			[illegible signature]	Feb 26	5/2

Page 1 of 2

Nº: T - 143892

Pink Copy - Client I Yellow Copy - AGAT I White Copy- AGAT

Document ID: DIV-78-1511.022

Any and all products and/or services provided by AGAT Labs are pursuant to the terms and conditions as set forth at www.agatlabs.com/termsandconditions unless otherwise agreed in a current written contractual document.

Date Issued: Mar 30, 2023

AGAT Laboratories

Have feedback? Scan here for a quick survey!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 24T123947

Cooler Quantity:

Arrival Temperatures:

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes: FAES JAS

Report Information:

Company: SOIL MAT

Contact: ISHAN CHAUHAN

Address: 401 GUELPH

Phone: Fax:

Reports to be sent to:

1. Email: ISHAN CHAUHAN

2. Email: NATHAN SEARS

Project Information:

Project: 231080

Site Location: HAMILTON

Sampled By: Rob McLeod

AGAT Quote #: PO:

Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:

Contact:

Address:

Email:

Regulatory Requirements:

(Please check all applicable boxes)

☐ Regulation 153/04
Table _____ *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☑ Regulation 406
Table 1 *Indicate One*

☐ Regulation 558

☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
_____ *Region*

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
_____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☐ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT

**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: VOC	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	Potentially Hazardous or High Concentration (Y/N)
1. BH 5 SS 1	2/24/24	5PM AM PM	1								X							
2. BH 5 SS 2		AM PM	3						X	X					M			
3.		AM PM																
4.		AM PM																
5.		AM PM																
6.		AM PM																
7.		AM PM																
8.		AM PM																
9.		AM PM																
10.		AM PM																
11.		AM PM																

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
			TK	Feb 26	5PM
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 2 of 2

N°: T-143891

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

AGAT Laboratories

Sample Temperature Log

Client: Soil Mat

COC# or Work Order #: 24T123947

# of Coolers: 7 Large

# of Submissions:

Arrival Temperatures - Branch/Driver

Loose ice

Cooler #1:	4.9	5.0	5.9
Cooler #2:	4.7	4.3	4.4
Cooler #3:	5.9	5.0	5.2
Cooler #4:	5.3	5.5	5.2
Cooler #5:	4.2	4.3	4.4
Cooler #6:	4.5	4.6	4.7
Cooler #7:	3.9	3.8	3.2
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Tiffany Pearson

Date (yyyy/mm/dd): 2024/02/26 **Time:** 5:00 AM / PM

Arrival Temperatures - Laboratory

Cooler #1:			
Cooler #2:			
Cooler #3:			
Cooler #4:			
Cooler #5:			
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By:

Date (yyyy/mm/dd): **Time:** : AM / PM

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

SOIL-MAT ENGINEERS & CONSULTANTS LTD.

401 Grays Road · Hamilton, ON · L8E 2Z3

www.soil-mat.ca info@soil-mat.ca 905.318.7440 / 800.243.1922 (*toll free*) 905.318.7455

PROJECT NO.: SM 231080-G March 26, 2024

RIMKUS
2121 Argentia Road, 4th Floor
Mississauga, Ontario
L5N 2X4

Attention: Hanish Chundi, M. Eng., EIT
Project Coordinator

GEOTECHNICAL INVESTIGATION
PROPOSED PAVEMENT RECONSTRUCTION
1292 CANNON STREET EAST
HAMILTON, ONTARIO

Dear Mr. Chundi,

Further to your authorisation SOIL-MAT ENGINEERS & CONSULTANTS LTD. has completed the fieldwork, laboratory testing and report preparation in connection with the above noted project. This work was conducted in general accordance with our proposal P231080 dated January 18, 2024. Our recommendations, based on the findings at the five [5] borehole locations, are presented in the following paragraphs.

1. INTRODUCTION

We understand that the project will involve the reconstruction of the asphalt play area and the construction of an artificial turf field at Queen Mary Elementary School, located at 1292 Cannon Street East in Hamilton, Ontario. The purpose of this geotechnical investigation work is to assess the existing pavement structure and subsurface soil conditions, and to provide our comments and recommendations with respect to the proposed pavement reconstruction, from a geotechnical point of view.

This report is based on the above summarised project, and on the assumption that the design and construction will be performed in accordance with applicable codes and standards. Any significant deviations from the proposed project design may void the recommendations given in this report. If significant changes are made to the proposed design, this office must be consulted to review the new design with respect to the results of this investigation.

PROCEDURE

A total of five [5] sampled boreholes were advanced at the locations illustrated in the attached Drawing No. 1, Borehole Location Plan. The boreholes were advanced using continuous flight power auger equipment on February 24, 2024 under the direction and supervision of a staff member of SOIL-MAT ENGINEERS & CONSULTANTS LTD., to termination at depths of between approximately 1.3 to 2.1 metres below the existing ground surface. On completion of drilling, all of the boreholes were backfilled in general accordance with Ontario Regulation 903 and the ground surface reinstated even with the existing grade using a pre-mixed asphalt 'cold patch' product.

Representative samples of the subsoils were recovered from the borings at selected depth intervals using split barrel sampling equipment driven in accordance with the requirements of the ASTM test specification D1586, Standard Penetration Resistance Testing. After undergoing a general field examination, the soil samples were preserved and transported to the SOIL-MAT laboratory for visual, tactile, and olfactory classifications. Routine moisture content tests were performed on all soil samples recovered from the borings. Additionally, one [1] selected soil sample was subjected to laboratory grain size analysis.

The boreholes were located on site by a representative of SOIL-MAT ENGINEERS & CONSULTANTS LTD., based on accessibility across the site and clearance of underground services, and in accordance with the drawing provided to our office. The ground surface elevation at the borehole locations were referenced to an existing ground surface.

Details of the conditions encountered in the boreholes, together with the results of the field and laboratory tests, are presented in Borehole Log Nos. 1 to 5, inclusive, following the text of this report. It is noted that the boundaries of soil types indicated on the borehole logs are inferred from non-continuous soil sampling and observations made during drilling. These boundaries are intended to reflect transition zones for the purpose of geotechnical design and should not be construed as the exact planes of geological change.

2. SITE DESCRIPTION AND SUBSURFACE CONDITIONS

The subject project area is consist of asphalt paved play area within the Queens Mary Elementary School property, on the west side of the school building, located at 1292 Cannon Street East in Hamilton, Ontario. The site is bounded to the north by Cannon Street East, to the east by residential properties, to the south by Roxborough Avenue and to the west by Province Street North. The site is within a residential area of Hamilton, with the surrounding lands comprised of dwellings with a park to the south. The subject property is relatively flat and even, with the adjacent Province Street North.

The subsurface conditions encountered at the borehole locations are summarised as follows:

Pavement Structure

All of the boreholes were advanced through the pavement structure of the existing play area, which was found to consist of approximately 40 to 65 millimetres of asphaltic concrete overlying approximately 300 to 650 millimetres of granular base material. The pavement surface in the play area was noted to generally be in poor to fair condition with frequent longitudinal and transverse cracking, and occasional alligator cracking, consistent with age related distress of the asphalt surface, as well as possible areas of subgrade failure. The pavement structure encountered at the borehole locations has been summarized as follows:

TABLE A – PAVEMENT STRUCTURE ENCOUNTERED

Borehole No.	Asphaltic Concrete (mm)	Granular Base (mm)
1	65	500
2	40	650
3	50	300
4	40	300
5	40	450

Sand and Gravel Fill

Sand and gravel fill material was encountered beneath the pavement structure in Borehole Nos. 1 and 4. The fill material was brown in colour, noted occasional construction debris, noted to be in compact condition and was proven termination at a depth of approximately 1.3 to 1.4 metres below the existing pavement surface. The sand and gravel fill material encountered may be associated with the construction of the existing pavement structure, and/or may be trench backfill associated with existing underground infrastructure. It is noted that fill deposits of greater depth and composition varying from those identified at the borehole locations may be present across the site.

Silty Clay/Clayey Silt

Silty clay/clayey silt was encountered below the pavement structure at all of the borehole locations with the exception of Borehole No. 4. The cohesive soils were brown to red in colour, and was generally noted to be very stiff to very stiff in consistency. The native cohesive soils were proven to termination/sampling spoon refusal on at depths of between approximately 1.4 to 2.1 metres below the existing pavement surface. The lower levels of the native silty clay/clayey silt encountered became red in colour and hard in consistency, yielding sampling spoon refusal at depths of approximately 2 metres in some locations. This is consistent with the transition in the overburden cohesive soils to weathered Queenston shale bedrock, present at relatively shallow depths in the area.

The upper levels of the silty clay/clayey silt encountered generally had a reworked/weathered appearance, in some cases appearing to contain inclusions of construction debris, and may be fill associated with the construction of the school facility, having been subjected to ongoing freeze-thaw cycles and traffic loads.

Queenston Shale

The native overburden soils transitioned to red weathered Queenston shale bedrock at depths of approximately 2 metres below the existing ground surface at all borehole locations with the exception of Borehole No. 4. The Queenston shale bedrock is red in colour, with occasional grey, more resistant grey layers, and is highly weathered in the upper levels, becoming more sound with depth. It is noted that the upper levels of the Queenston shale bedrock are severely weathered, exhibiting characteristics of a very stiff to hard cohesive soil. As such, the transition from the cohesive overburden soils to Queenston shale bedrock is somewhat indistinct. The Queenston shale bedrock was not cored as part of this investigation.

A review of available published information [Quaternary Geology of Ontario, Southern Sheet Map 2556] indicate the subsurface soils in the area is consist of a thin layer of overburden soil with Queenston shale bedrock at relatively shallow depths. This is consistent with our experience in the area, and our observations during drilling.

Groundwater Observations

All the boreholes were recorded as 'dry' upon completion of drilling, with the exception of Borehole Nos. 1 and 3, which were recorded to be 'wet' at depths of approximately 1.4 and 0.6 metres, respectively. It is noted that insufficient time would have passed for the groundwater level to stabilise in the open boreholes, and the observed water levels are likely due to perched deposits within permeable seams and granular fill material, are not considered reflective of the static groundwater level. Based on our experience in the area and observation during drilling, static ground water level is expected to be within Queenston shale bedrock, below the depths of this investigation and anticipated depth of construction. Regardless, shallower, perched deposits of water within granular material, fill deposits, etc., as well as from surface runoff, should be expected, especially during the 'wet' times of the year.

3. PAVEMENT RECONSTRUCTION CONSIDERATIONS

As noted above, the pavement structure was noted to be in poor to fair condition, with some to frequent longitudinal and transverse cracking, alligator cracking, exhibiting signs of age-related distress of the pavement surface, as well as areas of potential subgrade failure. The existing pavement structure was noted to consist of approximately 40 to 65 millimetres of asphaltic concrete overlying approximately 300 to 650 millimetres of granular base material. Based on the observed granular base depths, subgrade condition, etc., and the expected loads being predominately pedestrian with occasional light duty vehicles and snow clearing equipment, a partial depth reconstruction may be considered sufficient over the 'light duty' portions of the pavement subjected to predominately pedestrian/students, and occasional maintenance equipment. Of course where areas of severe distress/subgrade failure are evident, or where traffic loads are expected to be greater such as due to buses, delivery vehicles, etc., local full depth reconstruction may be warranted.

It is noted that a full depth reconstruction would provide the longest lifespan and lower maintenance costs at an increased initial cost, where a partial depth reconstruction option would have a reduced lifespan and initial cost, with increased maintenance requirements versus a full depth reconstruction. Given the depth of granular material encountered on site, placement of additional granular material is not anticipated to be feasible in most of the areas, however if a partial depth reconstruction is pursued, the additional of granular materials would serve increase the lifespan of the new pavement structure.

PARTIAL DEPTH RECONSTRUCTION

Partial depth reconstruction of the pavement structure would typically consist of a 'peel and pave' or 'pulverised and pave' method. A 'peel and pave' approach would involve the removal of the asphalt layers, re-grading and compaction of the existing granular base material, and placement of additional granular materials and new asphaltic concrete. Where feasible, as noted above, the provision of additional depth of granular base materials would serve to extend the lifespan of the pavement structure, however it is not anticipated this is possible in most areas. As such, it is not expected that a 'pulverise and pave' approach would be considered feasible either. The existing and any new granular base materials should be compacted to a minimum of 98 per cent of its SPMDD. Where areas of severe distress or subgrade failure, instability of the granular materials, etc., are noted, localised areas of full depth reconstruction would be warranted.

It is understood that the paved playground area would be considered 'light duty' pavement areas, subjected to relatively light loads (cars, occasional trucks, pedestrians/students). A typical suggested asphalt structure for these areas would consist of 50 millimetres of HL8 binder course asphaltic concrete and 40 millimetres of HL3 surface course asphaltic concrete.

A reduced light duty asphalt structure consisting of 65 millimetres of HL3 surface course may also perform sufficiently for the play area, considering area will be subject to play area for children and will be subjected to limited stress. Such a structure may have a reduced lifespan if subjected to heavier vehicles, however, and would also not allow for 'mill and pave' type operations for future rehabilitation. The asphalt should be compacted to a minimum of 92 per cent of their Marshall maximum relative density [MRD]

The outlined partial depth pavement reconstruction may be expected to have an approximate 10 to 15-year service life, assuming that regular maintenance is performed.

FULL DEPTH RECONSTRUCTION

In areas where regular heavy traffic expected, and areas with severe distress noted, a full depth reconstruction would offer best long term performance. A full depth reconstruction would involve the removal of the existing asphaltic concrete and granular base layers to the proposed subgrade elevation. This approach would provide for a full depth of granular base material, with a resulting increased lifespan, and would maintain the existing grades of the area. The existing asphaltic concrete could be pulverised into the existing granular base, and possibly mixed in with new imported granular fill material, to create a well-graded granular product that could be re-used on the project as sub-base course material, depending on the material gradation. If not desired to pulverise and reuse the existing asphalt layers, it should be feasible to reuse the existing granular materials within the sub-base layer of the new pavement structure if they can be sufficiently separated from the underlying subgrade soils during excavation. Laboratory sieve analyses would be required to assess the suitability of the pulverised/existing granular materials.

The exposed subgrade should be well compacted and proof rolled with 3 to 4 passes of a loaded tandem-axle truck in the presence of a representative of SOIL-MAT ENGINEERS & CONSULTANTS LTD., immediately prior to the placement of the sub-base material. Any areas of distress revealed by this or other means should be sub-excavated and replaced with suitable backfill material, such as with suitable on-site granular materials or imported OPSS Granular 'B', Type II (crushed limestone bedrock), compacted to a minimum of 98 per cent of its SPMDD. Alternatively, the soft areas may be repaired by 'punching' coarse aggregate, such as a 50-millimetre clear crushed stone or 'rip rap', into the soft areas. In severe cases, the use of a geofabric separator and/or stabilising geogrid product may be warranted. The need for sub-excavation of softened subgrade materials will be reduced if construction is undertaken during the dry summer months of the year and careful attention is paid to the compaction operations.

The need for sub-excavations of softened subgrade materials will be reduced if construction is undertaken during dry periods of the year and careful attention is paid to the compaction operations. The on-site soils are sensitive to disturbance and moisture and may present difficulty for pavement construction during 'wet' periods of the year, or when the subgrade is left exposed to the elements for extended periods of time. Should pavement construction be undertaken during 'wet' periods of the year it should be anticipated that greater stabilisation efforts will be required and/or additional depth of OPSS Granular 'B' Type II (crushed limestone bedrock), or approved alternative material may be required.

Good drainage provisions will optimise the long-term performance of the pavement structure. The subgrade must be properly crowned and shaped to promote drainage to the subdrain system. Subdrains should be installed to intercept excess subsurface water and to prevent softening of the subgrade material. Surface water should not be allowed to pond adjacent to the outer limits of the paved areas. The most severe loading conditions on the subgrade typically occur during the course of construction, therefore precautionary measures may have to be taken to ensure that the subgrade is not unduly disturbed by construction traffic.

The suggested pavement structures outlined in Table B are based on subgrade parameters estimated on the basis of visual and tactile examinations of the on-site soils and past experience. The outlined pavement structure may be expected to have an approximate fifteen to twenty-year life, assuming that regular maintenance is performed. Should a more detailed pavement structure design be required, site specific traffic information would be needed, together with detailed laboratory testing of the subgrade soils.

TABLE B – TYPICAL SUGGESTED PAVEMENT STRUCTURES

LAYER DESCRIPTION	COMPACTION REQUIREMENTS	LIGHT DUTY SECTIONS	HEAVY DUTY [TRUCK ROUTE]
Asphaltic Concrete Wearing course OPSS HL 3 or HL 3A	92 percent Marshall MRD	40 millimetres	40 millimetres
Binder Course OPSS HL 8	92 percent Marshall MRD	50 millimetres	80 millimetres
Base Course OPSS Granular A	100% SPMDD	150 millimetres	150 millimetres
Sub-base Course OPSS Granular B Type II	100% SPMDD	300 millimetres	450 millimetres

* Marshall MRD denotes Maximum Relative Density.
* SPMDD denotes Standard Proctor Maximum Dry Density, ASTM-D698.

Similar to the partial depth reconstruction, depending on the anticipated traffic, a reduced light duty asphalt structure consisting of 65 millimetres of HL3 surface course may also perform sufficiently for the proposed play area. Such a structure may have a reduced lifespan if subjected to heavier vehicles, however, and would also not allow for ‘mill and pave’ type operations for future rehabilitation.

GENERAL ASPHALT PLACEMENT CONSIDERATIONS

To minimise segregation of the finished asphalt mat, the asphalt temperature must be maintained uniform throughout the mat during placement and compaction. All too often, significant temperature gradients exist in the delivered and placed asphalt with the cooler portions of the mat resisting compaction and presenting a honey combed surface. As the spreader moves forward, a responsible member of the paving crew should monitor the pavement surface, to ensure a smooth uniform surface. Surface segregation can be mitigated by 'back-casting' or scattering shovels of the full mix material over the segregated areas and raking out the coarse particles during compaction operations. Of course, the above assumes that the asphalt mix is sufficiently hot to allow the 'back-casting' to be performed.

4. GENERAL COMMENTS

The comments provided in this document are intended only for the guidance of the design team. The material in it reflects SOIL-MAT ENGINEERS' best judgment in light of the information available to it at the time of preparation. The information presented concerning subsurface soil and groundwater conditions are descriptive of conditions at the borehole locations only. There may be conditions in the study area which are not represented by these investigations. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. SOIL-MAT ENGINEERS accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that this report is sufficient for your present requirements. Should you require any additional information or clarification as to the contents of this document, please do not hesitate to contact the undersigned.

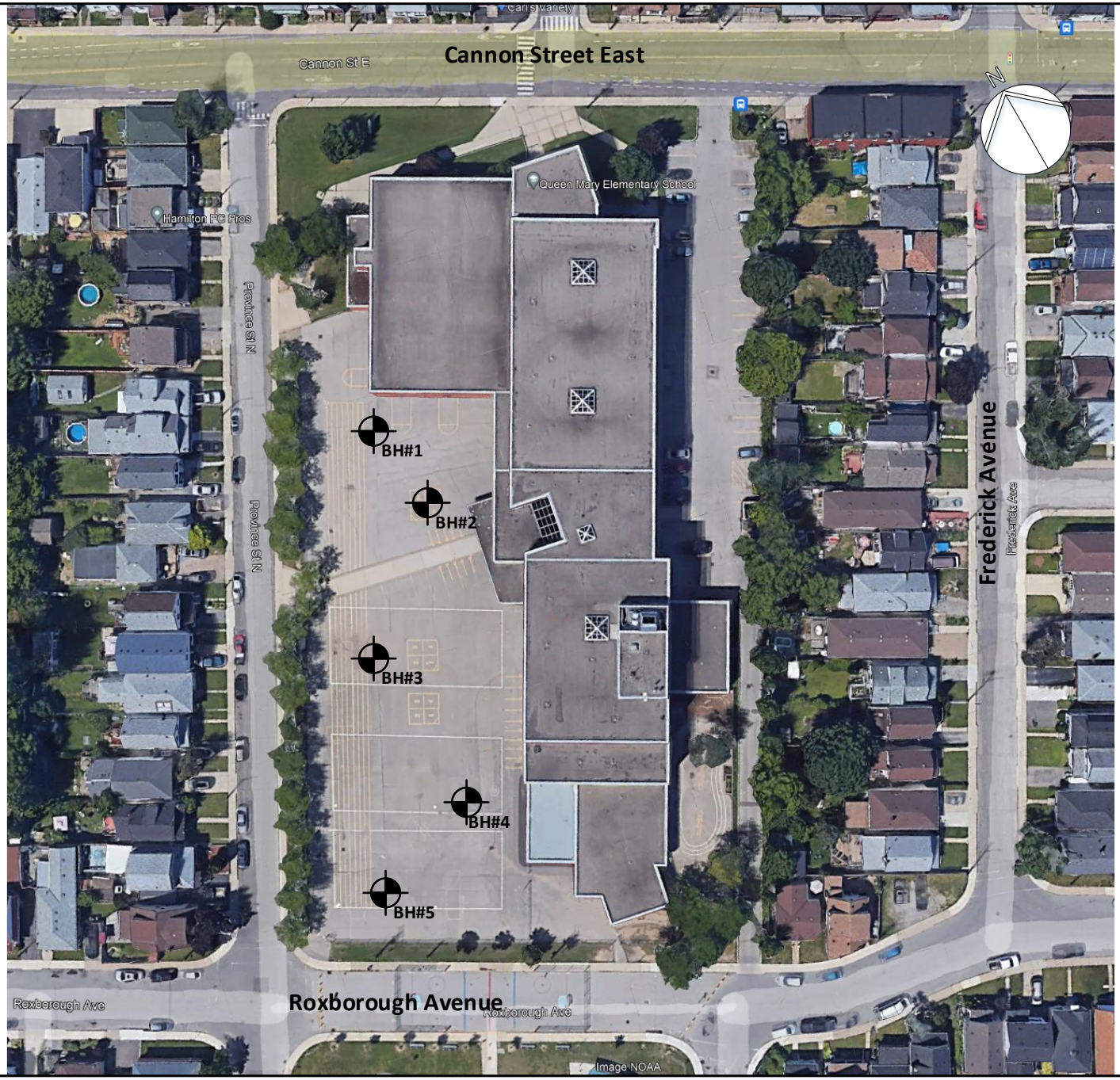
Yours very truly,
SOIL-MAT ENGINEERS & CONSULTANTS LTD.

Ishan Chauhan, B.Eng. EIT.
Junior Engineer

Kyle Richardson, P. Eng.
Project Engineer

Attachments: Drawing No. 1, Borehole Location Plan
Log of Borehole No. 1 to 5, inclusive

Distribution: RIMKUS [pdf]



LEGEND

BH# Borehole Location

NOTES

1. This drawing should be read in conjunction with SOIL-MAT ENGINEERS & CONSULTANTS LTD. Report No. SM 231080-G

2. Borehole locations are approximate.

SOIL-MAT

ENGINEERS & CONSULTANTS LTD.

Proposed Pavement Reconstruction
1292 Cannon Street East
Hamilton, Ontario

Borehole Location Plan

Project No. SM 231080-G

Date: February 2024

Drawn: RM

Checked: KR

Drawing No. 1

Log of Borehole No. 1

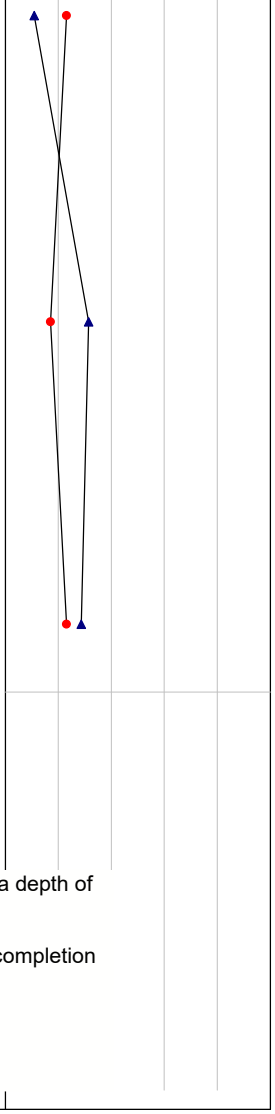
Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 4788827
E: 596292

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	0.00	Ground Surface								
0 – 1		**Pavement Structure** Approximately 65 millimetres of asphaltic concrete overlaying 500 millimetres of compact granular base.		SS	1	12,12,11,6	23			
1 – 2 / 1	-0.56	**Sand and Gravel Fill** Brown, occasional construction debris, compact.		SS	2	8,10,7,8 Wet Spoon	17			
3 – 4 / 1	-1.44	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragment, very stiff.		SS	3	5,13,20,50/5" Wet	33			
5 – 6 / 2	-2.13	End of Borehole Spoon refusal on assumed bedrock								
7 – 8										
9										

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)



1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 2.1 metres.

2. Borehole was recorded as 'wet' at a depth of 1.4 metres and caved to a depth of 0.9 metres upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

Soil-Mat Engineers & Consultants Ltd.
401 Grays Road · Hamilton, Ontario · L8E 2Z3
T: 905.318.7440 · TF: 800.243.1922 · F: 905.318.7455
www.soil-mat.ca · E: info@soil-mat.ca

Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

Log of Borehole No. 2

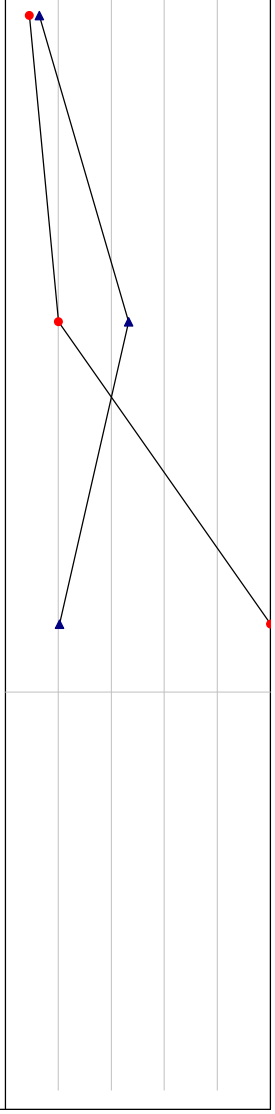
Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 478825
E: 596300

Depth (ft)	Depth (m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		0.00	Ground Surface							
0	0		**Pavement Structure** Approximately 40 millimetres of asphaltic concrete overlaying 650 millimetres of compact granular base.	SS	1	8,4,5,4	9			
		-0.68	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragments, very stiff to hard..							
3	1			SS	2	3,6,14,18	20			
6	2	-2.13		SS	3	7,25,50/4"	100			
			End of Borehole Spoon refusal on assumed bedrock							

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)



1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 2.1 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

Soil-Mat Engineers & Consultants Ltd.
401 Grays Road · Hamilton, Ontario · L8E 2Z3
T: 905.318.7440 · TF: 800.243.1922 · F: 905.318.7455
www.soil-mat.ca · E: info@soil-mat.ca

Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

Log of Borehole No. 3

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 4788736
E: 596294

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	SAMPLE Number	SAMPLE Blow Counts	SAMPLE Blows/300mm	SAMPLE Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	0.00	Ground Surface								
0 – 1		**Pavement Structure** Approximately 50 millimetres of asphaltic concrete overlaying 300 millimetres of compact granular base.		SS	1	7,4,3,6	7			
1 – 2 / 1	-0.36	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragment, firm to very siff.								
2 – 3				SS	2	4,12,15,23 Wet Spoon	27			
3 – 4	-1.37	End of Borehole Spoon refusal on assumed bedrock								
4 – 5 / 2		1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 1.3 metres.								
5 – 6		2. Borehole was recorded as open and 'wet' at a depth of 0.6 metres upon completion and backfilled as per Ontario Regulation 903.								
6 – 7		3. Soil samples will be discarded after 3 months unless otherwise directed by our client.								
7 – 8										
8 – 9										

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

Soil-Mat Engineers & Consultants Ltd.
401 Grays Road · Hamilton, Ontario · L8E 2Z3
T: 905.318.7440 · TF: 800.243.1922 · F: 905.318.7455
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Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

Log of Borehole No. 4

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 596300
E: 4788755

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	0.00	Ground Surface							
0–1 / 0	0.00	**Pavement Structure** Approximately 40 millimetres of asphaltic concrete overlaying approximately 300 millimetres of compact granular base.							
1–4 / 0–1		**Sand and Gravel Fill** Brown, compact.	SS	1	7,10,12,23	22			
3–4 / 1			SS	2	12,19,16,11 Wet Spoon	35			
	-1.37	End of Borehole							

1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 1.3 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)

Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Datum: Existing Road Structure
Field Logged by: RM
Checked by: KR
Sheet: 1 of 1

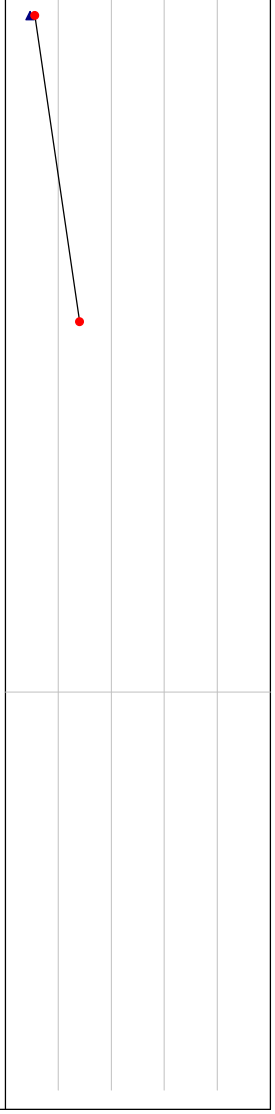
Log of Borehole No. 5

Project No: SM 231080-G
Project: Proposed Pavement Reconstruction
Location: 1292 Cannon Street East, Hamilton
Client: Rimkus

Project Manager: Kyle Richardson P. Eng
Borehole Location: See Drawing No.1
UTM Coordinates - N: 596275
E: 4788745

Depth (ft)	Depth (m)	Elevation (m)	Description	Well Data	SAMPLE Type	SAMPLE Number	SAMPLE Blow Counts	SAMPLE Blows/300mm	SAMPLE Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		0.00	Ground Surface								
0	0		**Pavement Structure** Approximately 40 millimetres of asphaltic concrete overlaying 450 millimetres of compact granular base.		SS	1	10,8,3,4	11			
		-0.50	**Silty Clay/Clayey Silt** Brown to red, occasional shale fragments, stiff to very stiff.								
3	1				SS	2	7,13,15,16	28			
		-1.37	End of Borehole Spoon refusal on assumed bedrock								
6	2		1. Borehole was advanced using solid stem auger equipment on February 24, 2024 to termination at a depth of 1.1 metres. 2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903. 3. Soil samples will be discarded after 3 months unless otherwise directed by our client.								

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



Drill Method: Soild Stem Auger
Drill Date: February 24, 2024
Hole Size: 150 millimetres
Drilling Contractor: Kodiak

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Datum: Existing Road Structure
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Sheet: 1 of 1