PROJECT NO: SM 177474-E

OCTOBER 16, 2017

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PROPOSED RESIDENTIAL DEVELOPMENT
53-71 PLAINS ROAD EAST
BURLINGTON, ONTARIO

PREPARED FOR:

VRANCOR GROUP OF COMPANIES

BY

SOIL-MAT ENGINEERS & CONSULTANTS LTD.

130 LANCING DRIVE
HAMILTON, ONTARIO
L8W 3A1

PO BOX 40012, DERRY HEIGHTS PO
MILTON, ONTARIO
L9T 7W4

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PROJECT NO.: SM 177474-E October 16, 2017

VRANCOR GROUP OF COMPANIES
366 KING STREET WEST
HAMILTON, ONTARIO
L8P 1B3

Attention: Mr. Darko Vranich

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
53 – 71 PLAINS ROAD EAST
BURLINGTON, ONTARIO

Dear Mr. Vranich,

SOIL-MAT ENGINEERS & CONSULTANTS LTD. [SOIL-MAT ENGINEERS] were retained by VRANCOR GROUP OF COMPANIES to undertake a Phase Two Environmental Site Assessment [ESA] on the above captioned property. Furthermore, it is our understanding that the Phase Two ESA is intended to support the filing of a Record of Site Condition [RSC]. In order to complete and file an RSC the subject property will either need to meet the applicable Ontario Regulation 153/04 [as amended] soil and groundwater standards or be subjected to some level of Risk Assessment activities.

Our fieldwork, laboratory testing and interpretation in connection with the assessment activities has been finalised and our comments and recommendations, based on our findings, are presented in the following paragraphs.

The subject property is herein referred to as the *Site*.

1.0 INTRODUCTION

1.1 SITE DESCRIPTION

The subject Site is comprised of three [3] contiguous roughly rectangular shaped parcels of land that together comprised an irregular shaped parcel of land. The Site is located on the northeast corner of the intersection of Plains Road East and Cooke Boulevard in the City of Burlington, Ontario.

At the time of this report, the Phase Two ESA property was occupied by a single-storey commercial building with a basement level. The remainder of the Site was comprised primarily of a mixture of asphalt covered parking lot areas and grass covered landscaped areas.

The Site was bound to the north by mixed residential and commercial properties, to the south by Plains Road East, to the west by Cooke Boulevard and to the east by Clearview Avenue.

The municipal address of the Site includes 53 and 71 Plains Road East, and 1025 Cooke Boulevard in the City of Burlington, Ontario.

The legal description of the Site includes the following:

1. 53 Plains Road East – Part Lot 6, Concession 1, as in 728438; T/W 728438; S/T FH255204 Burlington / East Flamborough Township;
2. 71 Plains Road East – Part Lots 7, 8 & 9, Plan PF753, &; Part Lot 6, Concession 1, as in 685675; S/T as in 685675; S/T FH221368 Burlington / East Flamborough Township, and;
3. 1025 Cooke Boulevard – Parcel 7-1, Sec 20M507; Lot 7, Plan 20M507, T/W Pt 7, 20R8287, as in H331145; S/T H414356 Burlington.

The geographic coordinates of the Site using a hand held global positioning unit are [NAD 83] 17T 593170E/ 4795730N.

Refer to Drawing No.: 1, Appendix 'A' for a general site location drawing.

1.2 PROPERTY OWNERSHIP

The current owner of the properties are 848347 Ontario Ltd., 71 Burlington Plains Inc., Darko Vranich, Zeljko Rudan and Mila Rudan at the time of the title search. However, as noted in the preamble of this Report, SOIL-MAT ENGINEERS were retained by VRANCOR GROUP OF COMPANIES to undertake the Phase Two ESA activities on the Site in support of the redevelopment of the Site.

The contact information for Vrancor Group of Companies is provided below:

VRANCOR GROUP OF COMPANIES
366 King Street West
Hamilton, Ontario
L8P 1B3

Point of Contact: Darko Vranich [darko@vrancor.ca]

1.3 CURRENT AND PROPOSED FUTURE USES

The Site was most recently used for commercial purposes. The proposed future use of the site is a residential development. The change in land use from a commercial use to a residential use will trigger a mandatory RSC filing under Ontario Regulation 153/04 [as amended].

1.4 APPLICABLE SITE CONDITION STANDARDS

The following criteria was utilised to determine the appropriate site classification and Ontario Regulation 153/04 [as amended] soil and groundwater standards.

- Current land use: Commercial;
- Intended land use: Residential;
- Drinking Water Supply: Non-potable Ground Water;
- On-site Soil Texture: Coarse textured Soils;
- Depth to Bedrock: greater than 9.0 metres;

- pH of soils on the Site: Within Standard range;
- Surface Water Body: None observed within 30 metres of the Site.

Based on the above, all soil and groundwater laboratory analytical test results were compared to the Table 3 Soil and Ground Water Standards for a Residential/Parkland/Institutional Property Use [RPI] in a non-potable groundwater condition from the Ministry of the Environment document "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environment Protection Act, [2011], hereinafter referred to as the 'Table 3 RPI Standards'.

It is noted that the City of Burlington and Region of Halton will be required to be notified of our intent to utilise non-potable groundwater site condition standards prior to the filing of an RSC.

2.0 BACKGROUND INFORMATION

2.1 PHYSICAL SETTING

At the time of this Report no construction activities were underway.

The Site is bounded to the north by mixed residential and commercial properties, to the south by Plains Road East, to the west by Cooke Boulevard and to the east by Clearview Avenue.

2.2 PAST INVESTIGATIONS

SOIL MAT ENGINEERS' previously conducted a Phase One Environmental Site Assessment Report [SM 135036-E, dated May 10, 2013] and a Phase One ESA Update Report [SM 177473-E, dated June 29, 2017] for the Site.

Upon completion of the noted Phase One ESA Reports, three [3] potential contaminating activities [PCAs] were identified in connection with the Site.

The PCAs are identified in the following table:

PCA Number	PCA Description	Location of the PCA
28	Gasoline and Associated Products Storage in Fixed Tanks	On-Site
28	Gasoline and Associated Products Storage in Fixed Tanks	Approximately 30 metres southwest from the Site
30	Importation of Fill Material of Unknown Quality	On-Site

The Areas of Potential Environmental Concern [APEC] and the Contaminants of Potential Concern [COPC] are identified in the following table as well as Drawing No. 1A:

APEC No.	PCA No.	APEC Description	COPC
1	30. Importation of Fill Material of Unknown Quality	Entire Portion of the Phase Two Property	Metals, As, Sb, Se, BHWS, CN-, Electrical Conductivity, CR (VI), Hg, Sar
2	28. Gasoline and Associated Products Storage in Fixed Tanks	Eastern Portion of the Phase Two Property	PHCs and BTEX
3	28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site – South west portion of the Phase Two Property.	PHCs and BTEX

A Preliminary Phase Two ESA [SM 135149-E, dated May 15, 2013] was conducted and concluded the following:

"the laboratory analytical test results for the submitted soil samples are all below the applicable Ontario Regulation 153/04 [as amended] Table 3 RPI Standards for the Site."

"it is recommended that groundwater sampling be conducted on the eastern portion of the Site in the immediate area of the former retail gasoline fuel outlet pumps and fuel storage tanks, as well as along the western limit of the Site, in the vicinity of the off-site PCA."

The Areas of Potential Environmental Concern [APEC] can be seen in Drawing 1A, Illustration of APECs.

Based on the above, SOIL-MAT ENGINEERS were retained to undertake Phase Two ESA activities to assess the potential adverse impact(s) to the soil and groundwater mediums as a result of the noted PCAs. The contaminants of potential concern [COPC] groupings were limited to Petroleum Hydrocarbons [PHCs], Benzene, Toluene, Ethylbenzene and Xylenes [BTEX] and Metals in soil, and PHC and BTEX in groundwater.

The fieldwork included the advancement of eight [8] sampled boreholes on the Site to depths ranging between 3.7 to 9.8 metres below ground surface. Five [5] boreholes were also advanced during a second visit to obtain samples at depths of between 0.8 to 2.9 metres.

3.0 SCOPE OF THE INVESTIGATION

3.1 OVERVIEW OF SITE INVESTIGATION

The Phase Two ESA fieldwork programme was carried out on May 31, June 2 and September 1 of 2017 and included the advancement of thirteen [8] boreholes within the Site boundaries to assess potential environmental impact, if any, to the Site as a result of the above noted PCAs.

To achieve the above, twenty nine [29] discrete soil samples including two [2] duplicates were selected from Borehole Nos. 1 through 8, inclusive, for submission to AGAT Laboratories,

[AGAT], [an accredited Canadian Environmental Laboratory] for analytical testing of the COPCs.

In addition to the above, a groundwater monitoring well was installed in Borehole Nos. 101, 102, 103 and 108 to allow for the collection of groundwater samples for laboratory analytical testing for PHCs.

The laboratory analytical test results were interpreted from an environmental point-of-view and were compared to the applicable Ontario Regulation 153/04 [as amended] soil and groundwater standards for the Site.

3.2 MEDIA INVESTIGATED

The Phase Two ESA investigated potential impacts to the surface and subsurface soil and groundwater mediums. The COPCs grouping were determined based on the previous site use. As previously noted, the COPCs groupings were limited to PHCs, BTEX and Metals in soil and PHC and BTEX in groundwater.

3.3 DEVIATIONS FROM SAMPLING AND ANALYSIS PLAN

No deviations from the Phase Two ESA sampling plan were encountered.

3.4 IMPEDIMENTS

SOIL-MAT ENGINEERS did not encounter any physical impediments on the Site and were not denied access to any parts of the Phase Two ESA property.

4.0 INVESTIGATION METHOD

4.1 GENERAL

The Phase Two ESA included securing both soil and groundwater samples.

Professional care was exercised during the retrieval of each sample, the placement of each sample in the appropriate sample jar, the labeling of the field samples and associated chain of custody and in the delivery of the samples to the testing laboratory.

As our standard operating procedures dictate unusual field observations, such as visual or olfactory evidence of a suspected impact, a deviation from SOIL-MAT ENGINEERS' field sampling and handling protocols or incident on the testing laboratories' side was documented either on our field borehole logs or in-house copy of the sample Certificate of Analysis.

4.2 DRILLING AND EXCAVATING

Determination Drilling were retained by SOIL-MAT ENGINEERS for the physical advancement of the boreholes and installation of the groundwater monitoring wells. It is noted that Determination Drilling is a registered water well contractor for the installation and abandonment of groundwater monitoring wells under Ontario Regulation 903.

The boreholes were advanced using a trailer mounted drill rig and a Geoprobe drill rig under the direction of SOIL-MAT ENGINEERS. Soil samples were secured at roughly 0.61 metre intervals via split spoon samplers to the termination of each borehole. The split spoon samples were driven in general accordance with the Standard Penetration Test [SPT] method.

Each split-spoon sampler was thoroughly washed with non-phosphate detergent then rinsed with water before the collection of each subsequent sample to minimise the potential for cross-contamination between samples. The boreholes were advanced on the Site using hollow stem augers.

A site plan drawing illustrating the borehole and groundwater monitoring well locations is included in Appendix 'A' for reference [refer to Drawing No.: 1].

4.3 SOIL SAMPLING

The soil samples were examined in the field for visual and olfactory evidence of potential impacts such as unusual staining and/or odours, etc., and were split into two separate samples, including the following:

- One half of the sample was sealed in sampling jars for submission to AGAT for analytical testing, and;
- One half of the sample was sealed in a plastic sampling bag for further characterisation in SOIL-MAT ENGINEERS' in-house soils laboratory.

The soil samples that were delivered to AGAT were sealed in pre-cleaned sample jars, with preservatives were required, as provided by the laboratory.

The samples were delivered to the AGAT depot in Stoney Creek, Ontario in coolers to maintain a temperature range between the applicable 0°C to 10°C [average temperature of 6.5°C].

A copy of SOIL-MAT ENGINEERS borehole logs is included in Appendix 'B' for reference.

4.4 FIELD SCREENING MEASUREMENTS

All of the Phase Two ESA soil samples were examined in the field for visual and olfactory evidence of potential PHC impact(s), such as unusual staining and/or odours, etc.

No hand held field screening units were utilised during the collection of the confirmatory soil samples.

4.5 GROUNDWATER MONITORING WELL INSTALLATION

Determination Drilling were retained by SOIL-MAT ENGINEERS for the physical drilling and installation of the groundwater monitoring wells.

The boreholes were advanced using a trailer mounted drill rig and a Geoprobe drill rig under the direction of SOIL-MAT ENGINEERS and were advanced using hollow stem augers.

50 millimetre groundwater monitoring wells were installed at Borehole Nos. 101, 102, 103 and 108 upon the completion of drilling activities. The groundwater monitoring wells were installed in accordance with *Regulation 903 [Wells]* under the Ontario Water Resources Act.

A water well record was submitted to the Ministry of the Environment upon completion of drilling activities. It is the responsibility of the Site owner to ensure the groundwater monitoring well is maintained in an appropriate, safe and secure condition as per the Regulation and to arrange for the monitoring well to be abandoned in accordance with the Regulation when it is no longer in use.

4.6 GROUNDWATER FIELD MEASUREMENT OF WATER QUALITY PARAMETERS

No hand held field screening units were utilised during the collection of the groundwater samples. The samples were delivered immediately to AGAT upon retrieval from the monitoring well and were subjected to AGAT's QA procedure which included a temperature reading upon their receipt.

In each case, the groundwater samples were delivered to the AGAT depot in Stoney Creek, Ontario and maintained a temperature range between the applicable 0°C to 10°C [average temperature of 9.3°C].

4.7 GROUNDWATER SAMPLING

Three [3] well volumes were purged from each groundwater monitoring well prior to the collection of the groundwater samples. The monitoring wells were then allowed to recharge back to recorded static groundwater levels prior to the physical sample collection.

The monitoring wells installed on the Site during this Phase Two ESA were equipped with dedicated sampling equipment, including a 25 millimetre water bailer for sample collection for the PHC and BTEX parameters.

Professional care was exercised during the retrieval of each sample, the placement of each sample in the appropriate sample jar, the labeling of the field samples and associated chain of custody and in the delivery of the samples to the testing laboratory.

As our standard operating procedures dictate unusual field observations, such as visual or olfactory evidence of a suspected impact, a deviation from SOIL-MAT ENGINEERS' field sampling and handling protocols or incident on the testing laboratories' side was documented either on our field borehole logs or in-house copy of the sample certificate of analysis.

There were no deviations recorded during the Phase Two ESAs.

4.8 SEDIMENT SAMPLING

Sediment sampling was not conducted as part of this Phase Two ESA.

4.9 ANALYTICAL TESTING

All laboratory analytical work was performed by AGAT, in Mississauga, Ontario.

AGAT is a member of the Canadian Association for Laboratory Accreditation [CALA] and meets the requirements of Section 47 of the RSC Regulation.

4.10 RESIDUE MANAGEMENT PROCEDURES

The residue soil generated during advancement of the boreholes was left on Site.

Purged groundwater was stored on-site until the results of the laboratory analytical testing demonstrated that the groundwater met the applicable SCS at which time the groundwater was discarded across the surface soil in the vicinity of each groundwater sampling point.

4.11 ELEVATION SURVEYING

All boreholes and groundwater monitoring wells were surveyed by a staff member of SOIL-MAT ENGINEERS to facilitate site relative survey information. The top of the catchbasin located on the north side of Plains Road East just east of the entrance had a geodetic elevation of 100.29 metres.

4.12 QUALITY ASSURANCE AND QUALITY CONTROL MEASURES

QA/QC was maintained during the field program through equipment decontamination and sampling procedures, as outlined in the "*MOE Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*" (May, 1996).

Standard QA/QC protocols were followed for bottle preparation, sample collection and transportation, as outlined by MOE guidance documents, including the MOE's 2011 "*Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental Protection Act*".

In addition to these field-based measures, extensive QA/QC procedures were carried out by the analytical laboratories, including:

- Lab blanks;
- Spikes;
- Matrix blanks; and
- Instrument blanks and assessments of instrument tuning and performance.

Based on the evaluation of the sampling and analytical procedures used, the following data quality statements can be made:

- The data are adequate for the RSC objectives and approach utilized; and,
- Soil and groundwater analytical data were of an acceptable quality for comparison to 2011 MOE SCS as defined by *O.Reg.153/04, as amended,* for current investigations.

5.0 REVIEW AND EVALUATION

5.1 GEOLOGY

A copy of SOIL-MAT ENGINEERS' borehole logs are presented in Appendix 'B' for reference.

In summary, the Phase Two ESA revealed the following Site stratigraphy:

TOPSOIL

A surficial veneer of topsoil approximately 100 to 125 millimetres in thickness was encountered at Borehole Nos. 101, 102, 104 and 105. It is noted that the depth of topsoil may vary across the site and from the borehole locations. It is also noted that the term topsoil has been used from a geotechnical point of view, and does not necessarily reflect its nutrient content or ability to support plant life.

SAND AND GRAVEL FILL / PAVEMENT STRUCTURE

Borehole No. 103 was advanced through surficial sand and gravel fill which was found to be approximately 300 millimetres thick. Borehole Nos. 106, 107 and 108 were advanced through the existing pavement structure which was found to consist of 50 to 75 millimetres of asphaltic concrete over approximately 400 to 450 millimetres of compact granular base.

SILTY SAND FILL

A layer of silty sand fill was encountered beneath the topsoil, sand and gravel fill and pavement structure in Borehole Nos. 101, 102, 103, 104, 105 and 106. The fill material was brown to reddish brown in colour, contained traces of, to some, clay and gravel and was generally in a very loose to compact state. The silty sand fill was encountered to depths of 1.8 to 7.0 metres.

SILTY SAND

Native silty sand was encountered underlying the silty sand fill and pavement structure in all borehole locations. The silty sand was brown to reddish brown in colour, contained traces of, to some, clay and gravel and was generally in a loose to dense state. The native silty sand was proven to termination in all boreholes

5.2 GROUNDWATER ELEVATIONS AND FLOW DIRECTIONS

All boreholes were recorded as 'dry' upon completion of drilling activities. It is noted that insufficient time would have passed for the static groundwater level to stabilize in the open boreholes.

Groundwater monitoring wells were installed in Borehole Nos. 102, 103 and 108 for future monitoring of the static groundwater level and environmental sampling of the on-site groundwater. The results of these readings are outlined in the table on the following page.

TABLE A
SUMMARY OF GROUNDWATER LEVELS

Borehole No.	Surface Elevation (m)	July 7, 2017		July 11, 2017	
		Depth [m]	Elev. [m]	Depth [m]	Elev. [m]
BH#101	100.36	7.68	93.68	7.64	93.72
BH-#102	99.83	7.00	92.83	7.00	92.83
BH-#103	99.91	7.17	92.74	7.26	92.65
BH-#108	99.69	7.20	92.49	7.19	92.50

Based on the groundwater readings the static groundwater level is estimated at a depth of approximately 7.0 to 8.0 metres below grade, although seasonal fluctuations must be expected.

Based on the ground water contours extrapolated from recorded static ground water levels on the Site the ground water flow direction through the Site is to the east-southeast towards the lake.

5.3 GROUNDWATER HYDRAULIC GRADIENTS

The horizontal hydraulic gradient was calculated based on the groundwater levels recorded during the Phase Two ESA. Based on these recordings, the distance between the monitoring wells and the depth of well installation the horizontal hydraulic gradient is estimated as 0.021.

5.4 SOIL TEXTURE

SOIL-MAT ENGINEERS' borehole logs indicate that the surface and subsurface soil consists primarily of silty sand as the predominant soil type. As such the soil was classified as a coarse texture soil.

5.5 SOIL QUALITY –SOIL SAMPLING

In total, twenty nine [29] soil samples, including duplicates, were secured from the Site to assess potential impacts on the Site. The secured soil samples were submitted to AGAT for laboratory analytical testing as described in the summary table on the following page.

TABLE B
SUMMARY OF ANALYTICAL TESTING – SOIL [TABLE 3 RPI]

Sample ID	Depth [m bgs]	Laboratory Analysis	Soil Description	Table 3 RPI Exceedances
BH101 SS4	2.3 – 2.9	Metals	Silty Sand Fill	No exceedances reported
BH101 SS5	3.0 – 3.6	PHCs and BTEX	Silty Sand Fill	No exceedances reported
BH101 SS9	6.1 – 6.7	PHCs and BTEX	Silty Sand Fill	No exceedances reported
BH102 SS3	1.5 – 2.1	Metals	Silty Sand Fill	No exceedances reported
BH102 SS4	2.3 – 2.9	PHCs and BTEX	Silty Sand Fill	No exceedances reported
BH103 SS3	1.5 – 2.1	Metals	Silty Sand Fill	No exceedances reported
BH103 SS5	3.0 – 3.6	PHCs and BTEX	Silty Sand Fill/Silty Sand	No exceedances reported
BH103 SS9	7.6 – 8.2	PHCs and BTEX	Silty Sand	No exceedances reported
BH104 SS2	0.8 – 1.4	PHCs and BTEX	Silty Sand Fill	No exceedances reported
BH104 SS4	3.0 – 3.6	PHCs and BTEX	Silty Sand	No exceedances reported
BH105 SS1	0 – 0.6	Metals	Topsoil/Silty Sand Fill	No exceedances reported
BH105 SS2	0.8 – 1.4	PHCs and BTEX	Silty Sand Fill	No exceedances reported

BH105 SS5	3.0 – 3.6	PHCs and BTEX	Silty Sand Fill	No exceedances reported
BH106 SS1	0.8 – 1.4	Metals	Silty Sand Fill	No exceedances reported
BH107 SS1	0.8 – 1.4	Metals	Silty Sand	No exceedances reported
BH107 SS3	2.3 – 2.9	Metals	Silty Sand	No exceedances reported
BH108 SS2	1.5 – 2.1	Metals	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 10.1ppm vs the Standard of 5ppm
BH108 SS4	3.0 – 3.6	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 11.8ppm vs the Standard of 5ppm
BH108 SS7	6.1 – 6.7	SAR	Silty Sand	No exceedances reported
BH108 SS8	7.6 – 8.2	PHCs and BTEX	Silty Sand	No exceedances reported
BH108-1 SS3	1.5 – 2.1	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 18ppm vs the Standard of 5ppm
BH108-2 SS2	1.5 – 2.1	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 10.5ppm vs the Standard of 5ppm
BH108-3 SS1	0.8 – 1.4	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 6.84ppm vs the Standard of 5ppm
BH108-3 SS2	1.5 – 2.1	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 7.51ppm vs the Standard of 5ppm
BH108-3 SS3	2.3 – 2.9	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 5.18ppm vs the Standard of 5ppm
BH108-4 SS2	1.5 – 2.1	SAR	Silty Sand	No exceedances reported
BH108-5 SS2	1.5 – 2.1	SAR	Silty Sand	Exceeds in Sodium Adsorption Ratio [SAR] – reported as 5.61ppm vs the Standard of 5ppm
Dupe (BH102 SS4)	2.3 – 2.9	PHCs and BTEX	Silty Sand Fill	No exceedances reported
Dupe 2 (BH102 SS3)	1.5 – 2.1	Metals	Silty Sand Fill	No exceedances reported
Notes: PHCs = Petroleum Hydrocarbons, BTEX = Benzene, Toluene, Ethylbenzene and Xylenes				

In most cases, the laboratory analytical test results for the submitted soil samples meet the applicable Table 3 [RPI] Standards for the select tested parameters, being less than the laboratory method detection limits in many cases, with the exception of Borehole No. 108 and the general vicinity (BH108-1 to BH108-5) which had an exceedance in the SAR parameter.

The AGAT Certificate of Analysis for the soil analytical data is contained in Appendix 'C' for reference.

5.6 SOIL QUALITY – IMPORTED FILL MATERIAL

As described in Section 5.1 a deposit of silty sand fill material was encountered in Borehole Nos. 101, 102, 103, 104, 105 and 106. The origin and placement of the fill material is not specifically known, however it is likely associated with fill placement after removal of the former USTs. Sampling and testing of the fill was conducted as outlined above, and the results shown to be within the applicable site condition Standards. Drawing No. 1B illustrates the depth of fill encountered on the Site.

5.7 GROUNDWATER QUALITY

A groundwater sample was secured on July 11, 2017 from the four [4] existing monitoring wells installed on the Site.

A summary of the field samples and laboratory analytical test results is presented in Tables D and below:

TABLE D
SUMMARY OF ANALYTICAL TESTING – WATER [TABLE 3 NPGW]

Sample ID	Laboratory Analysis	Table 3 NPGW Exceedances
MW101 S1	PHCs & BTEX	No exceedances reported
MW102 S1	PHCs & BTEX	No exceedances reported
MW103 S1	PHCs & BTEX	No exceedances reported
MW108 S1	PHCs & BTEX	No exceedances reported
Dup 1	PHCs & BTEX	No exceedances reported
Notes: PHCs = Petroleum Hydrocarbons, BTEX = Benzene, Toluene, Ethylbenzene, Xylenes		

The laboratory analytical test results for the submitted ground water samples are all below the applicable Table 3 NPGW Standards for the select test parameters, being below the laboratory method detection limit in most cases.

The AGAT certificate of analysis for the groundwater analytical data is contained in Appendix 'D' for reference.

5.8 SEDIMENT QUALITY

Sediment sampling was not conducted as part of this Phase Two ESA. The APEC and COC groupings were limited to the soil and groundwater mediums.

5.9 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

QA/QC was maintained during the field program through equipment decontamination and sampling procedures, as outlined in the "*MOE Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*" (May, 1996). Each groundwater monitoring well was

equipped with dedicated sampling equipment, including a 25 millimetre water bailer for sample collection.

Standard QA/QC protocols were followed for bottle preparation, sample collection and transportation, as outlined by MOE guidance documents, including the MOE's 2011 "*Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental Protection Act*".

In addition to these field-based measures, extensive QA/QC procedures were carried out by the analytical laboratories, including:

- Lab blanks;
- Spikes;
- Matrix blanks; and
- Instrument blanks and assessments of instrument tuning and performance.

Based on the evaluation of the sampling and analytical procedures used, the following data quality statements can be made:

- The data are adequate for the RSC objectives and approach utilized; and,

- Soil and groundwater analytical data were of an acceptable quality for comparison to 2011 MOE Standards as defined by *O.Reg.153/04* for current investigations.

5.10 PHASE TWO CONCEPTUAL SITE MODEL [CSM]

SOIL-MAT ENGINEERS' has not prepared a Phase Two CSM as part of this Phase Two ESA. A final Phase Two CSM will be prepared to support the filing of an RSC.

6.0 CONCLUSIONS

SOIL-MAT ENGINEERS were retained by VRANCOR GROUP OF COMPANIES to undertake a Phase Two ESA programme on the Site to assess potential adverse environmental impact(s) to the soil and groundwater mediums as a result of the PCAs associated with the Site.

The results of our Phase Two ESA findings are summarized below:

METALS IN THE SOIL MEDIUM

The Phase Two ESA activities carried out by SOIL-MAT ENGINEERS revealed an elevated level of the Sodium Adsorption Ratio [SAR] parameter in the sand fill in Borehole No. 108.

The elevated level of SAR is likely associated with the effects of historical application of deicing salt on the adjacent roadway.

To facilitate the above, an additional five [5] boreholes were advanced on the Phase Two property to determine if there is a potential connection with the winter, de-icing operation on the neighbouring roadway and the RSC property.

Based on the results of the additional soil sampling and the level of SAR present in the soil in relation to the neighbouring roadway, it is our opinion that the elevated SAR levels are associated with winter de-icing salt usage on the neighbouring roadway. The vertical extent of the elevated SAR levels was established in Borehole No. 108 at approximately 6.1 metres below ground surface which is where the bottom of the structure would be placed. The material will also be taken off Site when the construction takes place.

Based on the findings of the Phase Two ESA activities, the applicable SAR standard is not considered to be exceeded as it is our opinion that the elevated SAR levels are a direct result of a substance being used on a roadway for the purpose of keeping the roadway safe for traffic under conditions of snow or ice or both, as provided under Section 2 of Regulation 339 of the Revised Regulations of Ontario, 1990 (Classes of Contaminants – Exemptions).

The metal soil sampling locations are illustrated on Drawing.: 3, Appendix A.

PHCs IN THE SOIL MEDIUM

The Phase Two ESA activities carried out by SOIL-MAT ENGINEERS did not reveal any PHCs exceedances in the soil.

The PHCs soil sampling locations are illustrated on Drawing.: 2, Appendix A.

BTEX IN THE SOIL MEDIUM

The Phase Two ESA activities carried out by SOIL-MAT ENGINEERS did not reveal any BTEX exceedances in the soil.

The BTEX soil sampling locations are illustrated on Drawing.: 2, Appendix A.

GROUNDWATER ANALYTICAL DATA

SOIL-MAT ENGINEERS' Phase Two ESA activities undertaken on the Site [to date] did not reveal any exceedances of the PHCs or BTEX groupings in the groundwater medium.

The groundwater sampling locations are illustrated on Drawing.: 4, Appendix A.

PROPOSED FUTURE RESIDENTIAL REDEVELOPMENT

Given the proposed future use of the Site [residential], the Site would be subject to a mandatory Record of Site Condition [RSC] filing. Based on the above, the Site meets the applicable Ontario Regulation 153/04 [as amended] soil and groundwater standards, and an RSC may be reasonably filed for the Site.

GENERAL COMMENTS

SOIL-MAT ENGINEERS & CONSULTANTS LTD. prepared this Report for the account of VRANCOR GROUP OF COMPANIES. The material in it reflects SOIL-MAT ENGINEERS' best judgement in light of the information available to it 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 Report 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.



Jeremy Yang, M.Sc. Eng., EIT
Environmental Scientist





Keith Gleadall, B.A., EA Dipl.
Environmental Manager



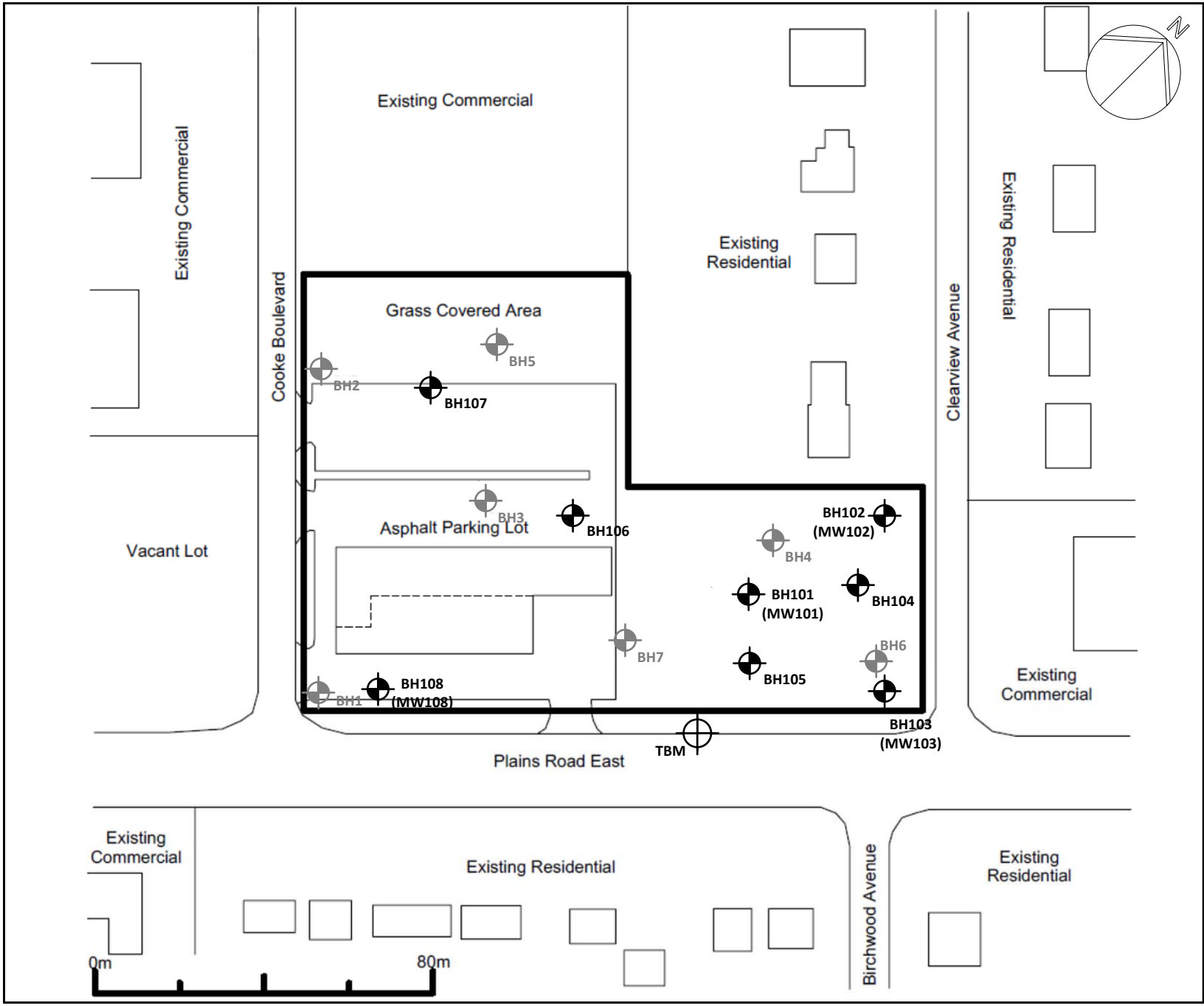
Stephen R. Sears, B. Eng. Mgmt., P. Eng., QP_{ESA}
Review Engineer

Distribution: VRANCOR GROUP OF COMPANIES [2]

Enclosures:
- Appendix 'A': Drawing Nos. 1 to 4 – Borehole Location & Analytical Data Summary;
- Appendix 'B' Borehole Logs;
- Appendix 'C' AGAT Soil Analytical Data;
- Appendix 'D' AGAT Ground Water Analytical Data;
- Appendix 'E' Qualifications of Assessors;
- Appendix 'F' Statement of Limitations.

Appendix 'A'

1. Drawing No.: 1: Borehole Location Plan;
2. Drawing No.: 1A: Illustration of APECs, and;
3. Drawing No.: 1B: Fill Material Drawing, and;
4. Drawing No.: 2: Analytical Data Summary [Soil] PHCs, and;
5. Drawing No.: 3: Analytical Data Summary [Soil] Metals, and;
6. Drawing No.: 4: Analytical Data Summary [Water] PHCs



LEGEND

- BH# — Borehole Location
- BH# — Previous Borehole Location
- TBM — Temporary Benchmark: Top of cathbasin on Plains Road East, geodetic elevation of 100.29 metres.

NOTES

1. This drawing should be read in conjunction with Soil-Mat Engineers & Consultants Ltd. Report No. SM 177474-E.

2. Borehole locations are approximate.

SOIL-MAT

ENGINEERS & CONSULTANTS LTD.

Phase Two Environmental Site Assessment
53-71 Plains Road East,
Burlington, Ontario

Borehole Location Plan

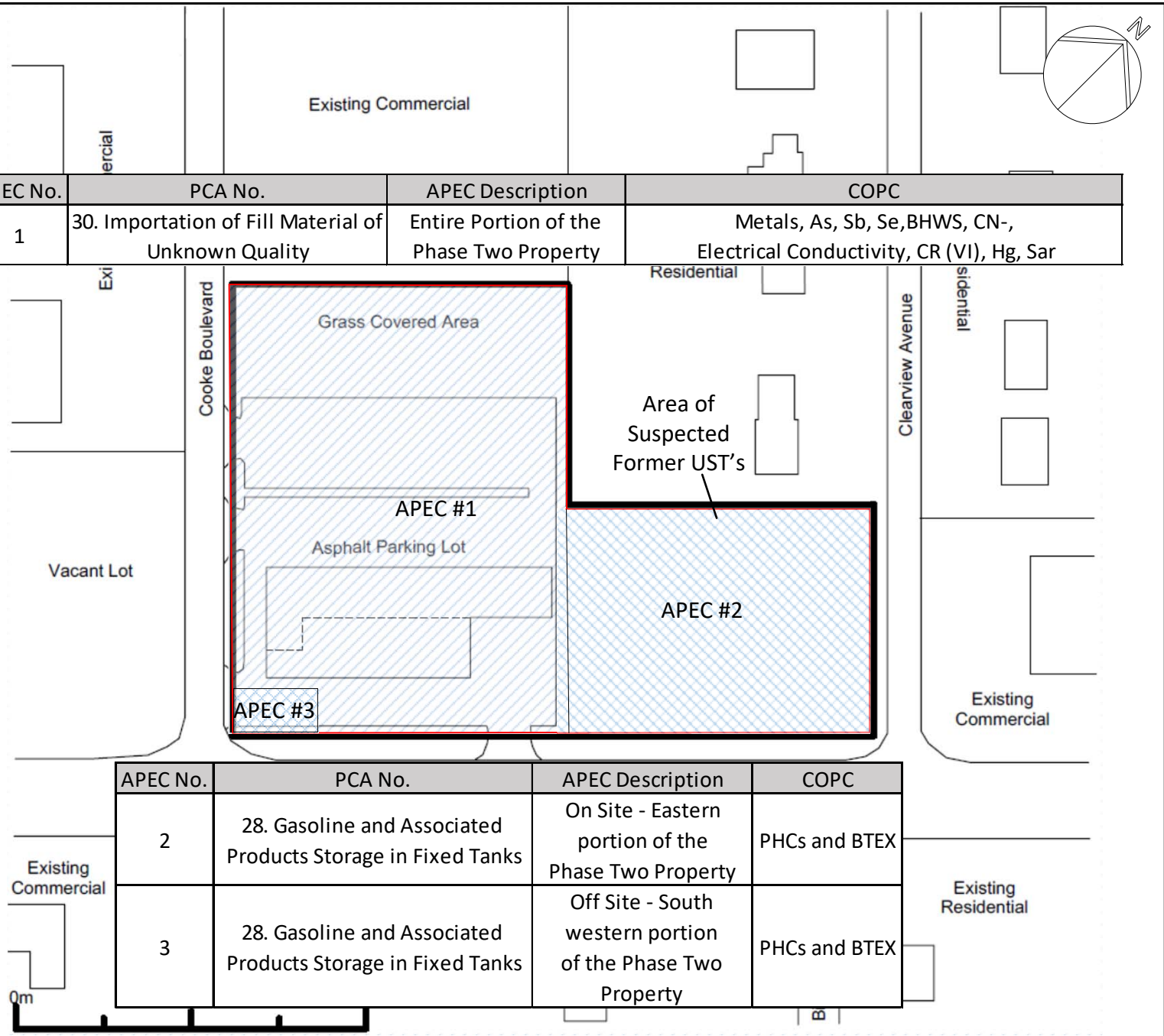
Project No. SM 177474-E

Date: June 2017

Drawn: JY	Checked: IS

SM 177474-E Borehole Location Plan

Drawing No. 1



APEC No.	PCA No.	APEC Description	COPC
1	30. Importation of Fill Material of Unknown Quality	Entire Portion of the Phase Two Property	Metals, As, Sb, Se,BHWS, CN-, Electrical Conductivity, CR (VI), Hg, Sar

APEC No.	PCA No.	APEC Description	COPC
2	28. Gasoline and Associated Products Storage in Fixed Tanks	On Site - Eastern portion of the Phase Two Property	PHCs and BTEX
3	28. Gasoline and Associated Products Storage in Fixed Tanks	Off Site - South western portion of the Phase Two Property	PHCs and BTEX

LEGEND

= Phase Two Property

= APEC

NOTES

1. APEC = Area of Potential Environmental Concern;

2. PCA = Potential Contaminating Activity;

3. COPC = Contaminant of Potential Concern

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Phase Two Environmental Site Assessment
53-71 Plains Road East,
Burlington, Ontario

Illustration of APECs on the Phase Two Property

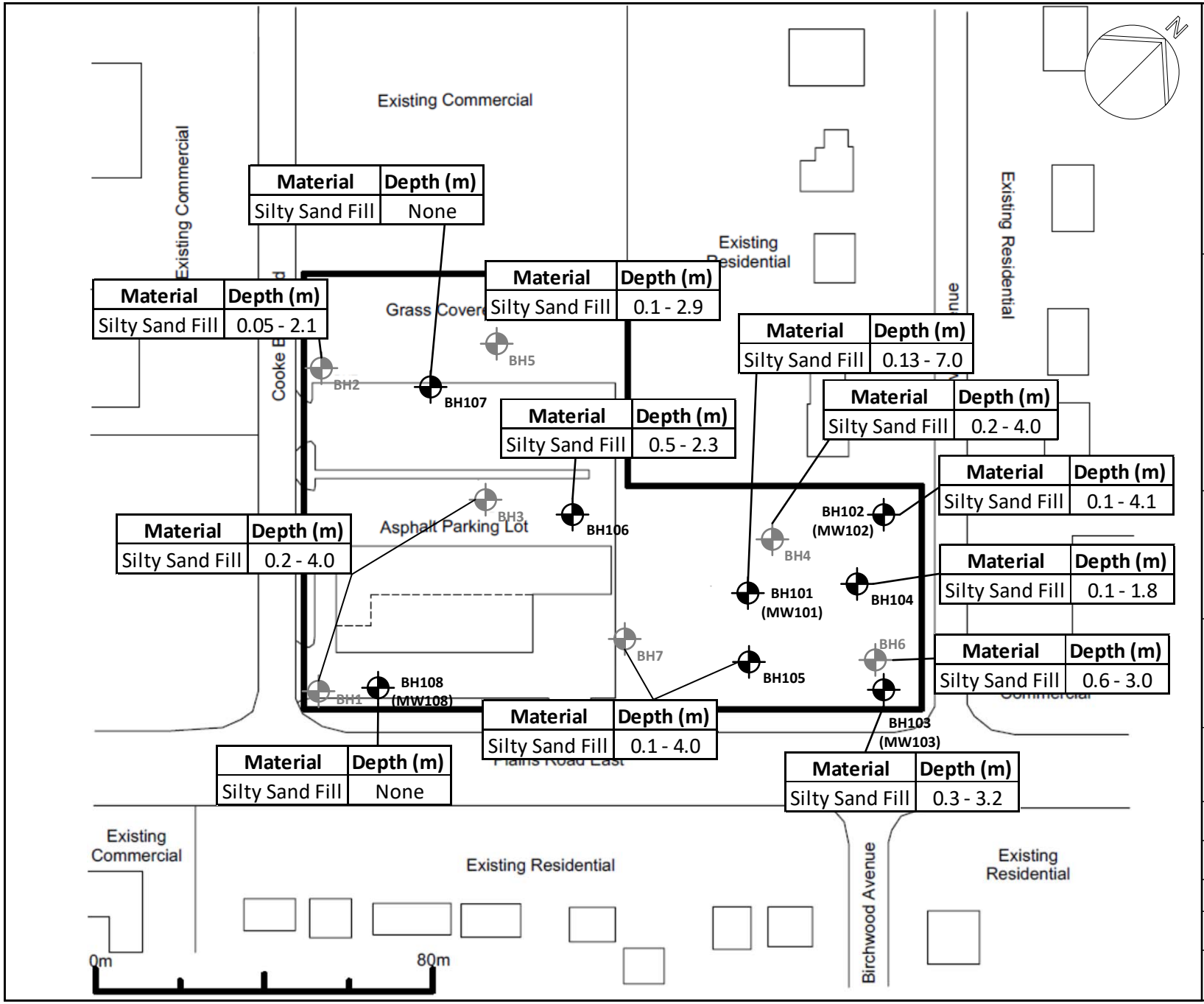
Project No. SM 177474-E

Date: June 2017

Drawn: JY | Checked: IS

APECs

Drawing No. 1A



LEGEND

- BH# — Borehole Location
- BH# — Previous Borehole Location
- TBM — Temporary Benchmark: Top of cathbasin on Plains Road East, geodetic elevation of 100.29 metres.

NOTES

1. This drawing should be read in conjunction with Soil-Mat Engineers & Consultants Ltd. Report No. SM 177474-E.
2. Borehole locations are approximate.

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Phase Two Environmental Site Assessment
53-71 Plains Road East,
Burlington, Ontario

Quantity of Fill Material

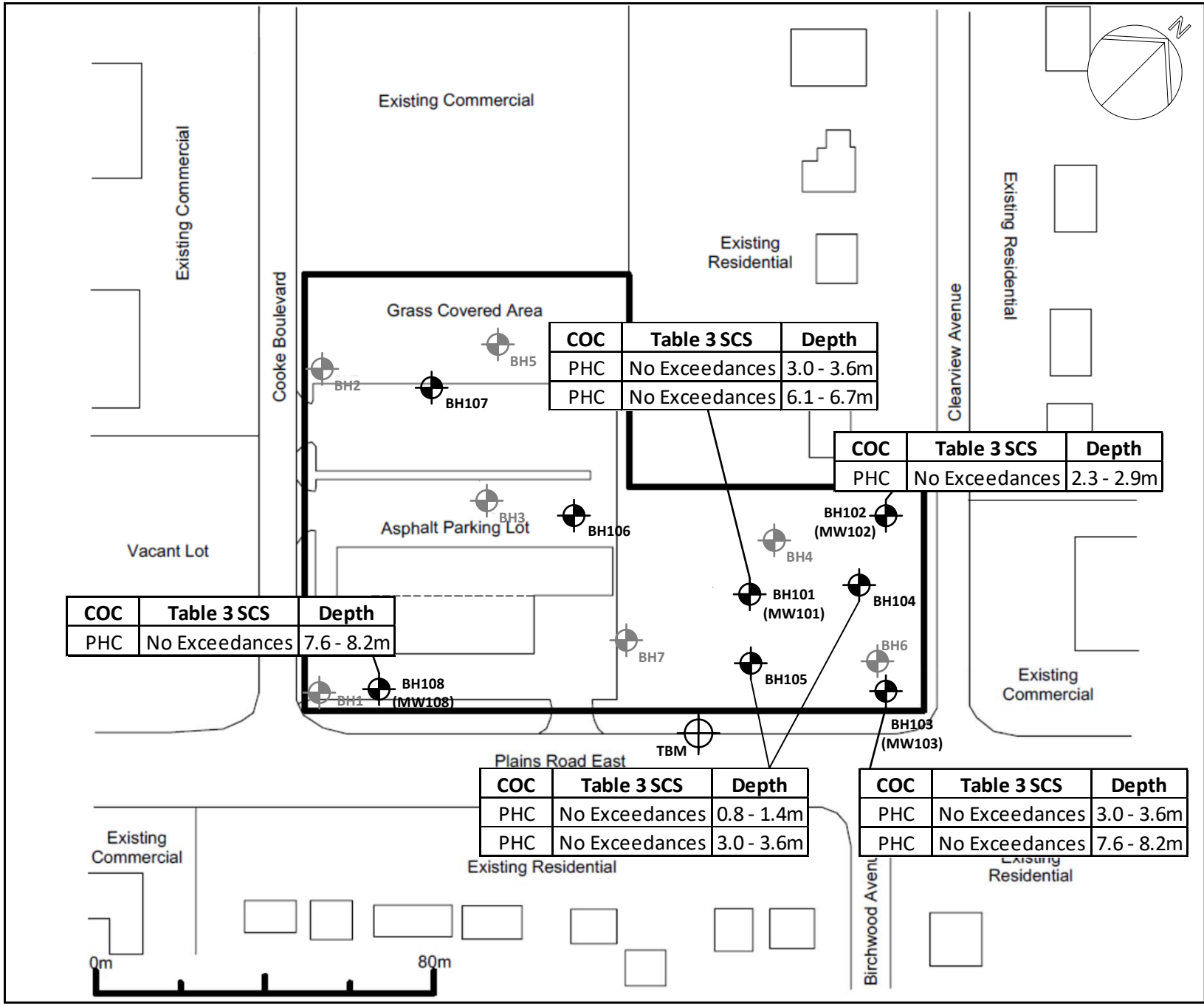
Project No. SM 177474-E

Date: June 2017

Drawn: JY | Checked: IS

SM 177474-E Quantity of Fill Material

Drawing No. 1B



LEGEND

- BH# — Borehole Location
- BH# — Previous Borehole Location
- TBM — Temporary Benchmark: Top of cathbasin on Plains Road East, geodetic elevation of 100.29 metres.

NOTES

1. This drawing should be read in conjunction with Soil-Mat Engineers & Consultants Ltd. Report No. SM 177474-E.
2. Borehole locations are approximate.

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Phase Two Environmental Site Assessment
53-71 Plains Road East,
Burlington, Ontario

Analytical Data Summary [Soil] - PHC

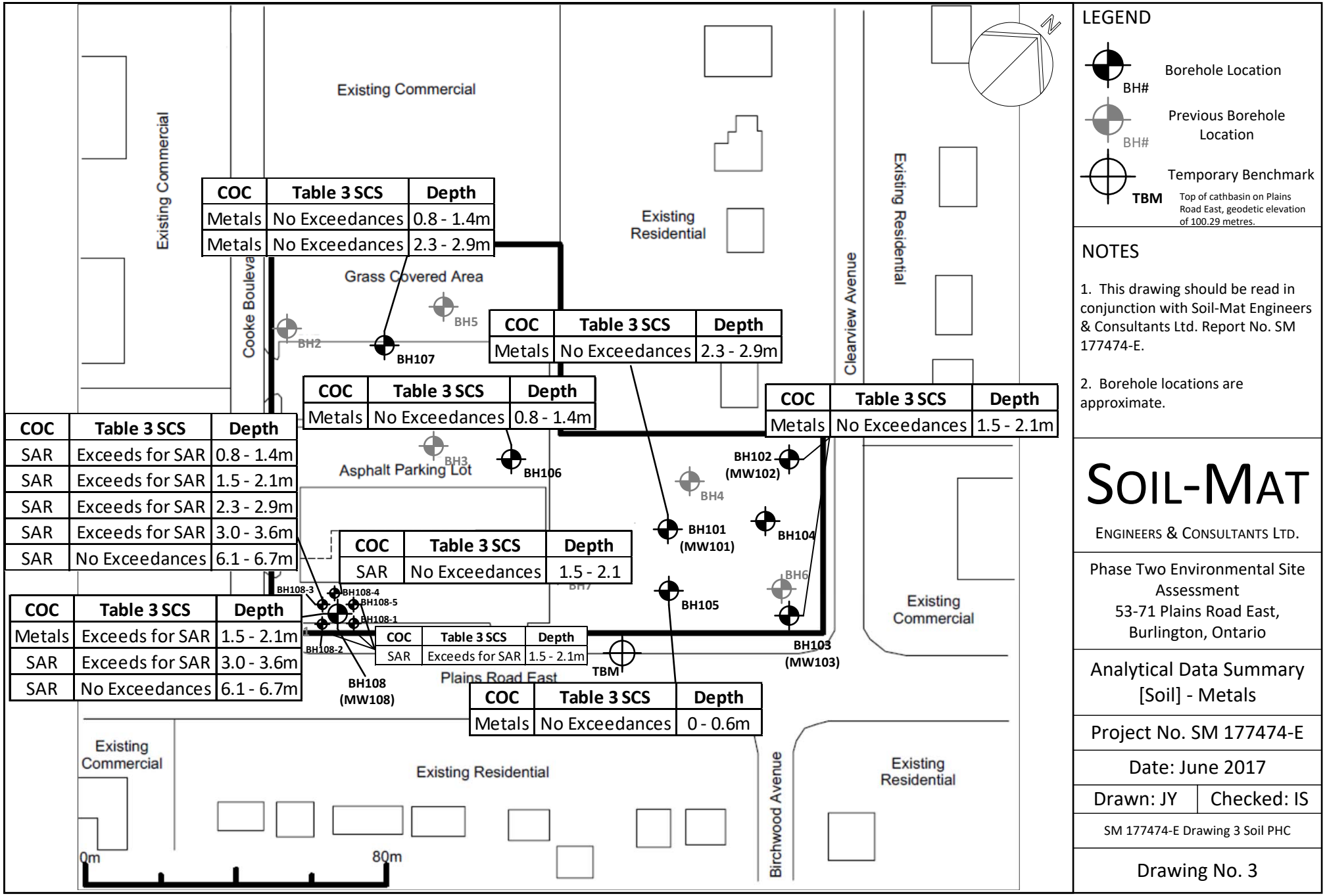
Project No. SM 177474-E

Date: June 2017

Drawn: JY | Checked: IS

SM 177474-E Drawing 2 Soil PHC

Drawing No. 2



LEGEND

- BH# — Borehole Location
- BH# — Previous Borehole Location
- TBM — Temporary Benchmark: Top of cathbasin on Plains Road East, geodetic elevation of 100.29 metres.

NOTES

1. This drawing should be read in conjunction with Soil-Mat Engineers & Consultants Ltd. Report No. SM 177474-E.
2. Borehole locations are approximate.

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Phase Two Environmental Site Assessment
53-71 Plains Road East,
Burlington, Ontario

Analytical Data Summary [Soil] - Metals

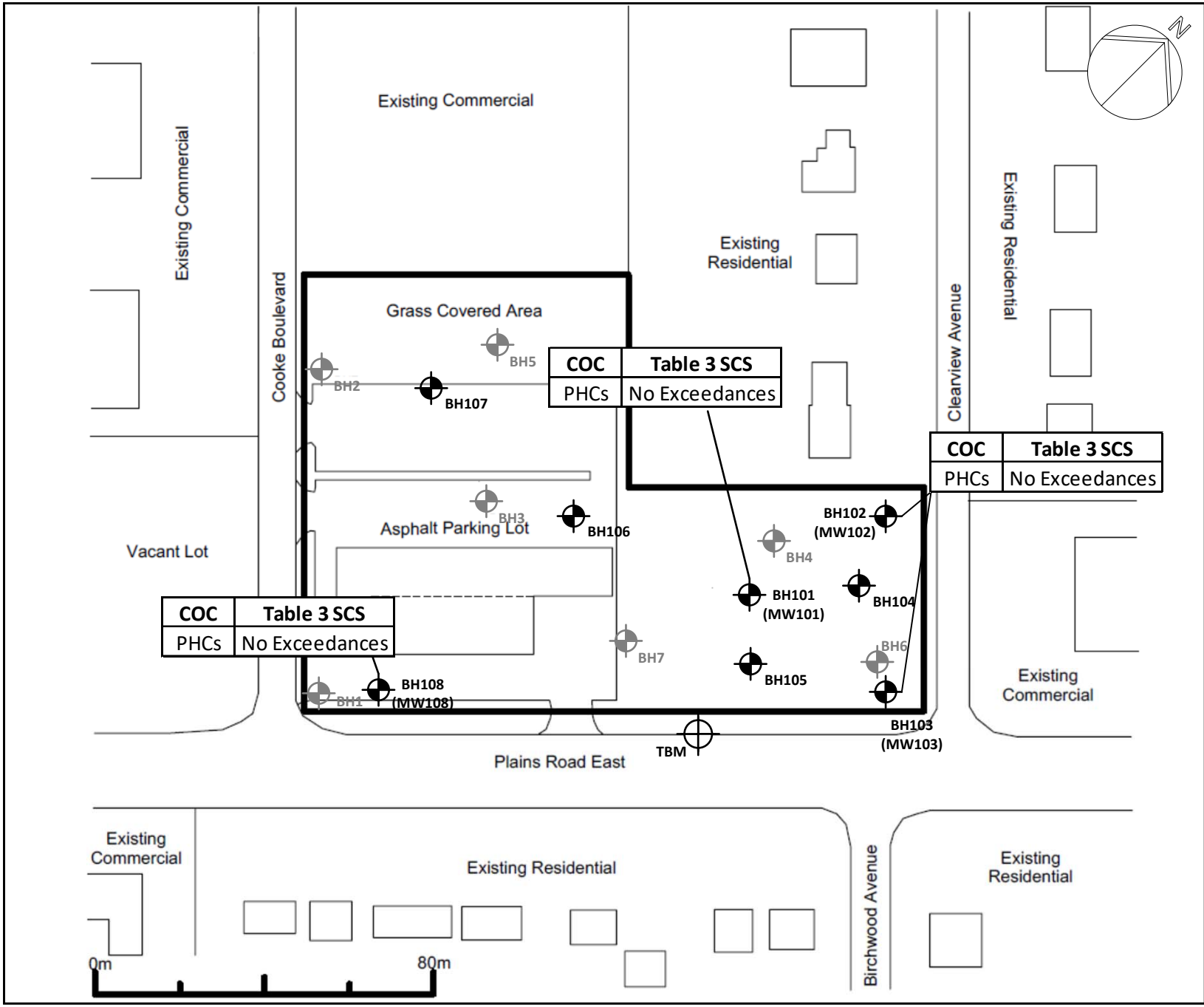
Project No. SM 177474-E

Date: June 2017

Drawn: JY | Checked: IS

SM 177474-E Drawing 3 Soil PHC

Drawing No. 3



LEGEND

- BH# — Borehole Location
- BH# — Previous Borehole Location
- TBM — Temporary Benchmark: Top of cathbasin on Plains Road East, geodetic elevation of 100.29 metres.

NOTES

1. This drawing should be read in conjunction with Soil-Mat Engineers & Consultants Ltd. Report No. SM 177474-E.
2. Borehole locations are approximate.

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Phase Two Environmental Site Assessment
53-71 Plains Road East,
Burlington, Ontario

Analytical Data Summary [Water] - PHCs

Project No. SM 177474-E

Date: June 2017

Drawn: JY	Checked: IS

SM 177474-E Drawing 4 Water PHC

Drawing No. 4

Appendix ‘B’

1. Borehole Logs

Log of Borehole No. 101

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	100.65	Ground Surface							
0–3 / 0–1		**Topsoil** Approximately 125 millimetres of topsoil.	SS	1	3 9 5 4	14			
3–7 / 1–2		**Silty Sand Fill** Reddish brown, trace to some clay and gravel, very loose to loose.	SS	2	2 3 3 3	6			
			SS	3	2 1 2 3	3			
			SS	4	1 2 4 3	6			
10–13 / 3–4			SS	5	0 1 2 2	3			
			SS	6	0 0 0 1	0			
16–17 / 5			SS	7	0 0 1 1	1			
18–19 / 6			SS	8	0 1 1 2	2			
20–21 / 6			SS	9	1 3 1 1	4			
23 / 7	93.59	**Silty Sand** Brown, trace to some gravel, loose to dense.	SS	10	2 1 4 4	5			
26–27 / 8									
30–31 / 9			SS	11	6 23 13 11	36			
32	90.89	End of Borehole							
33									

NOTES:

1. Borehole was advanced using hollow stem auger equipment on May 31, 2017 to termination at a depth of 9.8 metres.
2. Borehole was backfilled as per Ontario Regulation 903.
3. Soil samples will be discarded after 3 months unless otherwise directed by our client.
4. A moitoring well was installed and the following groundwater level readings have been measured:

July 7, 2017 - 7.68m
July 11, 2017 - 7.64m

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

Drill Method: Hollow Stem Augers
Drill Date: May 31, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: YM
Checked by: ML
Sheet: 1 of 1

Log of Borehole No. 102

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

Depth (ft)	Depth (m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		100.12	Ground Surface							
0–3	0–1		**Topsoil** Approximately 100 millimetres of topsoil. **Silty Sand Fill** Reddish brown, trace to some clay and gravel, very loose to loose.	SS	1	2 5 7 6	12			
				SS	2	3 2 2 2	4			
3–6	1–2			SS	3	2 4 5 5	9			
6–9	2–3			SS	4	2 1 1 1	2			
9–12	3–4			SS	5	2 1 0 2	1			
13	4	95.99								
13–16	4–5		**Silty Sand** Brown, trace to some gravel, occasional gravel layer, loose to very dense.	SS	6	3 6 9 6	15			
16–20	5–6		NOTES: 1. Borehole was advanced using hollow stem auger equipment on May 31, 2017 to termination at a depth of 9.8 metres. 2. Borehole was backfilled as per Ontario Regulation 903. 3. Soil samples will be discarded after 3 months unless otherwise directed by our client. 4. A monitoring well was installed and the following groundwater level readings have been measured: July 7, 2017 - 7.0m July 11, 2017 - 7.0m	SS	7	13 48 43 18	91			
20–24	6–7			SS	8	12 48 43 50/5	91			
24–28	7–8									
28–31	8–9			SS	9	9 4 7 7	11			
32		90.29								
33			End of Borehole							

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

Drill Method: Hollow Stem Augers
Drill Date: May 31, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: YM
Checked by: ML
Sheet: 1 of 1

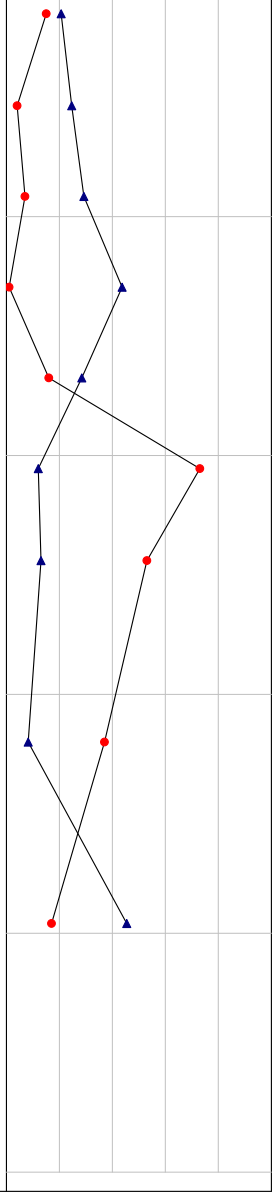
Log of Borehole No. 103

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

Depth (ft)	Depth (m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		100.20	Ground Surface							
0	0	99.90	**Sand and Gravel Fill** Approximately 300 millimetres of sand and gravel fill.							
1			**Silty Sand Fill** Reddish brown, trace to some clay and gravel, very loose to loose.	SS	1	11 10 5 6	15			
2				SS	2	3 2 2 5	4			
3	1			SS	3	2 3 4 4	7			
4				SS	4	2 0 1 0	1			
5				SS	5	5 8 8 9	16			
6	2			SS	6	15 23 50 37	73			
7				SS	7	18 26 27 30	53			
8										
9				SS	8	25 22 15 12	37			
10	3	96.99	**Silty Sand** Brown, trace to some gravel, occasional gravel layer, compact to very dense.							
11										
12										
13	4									
14										
15			NOTES:							
16										
17	5		1. Borehole was advanced using hollow stem auger equipment on June 2, 2017 to termination at a depth of 9.8 metres.							
18										
19			2. Borehole was backfilled as per Ontario Regulation 903.							
20	6									
21			3. Soil samples will be discarded after 3 months unless otherwise directed by our client.							
22										
23	7									
24			4. A monitoring well was installed and the following groundwater level readings have been measured:							
25										
26	8		July 7, 2017 - 7.17m July 11, 2017 - 7.26m	SS	9	1 7 10 13	17			
27										
28										
29	9	91.10								
30			End of Borehole							
31										
32										
33										



Drill Method: Hollow Stem Augers
Drill Date: June 2, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: SO
Checked by: ML
Sheet: 1 of 1

Log of Borehole No. 104

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

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	100.27	Ground Surface								
0–3 / 0–1		**Topsoil** Approximately 100 millimetres of topsoil.		SS	1	4 4 11 5	15			
3–6 / 1–2		**Silty Sand Fill** Brown, trace to some clay and gravel, loose to compact.		SS	2	2 5 1 0	6			
6–12 / 2–3.7	98.49	**Silty Sand** Reddish brown, trace to some clay and gravel, loose.		SS	3	2 3 5 4	8			
				SS	4	3 3 4 4	7			
				SS	5	2 2 2 1	4			
12 / 3.7	96.59	End of Borehole								

Moisture Content w% (10 20 30 40)

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

NOTES:

1. Borehole was advanced using hollow stem auger equipment on May 31, 2017 to termination at a depth of 3.7 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: Hollow Stem Augers
Drill Date: May 31, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: YM
Checked by: ML
Sheet: 1 of 1

Log of Borehole No. 105

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

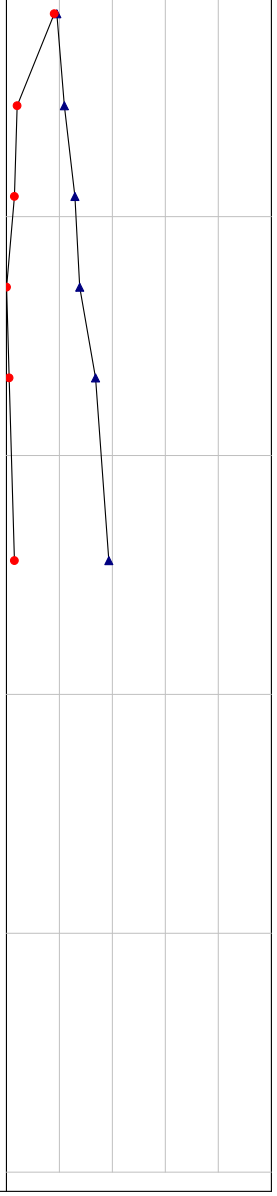
Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

Depth (ft)	Depth (m)	Elevation (m)	Symbol	Description	Well Data	SAMPLE Type	SAMPLE Number	SAMPLE Blow Counts	SAMPLE Blows/300mm	SAMPLE Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
		100.57		Ground Surface								
0	0			**Topsoil** Approximately 100 millimetres of topsoil.		SS	1	5 7 11 12	18			
3	1			**Silty Sand Fill** Brown, trace to some clay and gravel, very loose to compact.		SS	2	3 2 2 4	4			
6	2					SS	3	0 2 1 1	3			
9	3					SS	4	1 0 0 0	0			
10						SS	5	0 0 1 0	1			
13	4	96.59		**Silty Sand** Reddish brown, trace to some clay and gravel, very loose.		SS	6	1 1 2 17	3			
16	5	95.39		End of Borehole								
23	7			NOTES: 1. Borehole was advanced using hollow stem auger equipment on May 31, 2017 to termination at a depth of 5.2 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.								
30	9											
33												

Moisture Content w%
10 20 30 40

Standard Penetration Test blows/300mm
20 40 60 80



Drill Method: Hollow Stem Augers
Drill Date: May 31, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: YM
Checked by: ML
Sheet: 1 of 1

Log of Borehole No. 106

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

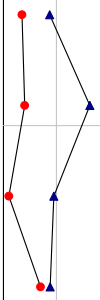
Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

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	100.04	Ground Surface								
0 / 0	99.51	**Pavement Structure** Approximately 75 millimetres of asphaltic concrete over 450 millimetres of compact granular base.								
3 / 1		**Silty Sand Fill** Brown, trace to some clay and gravel, loose.		SS	1	1 0 7 11	7			
6 / 2				SS	2	6 5 3 3	8			
7 / 2	97.79	**Silty Sand** Brown, trace gravel, compact.		SS	3	0 0 2 5	2			
10 / 3				SS	4	3 6 8 9	14			
11 / 3	96.39	End of Borehole								

Moisture Content w% (10 20 30 40)

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



NOTES:

1. Borehole was advanced using solid stem auger equipment on May 31, 2017 to termination at a depth of 3.7 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: Solid Stem Augers
Drill Date: May 31, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
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Datum: Temporary Benchmark
Field Logged by: YM
Checked by: ML
Sheet: 1 of 1

Log of Borehole No. 107

Project No: SM 177474-E
Project: Solid Gold Phase Two
Location: 53-71 Plains Rd E, Burlington
Client: Darko Vranich

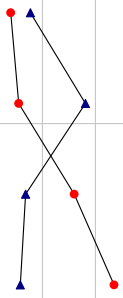
Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

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	100.07	Ground Surface								
0 / 0	99.54	**Pavement Structure** Approximately 75 millimetres of asphaltic concrete over 450 millimetres of compact granular base.								
3 / 1		**Silty Sand** Brown, trace gravel, reworked in upper levels, loose to dense.		SS	1	2 2 6 6	8			
6 / 2				SS	2	7 4 7 30	11			
9 / 3				SS	3	20 15 17 15	32			
11 / 3				SS	4	22 22 25 33	47			
12 / 4	96.39	End of Borehole								

Moisture Content w% (10 20 30 40)

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



NOTES:

1. Borehole was advanced using solid stem auger equipment on May 31, 2017 to termination at a depth of 3.7 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: Solid Stem Augers
Drill Date: May 31, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: YM
Checked by: ML
Sheet: 1 of 1

Log of Borehole No. 108

Project No: SM 177474-E
Project: Solid Gold Phase II ESA
Location: 53-71 Plains Rd E, Burlington
Client: Vrancor Developments

Project Manager: Steve Sears P. Eng.
Borehole Location: See Drawing No. 1
UTM Coordinates - N:
E:

Soil-Mat

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)	U.Wt.(kN/m3)
0 / 0	99.98	Ground Surface							
0 / 0	99.53	**Pavement Structure** Approximately 50 millimetres of asphaltic concrete over 400 millimetres of compact granular base.							
		Silty Sand Brown, trace to some gravel, reworked in upper levels, occasional gravel layer, loose to very dense.	SS	1	1 2 2 2	4			
			SS	2	1 3 3 2	6			
			SS	3	4 7 7 5	14			
			SS	4	3 8 8 11	16			
			SS	5	11 14 14 14	28			
			SS	6	7 50/5	100			
			SS	7	33 29 22 20	51			
			SS	8	3 10 13 13	23			
			SS	9	6 8 12 22	20			
32 / 9	90.19	End of Borehole							

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

NOTES:

1. Borehole was advanced using hollow stem auger equipment on May 31, 2017 to termination at a depth of 9.8 metres.

2. Borehole was backfilled as per Ontario Regulation 903.

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

4. A monitoring well was installed and the following groundwater level readings have been measured:

July 7, 2017 - 7.2m
July 11, 2017 - 7.19m

Drill Method: Hollow Stem Augers
Drill Date: June 2, 2017
Hole Size: 150 mm
Drilling Contractor: Determination

Soil-Mat Engineers & Consultants Ltd.
130 Lancing Drive, Hamilton, ON L8W 3A1
T: 905.318.7440 F: 905.318.7455
E: info@soil-mat.ca

Datum: Temporary Benchmark
Field Logged by: SO
Checked by: ML
Sheet: 1 of 1

Appendix ‘C’

1. AGAT Certificate of Analysis - Soil

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT
130 LANCING DRIVE
HAMILTON, ON L8W3A1
(905) 318-7440

ATTENTION TO: Peter Markesic

PROJECT: 177474

AGAT WORK ORDER: 17H223449

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Jun 14, 2017

PAGES (INCLUDING COVER): 11

VERSION*: 1

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

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17H223449

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:YM, SO

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

DATE RECEIVED: 2017-06-07

DATE REPORTED: 2017-06-14

		SAMPLE DESCRIPTION:		BH107 SS1	BH105 SS1	BH101 SS4	BH106 SS1	BH108 SS2	BH107 SS3	BH103 SS3	BH102 SS3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-05-31	2017-05-31	2017-05-31	2017-05-31	2017-06-02	2017-05-31	2017-06-02	2017-05-31
Parameter	Unit	G / S	RDL	8449745	8449748	8449749	8449750	8449752	8449753	8449754	8449755
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	6	6	3	4	7	6	5
Barium	µg/g	220	2	22	65	77	37	17	86	42	51
Beryllium	µg/g	2.5	0.5	<0.5	0.6	0.6	<0.5	<0.5	<0.5	0.6	<0.5
Boron	µg/g	36	5	<5	6	10	<5	6	7	5	<5
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	0.12	0.11	<0.10	<0.10	<0.10	0.13	0.13
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	2	7	14	14	7	6	12	13	10
Cobalt	µg/g	21	0.5	3.4	6.5	7.0	3.0	3.8	6.4	7.4	4.3
Copper	µg/g	92	1	17	29	25	10	12	46	33	14
Lead	µg/g	120	1	5	18	10	6	5	10	12	12
Molybdenum	µg/g	2	0.5	<0.5	0.5	0.6	<0.5	<0.5	0.7	<0.5	<0.5
Nickel	µg/g	82	1	7	15	17	6	8	13	16	9
Selenium	µg/g	1.5	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	12	21	21	12	12	20	23	16
Zinc	µg/g	290	5	18	58	38	22	19	41	41	35
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.222	0.114	0.157	0.398	0.505	0.148	0.144	0.122
Sodium Adsorption Ratio	NA	2.4	NA	0.666	0.102	0.158	2.63	10.1	0.727	0.099	0.103
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.72	7.48	7.33	7.36	7.68	7.88	7.37	7.52

Certified By: Amanjot Bhela

Results relate only to the items tested and to all the items tested

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 17H223449

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:YM, SO

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

DATE RECEIVED: 2017-06-07

DATE REPORTED: 2017-06-14

		SAMPLE DESCRIPTION:		Dupe - 2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2017-05-31
Parameter	Unit	G / S	RDL	8449756
Antimony	µg/g	1.3	0.8	<0.8
Arsenic	µg/g	18	1	4
Barium	µg/g	220	2	38
Beryllium	µg/g	2.5	0.5	<0.5
Boron	µg/g	36	5	<5
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.11
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	70	2	9
Cobalt	µg/g	21	0.5	4.3
Copper	µg/g	92	1	10
Lead	µg/g	120	1	7
Molybdenum	µg/g	2	0.5	<0.5
Nickel	µg/g	82	1	8
Selenium	µg/g	1.5	0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	2.5	0.5	<0.5
Vanadium	µg/g	86	1	16
Zinc	µg/g	290	5	25
Chromium VI	µg/g	0.66	0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.071
Sodium Adsorption Ratio	NA	2.4	NA	0.074
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.27

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

8449745-8449756 EC & SAR were 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.

Certified By: Amanjot Bhela

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Certificate of Analysis

AGAT WORK ORDER: 17H223449

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:YM, SO

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

DATE RECEIVED: 2017-06-07

DATE REPORTED: 2017-06-14

		SAMPLE DESCRIPTION:		BH108 SS8	BH104 SS2	BH104 SS4	BH105 SS2	BH105 SS5	BH103 SS5	BH103 SS9	BH101 SS5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-06-02	2017-05-31	2017-05-31	2017-05-31	2017-05-31	2017-06-02	2017-06-02	2017-05-31
Parameter	Unit	G / S	RDL	8449761	8449766	8449767	8449768	8449771	8449772	8449773	8449774
Benzene	µg/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	0.2	0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50	<50	160
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	16.6	10.3	14.0	11.9	12.5	6.9	16.8	12.1
Surrogate	Unit	Acceptable Limits									
Terphenyl	%	60-140		86	87	89	75	67	78	105	110

Certified By:

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17H223449

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:YM, SO

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

DATE RECEIVED: 2017-06-07

DATE REPORTED: 2017-06-14

		SAMPLE DESCRIPTION:		BH101 SS9	BH102 SS4	Dupe
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2017-05-31	2017-05-31	2017-05-31
Parameter	Unit	G / S	RDL	8449775	8449776	8449777
Benzene	µg/g	0.02	0.02	<0.02	<0.02	<0.02
Toluene	µg/g	0.2	0.08	<0.08	<0.08	<0.08
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Xylene Mixture	µg/g	0.05	0.05	<0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	25	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	120	50	NA	NA	NA
Moisture Content	%		0.1	12.8	17.8	15.8
Surrogate	Unit	Acceptable Limits				
Terphenyl	%	60-140		89	101	88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

8449761-8449777 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
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 contributions.
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 with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Certified By: NPopowich

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AGAT Laboratories

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Guideline Violation

AGAT WORK ORDER: 17H223449

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8449750	BH106 SS1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	2.4	2.63
8449752	BH108 SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	2.4	10.1

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Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT
AGAT WORK ORDER: 17H223449
PROJECT: 177474
ATTENTION TO: Peter Markesic
SAMPLING SITE:
SAMPLED BY:YM, SO

Soil Analysis

RPT Date: Jun 14, 2017			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	8455424		<0.8	<0.8	NA	< 0.8	108%	70%	130%	87%	80%	120%	87%	70%	130%
Arsenic	8455424		2	2	NA	< 1	109%	70%	130%	90%	80%	120%	87%	70%	130%
Barium	8455424		16	15	6.5%	< 2	100%	70%	130%	87%	80%	120%	83%	70%	130%
Beryllium	8455424		<0.5	<0.5	NA	< 0.5	107%	70%	130%	104%	80%	120%	96%	70%	130%
Boron	8455424		<5	<5	NA	< 5	87%	70%	130%	119%	80%	120%	101%	70%	130%
Boron (Hot Water Soluble)	8460110		0.22	0.22	NA	< 0.10	78%	60%	140%	100%	70%	130%	94%	60%	140%
Cadmium	8455424		<0.5	<0.5	NA	< 0.5	105%	70%	130%	92%	80%	120%	90%	70%	130%
Chromium	8455424		7	7	NA	< 2	96%	70%	130%	93%	80%	120%	89%	70%	130%
Cobalt	8455424		2.1	2.1	NA	< 0.5	98%	70%	130%	91%	80%	120%	86%	70%	130%
Copper	8455424		5	5	0.0%	< 1	93%	70%	130%	96%	80%	120%	87%	70%	130%
Lead	8455424		3	3	NA	< 1	99%	70%	130%	91%	80%	120%	85%	70%	130%
Molybdenum	8455424		<0.5	<0.5	NA	< 0.5	117%	70%	130%	103%	80%	120%	101%	70%	130%
Nickel	8455424		4	4	NA	< 1	102%	70%	130%	97%	80%	120%	90%	70%	130%
Selenium	8455424		<0.4	<0.4	NA	< 0.4	114%	70%	130%	93%	80%	120%	88%	70%	130%
Silver	8455424		<0.2	<0.2	NA	< 0.2	98%	70%	130%	91%	80%	120%	84%	70%	130%
Thallium	8455424		<0.4	<0.4	NA	< 0.4	93%	70%	130%	92%	80%	120%	86%	70%	130%
Uranium	8455424		<0.5	<0.5	NA	< 0.5	97%	70%	130%	91%	80%	120%	86%	70%	130%
Vanadium	8455424		14	14	0.0%	< 1	99%	70%	130%	90%	80%	120%	83%	70%	130%
Zinc	8455424		17	15	NA	< 5	97%	70%	130%	104%	80%	120%	89%	70%	130%
Chromium VI	8452731		<0.2	<0.2	NA	< 0.2	95%	70%	130%	103%	80%	120%	101%	70%	130%
Cyanide	8456002		<0.040	<0.040	NA	< 0.040	98%	70%	130%	96%	80%	120%	99%	70%	130%
Mercury	8455424		<0.10	<0.10	NA	< 0.10	98%	70%	130%	96%	80%	120%	93%	70%	130%
Electrical Conductivity	8455424		0.109	0.117	7.1%	< 0.005	93%	90%	110%	NA			NA		
Sodium Adsorption Ratio	8455841		1.91	1.93	1.0%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	8454557		7.21	7.20	0.1%	NA	101%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Amanjot Bhela

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Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H223449

PROJECT: 177474

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:YM, SO

Trace Organics Analysis

RPT Date: Jun 14, 2017			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) - PHCs F1 - F4 (Soil)															
Benzene	8456258		< 0.02	< 0.02	NA	< 0.02	112%	60%	130%	108%	60%	130%	105%	60%	130%
Toluene	8456258		< 0.08	< 0.08	NA	< 0.08	112%	60%	130%	110%	60%	130%	111%	60%	130%
Ethylbenzene	8456258		< 0.05	< 0.05	NA	< 0.05	112%	60%	130%	108%	60%	130%	111%	60%	130%
Xylene Mixture	8456258		< 0.05	< 0.05	NA	< 0.05	105%	60%	130%	109%	60%	130%	103%	60%	130%
F1 (C6 to C10)	8456258		< 5	< 5	NA	< 5	80%	60%	130%	90%	85%	115%	74%	70%	130%
F2 (C10 to C16)	8449777	8449777	< 10	< 10	NA	< 10	96%	60%	130%	94%	80%	120%	84%	70%	130%
F3 (C16 to C34)	8449777	8449777	< 50	< 50	NA	< 50	96%	60%	130%	94%	80%	120%	83%	70%	130%
F4 (C34 to C50)	8449777	8449777	< 50	< 50	NA	< 50	86%	60%	130%	96%	80%	120%	90%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Results relate only to the items tested and to all the items tested

AGAT Laboratories

5835 COOPERS AVENUE
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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H223449

PROJECT: 177474

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:YM, SO

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Trace Organics Analysis			
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID

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5835 Coopers Avenue
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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 #: 17H223449

Cooler Quantity: LG cooler

Arrival Temperatures: 6.3 | 6.4 | 6.6 / 5.5 | 5.4 | 5.6

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: Soil Mat Engineers

Contact:

Address: 130 Lancing Dr Hamilton ON

Phone: Fax:

Reports to be sent to:

1. Email: Peter Markesic Ross Keller
2. Email: Jeremy Yang

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04 — Table 1 (Indicate One) — ☐ Ind/Com ☐ Res/Park ☐ Agriculture

Soil Texture (Check One): ☐ Coarse ☐ Fine

☐ Sewer Use — ☐ Sanitary ☐ Storm

Region (Indicate One) ☐ MISA

☐ Regulation 558

☐ CCME

☐ 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: 177474

Site Location:

Sampled By: YM + SO

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

B	Biota
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 (Y/N)	O. Reg 153: Metals and Inorganics	All Metals ☐ 153 Metals (excl. Hydrides)	Hydride Metals ☐ 153 Metals (Incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN⁻	☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg	☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN	☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH 7 SS1	May 31	AM	1				X																	
BH 5 SS1	May 31	PM	1				X																	
BH 1 SS4	May 31	AM	1				X																	
BH 6 SS1	May 31	PM	1				X																	
BH 8 SS2	Jun 2	PM	1				X																	
BH 7 SS3	May 31	PM	1				X																	
BH 3 SS3	Jun 2	AM	1				X																	
BH 2 SS3	May 31	AM	1				X																	
Dupe - 2	May 31	AM	1				X																	
BH 8 SS8	Jun 2	PM	2															X						
BH 4 SS2	May 31	PM	2															X						

Samples Relinquished By (Print Name and Sign): Ross Keller RK	Date: Jun 7/17	Time: 2:00	Samples Received By (Print Name and Sign): Daniella Jaic	Date: 6/7/17	Time: 2:00pm
Samples Relinquished By (Print Name and Sign): Daniella Jaic	Date: 6/7/17	Time: 3:15pm	Samples Received By (Print Name and Sign): 2017/06/07	Date:	Time: 3:15
Samples Relinquished By (Print Name and Sign): 2017/06/07	Date:	Time: 4:40	Samples Received By (Print Name and Sign):	Date:	Time:

Page 1 of 2

N°: T 048712

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

Date Issued: February 22, 2017

AGAT Laboratories

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 #: 1741223449

Cooler Quantity: 1 x cooler

Arrival Temperatures: 6.5 6.4 6.6 / 5.5 5.4 5.6

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: Soil Mat Engineers

Contact:

Address: 130 Lancing Dr Hamilton ON

Phone: Fax:

Reports to be sent to:

1. Email: Peter Markesic Ross Keller

2. Email: Jeremy Yang

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04 — Table 1 (Indicate One) — ☐ Ind/Com ☐ Res/Park ☐ Agriculture — Soil Texture (Check One) ☐ Coarse ☐ Fine

☐ Sewer Use — ☐ Sanitary ☐ Storm — Region (Indicate One) ☐ MISA

☐ Regulation 558 ☐ CCME ☐ 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 Surchargers 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: 177474

Site Location:

Sampled By: YM + SO

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

B	Biota
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 (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN⁻ ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH4 SS4	May 31	PM	2										X					
BH5 SS2	May 31	PM	2										X					
BH5 SS5	May 31	PM	2										X					
BH3 SS5	Jun 2	AM	2										X					
BH3 SS9	Jun 2	AM	2										X					
BH1 SS5	May 31	AM	2										X					
BH1 SS9	May 31	AM	2										X					
BH2 SS4	May 31	AM	2										X					
Dupe	May 31	AM	2										X					

	Date	Time		Date	Time
Samples Relinquished By (Print Name and Sign): Ross Keller RK	Jun 7/17	2:00	Samples Received By (Print Name and Sign): Daniella Jaic	6/7/17	2:00pm
Samples Relinquished By (Print Name and Sign): Daniella Jaic	6/7/17		Samples Received By (Print Name and Sign): 2017/06/07		3:15
Samples Relinquished By (Print Name and Sign): 2017/06/07		4:40	Samples Received By (Print Name and Sign):		

Page 2 of 2

Nº: T 048713

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http://www.agatlabs.com

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT
130 LANCING DRIVE
HAMILTON, ON L8W3A1
(905) 318-7440

ATTENTION TO: Steve Sears

PROJECT: 177474

AGAT WORK ORDER: 17H258995

SOIL ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 19, 2017

PAGES (INCLUDING COVER): 5

VERSION*: 1

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

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17H258995

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Steve Sears

SAMPLING SITE:Burlington

SAMPLED BY:SO

Sodium Adsorption Ratio (SAR)

DATE RECEIVED: 2017-09-12

DATE REPORTED: 2017-09-19

		SAMPLE DESCRIPTION:		BH8 SS4	BH8 SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:			
Parameter	Unit	G / S	RDL	8709098	8709109
Sodium Adsorption Ratio	NA	5	NA	11.8	3.42

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T3 S RPI CT
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.

8709098-8709109 SAR was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

Certified By: Iris Verástegui

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Guideline Violation

AGAT WORK ORDER: 17H258995

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Steve Sears

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8709098	BH8 SS4	ON T3 S RPI CT	Sodium Adsorption Ratio (SAR)	Sodium Adsorption Ratio	NA	5	11.8

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H258995

PROJECT: 177474

ATTENTION TO: Steve Sears

SAMPLING SITE:Burlington

SAMPLED BY:SO

Soil Analysis

RPT Date: Sep 19, 2017			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
Sodium Adsorption Ratio (SAR)															
Sodium Adsorption Ratio	8709208		5.97	6.43	7.5%	NA	NA			NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Iris Verástegui

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Method Summary

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H258995

PROJECT: 177474

ATTENTION TO: Steve Sears

SAMPLING SITE:Burlington

SAMPLED BY:SO

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT
130 LANCING DRIVE
HAMILTON, ON L8W3A1
(905) 318-7440

ATTENTION TO: Peter Markesic

PROJECT: 177474

AGAT WORK ORDER: 17H255810

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Sep 11, 2017

PAGES (INCLUDING COVER): 5

VERSION*: 1

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

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17H255810

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2017-09-01

DATE REPORTED: 2017-09-11

				SAMPLE DESCRIPTION:	BH 108-1 SS3	BH 108-2 SS2	BH 108-3 SS1	BH 108-3 SS2	BH 108-3 SS3	BH 108-4 SS2	BH 108-5 SS2
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2017-09-01	2017-09-01	2017-09-01	2017-09-01	2017-09-01	2017-09-01	2017-09-01
Parameter	Unit	G / S	RDL		8684386	8684387	8684388	8684389	8684390	8684391	8684392
Sodium Adsorption Ratio	NA	5	NA		18.0	10.5	6.84	7.51	5.18	3.55	5.61

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T3 S RPI CT
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.

8684386-8684392 SAR was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

Certified By: Amanjot Bhela

Results relate only to the items tested and to all the items tested

AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 17H255810

PROJECT: 177474

5835 COOPERS AVENUE
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CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8684386	BH 108-1 SS3	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	18.0
8684387	BH 108-2 SS2	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	10.5
8684388	BH 108-3 SS1	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	6.84
8684389	BH 108-3 SS2	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	7.51
8684390	BH 108-3 SS3	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	5.18
8684392	BH 108-5 SS2	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	5.61

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H255810

PROJECT: 177474

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Sep 11, 2017			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) - ORPs (Soil)															
Sodium Adsorption Ratio	8684386	8684386	18.0	18.8	4.3%	NA	NA			NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Amanjot Bhela

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Results relate only to the items tested and to all the items tested

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H255810

PROJECT: 177474

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES

Results relate only to the items tested and to all the items tested

Appendix ‘D’

1. AGAT Certificate of Analysis - Water

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT
130 LANCING DRIVE
HAMILTON, ON L8W3A1
(905) 318-7440

ATTENTION TO: Peter Markesic

PROJECT: 177474

AGAT WORK ORDER: 17H235992

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Jul 19, 2017

PAGES (INCLUDING COVER): 5

VERSION*: 1

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

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

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Certificate of Analysis

AGAT WORK ORDER: 17H235992

PROJECT: 177474

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:Ross Keiller

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2017-07-12

DATE REPORTED: 2017-07-19

		SAMPLE DESCRIPTION:		MW 101-S1	MW 102-S1	MW 103-S1	MW 108-S1	Dup 1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2017-07-11	2017-07-11	2017-07-11	2017-07-11	2017-07-11
Parameter	Unit	G / S	RDL	8546932	8546955	8546960	8546964	8546968
Benzene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
F1 (C6 to C10)	µg/L	420	25	<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	240	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NA	NA	NA
Surrogate	Unit	Acceptable Limits						
Terphenyl	%	60-140		102	95	121	105	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

8546932-8546968 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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 contributions.
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 with the contribution of PAHs. Under Ontario Regulation 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Certified By: N Popnikolof

Results relate only to the items tested and to all the items tested

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Quality Assurance

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H235992

PROJECT: 177474

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:Ross Keiller

Trace Organics Analysis

RPT Date: Jul 19, 2017			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) - PHCs F1 - F4 (Water)															
Benzene	8560493		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	100%	60%	130%	113%	50%	140%
Toluene	8560493		< 0.20	< 0.20	NA	< 0.20	84%	50%	140%	101%	60%	130%	98%	50%	140%
Ethylbenzene	8560493		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	99%	60%	130%	110%	50%	140%
Xylene Mixture	8560493		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	113%	60%	130%	116%	50%	140%
F1 (C6 to C10)	8560493		< 25	< 25	NA	< 25	80%	60%	140%	89%	60%	140%	97%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	97%	60%	140%	60%	60%	140%	64%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	101%	60%	140%	84%	60%	140%	79%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	88%	60%	140%	101%	60%	140%	88%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Results relate only to the items tested and to all the items tested

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Method Summary

CLIENT NAME: SOIL MAT ENGINEERS & CONSULTANTS LT

AGAT WORK ORDER: 17H235992

PROJECT: 177474

ATTENTION TO: Peter Markesic

SAMPLING SITE:

SAMPLED BY:Ross Keiller

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10)	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID

Results relate only to the items tested and to all the items tested

AGAT Laboratories
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 #: 17H235992
Cooler Quantity: MD cooler
Arrival Temperatures: 20.9 | 20.8 | 20.7 (19.7 | 18.7 | 19.3)
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: NO ICE

Report Information:
Company: SoilMat
Contact:
Address: 130 Lancing Dr Hamilton ON
Phone: Fax:
Reports to be sent to:
1. Email: Ross Keller Jeremy Yang
2. Email: Peter Markesic

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)
☒ Regulation 153/04 — Table 1 (Indicate One) ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One) ☐ Coarse ☐ Fine
☐ Sewer Use ☐ Sanitary ☐ Storm
Region (Indicate One) ☐ MISA
☐ Regulation 558 ☐ CCME ☐ Prov. Water Quality Objectives (PWQO) ☐ Other
(Indicate One)

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: 177474
Site Location:
Sampled By: RK
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a Record of Site Condition? ☐ Yes ☐ No
Report Guideline on Certificate of Analysis ☐ Yes ☐ No

Invoice Information: Bill To Same: Yes ☐ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend
B Biota
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 (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (exc. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides); ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR)	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
MW 101-S1	Jul 11/17	200	4	GW								X						
MW 102-S1	↓	230	4	↓								X						
MW 103-S1		300	4									X						
MW 108-S1		330	4									X						
DUP 1		300	4									X						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Ross Keller	Jul 11/17	440	Daniella	7/11/17	4:40pm
Daniella	7/12/17	2:45pm		12/7/17	2:45
	Date	Time		Date	Time

Page 1 of 1
Nº: T 052883

Document ID: DIV-78-1511-014
Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT
Date Revised: December 22, 2017

Appendix ‘E’

1. Qualification of Assessors

COMPANY BACKGROUND

SOIL-MAT ENGINEERS & CONSULTANTS LTD. [SOIL-MAT ENGINEERS] is a Canadian Consulting Engineering firm owned by its senior staff. Over the past thirty years the principals of SOIL-MAT ENGINEERS have undertaken geotechnical investigations in all areas of Hamilton and surrounding area and are familiar with the distinct geology of the area and therefore well-versed with the various soil, bedrock and groundwater conditions. SOIL-MAT ENGINEERS has a staff of over twenty-five engineers and technical staff who specialize in geotechnical assignments, environmental assessments, hydrogeological investigations and construction quality control/assurance projects. The company commenced operation on June 15, 1992 and has undertaken over 5,000 projects since its inception. The firm and all professional staff are in good standing with Professional Engineers Ontario. The company has maintained a current Certificate of Authorisation since it was granted on April 28, 1992. The firm's office and laboratory facilities are located at 130 Lancing Drive in Hamilton, Ontario.

REPORT AUTHORS

Jeremy Yang, M.Sc. Eng., EIT.
Project Manager

Mr. Yang has over three years of experience in conducting Phase I ESA research and Phase II ESA fieldwork, including soil and groundwater sampling. Mr. Yang also has experience in Phase III Environmental Site Assessments including remediation of underground storage tanks and various ex-situ 'dig and dump' remediation programmes.

Stephen R. Sears, B. Eng. Mgmt., P. Eng.
[Director/ Senior Professional]

Mr. Sears has over twenty-two years of experience in the geotechnical and geo-environmental fields. Mr. Sears holds current Consulting Engineer designations with the Professional Engineers Ontario and the Association of Professional Engineers and Geoscientists of Saskatchewan and has supervised the geotechnical investigations for numerous industrial, commercial and residential development projects in Southern Ontario, slope stability assignments associated with Hamilton Conservation Authority, Conservation Halton and Niagara Peninsula Conservation Authority requirements, and several high rise developments throughout Ontario. Mr. Sears has also been involved in geotechnical and hydrogeological investigations for industrial park developments in the Greater Toronto Area and Niagara Peninsula. Some of Mr. Sears' projects have included the decommissioning and reconstruction of underground and above ground fuel oil storage tanks in Ontario and Saskatchewan, the study of the containment structures at a number of Petroleum Storage Facilities in Ontario and numerous 'dig and dump' remediation projects.

Keith Gleadall, B.A., EA Dipl.

Vice-President [Senior Professional]

Mr. Gleadall has over fourteen years of experience in conducting Phase I, II and III Environmental Site Assessments and has successfully completed the requirements of the Associated Environmental Site Assessors of Canada and a Post Graduate Diploma in Environmental Site Assessment from Niagara College. Mr. Gleadall is responsible for undertaking numerous hydrogeological investigations, primarily within the City of Hamilton, associated with the development of residential and commercial subdivision projects, together with Phase I, II and III Environmental Site Assessments. Projects have included the decommissioning of underground and above ground fuel oil storage tanks, the implementation of in-situ and ex-situ remediation programmes, the decommissioning of a former dry cleaning facility and numerous 'dig and dump' remediation projects.

Appendix ‘F’

1. Statement of Limitations

REPORT LIMITATIONS

Achieving the objectives that are stated in this report has required SOIL-MAT ENGINEERS to derive conclusions based upon the best and most recent information currently available to SOIL-MAT ENGINEERS. No investigative method can completely eliminate the possibility of obtaining partially imprecise information. SOIL-MAT ENGINEERS has expressed professional judgement in gathering and analysing the information obtained and in the formulation of its conclusions.

Information in this report was obtained from sources deemed to be reliable, however, no representation or warranty is made as to the accuracy of this information. To the best of SOIL-MAT ENGINEERS' knowledge, the information gathered from outside sources contained in this report on which SOIL-MAT ENGINEERS has formulated its opinions and conclusions, are both true and correct. SOIL-MAT ENGINEERS assumes no responsibility for any misrepresentation of facts gathered from outside sources.

This report was prepared to assess and document evidence of potential environmental contamination, and not to judge the acceptability of the risks associated with such environmental contamination. Much of the information gathered for this report is only accurate at the time of collection and a change in the Site conditions may alter the interpretation of SOIL-MAT ENGINEERS' findings. Furthermore, the reader should note that the Site reconnaissance described in this report was an environmental assessment of the Site, not a regulatory compliance or an environmental audit of the Site.

SOIL-MAT ENGINEERS & CONSULTANTS LTD. prepared this Report for the account of VRANCOR GROUP OF COMPANIES. The material in it reflects SOIL-MAT ENGINEERS best judgement in light of the information available to it 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.