• Broccolini Limited Partnership No. 6

Geotechnical Investigation
Building 1
12304 Heart Lake Road
Caledon, Ontario

Project Number
BRM-21004344-C0

Prepared By:

EXP Services Inc.
1595 Clark Boulevard
Brampton, ON L6T 4V1
Canada,

Date Submitted
November 10, 2021

Table of Contents

Tables

Drawings

Appendices

1. Introduction

This report presents the results of a Geotechnical Investigation carried out at the site of a proposed commercial/industrial building development at 12304 Heart Lake Road in the Town of Caledon, Ontario. The work was authorized by Mr. Ben Wilson on behalf of Broccolini Limited Partnership No. 6.

It is understood that the proposed construction will comprise one (1) single storey slab on grade building without basement, supporting truck loading docks, paved accessways, sewers, and truck and passenger vehicle parking areas. The proposed building is designated Building 1 and will have a footprint of approximately 42,223 m^2 (~454, 485 $ft.^2$).

The purpose of this study was to determine the subsurface conditions at the site. In this regard, thirty (30) boreholes evenly located to provide representative coverage of the site were drilled for preliminary Geotechnical Investigation purposes with findings detailed in Preliminary Geotechnical report dated April 21, 2021. Upon receipt of the proposed development layout for Building 1 illustrated on a plan provided by the client, it was determined that the existing boreholes provided adequate coverage for design purposes for this building. Based on the existing information, geotechnical engineering guidelines for the design and construction of the proposed development would be provided.

The comments and recommendations given in this report are based on the assumption that the design concept described will proceed into construction. If changes are made either in the design phase or during construction, this office must be retained to review these modifications. The result of this review may be a modification of our recommendations or the requirement of additional field or laboratory work to check whether the changes are acceptable from a geotechnical viewpoint.

2. Procedure

Drilling and sampling operations, carried out between March 16 and 25, 2021, were completed by a combination of auger and split-spoon techniques with drilling equipment owned and operated by a specialist contractor. A total of thirty (30) boreholes, designated as Boreholes 1 to 30, was drilled for this investigation. The boreholes were advanced to depths of approximately 7.8 to 8.2 m and spaced to provide representative coverage of the site. This report addresses the location of proposed Building 1 on the southwest portion of the site. As such Boreholes 17 to 20 and 24 to 27 are applicable. The approximate borehole locations are shown on the attached Borehole Location Plan (Drawing No. 1).

A representative of EXP Services Inc. (EXP) was present throughout the fieldwork to monitor and direct the drill operations, and to record borehole information. Representative samples of the subsurface soils were recovered at regular intervals using conventional 50 mm O.D. split spoon sampling equipment driven in accordance with Standard Penetration Test procedures (ASTM D1586). All split spoon samples were returned to EXP's Brampton laboratory for testing which included moisture content and unit weight determinations on selected samples. Water levels were monitored in the open boreholes prior to backfilling and in the monitoring well installed in Borehole 25.

The borehole locations were established in the field by EXP personnel. Elevations were measured using a Sokkia GCS3 Global Navigation Satellite System (GNSS) receiver based on information derived from the TopNET Live Network Service Global Positioning System (GPS).

3. Site Description

The project site occupies an area of 37.04 hectares (91.52 acres) in the Town of Caledon, Ontario. The property consists of mainly farmland. Two (2) residences are located at the east-central and southeast portions of the property respectively, fronting onto Heart Lake Road. A third homestead and associated farm buildings are located in the north central portion of the site. The property is irregular in shape and is located on the west side of Heart Lake Road, with frontage centred approximately 845 m north of Mayfield Road. This report is specific to proposed Building 1 located on the southwest portion of the site.

4. Subsurface Conditions

The detailed soil profiles encountered in each borehole and the results of moisture content and unit weight determinations are indicated on the attached borehole logs. It should be noted that the soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect approximate transition zones for the purpose of geotechnical design and should not be interpreted as exact planes of geological change.

The "Notes on Sample Description" preceding the borehole logs form an integral part of and should be read in conjunction with this report.

The soil stratigraphy at the southwest portion of the site consists of surficial topsoil over a discontinuous fill layer underlain by native deposits of clayey silt till and sandy silt till. Following is a brief description of the soil conditions encountered during the investigation.

Topsoil

Surface cover comprises topsoil ranging in thickness from approximately 130 to 280 mm at all borehole locations. However, the boreholes were advanced in cultivated fields. As such, topsoil thicknesses up to approximately 600 mm associated with typical ploughed fields should be anticipated.

It should be noted that topsoil measurements were carried out at the borehole locations only and could differ at other locations on the site. If required, a more detailed test pit program should be carried out to more accurately quantify the amount of topsoil to be removed for construction purposes.

Fill

Fill was encountered following the topsoil in Boreholes 20 and 27. The fill extends to a depth of approximately 1.4 m (~Elevation 270.0 to 270.1 m). The fill constitutes brown clayey silt to sandy silt with trace gravel and minor stone fragments and appeared to be reworked on-site parent material. Moisture contents recorded in the fill ranged between approximately 12 and 15 percent. The higher moisture contents were recorded in the upper regions of the fill and are likely associated with the transition from recently melted snow in the topsoil overlying the fill.

Clayey Silt Till

A clayey silt till deposit underlies the fill in Boreholes 20 and 27 and the topsoil at all other borehole locations. The clayey till extends to termination depth of approximately 8.1 m (~Elevation 258.7 to 260.3 m) in Boreholes 17 and 25. The clayey silt till was fully

penetrated approximately 4.1 to 7.1 m depth (~Elevation 260.0 to 265.8 m) in the remaining boreholes. The clayey silt till was found to be disturbed in the upper 200 to 300 mm at several borehole locations. The clayey silt till contains trace sand or fine sand seams/pockets, trace gravel and occasional boulder fragments. The clayey silt till is typically brown in colour becoming grey with depth. The consistency of the clayey silt till is generally very stiff to hard. Localized stiff zones were noted at depth in Boreholes 24 and 27, generally consistent with the change in colour from brown to grey. Moisture contents of the clayey silt till were recorded between approximately 8 and 16 percent.

Sandy Silt Till

A sandy silt till deposit was intersected below the clayey silt till in Boreholes 18 to 20, 24, 26 and 27. All boreholes where the sandy silt till was encountered were terminated in this deposit at depths of approximately 7.8 to 8.1 m (~Elevation 259.0 to 263.6 m). The sandy silt till contains trace clay, silt partings, fine sand seams, trace gravel and occasional boulder fragments. The sandy silt till is grey in colour except for Boreholes 18 and 20 where the deposit is brown. The degree of compactness of the sandy silt till was assessed as dense to very dense. Moisture content of the sandy silt till generally ranges from approximately 6 to 18 percent.

Groundwater Conditions

Groundwater conditions were assessed in the open boreholes and in the monitoring well installed in Borehole 25 during the course of the fieldwork.

Short term groundwater levels are recorded on the attached borehole logs. Upon completion of drilling, free water was observed in Borehole 19 at a depth of approximately 6.4 m below existing grade. The remaining boreholes were dry upon completion of augering.

Subsequently, the groundwater level in the monitoring well installed in Borehole 25 was measured and recorded, with the results summarized in the following Table 1.

Table 1: Groundwater Level Readings

Borehole No.	Elapsed Time	Water Level – Depth below grade (m)	Elevation (m)
25	After 17 Days	1.5	266.9

Based on the information observed in the boreholes, the groundwater originates from the more pervious wet sand seams in the clayey silt till and sandy silt till on the site.

The groundwater elevations reflect the conditions at the time of the investigation. Groundwater elevations are subject to seasonal fluctuations.

The monitoring well was installed in general accordance with the Ontario Water Resources Act-R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03 by CSD, by a licensed well contractor. When the use of the monitoring well is no longer required, it must be decommissioned in accordance with the procedure outlined in the Ontario Water Resources Act – R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03.

5. Geotechnical Assessment

5.1 Site Grading

It is our understanding that the final site grades have not been established at the time of this investigation. However, based on surface elevations at the borehole locations, relief of approximately 4.7 m exists over the southwest portion of the site. As such, it is anticipated that some regrading (cut and fill operations) will be carried out at the site. The following procedures are recommended for the construction of fill sections for pavement and building areas at the site, where required.

- All vegetation, topsoil, organic or deleterious materials, existing fill and former building foundations etc. should be removed from beneath the proposed building and pavement areas.

- The exposed subgrade surface should be proofrolled with a heavy vibratory roller and examined by a geotechnical engineer. Any soft areas detected during the proofrolling process should be subexcavated.

- The area can then be brought up to the final subgrade level with approved on-site or imported material placed in lifts not exceeding 200 mm and compacted to the following requirements:

    I. Within the building areas - minimum of 98 percent standard Proctor maximum dry density (SPMDD) for slab-on-grade support. If foundations are to be placed on engineered fill, the fill should be compacted to 100% SPMDD.

    II. Pavement areas - minimum of 95 percent SPMDD to within 600 mm of final subgrade level and 98 percent SPMDD for the upper 600 mm.

    III. General backfill including trench backfill and backfill adjacent to foundation walls - minimum of 98 percent SPMDD.

- All backfilling and compaction operations should be monitored on a full-time basis by qualified geotechnical personnel to approve material, evaluate placement operations and confirm the specified degree of compaction is achieved uniformly throughout the fill.

- Where free-draining backfill is required, or in confined areas, imported granular material conforming to OPSS Granular ‘B’ is recommended.

5.2 Foundation Considerations

Based on the results of the investigation, conditions suitable for support of the proposed structure were available at all borehole locations within or close to the proposed building envelope. The proposed structure can be supported on conventional spread and strip footings or augered piers founded at depths of 1.0 to 2.0 m (~Elevation 265.3 to 269.5 m) below all fill on the undisturbed native clayey silt till. The footings can be designed for a geotechnical reaction at Serviceability Limit States (SLS) of 300 kPa and factored geotechnical resistance of 450 kPa at Ultimate Limit States (ULS), subject to geotechnical inspection during construction.

Typically, the piers can be cleaned by the augers. The final cleaning of the bases can then be auger cleaned by mixing the loose materials at the base of the piers with 0.3 to 0.5 m thick concrete. The mixture should then be removed. During the installation of piers, a temporary steel liner will have to be installed to prevent caving of the drilled hole and to seal off any water which may be perched in the water bearing seams above the founding levels. A positive head of concrete inside the liner with respect to any exterior groundwater levels must be maintained during withdrawal of the liner. A 150 mm slump concrete is recommended for use to prevent the concrete from having a honeycombed structure and to avoid bridging in the liner upon its withdrawal.

The following Table 2 shows the highest elevations at the borehole locations where the afore mentioned bearing values in the native soils can be applied.

Table 2: Highest Elevation at Borehole Locations Where Recommended Geotechnical Reaction/Resistance Can Be Applied

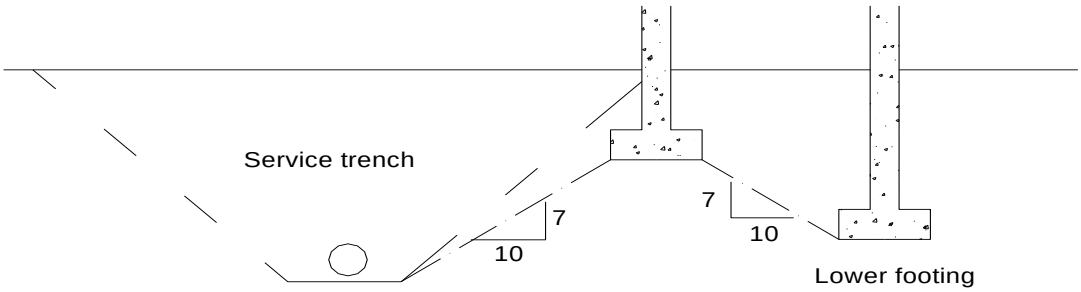
Borehole No.	Existing Grade Elevation (m)	Founding Material	Spread and Strip Footing/Augered Pier SLS 300 kPa / ULS 450 kPa ~ Elevation (Depth Below Existing Grade (m))
Building 1			
17	266.8	Clayey Silt Till	265.3 (1.5)
18	267.8	Clayey Silt Till	266.8 (1.0)
19	268.7	Clayey Silt Till	267.7 (1.0)
20	271.4	Clayey Silt Till	269.4 (2.0)
24	267.1	Clayey Silt Till	266.1 (1.0)
25	268.4	Clayey Silt Till	267.4 (1.0)
26	270.2	Clayey Silt Till	269.2 (1.0)
27	271.5	Clayey Silt Till	269.5 (2.0)

Alternatively, the structure can be supported at nominal depths on engineered fill placed on prepared subgrade and designed for geotechnical reaction of 150 kPa at SLS and factored geotechnical resistance of 225 kPa at ULS. General guidelines and requirements for foundation support on engineered fill are shown on Appendix A.

The engineered fill construction should be monitored on a full-time basis by geotechnical personnel from EXP to examine and approve fill materials, to evaluate placement operations, and to verify that the specified degree of compaction is being achieved uniformly throughout the fill.

5.3 Foundations General

Footings/piers at different elevations should be located such that higher footings/piers are set below a line drawn up at 10 Horizontal to 7 Vertical from the near edge of the lower footing/pier. This concept should also be applied to excavations for new foundations in relation to existing footings or underground services. This concept is illustrated in the following sketch.



FOOTINGS NEAR SERVICE TRENCHES OR AT DIFFERENT ELEVATIONS

All footings/ piers exposed to freezing conditions must be provided with a minimum of 1.2 m of earth cover or equivalent insulation for frost protection, depending on the final grade requirements.

Provided that the soil is not disturbed due to groundwater, precipitation, traffic, etc., and the aforementioned geotechnical reactions/resistances are not exceeded, then total and differential settlements should be small and within the normally tolerated limits of 25 mm and 19 mm, respectively.

The recommended bearing capacities have been calculated by EXP from the borehole information for the design stage only. The investigation and comments are necessarily on-going as new information of underground conditions becomes available. For example, it should be appreciated that modifications to bearing levels may be required if unforeseen subsoil conditions are revealed after the excavation is exposed to full view or if final design decisions differ from those assumed in this report. For this reason, this office should be retained to review final foundation drawings and to provide field inspections during the construction stage.

5.4 Floor Slabs and Permanent Drainage

The native soil encountered in the boreholes appears generally suitable for floor slab support. For normal slab-on-grade construction, all topsoil, existing fill, former building foundations and other deleterious material should be removed from the entire underfloor area. Following site grading the exposed subgrade surface should then be thoroughly proof-rolled with a heavy vibratory roller. Any soft spots detected should be sub-excavated and replaced with compactible fill in the manner described in Section 5.6 - "Backfill Considerations" section of this report. The site can then be filled to the required grades as outlined in Section 5.1 – “Site Grading”. This process also provides an opportunity for replacement of the fill as Engineered Fill capable of supporting foundations as discussed earlier.

A Modulus of Subgrade Reaction k_s of 27 MN/m^3 (170 kcf) may be applied to subgrade prepared in accordance with the foregoing procedures for design purposes.

A 200 mm layer of 19 mm clear stone should be placed between the prepared subgrade and the floor slab to serve as a moisture barrier. Also, within any unheated areas and entrances to buildings, Styrofoam insulation should be provided below the floor slab and against the foundation walls to protect against frost heave.

Based on the soil and groundwater conditions at the Building 1 portion of the site, underfloor drains will not be required. Perimeter drains are not required if the floor slab of the building is set at least 200 mm above the existing exterior grade.

Around the perimeter of the building the ground surface should be sloped on a positive grade away from the structure to promote surface water run-off and reduce groundwater infiltration adjacent to the foundations.

5.5 Excavations and Groundwater Control

All excavation must be carried out in accordance with the most recent Occupational Health and Safety Act. The fill is classified as Type 3 soil. The clayey silt till and sandy silt till are

classified as Type 2 soils. Where loose/soft materials are encountered locally, or within zones of persistent seepage at depth, it may be necessary to flatten the side slopes.

It should be noted that the presence of cobbles and boulders in glacial till deposits may influence the progress of excavation. Consequently, provisions should be made in the contract documents to cover any delays caused by these obstructions.

Some seepage of free water from more pervious seams and layers within the native soils should be anticipated during construction. However, it should be possible to control and remove any such seepage by pumping from temporary sumps and ditches and/or oversized excavations.

5.6 Backfill Considerations

Backfill used to satisfy underfloor slab requirements, in footings and service trenches, etc., should be compactible fill, i.e., inorganic soil with its moisture content close to its optimum moisture content determined in the standard Proctor maximum dry density test. For ease of compaction and quality control in confined areas, sand fill such as Ontario Provincial Standard Specifications (OPSS) 1010 Granular 'B' is recommended. The backfill should be placed in lifts not more than 200 mm thick in the loose state, each lift being compacted to at least 98 percent SPMDD under the floor slab and 95 percent SPMDD elsewhere, before subsequent lifts are placed. The degree of compaction achieved in the field should be checked by in-place density tests.

The majority of excavated material will likely consist of the upper fill and clayey silt till. In general, the moisture contents of the fill material are higher than optimum and may be reused for structural backfill only if they are free of topsoil inclusions or other obviously unsuitable material, and partial drying is carried out. Any organic or excessively wet or otherwise deleterious material should not be used for backfill purposes. Any shortfall of suitable on-site excavated material can be made up with imported granular material, OPSS Granular 'B' or equivalent.

In general, the overburden soils are not free draining and therefore should not be used where this characteristic is required, or in confined areas. Imported granular material conforming to OPSS Granular 'B' would also be suitable for these purposes.

5.7 Earthquake Considerations

The recommendations for the geotechnical aspects to determine the earthquake loading for design using the OBC 2012 are presented below.

5.7.1 Subsoil Conditions

The subsoil and groundwater information at this site have been examined in relation to Section 4.1.8.4 of the OBC 2012. The subsoils generally consist of clayey silt to sandy silt fill, clayey silt till and sandy silt till. It is anticipated that the floor slab of the proposed structure will be founded on stiff to hard clayey silt till.

5.7.2 Depth of Boreholes

Table 4.1.8.4.A. Site Classification for Seismic Site Response in OBC 2012 indicated that to determine the site classification, the average properties in the top 30 m (below the lowest basement level) are to be used. The deepest borehole advanced at this portion of the site was at about 8.1 m depth. Therefore, the site classification recommendation would be based on the available information as well as our interpretation of conditions below the boreholes based on our knowledge of the soil conditions in the area. The assumed undrained shear strength for the cohesive soils to 30 m depth will be greater than 100 kPa. The assumed N-values for the granular soil to 30 m depth will have an average value greater than 50.

5.7.3 Site Classification

Based on the above assumptions and currently available information, the Site Class for the proposed building is “C” as per Table 4.1.8.4.A, Site Classification for Seismic Site Response, OBC 2012.

5.8 Retaining Walls

Based on the relief over the Building 1 portion of the site as evidenced by the borehole collar elevations, retaining walls and loading dock walls may be required. Backfill behind the retaining walls should consist of free-draining granular material. Filter cloth should be placed between the retaining wall and the granular backfill material. A perimeter tile drain or weep holes should also be provided in the structure to prevent hydrostatic pressure build-up.

The lateral earth pressure acting on the retaining or loading dock walls may be calculated from the following equation:

$$p = k(\gamma h + q)$$

where:

- p = the pressure in kPa acting against any retaining wall at depth, h, below the ground surface;
- k = the earth pressure coefficient;
- γ = the bulk unit weight of the retained free draining granular backfill;
- h = the depth in m below the ground surface at which the pressure, p, is to be computed; and
- q = the value of any adjacent surcharge in kPa which may be acting close to the wall.

The foregoing expression assumes an effective perimeter tile drain system will be incorporated to prevent the build-up of hydrostatic pressure behind the retaining wall. To minimize infiltration of surface water behind exterior retaining walls, the upper 600 mm of backfill should comprise compacted relatively impervious material.

For design purposes, the following physical properties of the on-site native soils can be used:

Coefficient of Lateral Earth Pressures: $K_a = 0.3$; $K_p = 3.0$

Unit Weight = 23 kN/m^3

5.9 Parking Areas and Internal Access Roads

The recommended pavement structures provided in Table 3 are based upon an estimate of the subgrade soil properties determined from visual examination and textural classification of the soil samples. A functional design life of 8 to 10 years has been used to establish the pavement recommendations. This represents the number of years to the first rehabilitation, assuming regular maintenance is carried out. Other thickness combinations can be used provided the Granular Base Equivalency (GBE) is maintained and any minimum component thickness specified by the Town of Caledon is met.

Table 3: Recommended Pavement Structure Thickness

Pavement Layer	Compaction Requirements	Light-Duty Parking (Cars)	Heavy Duty Traffic (Trucks) Shipping Docks and Access Road
Asphaltic Concrete (OPSS 310)	Minimum 92 % MRD**	40 mm HL3 65 mm HL8	40 mm HL3 110 mm HL8
19 mm Crusher Run Limestone	100% SPMDD*	150 mm	150 mm
50 mm Crusher Run Limestone	100% SPMDD*	300 mm	450 mm

* Denotes standard Proctor maximum dry density, ASTM-D698
** Denotes Maximum Relative density, MTO LS-264

Where rigid pavements are required such as the truck loading dock apron area and dolly pads for trailer parking, recommended pavement structures are summarized in Table 4.

Table 4: Recommended Pavement Structure Thickness (Rigid)

Pavement Layer	Compaction Requirements	Concrete Pads Adjacent to Loading Docks	Concrete Dolly Pads
Concrete CSA Class C-2 32 MPa	-	230 mm	200 mm (4)
19 mm Crusher-run Limestone (OPSS 1010)	100% SPMDD (2)	200 mm	70 mm
50 mm Crusher-run Limestone (OPSS 1010)	100% SPMDD (2)	-	500 mm

Notes: (2) Denotes standard Proctor maximum dry density, MTO LS-706 (Procedure 3)
(4) The concrete dolly pads should be 200mm thick with shrinkage steel.

The concrete for this project should be C-2 Class as a minimum, i.e., 32 MPa, 0.45 maximum water/cement ratio. The nominal aggregate size in the mix should be 37.5 mm and the air content should range from 4 to 7%.

The subgrade must be compacted to 98 percent SPMDD for at least the upper 600 mm.

The long-term performance of the pavement structure is highly dependent upon the subgrade support conditions. Stringent construction control procedures should be maintained to ensure uniform subgrade moisture and density conditions are achieved. In

addition, the need for adequate drainage cannot be over-emphasized. The finished pavement surface should be free of depressions and should be sloped to provide effective surface drainage toward catch basins. Subdrains should be installed to intercept excess subsurface moisture and to prevent subgrade softening. This is particularly important in heavy-duty pavement areas.

Additional comments on the construction of parking areas and access roadways are as follows:

1. As part of the subgrade preparation, proposed parking areas and access roadways should be stripped of topsoil and other obvious objectionable material. Fill required to raise the grade to design elevations should conform to backfill requirements outlined in previous sections of this report. The subgrade should be proof-rolled in the full-time presence of qualified geotechnical personnel. Soft or spongy subgrade areas should be sub-excavated and properly replaced with suitable approved backfill compacted to 98 percent SPMDD. The final subgrade surface should then be properly shaped and crowned.

2. Assuming that satisfactory cross-falls have been provided for subdrainage, subdrains extending from and between catch basins may be satisfactory. Further, subdrains should also be installed along the perimeter of pavement areas as well as around landscaped areas and temporary snow storage areas.

3. The most severe loading conditions on light-duty pavement areas and the subgrade may occur during construction. Consequently, special provisions such as restricted access lanes, half-loads during paving, etc., may be required, especially if construction is carried out during unfavorable weather.

4. To minimize the problems of differential movement between the pavement and catchbasins/manholes due to frost action, the backfill around the structures should consist of free-draining granular.

5. To prevent water ponding at the lower pavement areas of loading docks, it is recommended that catchbasins be provided to drain the surface run-offs.

6. Chemical Testing

6.1 Chemical Testing Program

The scope of work for this project included chemical testing of soil from the boreholes to assist in selection of disposal options for excess soils that may be generated through construction. Accordingly, nine (9) soil samples including one (1) duplicate from the boreholes and one (1) soil sample from a granular stockpile noted on site were submitted for bulk chemical testing. The samples were analyzed for minimum sampling requirements outlined in O. Reg. 406/19 for metals, hydride-forming metals, electrical conductivity (EC), sodium adsorption ratio (SAR), benzene, toluene, ethyl benzene and xylene (collectively 'BTEX') and petroleum hydrocarbons (PHC) in accordance with the Ministry of the Environment, Conservation and Parks (MECP) document "Rules For Excess Soil Management And Excess Soil Quality Standards" covered under O.Reg.406/19. One (1) of the samples from the boreholes was also tested for Sulphate to assess potential for sulphate attack on subsurface concrete.

In addition, three (3) selected soil samples were subjected to the modified Synthetic Precipitation Leaching Procedure ('mSPLP') analysis for metals covered under O.Reg.406/19.

Since these samples were submitted to the analytical laboratory under one (1) chain of custody, the Certificate of Analysis cannot be separated to reflect only those samples from the Proposed Building 1 portion of the site. As such, the test results are discussed for all samples submitted for analysis.

As of January 1, 2021, the foregoing testing program represents the testing most commonly required by private receiving sites requiring fill for site grading purposes.

The soil samples were submitted to an independent laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA). Sample location and analytical data are summarized in the following table. The results of the chemical testing (Certificates of Analysis) are compiled in Appendix B attached.

Test results were compared to the applicable tables in the MECP document "Soil Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" – April 15, 2011 in accordance with O.Reg.153/04 as amended and the "Rules For Excess Soil Management And Excess Soil Quality Standards" in accordance with O.Reg.406/19.

Table 5: Summary of Soil Samples Submitted for Laboratory Analysis

Sample ID	Location	Depth (m)	Material Matrix	Analytical Parameters
BH1 SS2	Borehole 1	0.8 to 1.2	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC, mSPLP (Metals)
BH4 SS3	Borehole 4	1.5 to 1.9	Fill	Metals, EC, SAR, BTEX, PHC
BH11 SS2	Borehole 11	0.8 to 1.2	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC
BH13 SS3	Borehole 13	1.5 to 1.9	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC, mSPLP (Metals)
BH131 SS33	Duplicate of BH13 SS3	1.5 to 1.9	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC
BH18 SS4	Borehole 18	2.3 to 2.4	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC
BH21 SS2	Borehole 21	0.8 to 1.2	Fill	Metals, EC, SAR, BTEX, PHC, Sulphate
BH26 SS3	Borehole 26	1.5 to 1.9	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC, mSPLP (Metals)
BH30 SS1	Borehole 30	2.3 to 2.7	Native Clayey Silt Till	Metals, EC, SAR, BTEX, PHC
SP1	On-Site Granular Stockpile	Not Applicable	Gravel	Metals, EC, SAR, BTEX, PHC

Comparison with the MECP "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act"

Comparison with criteria in Table 2 of the MECP Standards was selected as being most appropriate for soil samples recovered from the boreholes and stockpile. The selection of Table 2 was based on the following Site conditions:

- The subject property has not been identified as a sensitive site.
- The subject property and surrounding properties are located in an area which is rural; there may still be properties in the surrounding area which utilize local groundwater for potable purposes.
- Full depth restoration of contamination (if encountered) is assumed.

Based on the proposed subject property use (proposed industrial development), Industrial/Commercial/ Community (ICC) property use criteria under these Standards were considered to be applicable. Soils at the subject site were visually assessed and greater than ⅔ of the soil was classified as medium to fine textured.

All analytical test results for Metals, EC and SAR for soil samples analyzed were within the Table 2 (potable groundwater) ICC property use criteria listed in the MECP Standards. These test results also met the more stringent Table 1 criteria covered under the MECP Standards.

All analytical test results for BTEX and PHC (F1 – F4) for soil samples analyzed were within the Table 2 (potable groundwater) ICC property use criteria listed in the MECP Standards. When compared with criteria in Table 1, an anomalous exceedance for PHC (F2 – Fraction) was recorded in a laboratory duplicate sample of BH18 SS4. All other BTEX and PHC concentrations, including those in BH18 SS4, met Table 1 criteria covered under the MECP Standards.

Comparison with the MECP "Rules For Excess Soil Management And Excess Soil Quality Standards"

Based on site conditions as described under the comparison with the MECP "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act" section, Table 2.1 (ICC) would be the applicable criteria for comparison under O.Reg.406/19.

All analytical test results for Metals, EC and SAR for soil samples analyzed were within the Table 2.1 (potable groundwater) ICC property use criteria listed in the Rules For Excess Soil Management And Excess Soil Quality Standards.

All analytical test results for BTEX and PHC for soil samples analyzed were within the Table 2.1 (potable groundwater) ICC property use criteria listed in the Rules For Excess Soil Management And Excess Soil Quality Standards.

All mSPLP test results met the leachate screening levels covered in Table 2.1 of the MECP Standards under O.Reg.406/19.

Disposal Options

Based on the results of the chemical testing program, from an environmental standpoint, soil represented by the samples analyzed would be considered suitable for reuse on site or for shipment to land based sites requiring fill without restriction, subject to approval of receiving site authorities. Physical suitability of the material should be assessed by the receiver for its intended use prior to shipment. Excess soil from the site would also be considered suitable for receipt at MECP registered landfill sites licensed to receive excess soils. However, additional testing for a more complete suite of Inorganic parameters and testing for classification under O.Reg.558/00 may be required for shipment to the MECP registered landfill sites.

Potential for Sulphate Attack

One (1) native soil sample, identified as BH21 SS2 was also analyzed for water soluble sulphate. The soluble sulphate content in the sample analyzed was reported as <20 µg/g (<0.002%). Table 3 of the Canadian Standards Association (CSA) A.23.1-09 lists 0.1 % sulphate as the minimum concentration of sulphate in soil that warrants additional requirements for concrete. At the measured concentration, the degree of exposure to sulphate attack is considered to be “negligible” and therefore normal Portland cement (Type 10) can be used in subsurface concrete.

7. General Comments

The information presented in this report is based on a limited investigation designed to provide information to support an overall assessment of the current geotechnical conditions of the subject property. The conclusions presented in this report reflect site conditions existing at the time of the investigation.

EXP should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, EXP will assume no responsibility for interpretation of the recommendations in the report.

The comments given in this report are intended only for the guidance of design engineers. The number of boreholes required to determine the localized underground conditions between boreholes affecting construction costs, techniques, sequencing, equipment, scheduling, etc., would be much greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should, in this light, decide on their own investigations, as well as their own interpretations of the factual borehole results, so that they may draw their own conclusions as to how the subsurface conditions may affect them.

More specific information, with respect to the conditions between samples, or the lateral and vertical extent of materials, may become apparent during excavation operations. Consequently, during the future development of the property, conditions not observed during this investigation may become apparent; should this occur, EXP should be contacted to assess the situation, and additional testing and reporting may be required. EXP has qualified personnel to provide assistance in regards to future geotechnical and environmental issues related to this property.

We trust this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

EXP Services Inc.

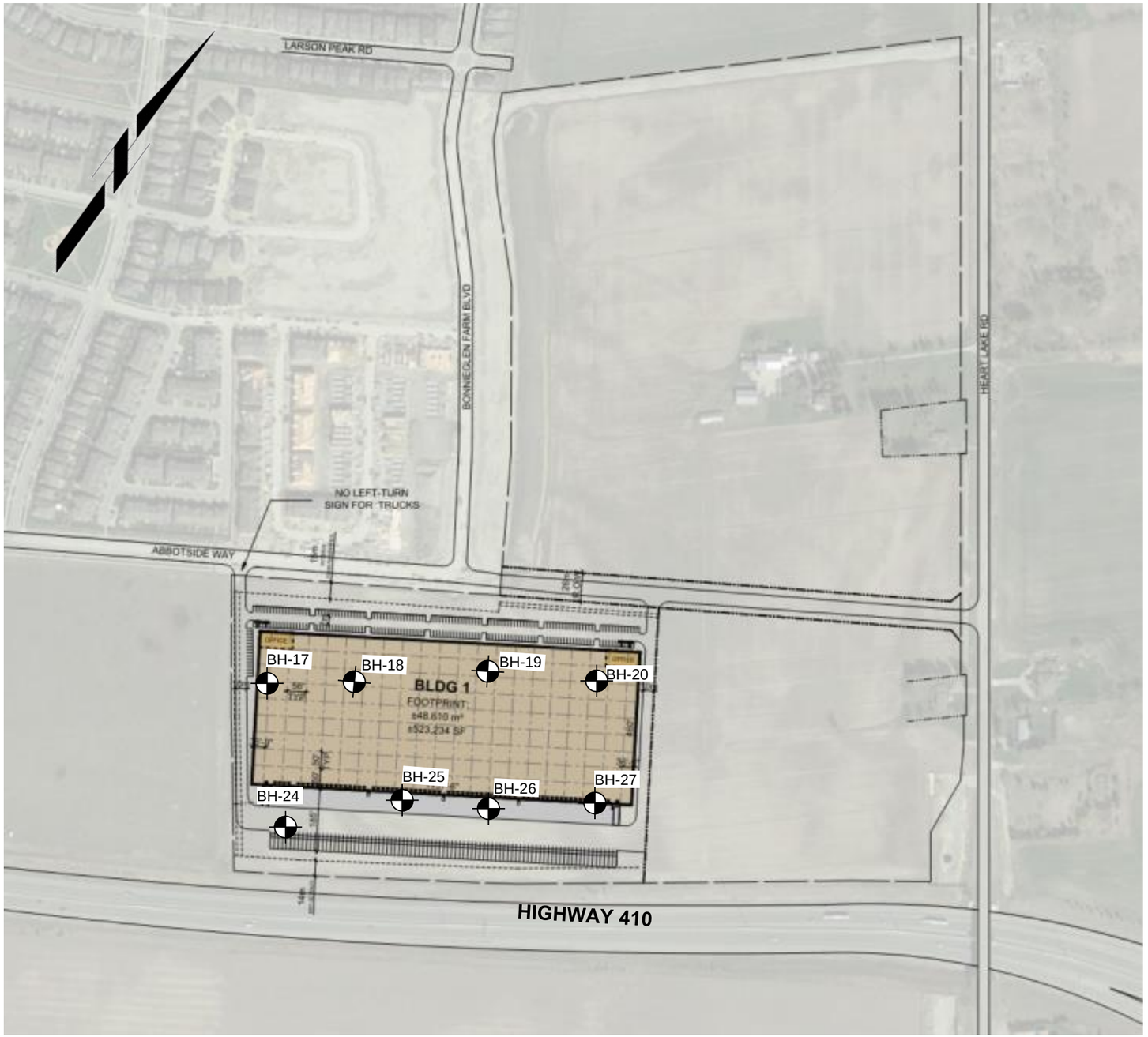
David Dennison, P. Eng.
Senior Engineer
Geotechnical Division

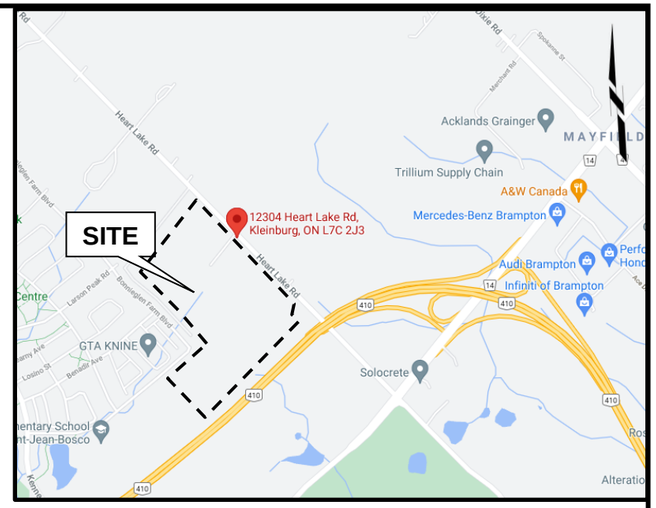
Stephen S. M. Cheng
Digitally signed by Stephen S. M. Cheng
Date: 2021.11.10 10:15:28 -05'00'

Stephen S.M. Cheng, P. Eng.
Discipline Manager
Geotechnical Division

DD/dd/I:\2003-Brampton\Projects\Geotechnical Engineering\21000000\21004000\21004300\21004344-C0 12304 Heart Lake Rd. Detailed Geo Inv\Report\Building 1 Report\Geo Report Bldg 1.doc

Drawings





Note:

1. The boundaries and soil types have been established only at the borehole locations. Between boreholes the boundaries are assumed and may be subject to considerable error.
2. Soil samples will be retained in storage for 3 months and then destroyed unless the client advises otherwise.
3. Topsoil quantities and/or volumes of unsuitable fill should not be established from the information provided at the borehole locations.
4. Borehole elevations should not be used to design building(s), or floor slab(s), or parking lot(s) grades.
5. This drawing to be read with subject report, project number as shown below.
6. Boreholes located and elevated using portable GPS equipment.
7. Dimensions shown on this drawing are in metric units, unless otherwise noted.

Legend:

Borehole Location

Property Boundary

Scale (m)

0 100

EXP Services Inc.
1595 Clark Blvd.
Brampton, ON L6T 4V1
www.exp.com

DRAWN: AA
CHECKED: DD
P.M.: DD

SCALE
As noted

Borehole Location Plan
Geotechnical Investigation- Building 1
12304 Heart Lake Road
Caledon, Ontario

Reference: BRM 21004344-C0

Drawing: 1

Notes on Sample Descriptions and Soil Types — Drawing 1A

1. All sample descriptions included in this report follow the Canadian Foundations Engineering Manual soil classification system. This system follows the standard proposed by the International Society for Soil Mechanics and Foundation Engineering. Laboratory grain size analyses provided by EXP also follow the same system. Others may use different classification systems; one such system is the Unified Soil Classification. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

ISSMFE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE		

0.002 0.006 0.02 0.06 0.2 0.6 2.0 6.0 20 60 200

EQUIVALENT GRAIN DIAMETER IN MILLIMETERS

CLAY (PLASTIC) TO SILT (NONPLASTIC)	FINE	MEDIUM	COARSE	FINE	COARSE
	SAND			GRAVEL	

UNIFIED SOIL CLASSIFICATION

2. Fill: Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc., none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.

3. Till: The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of

till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

4. Excerpt from “OHSA Regulations for Construction Projects,” Part III, Section 226:

- **Soil Types**

Type 1 Soil

a) is hard, very dense and only able to be penetrated with difficulty by a small sharp object;

b) has a low natural moisture content and a high degree of internal strength;

c) has no signs of water seepage; and

d) can be excavated only by mechanical equipment.

Type 2 Soil

a) is very stiff, dense and can be penetrated with moderate difficulty by a small sharp object;

b) has a low to medium natural moisture content and a medium degree of internal strength; and

c) has a damp appearance after it is excavated.

Type 3 Soil

a) is stiff to firm and compact to loose in consistency or is previously excavated soil;

b) exhibits signs of surface cracking;

c) exhibits signs of water seepage;

d) if it is dry, may run easily into a well-defined conical pile; and

e) has a low degree of internal strength.

Type 4 Soil

a) is soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength;

b) runs easily or flows, unless it is completely supported before excavating procedures;

c) has almost no internal strength;

d) is wet or muddy; and

e) exerts substantial fluid pressure on its supporting system. O. Reg. 213/91, s. 226.

Log of Borehole 17

Project No. BRM-210004344-B0

Drawing No. 02

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

Date Drilled: Mar 17, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)	Sample	Natural Unit Weight kN/m³
~ 280 mm **TOPSOIL** over	266.83	0		
CLAYEY SILT TILL: disturbed in upper ~ 300 mm, fine sand seams and layers, trace gravel, occaional boulder fragments, brown, oxidized zones, moist, stiff to hard	~266.6			
		1		
		2		22.9
		3		
- becoming grey		4		
		5		
		6		
- wet silty clay layers below		7		
	~258.7	8		
END OF BOREHOLE				

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30

SPT values: 6, 15, 23, 34, 38, 64, 39, 30

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62

EXPLOGBRAMPTON HEART LAKE ROAD - BH LOGS.GPJ NEW.GDT 4/21/21

Log of Borehole 18

Project No. BRM-210004344-B0

Drawing No. 03

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

Date Drilled: Mar 18, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)	Sample	Natural Unit Weight kN/m³
	267.84			
~ 130 mm **TOPSOIL** over **CLAYEY SILT TILL:** disturbed in upper ~ 250 mm, fine sand seams, trace gravel, occasional boulder fragments, brown, oxidized pockets, moist, very stiff to hard	~267.7	0		19.8
		1		22.8
		1		23.1
- wet sand layer, trace to some gravel		2		
		3		22.9
		4		
		5		23.2
SANDY SILT TILL: fine sand seams, trace gravel, trace clay, occasional boulder fragments, brown, moist, very dense	~262.2	6		22.2
		7		
	~259.8	8		
END OF BOREHOLE				

SPT (N Value): 20 40 60 80 — Shear Strength: 100 200 kPa

Combustible Vapour Reading (ppm): 25 50 75 — Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30

7 24 29 50/102mm 31 44 82/280mm 91/203mm

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62

EXPLOGBRAMPTON HEART LAKE ROAD - BH LOGS.GPJ NEW.GDT 4/21/21

Log of Borehole 19

Project No. BRM-210004344-B0

Drawing No. 04

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

Date Drilled: Mar 22, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)	Sample	Natural Unit Weight kN/m³
~ 280 mm **TOPSOIL** over	268.71	0		
CLAYEY SILT TILL: disturbed in upper ~ 200 mm, fine sand seams and layers, trace gravel, occasional boulder fragments, brown, moist, very stiff to hard	~268.4	1		
		2		22.9
		3		23.6
	~264.6	4		
SANDY SILT TILL: fine sand seams, trace gravel, occasional boulder fragments, grey, moist, very dense		5		
		6		23.5
- becoming dense		7		
- sand layer, medium grained, trace gravel, wet	~260.6	8		
END OF BOREHOLE				

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30

SPT values: 6, 19, 34, 38, 39, 56, 55, 41

Date	Water Level (m)	Hole Open to (m)
On Completion	6.40	7.32

EXPLOGBRAMPTON HEART LAKE ROAD - BH LOGS.GPJ NEW.GDT 4/21/21

Log of Borehole 20

Project No. BRM-210004344-B0
Drawing No. 05
Project: Geotechnical Investigation
Sheet No. 1 of 1
Location: 12304 Heart Lake Road
Caledon, Ontario
Date Drilled: Mar 22, 2021
Drill Type: CME55 Solid Auger Bomb
Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test
Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)
	271.42	0
~ 130 mm **TOPSOIL** over **FILL:** clayey silt to sandy silt, trace gravel, brown, moist (reworked parent material)	~271.3	
	~270.0	1
CLAYEY SILT TILL: fine sand seams, trace gravel, occasional boulder fragments, brown, moist, very stiff to hard		2
		3
		4
		5
	~265.8	6
SANDY SILT TILL: fine sand seams, trace gravel, occasional boulder fragments, brown, moist, very dense		7
	~263.6	8
END OF BOREHOLE		

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30

SPT values: 6, 12, 14, 24, 36, 31, 87, 50/51mm

Natural Unit Weight kN/m³: 21.1, 22.5, 22.1, 23.0

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62

EXPLOGBRAMPTON HEART LAKE ROAD - BH LOGS.GPJ NEW.GDT 4/21/21

Log of Borehole 24

Project No. BRM-210004344-B0

Drawing No. 06

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

Date Drilled: Mar 23, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)	Natural Unit Weight kN/m³
~ 250 mm **TOPSOIL** over	267.08	0	
CLAYEY SILT TILL: disturbed in upper ~ 300 mm, numerous fine sand layers, trace gravel, brown, moist, very stiff to hard	~266.8		
		1	22.6
		2	22.5
			22.5
		3	
		4	
- becoming grey, wet, stiff		5	
		6	23.4
	~260.0	7	
SANDY SILT TILL: fine sand seams, trace gravel, occasional boulder fragments, grey, moist, very dense			
	~259.0	8	
END OF BOREHOLE			

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30
Sample

SPT values: 10, 15, 24, 31, 72, 52, 16, 52

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.32

EXPLOGBRAMPTON HEART LAKE ROAD - BH LOGS.GPJ NEW.GDT 4/21/21

Log of Borehole 25

Project No. BRM-210004344-B0

Drawing No. 07

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

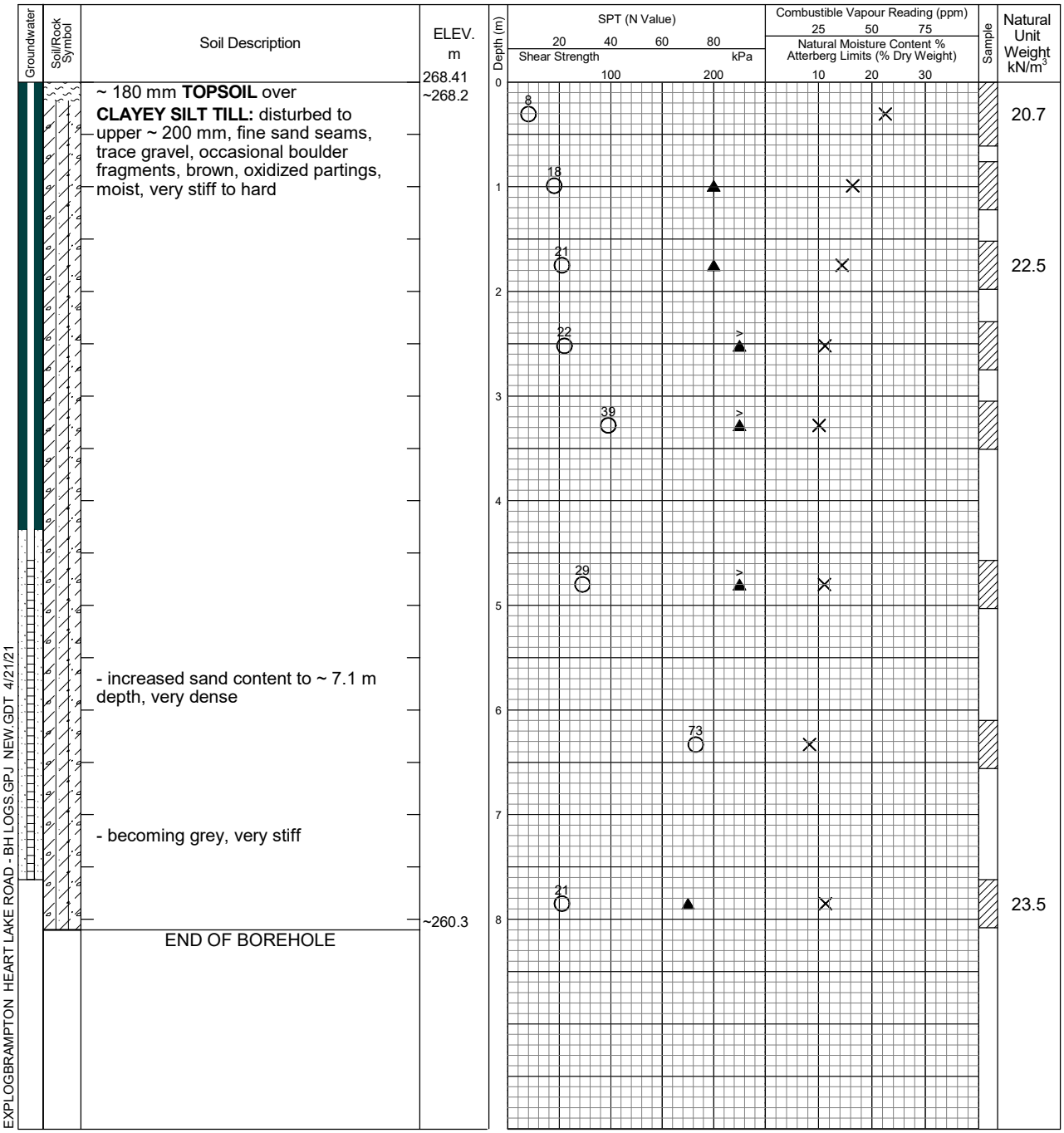
Date Drilled: Mar 23, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62
March 25, 2021	2.28	
April 9, 2021	1.45	

Log of Borehole 26

Project No. BRM-210004344-B0

Drawing No. 08

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

Date Drilled: Mar 23, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)	SPT (N Value) / Shear Strength kPa	Natural Moisture Content % / Atterberg Limits (% Dry Weight)	Natural Unit Weight kN/m³
~ 280 mm **TOPSOIL** over	270.21	0	4		
CLAYEY SILT TILL: disturbed in upper ~ 300 mm, fine sand seams, trace gravel, occasional boulder fragments, brown, moist, hard	~269.9	1	21		21.9
		2	29		22.1
		3	26		22.2
		4	24		22.0
		5	35		
SANDY SILT TILL: fine sand seams, trace gravel and cobbles, occasional boulder fragments, grey, moist, very dense	~264.6	6	95		
		7			
		8	91/280mm		
END OF BOREHOLE	~262.1				

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62

EXPLOGBRAMPTON HEART LAKE ROAD - BH LOGS.GPJ NEW.GDT 4/21/21

Log of Borehole 27

Project No. BRM-210004344-B0

Drawing No. 09

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12304 Heart Lake Road
Caledon, Ontario

Date Drilled: Mar 23, 2021

Drill Type: CME55 Solid Auger Bomb

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Soil Description	ELEV. m	Depth (m)	Natural Unit Weight kN/m³
~ 230 mm **TOPSOIL** over	271.46	0	
FILL: clayey silt to sandy silt, trace sand, trace gravel, brown and grey, moist (reworked parent material)	~271.2		
	~270.1	1	22.5
CLAYEY SILT TILL: numerous fine sand seams and layers, trace gravel, occasional boulder fragments, brown, oxidized partings, moist, hard		2	22.1
			22.0
		3	
		4	
		5	
- becoming grey, wet, stiff		6	23.4
	~264.4	7	
SANDY SILT TILL: fine sand seams, trace gravel, occasional boulder fragments, grey, moist, very dense			
	~263.4	8	
END OF BOREHOLE			

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30
Sample

SPT values: 7, 24, 27, 34, 26, 32, 12, 91

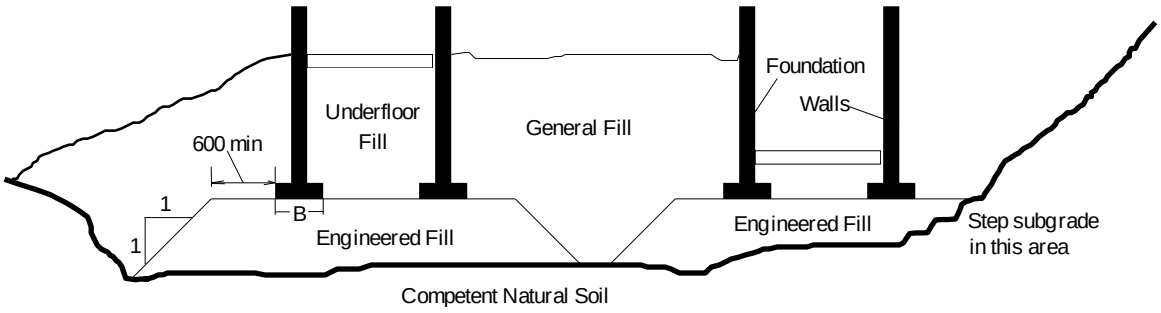
Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62

Appendix A:
Engineered Fill Construction Guidelines

Foundations placed on engineered fill comprising native soil from the site - or imported materials - may be designed for an SLS geotechnical reaction of 150 kPa (ULS factored geotechnical resistance of 225 kPa).

Additional comments with regard to engineered fill are as follows:

- The area must be stripped of all topsoil, existing fill material or other deleterious material and proof-rolled. Soft spots must be dug out. The stripped native subgrade must be examined and approved by a geotechnical engineer prior to placement of fill.
- The approved engineered fill must be placed in loose lifts not exceeding 200 mm and compacted to 100% Standard Proctor dry density throughout. Granular fill is preferred.
- Full time geotechnical inspection during placement of engineered fill is required.
- The fill must be placed such that the specified geometry is achieved as follows:.



Foundations on Engineered Fill (schematic)

- A minimum footing width of 500 mm (20 inches) is suggested. Steel Reinforcement should be as designed by the Structural Engineer.
- All excavations must be done in accordance with the Occupational Health and Safety Regulations of Ontario.

Appendix B:
Certificates of Analyses

Your P.O. #: BRM-GEO
Your Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your C.O.C. #: 817848-01-01

Attention: David Dennison

exp Services Inc
Brampton Branch
1595 Clark Blvd
Brampton, ON
CANADA L6T 4V1

Report Date: 2021/04/12
Report #: R6590858
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C180627
Received: 2021/03/26, 13:27

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Conductivity	10	2021/03/31	2021/03/31	CAM SOP-00414	OMOE E3530 v1 m
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	10	N/A	2021/03/30	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	2	2021/03/29	2021/03/30	CAM SOP-00316	CCME CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	8	2021/03/30	2021/03/30	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	9	2021/03/29	2021/03/30	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2021/03/29	2021/03/31	CAM SOP-00447	EPA 6020B m
Total Metals in SPLP Leachate by ICPMS	3	2021/04/09	2021/04/09	CAM SOP-00447	EPA 6020B m
Moisture	10	N/A	2021/03/27	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl2 EXTRACT	10	2021/03/30	2021/03/30	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	10	N/A	2021/03/31	CAM SOP-00102	EPA 6010C
Sulphate (20:1 Extract)	1	2021/03/29	2021/03/31	CAM SOP-00464	EPA 375.4 m
SPLP Inorganic extraction - pH	3	N/A	2021/04/08	CAM SOP-00941	EPA 1312 m
SPLP Inorganic extraction - Weight	3	N/A	2021/04/08	CAM SOP-00941	EPA 1312 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Your P.O. #: BRM-GEO
Your Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your C.O.C. #: 817848-01-01

Attention: David Dennison

exp Services Inc
Brampton Branch
1595 Clark Blvd
Brampton, ON
CANADA L6T 4V1

Report Date: 2021/04/12
Report #: R6590858
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C180627
Received: 2021/03/26, 13:27

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF420			PEF420			PEF421		
Sampling Date		2021/03/18 11:00			2021/03/18 11:00			2021/03/17 12:00		
COC Number		817848-01-01			817848-01-01			817848-01-01		
	UNITS	**BH1 SS2**	**RDL**	**QC Batch**	**BH1 SS2 Lab-Dup**	**RDL**	**QC Batch**	**BH4 SS3**	**RDL**	**QC Batch**
Calculated Parameters										
Sodium Adsorption Ratio	N/A	0.26 (1)		7268392				0.30 (1)		7268392
Inorganics										
Conductivity	mS/cm	0.16	0.002	7275424				0.12	0.002	7275424
Moisture	%	12	1.0	7270453				13	1.0	7270453
Available (CaCl2) pH	pH	7.64		7273142				7.70		7273142
Metals										
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	7271605				<0.20	0.20	7271605
Acid Extractable Arsenic (As)	ug/g	4.6	1.0	7271605				4.9	1.0	7271605
Acid Extractable Barium (Ba)	ug/g	66	0.50	7271605				56	0.50	7271605
Acid Extractable Beryllium (Be)	ug/g	0.58	0.20	7271605				0.59	0.20	7271605
Acid Extractable Boron (B)	ug/g	7.4	5.0	7271605				7.8	5.0	7271605
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	7271605				<0.10	0.10	7271605
Acid Extractable Chromium (Cr)	ug/g	18	1.0	7271605				18	1.0	7271605
Acid Extractable Cobalt (Co)	ug/g	11	0.10	7271605				12	0.10	7271605
Acid Extractable Copper (Cu)	ug/g	30	0.50	7271605				39	0.50	7271605
Acid Extractable Lead (Pb)	ug/g	9.6	1.0	7271605				12	1.0	7271605
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	7271605				<0.50	0.50	7271605
Acid Extractable Nickel (Ni)	ug/g	22	0.50	7271605				23	0.50	7271605
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	7271605				<0.50	0.50	7271605
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	7271605				<0.20	0.20	7271605
Acid Extractable Thallium (Tl)	ug/g	0.14	0.050	7271605				0.14	0.050	7271605
Acid Extractable Uranium (U)	ug/g	0.49	0.050	7271605				0.44	0.050	7271605
Acid Extractable Vanadium (V)	ug/g	26	5.0	7271605				26	5.0	7271605
Acid Extractable Zinc (Zn)	ug/g	51	5.0	7271605				54	5.0	7271605
BTEX & F1 Hydrocarbons										
Benzene	ug/g	<0.020	0.020	7274245	<0.020	0.020	7274245	<0.020	0.020	7274245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF420			PEF420			PEF421		
Sampling Date		2021/03/18 11:00			2021/03/18 11:00			2021/03/17 12:00		
COC Number		817848-01-01			817848-01-01			817848-01-01		
	UNITS	**BH1 SS2**	**RDL**	**QC Batch**	**BH1 SS2 Lab-Dup**	**RDL**	**QC Batch**	**BH4 SS3**	**RDL**	**QC Batch**
Toluene	ug/g	<0.020	0.020	7274245	<0.020	0.020	7274245	<0.020	0.020	7274245
Ethylbenzene	ug/g	<0.020	0.020	7274245	<0.020	0.020	7274245	<0.020	0.020	7274245
o-Xylene	ug/g	<0.020	0.020	7274245	<0.020	0.020	7274245	<0.020	0.020	7274245
p+m-Xylene	ug/g	<0.040	0.040	7274245	<0.040	0.040	7274245	<0.040	0.040	7274245
Total Xylenes	ug/g	<0.040	0.040	7274245	<0.040	0.040	7274245	<0.040	0.040	7274245
F1 (C6-C10)	ug/g	<10	10	7274245	<10	10	7274245	<10	10	7274245
F1 (C6-C10) - BTEX	ug/g	<10	10	7274245	<10	10	7274245	<10	10	7274245
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7273498				<10	10	7273498
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7273498				<50	50	7273498
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7273498				<50	50	7273498
Reached Baseline at C50	ug/g	Yes		7273498				Yes		7273498
Surrogate Recovery (%)										
1,4-Difluorobenzene	%	102		7274245	102		7274245	101		7274245
4-Bromofluorobenzene	%	96		7274245	88		7274245	94		7274245
D10-o-Xylene	%	88		7274245	92		7274245	84		7274245
D4-1,2-Dichloroethane	%	96		7274245	95		7274245	97		7274245
o-Terphenyl	%	97		7273498				96		7273498

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF422		PEF423		PEF424		
Sampling Date		2021/03/18 12:00		2021/03/25 11:00		2021/03/22 11:00		
COC Number		817848-01-01		817848-01-01		817848-01-01		
	UNITS	**BH11 SS2**	**QC Batch**	**BH13 SS3**	**QC Batch**	**BH18 SS4**	**RDL**	**QC Batch**
Calculated Parameters								
Sodium Adsorption Ratio	N/A	0.26 (1)	7268392	0.29 (1)	7268392	0.28 (1)		7268392
Inorganics								
Conductivity	mS/cm	0.16	7275424	0.13	7275424	0.15	0.002	7275424
Moisture	%	14	7270453	12	7270453	13	1.0	7270453
Available (CaCl2) pH	pH	7.74	7273142	7.66	7273142	7.77		7273142
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	7271605	<0.20	7271605	<0.20	0.20	7271605
Acid Extractable Arsenic (As)	ug/g	4.4	7271605	4.8	7271605	4.7	1.0	7271605
Acid Extractable Barium (Ba)	ug/g	60	7271605	75	7271605	55	0.50	7271605
Acid Extractable Beryllium (Be)	ug/g	0.55	7271605	0.61	7271605	0.47	0.20	7271605
Acid Extractable Boron (B)	ug/g	6.9	7271605	8.4	7271605	6.8	5.0	7271605
Acid Extractable Cadmium (Cd)	ug/g	<0.10	7271605	<0.10	7271605	<0.10	0.10	7271605
Acid Extractable Chromium (Cr)	ug/g	17	7271605	19	7271605	23	1.0	7271605
Acid Extractable Cobalt (Co)	ug/g	9.2	7271605	13	7271605	9.6	0.10	7271605
Acid Extractable Copper (Cu)	ug/g	30	7271605	31	7271605	35	0.50	7271605
Acid Extractable Lead (Pb)	ug/g	7.4	7271605	8.3	7271605	9.5	1.0	7271605
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	7271605	<0.50	7271605	0.89	0.50	7271605
Acid Extractable Nickel (Ni)	ug/g	19	7271605	25	7271605	19	0.50	7271605
Acid Extractable Selenium (Se)	ug/g	<0.50	7271605	<0.50	7271605	<0.50	0.50	7271605
Acid Extractable Silver (Ag)	ug/g	<0.20	7271605	<0.20	7271605	<0.20	0.20	7271605
Acid Extractable Thallium (Tl)	ug/g	0.12	7271605	0.17	7271605	0.11	0.050	7271605
Acid Extractable Uranium (U)	ug/g	0.42	7271605	0.43	7271605	0.38	0.050	7271605
Acid Extractable Vanadium (V)	ug/g	25	7271605	27	7271605	23	5.0	7271605
Acid Extractable Zinc (Zn)	ug/g	43	7271605	54	7271605	49	5.0	7271605
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.020	7274245	<0.020	7274245	<0.020	0.020	7274245
Toluene	ug/g	<0.020	7274245	<0.020	7274245	<0.020	0.020	7274245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF422		PEF423		PEF424		
Sampling Date		2021/03/18 12:00		2021/03/25 11:00		2021/03/22 11:00		
COC Number		817848-01-01		817848-01-01		817848-01-01		
	UNITS	**BH11 SS2**	**QC Batch**	**BH13 SS3**	**QC Batch**	**BH18 SS4**	**RDL**	**QC Batch**
Ethylbenzene	ug/g	<0.020	7274245	<0.020	7274245	<0.020	0.020	7274245
o-Xylene	ug/g	<0.020	7274245	<0.020	7274245	<0.020	0.020	7274245
p+m-Xylene	ug/g	<0.040	7274245	<0.040	7274245	<0.040	0.040	7274245
Total Xylenes	ug/g	<0.040	7274245	<0.040	7274245	<0.040	0.040	7274245
F1 (C6-C10)	ug/g	<10	7274245	<10	7274245	<10	10	7274245
F1 (C6-C10) - BTEX	ug/g	<10	7274245	<10	7274245	<10	10	7274245
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	7273498	<10	7272947	<10	10	7273498
F3 (C16-C34 Hydrocarbons)	ug/g	<50	7273498	<50	7272947	<50	50	7273498
F4 (C34-C50 Hydrocarbons)	ug/g	<50	7273498	<50	7272947	<50	50	7273498
Reached Baseline at C50	ug/g	Yes	7273498	Yes	7272947	Yes		7273498
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	104	7274245	103	7274245	101		7274245
4-Bromofluorobenzene	%	94	7274245	92	7274245	96		7274245
D10-o-Xylene	%	95	7274245	82	7274245	94		7274245
D4-1,2-Dichloroethane	%	93	7274245	93	7274245	96		7274245
o-Terphenyl	%	99	7273498	103	7272947	93		7273498

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF424			PEF425	PEF426		
Sampling Date		2021/03/22 11:00			2021/03/22 12:00	2021/03/23 12:00		
COC Number		817848-01-01			817848-01-01	817848-01-01		
	UNITS	**BH18 SS4 Lab-Dup**	**RDL**	**QC Batch**	**BH21 SS2**	**BH26 SS3**	**RDL**	**QC Batch**
Calculated Parameters								
Sodium Adsorption Ratio	N/A				0.28 (1)	0.26 (1)		7268392
Inorganics								
Conductivity	mS/cm				0.14	0.16	0.002	7275424
Moisture	%				15	14	1.0	7270453
Available (CaCl2) pH	pH				7.67	7.67		7273142
Metals								
Acid Extractable Antimony (Sb)	ug/g				<0.20	<0.20	0.20	7271605
Acid Extractable Arsenic (As)	ug/g				4.5	3.7	1.0	7271605
Acid Extractable Barium (Ba)	ug/g				45	92	0.50	7271605
Acid Extractable Beryllium (Be)	ug/g				0.46	0.72	0.20	7271605
Acid Extractable Boron (B)	ug/g				5.7	9.9	5.0	7271605
Acid Extractable Cadmium (Cd)	ug/g				<0.10	<0.10	0.10	7271605
Acid Extractable Chromium (Cr)	ug/g				14	23	1.0	7271605
Acid Extractable Cobalt (Co)	ug/g				8.8	14	0.10	7271605
Acid Extractable Copper (Cu)	ug/g				37	24	0.50	7271605
Acid Extractable Lead (Pb)	ug/g				7.2	11	1.0	7271605
Acid Extractable Molybdenum (Mo)	ug/g				<0.50	<0.50	0.50	7271605
Acid Extractable Nickel (Ni)	ug/g				18	29	0.50	7271605
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	0.50	7271605
Acid Extractable Silver (Ag)	ug/g				<0.20	<0.20	0.20	7271605
Acid Extractable Thallium (Tl)	ug/g				0.096	0.18	0.050	7271605
Acid Extractable Uranium (U)	ug/g				0.37	0.50	0.050	7271605
Acid Extractable Vanadium (V)	ug/g				21	32	5.0	7271605
Acid Extractable Zinc (Zn)	ug/g				44	60	5.0	7271605
BTEX & F1 Hydrocarbons								
Benzene	ug/g				<0.020	<0.020	0.020	7274245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF424			PEF425	PEF426		
Sampling Date		2021/03/22 11:00			2021/03/22 12:00	2021/03/23 12:00		
COC Number		817848-01-01			817848-01-01	817848-01-01		
	UNITS	**BH18 SS4 Lab-Dup**	**RDL**	**QC Batch**	**BH21 SS2**	**BH26 SS3**	**RDL**	**QC Batch**
Toluene	ug/g				<0.020	<0.020	0.020	7274245
Ethylbenzene	ug/g				<0.020	<0.020	0.020	7274245
o-Xylene	ug/g				<0.020	<0.020	0.020	7274245
p+m-Xylene	ug/g				<0.040	<0.040	0.040	7274245
Total Xylenes	ug/g				<0.040	<0.040	0.040	7274245
F1 (C6-C10)	ug/g				<10	<10	10	7274245
F1 (C6-C10) - BTEX	ug/g				<10	<10	10	7274245
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	12	10	7273498	<10	<10	10	7273498
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7273498	<50	<50	50	7273498
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7273498	<50	<50	50	7273498
Reached Baseline at C50	ug/g	Yes		7273498	Yes	Yes		7273498
Surrogate Recovery (%)								
1,4-Difluorobenzene	%				101	102		7274245
4-Bromofluorobenzene	%				97	96		7274245
D10-o-Xylene	%				85	76		7274245
D4-1,2-Dichloroethane	%				97	94		7274245
o-Terphenyl	%	93		7273498	98	96		7273498

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF426			PEF427			PEF427	
Sampling Date		2021/03/23 12:00			2021/03/24 12:00			2021/03/24 12:00	
COC Number		817848-01-01			817848-01-01			817848-01-01	
	UNITS	**BH26 SS3 Lab-Dup**	**RDL**	**QC Batch**	**BH30 SS4**	**RDL**	**QC Batch**	**BH30 SS4 Lab-Dup**	**QC Batch**
Calculated Parameters									
Sodium Adsorption Ratio	N/A				0.28 (1)		7268392		
Inorganics									
Conductivity	mS/cm				0.14	0.002	7275424		
Moisture	%	14	1.0	7270453	11	1.0	7270453		
Available (CaCl2) pH	pH				7.65		7273142	7.60	7273142
Metals									
Acid Extractable Antimony (Sb)	ug/g				<0.20	0.20	7271820		
Acid Extractable Arsenic (As)	ug/g				4.8	1.0	7271820		
Acid Extractable Barium (Ba)	ug/g				56	0.50	7271820		
Acid Extractable Beryllium (Be)	ug/g				0.53	0.20	7271820		
Acid Extractable Boron (B)	ug/g				7.0	5.0	7271820		
Acid Extractable Cadmium (Cd)	ug/g				<0.10	0.10	7271820		
Acid Extractable Chromium (Cr)	ug/g				20	1.0	7271820		
Acid Extractable Cobalt (Co)	ug/g				10	0.10	7271820		
Acid Extractable Copper (Cu)	ug/g				32	0.50	7271820		
Acid Extractable Lead (Pb)	ug/g				8.8	1.0	7271820		
Acid Extractable Molybdenum (Mo)	ug/g				0.50	0.50	7271820		
Acid Extractable Nickel (Ni)	ug/g				22	0.50	7271820		
Acid Extractable Selenium (Se)	ug/g				<0.50	0.50	7271820		
Acid Extractable Silver (Ag)	ug/g				<0.20	0.20	7271820		
Acid Extractable Thallium (Tl)	ug/g				0.11	0.050	7271820		
Acid Extractable Uranium (U)	ug/g				0.41	0.050	7271820		
Acid Extractable Vanadium (V)	ug/g				25	5.0	7271820		
Acid Extractable Zinc (Zn)	ug/g				52	5.0	7271820		
BTEX & F1 Hydrocarbons									
Benzene	ug/g				<0.020	0.020	7274245		

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF426			PEF427			PEF427	
Sampling Date		2021/03/23 12:00			2021/03/24 12:00			2021/03/24 12:00	
COC Number		817848-01-01			817848-01-01			817848-01-01	
	UNITS	**BH26 SS3 Lab-Dup**	**RDL**	**QC Batch**	**BH30 SS4**	**RDL**	**QC Batch**	**BH30 SS4 Lab-Dup**	**QC Batch**
Toluene	ug/g				<0.020	0.020	7274245		
Ethylbenzene	ug/g				<0.020	0.020	7274245		
o-Xylene	ug/g				<0.020	0.020	7274245		
p+m-Xylene	ug/g				<0.040	0.040	7274245		
Total Xylenes	ug/g				<0.040	0.040	7274245		
F1 (C6-C10)	ug/g				<10	10	7274245		
F1 (C6-C10) - BTEX	ug/g				<10	10	7274245		
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g				<10	10	7273498		
F3 (C16-C34 Hydrocarbons)	ug/g				<50	50	7273498		
F4 (C34-C50 Hydrocarbons)	ug/g				<50	50	7273498		
Reached Baseline at C50	ug/g				Yes		7273498		
Surrogate Recovery (%)									
1,4-Difluorobenzene	%				103		7274245		
4-Bromofluorobenzene	%				93		7274245		
D10-o-Xylene	%				81		7274245		
D4-1,2-Dichloroethane	%				96		7274245		
o-Terphenyl	%				96		7273498		

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF428		PEF429		
Sampling Date		2021/03/25 12:00		2021/03/25 13:00		
COC Number		817848-01-01		817848-01-01		
	UNITS	**BH131 SS33**	**QC Batch**	**SP1**	**RDL**	**QC Batch**
Calculated Parameters						
Sodium Adsorption Ratio	N/A	0.29 (1)	7268392	0.31		7268392
Inorganics						
Conductivity	mS/cm	0.13	7275424	0.25	0.002	7275424
Moisture	%	13	7270453	4.3	1.0	7270453
Available (CaCl2) pH	pH	7.67	7273142	7.94		7273142
Metals						
Acid Extractable Antimony (Sb)	ug/g	<0.20	7271605	0.24	0.20	7271605
Acid Extractable Arsenic (As)	ug/g	4.6	7271605	3.7	1.0	7271605
Acid Extractable Barium (Ba)	ug/g	64	7271605	19	0.50	7271605
Acid Extractable Beryllium (Be)	ug/g	0.59	7271605	0.20	0.20	7271605
Acid Extractable Boron (B)	ug/g	8.1	7271605	9.4	5.0	7271605
Acid Extractable Cadmium (Cd)	ug/g	<0.10	7271605	0.41	0.10	7271605
Acid Extractable Chromium (Cr)	ug/g	17	7271605	5.7	1.0	7271605
Acid Extractable Cobalt (Co)	ug/g	11	7271605	3.5	0.10	7271605
Acid Extractable Copper (Cu)	ug/g	31	7271605	8.2	0.50	7271605
Acid Extractable Lead (Pb)	ug/g	11	7271605	32	1.0	7271605
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	7271605	<0.50	0.50	7271605
Acid Extractable Nickel (Ni)	ug/g	25	7271605	8.2	0.50	7271605
Acid Extractable Selenium (Se)	ug/g	<0.50	7271605	<0.50	0.50	7271605
Acid Extractable Silver (Ag)	ug/g	<0.20	7271605	<0.20	0.20	7271605
Acid Extractable Thallium (Tl)	ug/g	0.14	7271605	0.062	0.050	7271605
Acid Extractable Uranium (U)	ug/g	0.70	7271605	0.20	0.050	7271605
Acid Extractable Vanadium (V)	ug/g	26	7271605	8.5	5.0	7271605
Acid Extractable Zinc (Zn)	ug/g	51	7271605	170	5.0	7271605
BTEX & F1 Hydrocarbons						
Benzene	ug/g	<0.020	7274245	<0.020	0.020	7274245
Toluene	ug/g	<0.020	7274245	<0.020	0.020	7274245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL MIN. BULK S/SS PKG (SOIL)

BV Labs ID		PEF428		PEF429		
Sampling Date		2021/03/25 12:00		2021/03/25 13:00		
COC Number		817848-01-01		817848-01-01		
	UNITS	**BH131 SS33**	**QC Batch**	**SP1**	**RDL**	**QC Batch**
Ethylbenzene	ug/g	<0.020	7274245	<0.020	0.020	7274245
o-Xylene	ug/g	<0.020	7274245	<0.020	0.020	7274245
p+m-Xylene	ug/g	<0.040	7274245	<0.040	0.040	7274245
Total Xylenes	ug/g	<0.040	7274245	<0.040	0.040	7274245
F1 (C6-C10)	ug/g	<10	7274245	<10	10	7274245
F1 (C6-C10) - BTEX	ug/g	<10	7274245	<10	10	7274245
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	<10	7273498	<10	10	7272947
F3 (C16-C34 Hydrocarbons)	ug/g	<50	7273498	<50	50	7272947
F4 (C34-C50 Hydrocarbons)	ug/g	<50	7273498	<50	50	7272947
Reached Baseline at C50	ug/g	Yes	7273498	Yes		7272947
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	104	7274245	104		7274245
4-Bromofluorobenzene	%	90	7274245	92		7274245
D10-o-Xylene	%	85	7274245	86		7274245
D4-1,2-Dichloroethane	%	94	7274245	94		7274245
o-Terphenyl	%	96	7273498	111		7272947

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

O.REG 406 EXCESS SOIL SPLP METALS (SOIL)

BV Labs ID		PEF420	PEF423	PEF426		
Sampling Date		2021/03/18 11:00	2021/03/25 11:00	2021/03/23 12:00		
COC Number		817848-01-01	817848-01-01	817848-01-01		
	UNITS	**BH1 SS2**	**BH13 SS3**	**BH26 SS3**	**RDL**	**QC Batch**
Metals						
Leachable (SPLP) Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	0.5	7290197
Leachable (SPLP) Arsenic (As)	ug/L	<1	<1	<1	1	7290197
Leachable (SPLP) Barium (Ba)	ug/L	<5	<5	<5	5	7290197
Leachable (SPLP) Beryllium (Be)	ug/L	<0.5	<0.5	<0.5	0.5	7290197
Leachable (SPLP) Boron (B)	ug/L	97	83	190	10	7290197
Leachable (SPLP) Cadmium (Cd)	ug/L	<0.1	<0.1	<0.1	0.1	7290197
Leachable (SPLP) Chromium (Cr)	ug/L	<5	<5	<5	5	7290197
Leachable (SPLP) Cobalt (Co)	ug/L	<0.5	<0.5	<0.5	0.5	7290197
Leachable (SPLP) Copper (Cu)	ug/L	1	<1	2	1	7290197
Leachable (SPLP) Lead (Pb)	ug/L	<0.5	<0.5	<0.5	0.5	7290197
Leachable (SPLP) Molybdenum (Mo)	ug/L	<1	<1	<1	1	7290197
Leachable (SPLP) Nickel (Ni)	ug/L	<1	<1	<1	1	7290197
Leachable (SPLP) Selenium (Se)	ug/L	<2	<2	<2	2	7290197
Leachable (SPLP) Silver (Ag)	ug/L	<0.1	<0.1	<0.1	0.1	7290197
Leachable (SPLP) Thallium (Tl)	ug/L	<0.05	<0.05	<0.05	0.05	7290197
Leachable (SPLP) Uranium (U)	ug/L	<0.1	<0.1	<0.1	0.1	7290197
Leachable (SPLP) Vanadium (V)	ug/L	<1	<1	1	1	7290197
Leachable (SPLP) Zinc (Zn)	ug/L	<5	<5	<5	5	7290197

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

SPLP LEACHATE PREPARATION (SOIL)

BV Labs ID		PEF420	PEF423	PEF426	
Sampling Date		2021/03/18 11:00	2021/03/25 11:00	2021/03/23 12:00	
COC Number		817848-01-01	817848-01-01	817848-01-01	
	UNITS	**BH1 SS2**	**BH13 SS3**	**BH26 SS3**	**QC Batch**
Inorganics					
Dry Weight	g	100	100	100	7286299
Final pH	pH	9.18	9.21	9.12	7286282
QC Batch = Quality Control Batch					

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

RESULTS OF ANALYSES OF SOIL

BV Labs ID		PEF425		
Sampling Date		2021/03/22 12:00		
COC Number		817848-01-01		
	UNITS	**BH21 SS2**	**RDL**	**QC Batch**
Inorganics				
Soluble (20:1) Sulphate (SO4)	ug/g	<20	20	7271490

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: PEF420
Sample ID: BH1 SS2
Matrix: Soil

Collected: 2021/03/18
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Total Metals in SPLP Leachate by ICPMS	ICP/MS	7290197	2021/04/09	2021/04/09	Nan Raykha
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk
SPLP Inorganic extraction - pH	PH	7286282	N/A	2021/04/08	Daruish Karimi
SPLP Inorganic extraction - Weight		7286299	N/A	2021/04/08	Daruish Karimi

BV Labs ID: PEF420 Dup
Sample ID: BH1 SS2
Matrix: Soil

Collected: 2021/03/18
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino

BV Labs ID: PEF421
Sample ID: BH4 SS3
Matrix: Soil

Collected: 2021/03/17
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

BV Labs ID: PEF422
Sample ID: BH11 SS2
Matrix: Soil

Collected: 2021/03/18
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: PEF423
Sample ID: BH13 SS3
Matrix: Soil

Collected: 2021/03/25
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7272947	2021/03/29	2021/03/30	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Total Metals in SPLP Leachate by ICPMS	ICP/MS	7290197	2021/04/09	2021/04/09	Nan Raykha
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk
SPLP Inorganic extraction - pH	PH	7286282	N/A	2021/04/08	Daruish Karimi
SPLP Inorganic extraction - Weight		7286299	N/A	2021/04/08	Daruish Karimi

BV Labs ID: PEF424
Sample ID: BH18 SS4
Matrix: Soil

Collected: 2021/03/22
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

BV Labs ID: PEF424 Dup
Sample ID: BH18 SS4
Matrix: Soil

Collected: 2021/03/22
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko

BV Labs ID: PEF425
Sample ID: BH21 SS2
Matrix: Soil

Collected: 2021/03/22
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: PEF425
Sample ID: BH21 SS2
Matrix: Soil

Collected: 2021/03/22
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sulphate (20:1 Extract)	KONE/EC	7271490	2021/03/29	2021/03/31	Avneet Kour Sudan

BV Labs ID: PEF426
Sample ID: BH26 SS3
Matrix: Soil

Collected: 2021/03/23
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Total Metals in SPLP Leachate by ICPMS	ICP/MS	7290197	2021/04/09	2021/04/09	Nan Raykha
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk
SPLP Inorganic extraction - pH	PH	7286282	N/A	2021/04/08	Daruish Karimi
SPLP Inorganic extraction - Weight		7286299	N/A	2021/04/08	Daruish Karimi

BV Labs ID: PEF426 Dup
Sample ID: BH26 SS3
Matrix: Soil

Collected: 2021/03/23
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)

BV Labs ID: PEF427
Sample ID: BH30 SS4
Matrix: Soil

Collected: 2021/03/24
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271820	2021/03/29	2021/03/31	Daniel Teclu
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

BV Labs ID: PEF427 Dup
Sample ID: BH30 SS4
Matrix: Soil

Collected: 2021/03/24
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: PEF428
Sample ID: BH131 SS33
Matrix: Soil

Collected: 2021/03/25
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7273498	2021/03/30	2021/03/30	Margaret Kulczyk-Stanko
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

BV Labs ID: PEF429
Sample ID: SP1
Matrix: Soil

Collected: 2021/03/25
Shipped:
Received: 2021/03/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	7275424	2021/03/31	2021/03/31	Tarunpreet Kaur
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7274245	N/A	2021/03/30	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7272947	2021/03/29	2021/03/30	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	7271605	2021/03/29	2021/03/30	Viviana Canzonieri
Moisture	BAL	7270453	N/A	2021/03/27	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7273142	2021/03/30	2021/03/30	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	7268392	N/A	2021/03/31	Automated Statchk

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C

Revised Report (2021/04/12): Additional analysis for SPLP Metals reported under samples BH1 SS2, BH13 SS3 and BH 26 SS3 as per David Dennison's request.

Sample PEF421 [BH4 SS3] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Sample PEF422 [BH11 SS2] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Sample PEF423 [BH13 SS3] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Sample PEF425 [BH21 SS2] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

QUALITY ASSURANCE REPORT

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
7272947	o-Terphenyl	2021/03/30	108	60 - 130	105	60 - 130	110	%				
7273498	o-Terphenyl	2021/03/30	90	60 - 130	91	60 - 130	94	%				
7274245	1,4-Difluorobenzene	2021/03/30	99	60 - 140	101	60 - 140	101	%				
7274245	4-Bromofluorobenzene	2021/03/30	99	60 - 140	97	60 - 140	94	%				
7274245	D10-o-Xylene	2021/03/30	80	60 - 140	90	60 - 140	78	%				
7274245	D4-1,2-Dichloroethane	2021/03/30	91	60 - 140	89	60 - 140	94	%				
7270453	Moisture	2021/03/27							0	20		
7271490	Soluble (20:1) Sulphate (SO4)	2021/03/31	128	70 - 130	107	70 - 130	<20	ug/g	NC	35		
7271605	Acid Extractable Antimony (Sb)	2021/03/30	93	75 - 125	103	80 - 120	<0.20	ug/g	NC	30		
7271605	Acid Extractable Arsenic (As)	2021/03/30	91	75 - 125	104	80 - 120	<1.0	ug/g	3.2	30		
7271605	Acid Extractable Barium (Ba)	2021/03/30	98	75 - 125	104	80 - 120	<0.50	ug/g	3.3	30		
7271605	Acid Extractable Beryllium (Be)	2021/03/30	98	75 - 125	106	80 - 120	<0.20	ug/g	NC	30		
7271605	Acid Extractable Boron (B)	2021/03/30	98	75 - 125	108	80 - 120	<5.0	ug/g	NC	30		
7271605	Acid Extractable Cadmium (Cd)	2021/03/30	92	75 - 125	101	80 - 120	<0.10	ug/g	NC	30		
7271605	Acid Extractable Chromium (Cr)	2021/03/30	93	75 - 125	104	80 - 120	<1.0	ug/g	6.5	30		
7271605	Acid Extractable Cobalt (Co)	2021/03/30	92	75 - 125	105	80 - 120	<0.10	ug/g	1.6	30		
7271605	Acid Extractable Copper (Cu)	2021/03/30	89	75 - 125	102	80 - 120	<0.50	ug/g	0.47	30		
7271605	Acid Extractable Lead (Pb)	2021/03/30	NC	75 - 125	102	80 - 120	<1.0	ug/g	3.7	30		
7271605	Acid Extractable Molybdenum (Mo)	2021/03/30	90	75 - 125	98	80 - 120	<0.50	ug/g	NC	30		
7271605	Acid Extractable Nickel (Ni)	2021/03/30	93	75 - 125	106	80 - 120	<0.50	ug/g	3.9	30		
7271605	Acid Extractable Selenium (Se)	2021/03/30	91	75 - 125	104	80 - 120	<0.50	ug/g	NC	30		
7271605	Acid Extractable Silver (Ag)	2021/03/30	91	75 - 125	102	80 - 120	<0.20	ug/g	NC	30		
7271605	Acid Extractable Thallium (Tl)	2021/03/30	90	75 - 125	104	80 - 120	<0.050	ug/g	NC	30		
7271605	Acid Extractable Uranium (U)	2021/03/30	89	75 - 125	100	80 - 120	<0.050	ug/g	12	30		
7271605	Acid Extractable Vanadium (V)	2021/03/30	96	75 - 125	105	80 - 120	<5.0	ug/g	12	30		
7271605	Acid Extractable Zinc (Zn)	2021/03/30	NC	75 - 125	105	80 - 120	<5.0	ug/g	8.8	30		
7271820	Acid Extractable Antimony (Sb)	2021/03/30	89	75 - 125	101	80 - 120	<0.20	ug/g	10	30		
7271820	Acid Extractable Arsenic (As)	2021/03/30	95	75 - 125	102	80 - 120	<1.0	ug/g	0.62	30		
7271820	Acid Extractable Barium (Ba)	2021/03/30	NC	75 - 125	101	80 - 120	<0.50	ug/g	0.10	30		
7271820	Acid Extractable Beryllium (Be)	2021/03/30	92	75 - 125	100	80 - 120	<0.20	ug/g	7.5	30		

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
7271820	Acid Extractable Boron (B)	2021/03/30	88	75 - 125	99	80 - 120	<5.0	ug/g	14	30		
7271820	Acid Extractable Cadmium (Cd)	2021/03/30	94	75 - 125	100	80 - 120	<0.10	ug/g	2.7	30		
7271820	Acid Extractable Chromium (Cr)	2021/03/30	94	75 - 125	103	80 - 120	<1.0	ug/g	1.5	30		
7271820	Acid Extractable Cobalt (Co)	2021/03/30	90	75 - 125	102	80 - 120	<0.10	ug/g	8.5	30		
7271820	Acid Extractable Copper (Cu)	2021/03/30	90	75 - 125	103	80 - 120	<0.50	ug/g	4.0	30		
7271820	Acid Extractable Lead (Pb)	2021/03/30	NC	75 - 125	99	80 - 120	<1.0	ug/g	1.3	30		
7271820	Acid Extractable Molybdenum (Mo)	2021/03/30	91	75 - 125	97	80 - 120	<0.50	ug/g	NC	30		
7271820	Acid Extractable Nickel (Ni)	2021/03/30	94	75 - 125	106	80 - 120	<0.50	ug/g	0.98	30		
7271820	Acid Extractable Selenium (Se)	2021/03/30	95	75 - 125	104	80 - 120	<0.50	ug/g	NC	30		
7271820	Acid Extractable Silver (Ag)	2021/03/30	93	75 - 125	101	80 - 120	<0.20	ug/g	NC	30		
7271820	Acid Extractable Thallium (Tl)	2021/03/30	89	75 - 125	99	80 - 120	<0.050	ug/g	0.20	30		
7271820	Acid Extractable Uranium (U)	2021/03/30	93	75 - 125	100	80 - 120	<0.050	ug/g	0.33	30		
7271820	Acid Extractable Vanadium (V)	2021/03/30	NC	75 - 125	100	80 - 120	<5.0	ug/g	1.1	30		
7271820	Acid Extractable Zinc (Zn)	2021/03/30	NC	75 - 125	99	80 - 120	<5.0	ug/g	1.3	30		
7272947	F2 (C10-C16 Hydrocarbons)	2021/03/30	119	50 - 130	114	80 - 120	<10	ug/g	NC	30		
7272947	F3 (C16-C34 Hydrocarbons)	2021/03/30	120	50 - 130	115	80 - 120	<50	ug/g	NC	30		
7272947	F4 (C34-C50 Hydrocarbons)	2021/03/30	119	50 - 130	115	80 - 120	<50	ug/g	NC	30		
7273142	Available (CaCl2) pH	2021/03/30			100	97 - 103			0.63	N/A		
7273498	F2 (C10-C16 Hydrocarbons)	2021/03/30	99	50 - 130	97	80 - 120	<10	ug/g	18	30		
7273498	F3 (C16-C34 Hydrocarbons)	2021/03/30	99	50 - 130	97	80 - 120	<50	ug/g	NC	30		
7273498	F4 (C34-C50 Hydrocarbons)	2021/03/30	97	50 - 130	95	80 - 120	<50	ug/g	NC	30		
7274245	Benzene	2021/03/30	76	50 - 140	90	50 - 140	<0.020	ug/g	NC	50		
7274245	Ethylbenzene	2021/03/30	84	50 - 140	99	50 - 140	<0.020	ug/g	NC	50		
7274245	F1 (C6-C10) - BTEX	2021/03/30					<10	ug/g	NC	30		
7274245	F1 (C6-C10)	2021/03/30	77	60 - 140	81	80 - 120	<10	ug/g	NC	30		
7274245	o-Xylene	2021/03/30	83	50 - 140	95	50 - 140	<0.020	ug/g	NC	50		
7274245	p+m-Xylene	2021/03/30	80	50 - 140	94	50 - 140	<0.040	ug/g	NC	50		
7274245	Toluene	2021/03/30	77	50 - 140	91	50 - 140	<0.020	ug/g	NC	50		
7274245	Total Xylenes	2021/03/30					<0.040	ug/g	NC	50		
7275424	Conductivity	2021/03/31			102	90 - 110	<0.002	mS/cm	0.31	10		

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
7290197	Leachable (SPLP) Antimony (Sb)	2021/04/09	105	80 - 120	105	80 - 120	<0.5	ug/L	2.0	35	<0.5	ug/L
7290197	Leachable (SPLP) Arsenic (As)	2021/04/09	102	80 - 120	102	80 - 120	<1	ug/L	5.1	35	<1	ug/L
7290197	Leachable (SPLP) Barium (Ba)	2021/04/09	101	80 - 120	103	80 - 120	<5	ug/L	NC	35	<5	ug/L
7290197	Leachable (SPLP) Beryllium (Be)	2021/04/09	102	80 - 120	103	80 - 120	<0.5	ug/L	NC	35	<0.5	ug/L
7290197	Leachable (SPLP) Boron (B)	2021/04/09	96	80 - 120	95	80 - 120	<10	ug/L	2.1	35	<10	ug/L
7290197	Leachable (SPLP) Cadmium (Cd)	2021/04/09	104	80 - 120	105	80 - 120	<0.1	ug/L	NC	35	<0.1	ug/L
7290197	Leachable (SPLP) Chromium (Cr)	2021/04/09	97	80 - 120	98	80 - 120	<5	ug/L	NC	35	<5	ug/L
7290197	Leachable (SPLP) Cobalt (Co)	2021/04/09	99	80 - 120	100	80 - 120	<0.5	ug/L	NC	35	<0.5	ug/L
7290197	Leachable (SPLP) Copper (Cu)	2021/04/09	104	80 - 120	105	80 - 120	<1	ug/L	4.6	35	<1	ug/L
7290197	Leachable (SPLP) Lead (Pb)	2021/04/09	103	80 - 120	103	80 - 120	<0.5	ug/L	NC	35	<0.5	ug/L
7290197	Leachable (SPLP) Molybdenum (Mo)	2021/04/09	103	80 - 120	105	80 - 120	<1	ug/L	0	35	<1	ug/L
7290197	Leachable (SPLP) Nickel (Ni)	2021/04/09	97	80 - 120	98	80 - 120	<1	ug/L	NC	35	<1	ug/L
7290197	Leachable (SPLP) Selenium (Se)	2021/04/09	104	80 - 120	106	80 - 120	<2	ug/L	NC	35	<2	ug/L
7290197	Leachable (SPLP) Silver (Ag)	2021/04/09	102	80 - 120	103	80 - 120	<0.1	ug/L	NC	35	<0.1	ug/L
7290197	Leachable (SPLP) Thallium (Tl)	2021/04/09	103	80 - 120	104	80 - 120	<0.05	ug/L	NC	35	<0.05	ug/L
7290197	Leachable (SPLP) Uranium (U)	2021/04/09	103	80 - 120	103	80 - 120	<0.1	ug/L			<0.1	ug/L
7290197	Leachable (SPLP) Vanadium (V)	2021/04/09	100	80 - 120	100	80 - 120	<1	ug/L	2.6	35	<1	ug/L
7290197	Leachable (SPLP) Zinc (Zn)	2021/04/09	104	80 - 120	105	80 - 120	<5	ug/L	NC	35	<5	ug/L

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

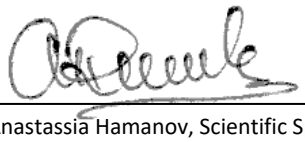
Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C180627
Report Date: 2021/04/12

exp Services Inc
Client Project #: BRM-21004344-B0
Site Location: 12304 HEARTLAKE RD
Your P.O. #: BRM-GEO
Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BUREAU VERITAS

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHA

Page of

26-Mar-21 13:27
Christine Gripton
C180627

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#9590 exp Services Inc	Company Name:	exp Services INC	Quotation #:	B91716 STREAM3
Attention:	Central Services	Attention:	David DENNISON	P.O. #:	BRM- GEO
Address:	1595 Clark Blvd Brampton ON L6T 4V1	Address:	1595 Clark Blvd BRAMPTON	Project:	BRM-21004344-B0
Tel:	(905) 793-9800 Fax: (905) 793-0641	Tel:	905 793 9800 Fax:	Project Name:	12304 Heart LAKE Rd
Email:	AP@exp.com; Karen.Burke@exp.com	Email:	dave.dennison@exp.com	Site #:	
				Sampled By:	BH

Order #: 817848
COC #: C#817848-01-01
Project Manager: Christine Gripton

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558. ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☑ Reg 406 Table 1
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O.Reg 406 Excess Soil Min. Bulk S/SS Pkg	O.Reg 406 Excess Soil SPLP Metals (ON HOLD)	SULPHATE	# of Bottles	Comments
1	BH1 SS2	BH1 SS2	3/18/21	11 AM	SOIL	X	X		5	Please put
2	BH4 SS3	BH4 SS3	3/17/21	12 PM		X	X		5	all Analysis
3	BH11 SS2	BH11 SS2	3/18/21	12PM		X	X		5	for SPLP METALS
4	BH13 SS3	BH13 SS3	3/25/21	11 PM		X	X		5	on hold.
5	BH18 SS4	BH18 SS4	3/22/21	11 PM		X	X		5	[illegible]
6	BH21 SS2	BH21 SS2	3/22/21	12PM		X	X	X	5	
7	BH26 SS3	BH26 SS3	3/23/21	12PM		X	X		5	
8	BH 30 SS4	BH 30 SS4	3/24/21	12 PM		X	X		5	
9	BH 131 SS33	BH 131 SS33	3/25/21	12 PM		X			5	
10	SP 1	SP1	3/25/21	1PM	↓	X			3	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Bernd Haug	21/03/26	1:25 PM	MEETHA SAKANTHAN	21/03/26	13:27	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	3/2/3	Present	✓	
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.