PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
SITE: 80 DIEPPE AVENUE, ELLIOT LAKE, ONTARIO

CITY OF ELLIOT LAKE

Attention: Steven Antunes
45 Hillside Drive North
Elliot Lake, ON
P5A 1X5

August 21, 2023

Project Reference Number: E23050

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Mr. Steven Antunes
City of Elliot Lake
45 Hillside Drive North
Elliot Lake, ON P5A 1X5

RE: Phase Two Environmental Site Assessment Preamble

As per your request this Phase Two Environmental Site Assessment (ESA) has been completed in accordance with Ontario Regulation 153/04 (O. Reg. 153/04) with the intent of filing a Record of Site Condition (RSC). Greenstone Engineering Ltd. (Greenstone) has completed this report to be compliant with Part VIII and Schedule E of O. Reg. 153/04. The following sections of this report have been prepared and numbered to be consistent with the minimum regulatory requirements outlined in "*Table 1 – Mandatory Requirements for Phase Two Environmental Site Assessment Reports*". At the time of the preparation of this report, a current plan of survey has not been provided to Greenstone. Prior to the filing of a Record of Site Condition, a current plan of survey will be required and prepared for the subject property.

Should you have any questions or would like to discuss any aspect of this submission please do not hesitate to contact the undersigned at your convenience.

Sincerely yours,

Christian Tenaglia, M.Env.Sc., P.Eng., QP_{ESA}
President
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1 EXECUTIVE SUMMARY

Greenstone Engineering Ltd. (Greenstone) was commissioned by the Corporation of the City of Elliot Lake (herein referred to as the "Client") to complete a Phase Two Environmental Site Assessment (ESA) for the property located at civic address 80 Dieppe Avenue in Elliot Lake, Ontario. At the time this Phase Two ESA was conducted, the site was a vacant property formerly used as a commercial plaza and has since been demolished.

This Phase Two ESA was completed in accordance with Ontario Regulation 153/04 (O. Reg. 153/04) to support the land use change from commercial to residential.

A previous Phase One ESA identified off-site and on-site potential contaminating activities (PCA) and related areas of potential environmental concern (APECs) on the subject property. As such, Greenstone completed this Phase Two ESA to investigate the environmental condition of the APECs.

Between June 8 and June 16, 2023, the Phase Two ESA investigation was completed to assess the soil and groundwater quality at the site. As part of the investigation a total of ten test pits were advanced at the site and three monitoring wells were installed for the purpose of collecting soil and groundwater samples. All samples were submitted to an accredited laboratory for analysis of the contaminants of potential concern (COPCs) related to the PCAs and APECs.

Based on information obtained from the Phase One and Two ESAs, the appropriate Site Condition Standards for the Phase Two Property are the Table 3 Full Depth Generic Site Condition Standards for Use in a Non-Potable Groundwater Condition with coarse textured soil and residential land use (Table 3 Standards).

All soil and groundwater samples collected during the Phase Two ESA met the applicable Table 3 Standards for the COPCs analyzed.

Based upon the review and evaluation of the results of the Phase Two ESA, it has been determined that the soil and groundwater quality meet the appropriate Table 3 Standards within the APECs investigated. Therefore, no further investigation is required for the Phase Two Property and Greenstone recommends filing of the RSC.

2 INTRODUCTION

2.1 SITE DESCRIPTION

The municipal address of the property is 80 Dieppe Avenue, Elliot Lake, Ontario. The property is 1.24 hectares in size. A map and site plan of the Phase Two Property illustrating the boundaries is shown on Figure 1 and 2, respectively, as provided in Appendix A.

The property identifier number (PIN) for the property is 31624-0347 (LT) with a legal description of PCL 2997 SEC AES; LT 1-18 PL M163 GUNTERMAN; BLK A, B, C PL M163 GUNTERMAN; ELLIOT LAKE.

2.2 PROPERTY OWNERSHIP

The name and address and other contact information for the owner of the Phase Two Property is:

THE CORPORATION OF THE CITY OF ELLIOT LAKE.
Steven Antunes
45 Hillside Drive North
Elliot Lake, ON
P5A 1X5
(705) 848-2287 x. 2107
santunes@city.elliotlake.on.ca

2.3 CURRENT AND PROPOSED FUTURE USES

The current use of the property is vacant and undeveloped. Its most recent use was as a commercial retail plaza (commercial land use). The intended future use of the property is residential land use.

2.4 APPLICABLE SITE CONDITION STANDARD

In order to establish the applicable generic site condition standards (SCS) for the subject site, sections 34 through 43 of Ontario Regulation 153/04 "*Records of Site Condition - Part XV.1 of the Act"* (O. Reg. 153/04) were utilized to classify the site's generic effects-based standards. The SCS are listed in the supporting MECP Standards.

Under the regulation, a sensitive site evaluation, classification of land use, classification of groundwater potability (potable vs. non-potable) and determination of full-depth vs. stratified options, were required to be reviewed in order to derive the applicable SCS. The following site specific details were considered in the selection of the applicable SCS:

- Bedrock outcrops were not observed on-site or on adjacent properties and bedrock refusal was not encountered within any of the test pits advanced on-site. Based on this information, it is Greenstone's opinion that approximately two-thirds or more of the soil across the subject property is equal to or greater than 2 meters (m) in depth beneath the soil surface and therefore would not be considered a "shallow soil property", as defined by O. Reg. 153/04. However, the depth of groundwater is less than 2 m from surface and consideration has been given to vapour intrusion, specifically with respect to structures and buildings. No structures or buildings are located on the site.
- The subject property is not adjacent to or part of a known "area of natural significance".
- The site is not adjacent to or within 30 m of a water body.
- The future use of the site is "residential".
- The stratified approach is not applicable for this assessment.
- The site and surrounding properties are municipally serviced with potable water. Potable water is municipally supplied by the City of Elliot Lake via an underground watermain from Dieppe Avenue. The site is not located within a source water protection area (i.e., municipal well groundwater capture zone). No potable drinking water wells exist on site or in proximity to the site. The municipal representative confirmed that non-potable standards are applicable for the subject property.
- Five soil samples were collected and submitted for laboratory analysis of pH in an effort to aid in classifying the site with respect to O. Reg. 153/04.
    - Two samples were collected from test pit TP2 (depth of 1.2 m below grade (mbg) (surface)) and resulted in an average pH values of 5.3. In accordance with O. Reg. 153/04, this soil sample location is within the acceptable pH range of 5.0 to 9.0 for surface soil.
    - One sample was collected from test pit TP2 (depth of 3.1 mbg (subsurface)) and resulted in a pH value of 6.80. In accordance with O. Reg. 153/04, this soil sample location is within the acceptable pH range of 5.0 to 11.0 for subsurface soil.
    - One sample was collected from test pit TP7 (depth of 1.2 mbg (surface)) and resulted in a pH value of 6.19. In accordance with O. Reg. 153/04, this soil sample location is within the acceptable pH range of 5.0 to 9.0 for surface soil.
    - One sample was collected from test pit TP7 (depth of 2.4 mbg (subsurface)) and resulted in a pH value of 5.16. In accordance with O. Reg. 153/04, this soil sample location is within the acceptable pH range of 5.0 to 11.0 for subsurface soil.
- Four soil samples of what appeared to be "native" soil material were collected and submitted for grain size analysis (75 um sieve) in an effort to aid in classifying the site with respect to O. Reg. 153/04. The samples were collected from test pit TP2 (depth of 1.2 mbg (surface) and depth of 3.1 mbg (subsurface) and test pit TP7 (depth of 1.2 mbg (surface) and depth of 2.4 mbg (subsurface)) and the results indicated that 63.2%, 56.6%, 93.7% and 97.7% of the soil particles, respectively, were greater than 75 microns in mean diameter. In accordance with O. Reg.

153/04, these samples would be classified as “coarse” textured. Based on field observations and grain size analyses, greater than two-thirds of the site consists of a coarse grained matrix; therefore, the site was classified as “coarse” textured in accordance with O. Reg. 153/04.

Based on the preceding information for the subject property, the applicable generic SCS for the property would be the Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition (Table 3 SCS) with the appropriate land use classification as “residential” with “coarse” textured soil.

3 BACKGROUND INFORMATION

3.1 PHYSICAL SETTING

The following is a description of the physical setting of the Phase Two Property:

i) The property is located within a predominantly residential area with some adjacent commercial land uses. No water bodies exist on-site. The nearest water body is a small unnamed lake located approximately 440 m southeast of the site.

ii) The subject property is not adjacent to or part of a known “area of natural significance”.

iii) The property is generally flat with a slope towards the west and the south. Topographic elevations rise significantly north of the site and drop significantly west of the site. Surface water drainage is expected to flow to the south and west towards Dieppe Avenue.

iv) No well-head protection areas or other designation identified by the municipality in its official plan for the protection of ground water exists on-site.

v) The site and surrounding properties are currently serviced with a municipal drinking water supply.

vi) Greenstone’s inspection of the Phase Two Property and review of publicly available well records did not indicate the presence of any well on the Phase Two Property or within the Phase One Study Area that supplies water used for human consumption or an agricultural use.

3.2 PAST INVESTIGATIONS

No past investigations have been completed for the site.

4 SCOPE OF INVESTIGATION

4.1 OVERVIEW OF SITE INVESTIGATION

This Phase Two ESA is being completed to support the Client's land use change from commercial to residential. In accordance with O. Reg. 153/04, if a land use changes to a more sensitive land use (i.e., commercial to residential) it is mandatory to file a Record of Site Condition in the Province of Ontario. This Phase Two ESA was conducted in accordance with Schedule E of O. Reg. 153/04. This project included the completion of all principle components of a Phase Two ESA, such as a Planning of the Site Investigation, Conducting the Site Investigation, Review and Evaluation of Information and the preparation of a Phase Two ESA Report. As noted in the preamble, this Phase Two ESA report was prepared in compliance with the minimum requirements as set out in Table 1 of the Schedule E.

4.2 MEDIA INVESTIGATED

Given the nature of the potential contaminating activities (PCAs), areas of potential environmental concern (APECs) and contaminants of potential concern (COPCs), it was applicable to assess both soil and groundwater to address the off-site concerns related to the historical retail fuel outlet. The rationale for assessing both the soil and groundwater relating to the off-site concern was that both soil and groundwater could act as a preferential pathway within the media for any contaminant transport. The remaining on-site concerns were related to the potential for fill material of unknown quality as well as winter maintenance activities to exist. Given the nature of these PCAs, it was Greenstone's rationale to only assess for the presence of the COPCs within the soil media only to address its presence.

4.3 PHASE ONE CONCEPTUAL SITE MODEL

The Phase One Property is located at civic address 80 Dieppe Avenue in Elliot Lake, Ontario. Figure 1 is a key map showing the location of the Phase One Property. It is located on the north side of Dieppe Avenue. The Phase One Property was first developed in the mid-1900s as a commercial property. It is assumed that the property remained commercial for the duration of its use up until the building was demolished. The site is currently vacant. The intention of the property is to develop it for residential use.

A conceptual site model (CSM) provides a summary of the findings of the Phase One ESA. Figures 2 to 4 summarize the Phase One CSM by illustrating the following features within the Phase One Property and the Phase One Study Area, where present:

- Existing buildings and structures.
- Water bodies located in whole or in part within the Phase One Study Area.
- Areas of natural significance located in whole or in part within the Phase One Study Area.

- Drinking water wells located at the Phase One Property.
- Land use of adjacent properties.
- Roads within the Phase One Study Area.
- PCAs within the Phase One Study Area, including the locations of tanks.
- APECs at the Phase One Property.

Item to discuss	Description
2.i. Any areas where PCAs on or potentially affecting the Phase One Property has occurred	There is two PCAs on the Phase One Property and two PCAs within the Phase One Study Area. The off-site PCAs represents APEC #1 on the Phase One Property and the on-site PCAs represent APEC #2 and #3 and are described as follows: **PCA #1 and PCA #2** – A retail fuel storage tank nest (two underground storage tanks (UST) was reported to have been located at 68 Dieppe Avenue and the business currently and formerly occupying that site was reported to have offered lubrication and oil change services. The automotive repair garage is approximately 10 m east of the Phase One Property boundary and the USTs are approximately 7 m east of the Phase One Property boundary and both are estimated to be cross-gradient from the Phase One Property. Based on this information these PCAs are considered to represent an APEC on the Phase One Property, herein referred to as APEC #1 (Item 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles; Item 28 – Gasoline and Associated Products Storage in Fixed Tanks). **PCA #3** – Fill of unknown quality has the potential to be on-site associated with the former commercial development), herein referred to as APEC #2 (Item 30 - Importation of Fill Material of Unknown Quality). **PCA #4** – Winter maintenance activities (i.e., salting) could have occurred in the vicinity of the former parking lot or areas adjacent to the former buildings, herein referred to as APEC #3 (Item Other – Winter Maintenance Activities).
2.ii. Any COPCs	The following COPCs are those associated with the PCA which represent an APEC at the Phase One Property: APEC #1 (PCA #1 and PCA #2) • Volatile Organic Compounds (VOCs) • Petroleum Hydrocarbons (PHCs) • Polycyclic Aromatic Hydrocarbons (PAHs)

Item to discuss	Description
	APEC #2 (PCA #3) • PHCs • PAHs • Metals • Electrical Conductivity (EC) • Sodium Adsorption Ratio (SAR) APEC #3 (PCA #4) • EC • SAR
2.iii. The potential for underground utilities, if any present, to affect contaminant distribution and transport	Sanitary, storm water and potable water utility services all exist underground within the Phase One Property and transect the majority of the site (as shown on Figure 2). Given the assumed depth of the utilities (>2.0 mbg) they are not considered to present a concern with respect to affecting the contaminant distribution or transport of any COPCs.
2.iv. Available regional or site specific geological and hydrogeological information, and	The regional bedrock geology of the Phase One Study Area consists of tonalite to granodiorite-foliated to gneissic with minor supracrustal inclusions of the gneissic tonalite suite. The Ontario Geological Survey (OGS) Northern Ontario Engineering Terrain Study for the Elliot Lake Area indicates that the overburden on the Phase One Property and the Phase One Study Area consists of till dominated ground moraine with moderate relief and mixed wet to dry surface conditions. Given the nature of the till soil conditions, bedrock is expected to exist within 10 m of surface. Based on the slope of the land on the Phase One Property and within the Phase One Study Area, the inferred groundwater flow direction is southerly towards the surface water bodies (>400 m south of the site). Based on site observations and the proximity of the nearby water body, the depth to groundwater is expected to be shallow at approximately 1.5 mbg. The nearest water body consists of a small unnamed pond located 440 m southeast of the Phase One Property.
2.v. How any uncertainty or absence of information obtained in each of the components of the phase one environmental site assessment could affect the validity of the model.	It is not anticipated that uncertainty or an absence of information will affect the validity of this CSM.

Item to discuss		Description
3.	**If the exemption set out in paragraph 1, 1.1 or 2 of section 49.1 of the regulation is being relied upon, document the rationale for relying upon the exemption, which may be based on information gathered during one or more of the records review, interviews and site reconnaissance.**	This CSM does not rely on exemptions set out in paragraph 1, 1.1 or 2 of section 49.1 of O. Reg. 153/04.
4.	**If there is an intention to rely upon the exemption set out in paragraph 3 of section 49.1 of the regulation, set out the intention to rely upon the exemption and provide a brief explanation as to why the exemption may apply, which may be based on information gathered during one or more of the records review, interviews and site reconnaissance.**	This CSM does not rely on exemptions set out in paragraph 3 of section 49.1 of O. Reg. 153/04.

4.4 DEVIATIONS FROM SAMPLING AND ANALYSIS PLAN

The Sampling and Analysis Plan (SAP) is provided in Appendix B. No deviations from the SAP occurred during the Phase Two ESA investigation.

5 INVESTIGATION METHOD

5.1 GENERAL

The subsurface investigation was completed to assess the environmental condition of the soil and groundwater at the site in the identified APECs. Representative soil and groundwater samples were obtained through the completion of a subsurface investigation and sampling program that included the excavation of test pits and monitoring and sampling of groundwater wells. The site's geological conditions were established based on visual observations of the soil samples collected as part of the

field program. Soil and groundwater quality information was obtained from visual and olfactory observations, field screening methods and laboratory analytical data.

A total of ten test pits (TP1 through TP10) were advanced across the site in the APECs. Three monitoring wells were installed for the purpose of obtaining information about the shallow unconfined groundwater aquifer. The test pit and monitoring well locations were chosen to provide coverage of the APECs relating to the site and were intended to intersect potential soil and groundwater contamination and to determine the site's geological and hydrogeological characteristics. Standard test pitting, monitoring well installation and soil and groundwater sampling methods were employed for the duration of the investigation. No deviations from the standard investigation methods occurred. Details regarding the test pits and monitoring wells are provided on the test pit logs in Appendix C. The well construction details are provided on Table 1 in Appendix D. Photographs of the work completed are provided in Appendix E.

5.2 DRILLING AND EXCAVATING

The test pit investigation was completed between June 8 and June 9, 2023. Greenstone retained Lajoie Bros. Contracting Ltd. (Lajoie) to complete the test pit excavations and monitoring well installations. Lajoie utilized a standard track-mounted hydraulic excavator to excavate the test pits (CAT 307). Test pits were advanced to maximum depths of 3.5 mbg. Discrete soil samples were collected from the different soil horizons encountered throughout the test pits at a continuous frequency of approximately one sample every 0.6 m interval of depth for field screening and characterization purposes.

The SAP developed was based on generally accepted professional practices and is in accordance with the Ministry of Environment, Conservation and Parks (MECP) document entitled "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*", dated December 1996 (Sampling Document). A combination of systematic sampling and judgmental sampling methods were employed. Soil samples were collected systematically the full depth of each test pit continuously at a regular specified interval until the maximum target depth of investigation was met. Each sample was field screened for evidence of contaminants. Based on field screening results, judgmental analysis was completed to identify worst case areas or areas where the highest potential for contamination was evident (i.e., capillary fringe, visual fill deposits, staining, highest COV measurement, etc.). A minimum of one soil sample collected from the worst-case area of each test pit was selected for laboratory analysis of the COPCs.

All components of the field investigation were completed under the supervision of one of Greenstone's experienced environmental field technicians. Details of the test pits and monitoring wells, including sample locations, stratigraphy and environmental characteristics observed are provided on test pit logs in Appendix C.

5.3 SOIL SAMPLING

Greenstone's sample collection, handling and equipment decontamination procedures are consistent with generally accepted professional practices and are in accordance with the MECP Sampling Document. The procedures carried out during the Phase Two ESA investigation were consistent throughout the entirety of the project.

Continuous soil sampling was conducted using the excavator bucket during test pit excavating vertically into the subsurface soil. Samples collected from the excavator bucket were collected from areas not in contact with the bucket or teeth to minimize potential for cross-contamination. In addition, precautions were taken to not disturb the open excavation to prevent soil mixing/cave while advancing for the next soil horizon. Soil samples collected from the test pits were immediately jarred in laboratory prepared containers. The remaining sample was collected within Ziploc bags for field screening measurements.

Soil sample collection for volatile organic carbon (VOC) related parameters were completed using core samplers with pre-weighted methanol preservative in vials provided by the laboratory, as well as Teflon lined lidded jars within minimal soil headspace packing field procedures. The samples that were jarred for laboratory testing were immediately labeled and placed into a cooler with ice prior to transport to the laboratory in order to minimize the volatilization of VOC related parameters. All samples were shipped to the laboratory immediately after sampling under chain of custody and seal.

All dedicated sampling equipment which contacts soil directly (i.e., spoons, knives, etc.) were thoroughly cleaned between sampling sites. Cleaning procedures included the use of distilled water, Alconox and the use of protective nitrile gloves during all sampling, handling and decontamination activities.

During the field investigation, soil conditions on-site were generally observed to consist of a thin layer of disturbed native soil or coarse gravel and sand fill to an average depth of 0.3 mbg. Test pit location TP/MW4 experienced a depth of fill material to extend to a maximum depth of 1.8 mbg. Test pit locations TP5, TP6, TP7 and TP8 did not experience any evidence of fill material. The native underlying soil conditions were observed to be consistent throughout the site and consist of medium to fine grained sand with trace amounts of gravel. The material was observed to be very dense and consistent with a till formation. The material was generally dry to moist near surface within increasing moisture content at depths greater than 1.5 mbg. Details regarding the soil conditions and sampling are provided on the test pit logs presented in Appendix C.

5.4 FIELD SCREENING MEASUREMENTS

Greenstone completed field screening of all soil samples collected to identify the presence of any environmental impact and to assist with determining worst case locations within the soil stratum for the selection process of soils requiring laboratory analysis.

1) The following information provided is in regards to the equipment and processes used for the field screening application:

i) The make and model of the field screening equipment used is an RKI Eagle 2 combustible gas monitor.

ii) The RKI Eagle 2 is capable of detecting the presence of combustible gas, oxygen (O2), carbon monoxide (CO), hydrogen sulfide (H2S), and various other toxic gases simultaneously.

iii) The precision of the RKI Eagle 2 is variable depending on the user and field screening standard operating procedure. The level of precision increases as the user completes field screening with the same level of consistency between samples.

iv) The RKI Eagle 2 used during the investigation is outfitted with a Catalytic Type Sensor capable of detecting gases in the Lower Explosive Limit (LEL) with an accuracy of +/- 5% and in the Parts Per Million (ppm) with an accuracy of +/- 25 ppm. For maximum accuracy the unit is configured and calibrated to the desired target gas.

v) The unit is calibrated to the following reference span gases:

a. Isobutylene with a concentration of 100 ppm; and

b. Hexane with a concentration of 15% LEL.

vi) The procedure of checking the calibration of the instrument is as follows:

a. Turn on the unit and allow it to stabilize for a minimum of 5 minutes.

b. Attach the flow control regulator to the Isobutylene span gas (100 ppm concentration).

c. Attach the RKI Eagle suction probe to the regulator draw port and allow the Isobutylene span gas to enter the unit. Measure the peak reading within approximately 15 to 30 seconds. The unit should read 100 ppm. If the reading is greater than 5% of the known calibration gas concentration, return the unit to the supplier for additional analysis and testing/replacement of the sensors. If the reading is within the calibration check limit, proceed to the next step.

d. Attach the flow control regulator to the Hexane span gas (15% LEL concentration).

e. Attach the RKI Eagle suction probe to the regulator draw port and allow the Hexane span gas to enter the unit. Measure the peak reading within approximately 15 to 30 seconds. The unit should read 15% LEL. If the reading is greater than 5% of the known

calibration gas concentration, return the unit to the supplier for additional analysis and testing/replacement of the sensors. If the reading is within the calibration check limit, proceed to the next step.

f. Record all your calibration field check readings and store these readings in the digital project field and with the unit.

2) Field screening of the each of the samples was completed during the sample collection process (test pitting vertical excavation and every 0.6 m continuous soil horizon). The portion of sample used for field screening was bagged within a large sealable bag (i.e., large Ziploc bag). Based on the soil volumes obtained during test pitting approximately 1/4 of the bag is filled. The soil within the bag is manipulated and broken apart to allow any volatile contaminants to disperse into the bag headspace. The soil bag is allowed to equilibrate to ambient temperatures for approximately 10 minutes. The soil within the bag is continuously manipulated and shook during this period. The probe is inserted into the sealed bag without allowing any 'fresh air' to enter the sealed bag thereby diluting the headspace. A headspace reading is collected using the RKI Eagle 2 by allowing the suction probe to draw a headspace sample for approximately 15 to 30 seconds. Peak readings are collected during this time and recorded. As samples are collected and screened vertically downwards, the sample with the highest reading is determined to be the 'worst-case' and selected for laboratory analysis. Other non-measurable field parameters are recorded and used to determine the worst-case areas within the test pit, such as the presence of deleterious materials within the quality of the fill, hydrocarbon or organic odours, staining of the soil, etc. Visual and olfactory observations make determine other worst-case areas with the test pit which may not be consistent with headspace readings. The Qualified Person will make the necessary judgement for sample selection and submission for laboratory analysis. If no visual or olfactory evidence is observed indicating the presence of environmental impairments, and if no headspace readings are detected indicating the presence of combustible impacts, it then prudent to select samples for laboratory analysis from areas where the fate and contaminant transport will most likely deliver the presence of contamination (i.e., the capillary fringe / smear zone, or known target depths of surficial fill deposits).

3) For the duration of the field investigation, all field screening methods described above were completed consistently with no deviation.

5.5 GROUNDWATER MONITORING WELL INSTALLATION

Monitoring wells were installed in three of the investigation locations identified as TP/MW2, TP/MW3 and TP/MW4. The monitoring wells were installed at depths between of 3.1 and 3.4 mbg. Each monitoring well was constructed using virgin grade schedule 40 PVC screen and riser and were surface-cased using a protective flushmounted road box or stick up monument. All monitoring wells were

installed in accordance with Ontario Regulation 903 "*Ontario Water Resources Act – Wells*" (O. Reg. 903) by a licensed well contractor (Lajoie Bros. Contracting Ltd.). Upon completion of the monitoring well installations, Lajoie completed and filed with the MECP water well records for the monitoring wells.

The monitoring wells were installed during the backfilling of the test pits by placing a virgin grade 6-inch (15 centimeter) PVC casing to the desired depth of the monitoring well to be constructed. The backfill is then placed around the casing. The casing is then utilized a rigid tremie pipe for the construction and installation of the monitoring well. The monitoring well screen and riser is constructed and placed within the casing and the filter pack (sand) is placed around the screen to the desired depth. The bentonite seal is then placed over the filter pack. Once total construction within the casing is complete, the PVC casing is removed the subsurface with the use of the excavator bucket.

The screened intervals of the monitoring wells were installed with the intention of intersecting the unconfined groundwater table to assess for the presence of any light free-phase liquids (i.e., NAPL). Specific groundwater well installation and development, monitoring and sampling standard operating procedures were implemented during this phase of the investigation to minimize the introduction of sediment or surface waters into the well structure, and to ensure representative groundwater data was collected (i.e., purge volume removal, dedicated tubing, sample intake depth, etc.).

All materials and equipment used in the construction of the monitoring wells is of new virgin grade quality and is kept clean and protected during transportation to the site and during installation. All well technicians must utilize clean and disposable nitrile gloves during the installation and handling of all well materials to prevent any cross-contamination.

Monitoring well locations/depths were chosen based on the results of field screening soil samples collected during the investigation. Locations identified to have worst case impacts were chosen for the location of a monitoring well; as well, monitoring wells were installed at locations across the site to provide information with respect to groundwater flow direction.

Groundwater samples were collected in containers provided by the laboratory containing preservatives corresponding and compliant with the analytical protocols. The samples that were jarred for laboratory testing were immediately labeled and placed into a cooler with ice prior to transport to the laboratory in order to minimize the volatilization of VOC related parameters. All samples were shipped to the laboratory immediately after sampling under chain of custody and seal.

All dedicated sampling equipment which contacts groundwater directly (i.e., interface probe, water quality meter, etc.) were thoroughly cleaned between monitoring wells. Cleaning procedures included the use of distilled water, Alconox and the use of protective nitrile gloves during all sampling, handling and decontamination activities.

All monitoring wells were developed using inertial foot-valves and water tubing. The wells were developed a minimum of three development events by purging a minimum of three well volumes from the well (or purged dry three times).

5.6 GROUNDWATER FIELD MEASUREMENT OF WATER QUALITY PARAMETERS

Groundwater monitoring was completed using standard low flow sampling procedures. Prior to sampling, the interface probe is inserted into the monitoring well to obtain a static water level elevation. Once completed, the peristaltic pump is instrumented with the necessary tubing which is inserted into the well (typically within the centre of the water column or within 30 cm from the surface of the top of water). The pump discharge is routed to a flow through cell which is connected to a pre-calibrated water quality instrument (YSI ProDSS Multiparameter Digital Water Quality Meter). The flow through cell is allowed to fill up and cover the water quality meter probe. Field readings at this time are allowed to be collected and monitored for stabilization. Stabilization of key parameters, specifically water level, pH, temperature, and conductivity, must reach a maximum of 5% of the previous reading to determine that equilibration has been achieved and that the water quality passing through the flow through cell is representative of the aquifer being sampled and is not stagnant.

5.7 GROUNDWATER SAMPLING

Groundwater sampling is completed using standard low flow sampling procedures. Once field measurement readings (as noted above) have met the equilibration target, samples are pumped and collected directly from the water tubing and stored within laboratory containers, jars and vials with the correct preservative. Samples are immediately placed on ice and shipped for laboratory analysis following the procedures as noted above.

5.8 SEDIMENT SAMPLING

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

5.9 ANALYTICAL TESTING

Since the results of contaminant analyses are to be compared to the MECP Standards, it is essential that well documented, validated and consistently applied analytical methods are utilized and that appropriate QA/QC procedures be carried out. The samples collected from the site were submitted to Eurofins Environment Testing Canada Inc. (Eurofins) in Ottawa, Ontario, which is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with the "*International Standards ISO/IEC 17025 – General Requirement for the Competence of Testing and Calibration Laboratories*", dated December 15, 1999. All contaminants were tested for using the analytical methods prescribed in the "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1*

of the Environmental Protection Act", dated July 1, 2011 (MECP Analytical Protocol). Eurofins analyzed all samples using method detection limits at or below the applicable criteria used for comparison in this Phase Two ESA.

5.10 RESIDUE MANAGEMENT PROCEDURES

During the investigation, any sampling residue management was completed in accordance with all applicable regulatory requirements. At the time of the soil test pitting, no significant soil residue was generated with the exception of small quantities of soil within the field screening bags. All soil field screening bags were shipped to Greenstone's head office for storage. All wash water and purge water was contained within pails or drums, returned to Greenstone's head office and disposed of in accordance with the applicable sewer use by-law as required. Details regarding the residue management is provided in Appendix F.

5.11 ELEVATION SURVEYING

The benchmark used for the elevation surveying of all test pits and monitoring wells was established as the top of the manhole adjacent to the entrance of the property on Dieppe Avenue. The benchmark was given an elevation of 352 m above sea level (masl) which is the known topographic elevation of the Phase Two Property. The location of the site benchmark is shown on Figure 2.

5.12 QUALITY ASSURANCE AND CONTROL MEASURES

All samples submitted for laboratory analysis were containerized and preserved in accordance with Table A and Table B of the MECP Analytical Protocol, corresponding to the COPCs under investigation, as follows:

- Soil VOCs - 40–60 mL glass vial (charged with methanol preservative, pre-weighed) and glass jar (for moisture content).
- Soil PHCs and PAHs - glass wide-mouth jar with Teflon™ lined lid.
- Soil Metals, EC and SAR – glass or high-density poly-ethylene HDPE.
- Water VOCs - 40–60 mL glass vials (minimum of 2) (no headspace) with NaHSO4 or HCl preservative.
- Water PHCs - 1L amber glass bottle with Teflon™ lined lid and NaHSO4 or HCl preservative.
- Water PAHs - 1L amber glass bottle with Teflon™ lined lid.

As noted above, all non-disposable equipment used between sampling locations was washed using distilled water and Alconox soap, followed by a rinse of distilled water and then air dry.

With respect to field practice QA/QC procedures, split duplicate sampling was employed during the field investigation of both the soil and groundwater media sampling events. Split duplicate sampling occurred for every 10% of the samples collected and for all COPCs analysed. Qualifiable Relative Percent Differences (RPDs) were calculated (where possible) for all parent and duplicate samples. As per the MECP Analytical Protocol, for duplicate samples (also referred to as replicates), as the measured analytical result approaches the laboratory reportable detection limit (RDL), the uncertainty associated with the value increases, thus duplicate (replicate) acceptance limits apply only where the average of the two samples (parent and replicate) is greater than five times the RDL. Therefore, qualifiable RPDs were only calculated if the average of the parent and replicate sample concentration for an analyte were greater than five times the RDL. Any qualifiable RPD data was compared against the alert limits as outlined in the MECP Analytical Protocol.

In addition to duplicate sampling, one trip blank water sample was carried between all the sampling locations and submitted for laboratory testing for VOC related parameters. The intent of the trip blank was to measure the impact of any concern ambient conditions which could cross-contaminate the representative samples.

No deviations from the QA/QC measures as noted above occurred during the investigation.

6 REVIEW AND EVALUATION

6.1 GEOLOGY

Based on the observations made during the investigation, only one significant geological unit was encountered and was exposed to the maximum depth of the investigation of 3.7 mbg. The geological unit consisted of a till made up of medium to fine grained sand with trace amounts of gravel.

The highest ground elevation measured was 352.26 masl at test pit location TP/MW2. The maximum depth of the stratigraphic unit encountered was 348.47 masl at test pit location TP/MW4.

No other geological or other material in each geological unit was encountered with the exception of a thin layer of surficial fill material.

The aquifer encountered was determined to be an unconfined aquifer, monitored to exist at a static elevation ranging between 351.11 masl at monitoring well location TP/MW2 to 350.16 masl at monitoring well location TP/MW4. This shallow unconfined aquifer was the chosen aquifer for investigation given the potential for the presence of light non-aqueous phased liquid (LNAPL) to be

migrating from the off-site PCA (i.e., gas or diesel hydrocarbons). Petroleum hydrocarbon contamination is most likely to float at the surface of the groundwater table interface since it is lighter than water (LNAPL) thereby smearing across the groundwater table interface (smear zone). This is the most likely area to intercept hydrocarbon related contaminants within the subsurface.

6.2 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

The Phase Two ESA investigation was conducted to determine the impact of on-site and off-site PCAs. The off-site PCAs have the potential to impact shallow groundwater along the eastern property boundary (APEC #1). Therefore, the SAP was developed to include a minimum of two shallow groundwater monitoring wells along the eastern property boundary. One additional monitoring well was installed west of APEC #1 to provide for triangulation to determine groundwater flow direction. The screened intervals of the wells were all installed across the top of the groundwater interface in order to capture the presence of any LNAPL contaminants within the capillary fringe.

During the groundwater monitoring activities, an interface probe was utilized to determine the groundwater depths as well as the presence of any LNAPL. Groundwater monitoring measurements determined that the static groundwater depths ranged from 1.15 mbg at monitoring well TP/MW2 to 2.63 mbg at monitoring well TP/MW4. No free flowing LNAPL was detected with the interface probe.

During the elevation survey, all monitoring well casings were surveyed relative to the site benchmark. Using the groundwater depths measured with the interface probe, the measurements were subtracted to the groundwater well casing elevations in order to calculate the groundwater elevations at each of the well locations. As noted above, the aquifer encountered was determined to be an unconfined aquifer, monitored to exist at a static elevation ranging between 351.11 masl at monitoring well location TP/MW2 to 350.16 masl at monitoring well location TP/MW4.

Based on the groundwater elevations, isopleth contours were created and mapped for the site. Based on the groundwater elevation isopleth contours, groundwater was calculated to flow in a southern direction, consistent with the topographic profiled and expected flow direction.

Given the nature of the geological conditions and the lack of any surface water body interaction at the site, potential for temporal variability in the groundwater flow direction is considered to be very low. In addition, based on the location of the groundwater assessment (APEC #1), the proximity of the buried utilities on-site, and the groundwater flow direction (southerly) Greenstone does not consider the utilities to have any significant potential interaction with the groundwater flow direction which could affect the mobility of the contaminants in this area. Groundwater monitoring data is provided in Table 2 in Appendix D.

6.3 GROUNDWATER HYDRAULIC GRADIENTS

During the Phase Two ESA investigation, the horizontal hydraulic gradient between each monitoring well was calculated. The maximum horizontal hydraulic gradient calculated was 0.0587 m/m and the minimum horizontal hydraulic gradient calculated was 0.0500 m/m. The average horizontal hydraulic gradient is calculated to be 0.0540 m/m. Vertical hydraulic gradients were not measured during this assessment.

6.4 FINE-MEDIUM SOIL TEXTURE

As noted above, textured testing of the soil was completed and it has been determined that coarse texture soil standards are the appropriate classification for the site. Coarse texture classification has been confirmed based on thorough visual inspection of the soils and documentation of the granular based materials. Therefore fine-medium soil texture standards will not be utilized.

6.5 SOIL FIELD SCREENING

The following field observations and field screening results regarding the environmental condition of the soil samples collected are noted below:

- No PHC and/or organic odours or staining were observed within any of the soil samples collected from the test pits advanced at the site.
- No significant qualities of waste debris, deleterious materials or fill of questionable environmental quality was observed within any of the test pits advanced at the site.
- COV headspace readings with the hydrocarbon vapour monitor ranged from non-detectable to 25 ppm (highest reading was observed at test pit sample locations TP1-2, TP1-2, TP2-1, TP2-2 and TP2-3).
- COV headspace readings with the photoionization detector (VOC monitor) ranged from non-detectable to 8 ppm (highest reading was observed at test pit sample location TP1-1).

6.6 SOIL QUALITY

The following summarizes the soil quality based on the laboratory results received and reviewed during the Phase Two ESA investigation:

- Soil sample TP1-3 collected at a depth of 1.8 mbg from test pit TP1, was analysed for the COPCs VOCs, PHCs and PAHs (associated with APEC #1). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP2-3 (and field duplicate DUP-1) collected at a depth of 1.8 mbg from test pit TP2, was analysed for the COPCs VOCs, PHCs and PAHs (associated with APEC #1). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP3-4 collected at a depth of 2.4 mbg from test pit TP3, was analysed for the COPCs VOCs, PHCs and PAHs (associated with APEC #1). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP4-2 collected at a depth of 1.2 mbg from test pit TP4, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP5-2 collected at a depth of 1.2 mbg from test pit TP5, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP6-2 collected at a depth of 1.2 mbg from test pit TP6, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP7-1 collected at a depth of 0.6 mbg from test pit TP7, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP8-3 collected at a depth of 1.8 mbg from test pit TP8, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP9-2 collected at a depth of 1.2 mbg from test pit TP9, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Soil sample TP10-1 (and field duplicate DUP-2) collected at a depth of 0.6 mbg from test pit TP10, was analysed for the COPCs PHCs, PAHs, Metals, EC and SAR (associated with APEC #2 and APEC#3). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

Based on Greenstone's assessment of the site and laboratory results reviewed as part of the investigation, it is our opinion that there are no contaminants related to chemical and biological transformations that have or may have occurred on the Phase Two Property. In addition, the results do not indicate that the soil is serving as a source of contaminant mass contribution to any groundwater or sediment. The results also confirm the absence of any LNAPL on-site.

A summary of all the laboratory analytical results for the soil is provided on Table 3 in Appendix D. The laboratory certificates of analysis for the soil results are provided in Appendix G.

6.7 GROUNDWATER QUALITY

The following summarizes the groundwater quality based on the laboratory results received and reviewed during the Phase Two ESA investigation:

- Groundwater sample TP/MW-2 collected at a depth of 1.15 to 3.13 mbg from monitoring well TP/MW2, was analysed for the COPCs VOCs, PHCs and PAHs (associated with APEC #1). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Groundwater sample TP/MW-3 collected at a depth of 1.67 to 3.53 mbg from monitoring well TP/MW3, was analysed for the COPCs VOCs, PHCs and PAHs (associated with APEC #1). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

- Groundwater sample TP/MW-4 collected at a depth of 2.63 to 3.62 mbg from monitoring well TP/MW4, was analysed for the COPCs VOCs, PHCs and PAHs (associated with APEC #1). Based on the laboratory results of the analysis in comparison to the Table 3 Standards, all parameters met the applicable criteria.

During the investigation, none of the groundwater samples were field filtered.

Based on Greenstone's assessment of the site and laboratory results reviewed as part of the investigation, it is our opinion that there are no contaminants related to chemical and biological transformations that have or may have occurred on the Phase Two Property. In addition, the results do not indicate that the soil is serving as a source of contaminant mass contribution to any groundwater or sediment. The results also confirm the absence of any LNAPL on-site.

A summary of all the laboratory analytical results for the groundwater is provided on Table 4 in Appendix D. The laboratory certificates of analysis for the soil results are provided in Appendix G.

6.8 SEDIMENT QUALITY

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

6.9 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

During the investigation, a total four QA/QC samples were collected and analysed. The QA/QC samples collected are as follows:

- Duplicate sample DUP-1 was split from parent soil sample TP2-3 and analyzed for the same COPCs as the parent sample (VOCs, PHCs and PAHs).
- Duplicate sample DUP-2 was split from parent soil sample TP10-1 and analyzed for the same COPCs as the parent sample (PHCs, PAHs, Metals, EC and SAR).
- Duplicate sample Dup-1 was split from parent groundwater sample TP/MW-2 and analyzed for the same COPCs as the parent sample (VOCs, PHCs and PAHs).
- A trip blank sample (Trip Blank) was completed during the groundwater monitoring event and submitted for laboratory analysis of VOCs and PHCs.

Based on a review of the laboratory analytical and field data, no QA/QC issues were identified with the respective sampling and lab analysis that would have a substantial effect on the conclusions presented in this report. All standard operating procedures for field sampling, sample collection, handling, preservation and transportation were adhered to during the field investigation. In addition, all field equipment performed as per the manufacturers specifications with calibrations completed for verification purposes.

As noted above, qualifiable RPDs were calculated (where possible) for all parent and duplicate samples. As per the MECP Analytical Protocol, for the duplicate samples, as the measured analytical result approaches the laboratory RDL, the uncertainty associated with the value increases, thus duplicate (replicate) acceptance limits apply only where the average of the two samples (parent and replicate) is greater than five times the RDL. Therefore, qualifiable RPDs were only calculated if the average of the parent and replicate sample concentration for an analyte were greater than five times the RDL. Any qualifiable RPD data was compared against the alert limits as outlined in the MECP Analytical Protocol. Review of the laboratory and field QA/QC data indicates that the analytical data is reliable for all soil and groundwater samples analyzed as part of this assessment.

With respect to subsection 47 (3) of O. Reg. 153/04:

- All certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47 (3);

- A certificate of analysis or analytical report has been received for each sample submitted for analysis; and

- All certificates of analysis or analytical reports received have been included in full in Appendix G of this Phase Two ESA report.

Based on Greenstone's review of the analytical reports, there were no comments prepared by the laboratory that have qualified any of the laboratory data or validity of the results.

Based on the field results reviewed, laboratory data received and reviewed, performance of all field equipment, and observation of the full compliance of the standard operating procedures during the investigation, Greenstone has not identified any QA/QC deficiencies that would affect the data quality, or thereby affecting the decision making process in assessing the subject property. Greenstone considers the work completed to have achieved the overall objectives of the investigation.

6.10 PHASE TWO CONCEPTUAL MODEL

The Phase Two Property is located at 80 Dieppe Avenue and is an oval shaped parcel of land. The land is located on the north side of Dieppe Avenue, immediately north of the intersection of Timmins Road and Dieppe Avenue. The Phase Two Property is 1.24 hectares in size and is bounded by Dieppe Avenue to the south, commercial properties to the east and west and residential properties to the north. A map illustrating the location of the Phase Two Property is provided as Figure 1.

Greenstone previously completed a Phase One ESA for the subject property. The results of the Phase One ESA included the development of a Phase One Conceptual Site Model (CSM) which details the APECs which could occur on, in, under or affecting the Phase Two Property. The Phase One CSM is detailed in Figures 2, 3 and 4 which illustrate the following land, environmental and geological features:

- Existing buildings and structures.

- Water bodies within the Phase One Study Area.

- Areas of natural significance within the Phase One Study Area.

- Drinking water wells on the Phase One Property.

- Land uses of the adjacent properties and within the Phase One Study Area.

- Roads within the Phase One Study Area.
- PCAs within the Phase One Study Area, including the location of any aboveground or underground storage tanks.
- APECs at the Phase One Property.

The following information expands on the Phase One CSM with information collected during the completion of the Phase Two ESA.

6.10.1 POTENTIAL CONTAMINATING ACTIVITIES

The Phase One ESA identified a total of four PCAs, with two PCAs within the Phase One Study Area and two PCAs on the Phase One Property, that could potentially affect the environmental condition of the subsurface media on, in or under the Phase Two Property. Any remaining PCAs located within the Phase One Study Area, outside of the Phase Two Property were not considered to result in APECs due to their distance or hydrogeological location (down/cross-gradient) from the Phase Two Property. The PCAs and their corresponding APECs at the Phase Two Property are summarized in the following table and are illustrated on Figure 4:

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	PCA	Location of PCA (on-site or off-site)	COPCs	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC #1 (Adjacent Automotive Repair Garage and Retail Fuel Outlet)	Eastern portion of the Phase One Property	Item 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles Item 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	VOCs PHCs PAHs	Soil and Groundwater

APEC #2 (Fill of Unknown Quality)	Central portion of the Phase One Property	Item 30 – Importation of Fill Material of Unknown Quality	On-Site	PHCs PAHs Metals EC SAR	Soil
APEC #3 (Winter Maintenance Activities)	Central portion of the Phase One Property	Item Other – Winter Maintenance Activities	On-Site	EC SAR	Soil

VOCs – Volatile Organic Compounds
PHCs – Petroleum Hydrocarbon Fractions F1 through F4
PAHs – Polycyclic Aromatic Hydrocarbons
EC – Electrical Conductivity
SAR – Sodium Adsorption Ratio

6.10.2 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

The Phase Two ESA included an assessment of the soil and groundwater quality within APEC #1 and the soil quality within APEC #2 and APEC #3. A summary of the findings of each of the APECs is provided as follows:

6.10.2.1 APEC #1

PCAs associated with Item 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles and Item 28 – Gasoline and Associated Products Storage in Fixed Tanks, are related to the current and former automotive repair garage activities located at the adjacent property at 68 Dieppe Avenue, and the associated historical retail fuel operations. Based on information reviewed during the Phase One ESA, two historical USTs and associated dispensing operations were located approximately 7 m east of the Phase Two Property boundary. Given that these PCAs are in an upgradient / cross-gradient position relative to the Phase Two Property, the soil and groundwater within the portion of land along the eastern property boundary could be impacted by these off-site PCAs, thereby creating APEC #1. The COPCs associated with APEC #1 are VOCs, PHCs and PAHs. The subsurface investigation of APEC #1 completed by Greenstone as part of the Phase Two ESA included three test pits and two monitoring wells (TP1, TP/MW2 and TP/MW3). One additional monitoring well (TP/MW4) was installed outside of APEC #1 in order to provide for triangulation and development of groundwater contours to establish groundwater flow direction. This monitoring well was also sampled for the COPCs related to APEC #1. The soil and groundwater samples submitted from the test pits and monitoring wells completed within APEC #1 met the Table 3 Standards.

6.10.2.2 APEC #2

The PCA associated with Item 30 – Importation of Fill Material of Unknown Quality, are related to the historical development and demolition of the former on-site building and parking lot. Based on information reviewed during the Phase One ESA, one commercial plaza building formerly occupied the site. It is unknown if fill material was imported to the site to backfill any excavations or former footprints of the site. Given that this PCA is on the Phase Two Property, the soil within this central portion of the site could have contaminants within suspect fill material, thereby creating APEC #2. The COPCs associated with APEC #2 are PHCs, PAHs, Metals, EC and SAR. The subsurface investigation of APEC #2 completed by Greenstone as part of the Phase Two ESA included seven test pits (TP3 through TP10) to expose subsurface conditions to inspect and assess for the presence of any fill materials and associated contaminants. The soil samples submitted from the test pits completed within APEC #2 met the Table 3 Standards.

6.10.2.3 APEC #3

The PCA associated with Item Other – Winter Maintenance Activities, are related to the historical operations of the former on-site building and parking lot. Based on information reviewed during the Phase One ESA, one commercial plaza building and parking lot formerly occupied the site and likely would have had winter salting of these areas as a preventative measure during winter periods. Given that this PCA is on the Phase Two Property, the soil within this central portion of the site could have contaminants within the shallow soil conditions, thereby creating APEC #3. The COPCs associated with APEC #3 are EC and SAR. The subsurface investigation of APEC #3 completed by Greenstone as part of the Phase Two ESA included seven test pits (TP3 through TP10) to expose subsurface conditions to inspect and assess for the presence of any salt related contaminants. The soil samples submitted from the test pits completed within APEC #3 met the Table 3 Standards.

The following table summarizes the test pits and monitoring wells completed to investigate each of the APECs:

APEC	Test Pit / Monitoring Well Location
APEC #1	TP1, TP/MW2 and TP/MW3
APEC #2 and APEC #3	TP4, TP5, TP6, TP7, TP8, TP9 and TP10

6.10.3 SUBSURFACE STRUCTURES AND UTILITIES

The only subsurface structures and utilities on the Phase Two Property that exist are the buried sanitary, storm water and potable water lines that transect the central portion of the property and connect in the mains located along Dieppe Avenue.

Based on the location of the groundwater assessment (APEC #1), the proximity of the buried utilities on-site, and the groundwater flow direction (southerly) Greenstone does not consider the utilities to have any significant potential interaction with the groundwater flow direction which could affect the mobility of the contaminants in this area.

6.10.4 GEOLOGICAL CONDITIONS

Based on the observations made during the investigation, one significant geological unit was encountered to the maximum depth of the investigation of 3.7 mbg. The geological unit consisted of a till made up of medium to fine grained sand with trace amounts of gravel. A thin layer of surficial fill material consisting of sand and gravel was observed. The fill material was observed to be free of any evidence of environmental concerns (deleterious materials, staining, odours, or debris). Saturated soil conditions were observed at depths ranging between 1.5 and 2.5 mbg. The saturated conditions represent the unconfined aquifer which was the deepest aquifer investigated during the Phase Two ESA. The test pit locations encountering the soil materials are illustrated on Figure 5. Cross-sections summarizing the subsurface geological conditions at the time of the Phase Two ESA have been provided as Figures 6, 7 and 8.

6.10.5 HYDROGEOLOGICAL CONDITIONS

The groundwater flow direction in the unconfined aquifer at the Phase Two Property is estimated to towards the south as shown on Figure 9. The horizontal hydraulic gradient within the unconfined aquifer at the Phase Two Property was calculated to be 0.054 m/m. The hydraulic conductivity of the soils are estimated to be 1.0×10^{-7} m/s based on soil type (glacial till).

6.10.6 BEDROCK DEPTH

Bedrock was not encountered within any of the test pits advanced at the site which were excavated to a maximum depth of 3.7 mbg. Based on the till formation and bedrock outcrops observed within the Phase One Study Area, the depth of bedrock beneath the site is expected to be at approximately 10 mbg.

6.10.7 DEPTH TO GROUNDWATER

During the groundwater monitoring activities, an interface probe was utilized to determine the groundwater depths as well as the presence of any LNAPL. Groundwater monitoring measurements determined that the static groundwater depths ranged from 1.15 mbg at monitoring well TP/MW2 to 2.63 mbg at monitoring well TP/MW4. No free flowing LNAPL was detected with the interface probe. The groundwater measured is representative of the shallow unconfined groundwater aquifer which resides within the saturated zone of the shallow till formation.

6.10.8 SITE SENSITIVITY

The site and surrounding properties are municipally serviced with potable water. Potable water is municipally supplied by the City of Elliot Lake via an underground watermain from Dieppe Avenue. The site is not located within a source water protection area (i.e., municipal well groundwater capture zone). No potable drinking water wells exist on site or in proximity to the site. The municipal representative confirmed that non-potable standards are applicable for the subject property. As such the Phase Two Property is defined as non-potable as per Section 35 of O. Reg. 153/04.

The pH values measured in the submitted soil samples were within the limits for non-sensitive sites. The Phase Two Property is also not an area of natural significance and it is not adjacent to, nor does it contain land within 30 m of, an area of natural significance. As such, the Phase Two Property is not an environmentally sensitive area as defined by Section 41 of O. Reg. 153/04.

Bedrock was not encountered within any of the test pits which were excavated at the Phase Two Property which were advanced to a maximum depth of 3.7 mbg. Greater than 2/3 of the property is more than 2 m in depth to bedrock, as such, the Phase Two Property is not a shallow soil property, as defined by Section 43.1 of O. Reg. 153/04. In addition, the Phase Two Property is not located within 30 m of water body, therefore is not considered a water body property, as defined by Section 43.1 of O. Reg. 153/04.

6.10.9 EXCESS SOILS

Excess soils as defined by O. Reg 406/19 have not been placed on the Phase Two Property and it is not anticipated that excess soils will be imported to the site.

6.10.10 PROPOSED BUILDINGS

At this time there are currently no locations for proposed buildings for the Phase Two Property.

6.10.11 APPLICABLE SITE CONDITION STANDARDS

Based on the grain size analysis of representative soil samples collected during the Phase Two ESA and the observed stratigraphy at the test pit locations, Greenstone concluded that over 2/3 of the overburden at the Phase Two Property is coarse-textured as defined by O. Reg. 153/04 and standards for coarse-textured soil were applied.

Based on information obtained from the Phase One and Two ESAs, the appropriate Site Condition Standards for the Phase Two Property are the Table 3 Full Depth Generic Site Condition Standards for Use in a Non-Potable Groundwater Condition with coarse textured soil and residential land use (Table 3 Standards).

6.10.12 CONTAMINANTS EXCEEDING APPLICABLE SITE CONDITION STANDARDS IN SOIL

All soil samples collected during the Phase Two ESA met the applicable Table 3 Standards for the parameters analyzed.

6.10.13 CONTAMINANTS EXCEEDING APPLICABLE SITE CONDITION STANDARDS IN GROUNDWATER

All groundwater samples collected during the Phase Two ESA met the applicable Table 3 Standards for the parameters analyzed.

6.10.14 METEOROLOGICAL AND CLIMATIC CONDITIONS

The groundwater table was not observed to fluctuate in elevation during the Phase Two ESA. Temporal groundwater table fluctuations are not expected to have had an effect on contaminant distribution throughout the Phase Two Property. As such, it is Greenstone's opinion that meteorological or climatic conditions have not influenced the distribution or migration of the contaminants at the Phase Two Property.

6.10.15 SOIL VAPOUR INTRUSION

No volatile parameters were identified at concentrations exceeding the Table 3 Standards. As such, soil vapour intrusion into buildings at the Phase Two Property is not considered a concern.

6.10.16 CONTAMINANT EXPOSURE ASSESSMENT

Given that all soil and groundwater samples collected during the Phase Two ESA met the applicable Table 3 Standards, Greenstone considered that an evaluation of potential exposure pathways and receptors was unnecessary, however Greenstone evaluated the potential exposure pathways and receptors which could potentially apply to the Phase Two Property based on the APECs and related COPCs identified, and information available during the completion of the Phase One ESA. The exposure pathways and potential receptors identified for the Phase Two Property as follows:

- GW1 – The protection of drinking water component.
- GW2 – The protection of indoor air from vapours originating from groundwater component.
- GW3 – The protection of the aquatic environment component.

- S1 – High-frequency, high-intensity, human health exposure scenario equivalent to that of a surface soil at a residential/parkland/institutional site or agricultural/other site (children and pregnant women are present).

- S2 – Lower-frequency and lower-intensity, human health exposure scenario without children present and is used at commercial/industrial/community sites.

- S3 – Low-frequency, high-intensity, human health exposure scenario without children present that is protective of a worker digging in the soil. It is used for subsurface soils at commercial/industrial/community sites.

- S-IA – Soil to indoor air, for vapour intrusion into a building.

- S-OA – Soil to outdoor air, a volatilization model combined with atmospheric mixing which is protective of outdoor air quality.

- S-Odour – Soil concentrations that will not result in unacceptable odours from direct sniffing of the soil.

- S-GW1 – Soil to potable groundwater, soil values protective of GW1 values.

- S-GW3 – Soil to groundwater to surface water, soil values protective of aquatic life and GW3 values.

- Direct Terrestrial Ecological (P&O) – Soil values protective of plants and soil-dwelling organisms in contact with soil.

- Mammals and Birds (M&B) – Soil values protective of some representative mammalian and avian species.

- Human health through direct contact with soil, including soil ingestion, dermal contact and dermal absorption following contact as well as inhalation of soil particles. Inhalation of indoor air contaminated by subsurface vapour intrusion and inhalation of odours are also considered for on-Site residents.

- Human health through direct contact with soil, including soil ingestion, dermal contact and dermal absorption following contact as well as inhalation of soil particles. Inhalation of vapours in a trench is also considered for the construction worker.

- Eco-toxicity to plants and soil-dwelling organisms, aquatic biota (off-site) and mammals and birds.

Based on the above and in considering the future development and intended land use, the GW2, S1, S2, S3, S-IA, S-OA and S-Odour pathways were considered potentially applicable during the completion of the Phase Two ESA. The G1, G3, S-GW1 and S-GW3 have been excluded given that there are no potable water use or water bodies within 30 m of the Site.

It is the opinion of the QP who supervised the Phase Two ESA that the applicable Table 3 Standards for soil and groundwater at the Phase Two Property have been met as of the Certification Date of August 21, 2023 and that no further subsurface investigation is required in relation to assessing the environmental quality of soil and groundwater at the Phase Two Property. It is Greenstone's opinion that there were no deviations from the Phase One ESA or Phase Two ESA requirements specified in O. Reg. 153/04 or absence of information that have resulted in uncertainty that would affect the validity of this Conceptual Site Model.

7 CONCLUSIONS

Based upon the review and evaluation of the results of the Phase Two ESA, it has been determined that the soil and groundwater quality meet the appropriate Table 3 Standards within the APECs investigated. Therefore, no further investigation is required for the Phase Two Property and Greenstone recommends filing of the RSC. A summary of the maximum soil and groundwater concentrations observed during the investigation are provided in Tables 5 and 6, respectively, in Appendix D.

7.1.1 SIGNATURES

The Phase Two ESA was completed by and under the supervision of a Qualified Person (Mr. Christian Tenaglia) of Greenstone Engineering Ltd. Mr. Tenaglia has worked in the environmental sector for approximately 19 years and has extensive experience in Brownfield Redevelopment, Phase I and Phase II Environmental Site Assessments, Detailed Site Investigations, Record of Site Conditions, Soil Vapour Assessments, Risk Assessment and Remediation. In addition, is proficient in waste management compliance, excess soils management, waste disposal and characterization, waste handling and transportation, landfill management and design and monitored natural attenuation. Mr. Tenaglia holds a Bachelor of Engineering Science from the University of Western Ontario and a Master of Environmental Science from the University of Toronto. He is also a Qualified Person in accordance with the MECP as per Ontario Regulation 153/04 and Ontario Regulation 406/19 and is also a licensed professional engineer with the Professional Engineers of Ontario.

To discuss any aspect of this work, please do not hesitate to contact one of the Greenstone representatives below.

Sincerely yours,

Christian Tenaglia, M.Env.Sc., P.Eng., QP_{ESA}
President
chris@greenstoneengineering.ca

8 REFERENCES

- Association of Professional Geoscientists of Ontario document entitled "*Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended)*" dated April, 2011.
- CSA document entitled *"Z769-00, Phase II Environmental Site Assessment*" dated March, 2000.
- Freeze and Cherry "*Groundwater"*, dated 1979.
- Google Earth, Microsoft.
- Greenstone document entitled "*Phase One Environmental Site Assessment, 80 Dieppe Avenue, Elliot Lake"*, dated February 28, 2023.
- MECP Source Water Protection Atlas: (https://www.lioapplications.lrc.gov.on.ca/SourceWaterProtection/index.html?viewer=SourceWaterProtection.SWPViewer&locale=en-CA).
- MECP Well Records Map: (https://www.ontario.ca/page/map-well-records).
- MECP Access Environment: (Ontario Map Viewer (gov.on.ca)).
- MECP *"Ontario Regulation 153/04 – Records of Site Condition – Part XV.1 of the Act (made under the Environmental Protection Act)",* (as amended).
- MECP document entitled *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"* dated December, 1996.
- MECP document entitled *"Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04"* dated June, 2011.
- MECP document entitled *"Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act"* dated July 1, 2011.
- MECP document entitled *"Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act"* dated July 1, 2011.
- MECP Species at Risk in Ontario Website (https://www.ontario.ca/page/species-risk-ontario) Professional Engineers of Ontario document entitled "*Environmental Site Assessment, Remediation and Management Guideline*" dated July 2020.

9 APPENDICES

APPENDIX A – FIGURES

FIGURE 1: SITE LOCATION

greenstone ENVIRONMENTAL ENGINEERING	Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:95000
	Project Number: E23050	Date: August 2023
	Report: Phase Two ESA	Client: City of Elliot Lake

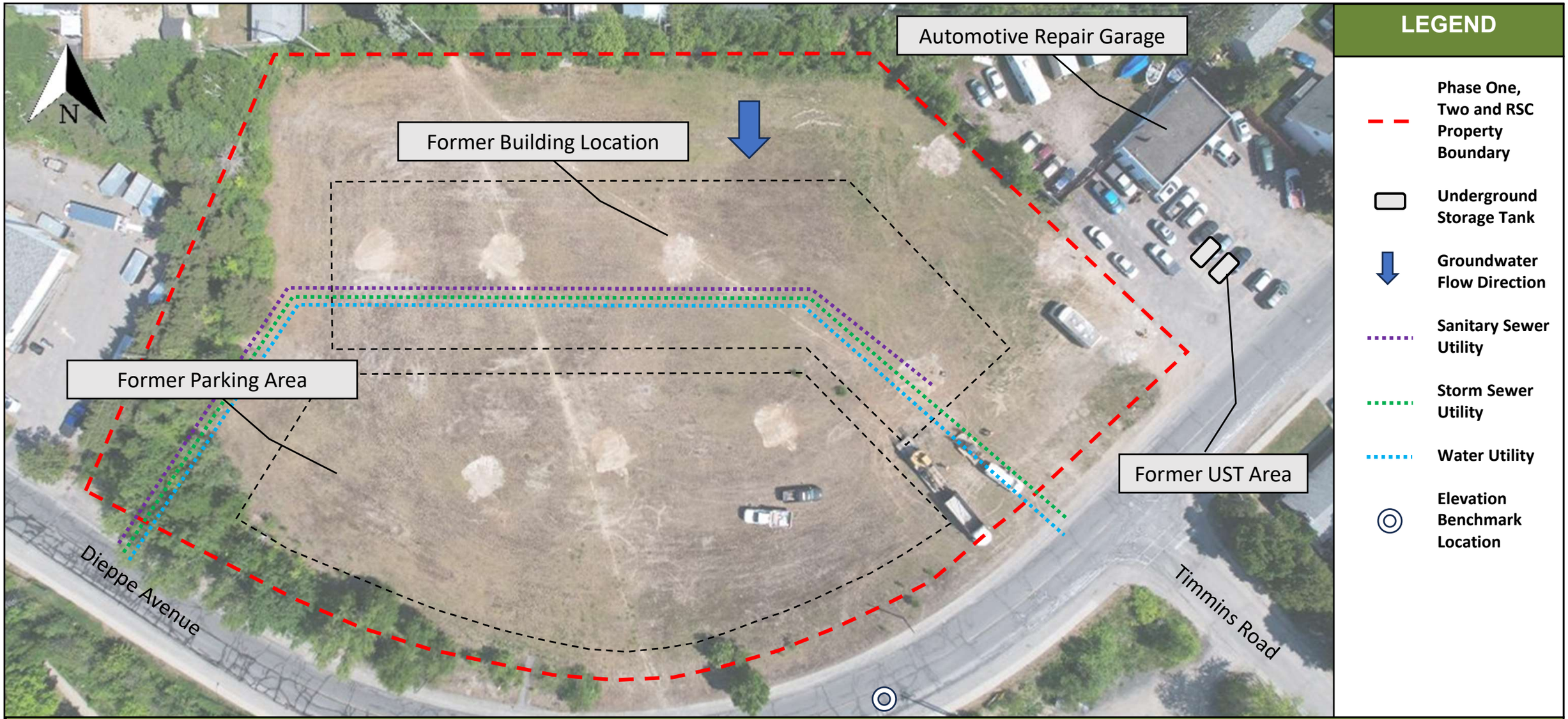


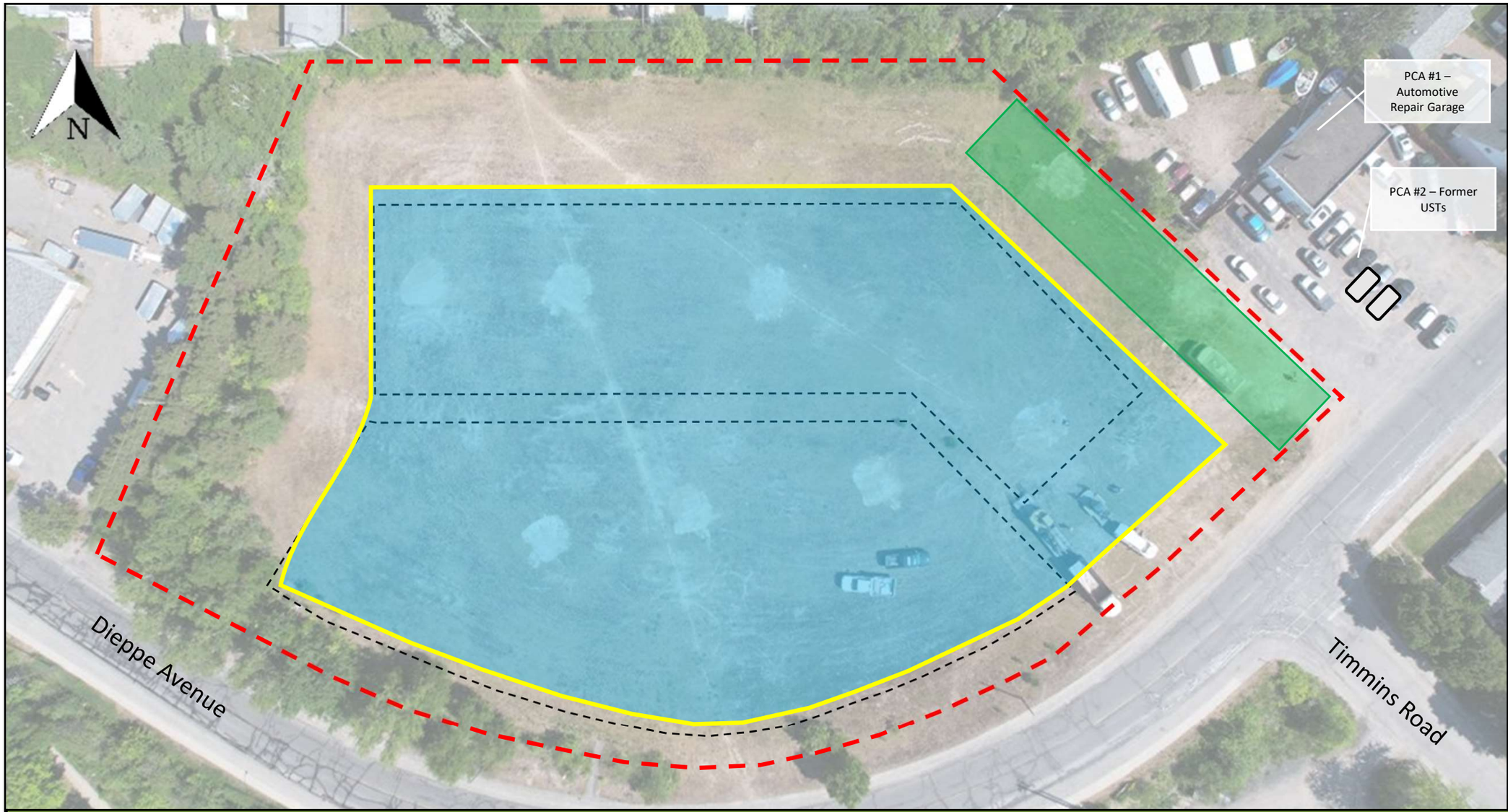
FIGURE 2: SITE PLAN

greenstone ENVIRONMENTAL ENGINEERING	Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
	Project Number: E23050	Date: August 2023
	Report: Phase Two ESA	Client: City of Elliot Lake

FIGURE 3: PHASE ONE STUDY AREA

greenstone ENVIRONMENTAL ENGINEERING

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:8250
Project Number: E23050	Date: August 2023
Report: Phase Two ESA	Client: City of Elliot Lake



LEGEND

- Phase One, Two and RSC Property Boundary
- Underground Storage Tank
- APEC #1 – Off-Site Retail Fuel Outlet, USTs and Automotive Repair Garage
- APEC #2 – Fill of Unknown Quality
- APEC #3 – Winter Maintenance Activities

FIGURE 4: AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

greenstone ENVIRONMENTAL ENGINEERING	Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
	Project Number: E23050	Date: August 2023
	Report: Phase Two ESA	Client: City of Elliot Lake

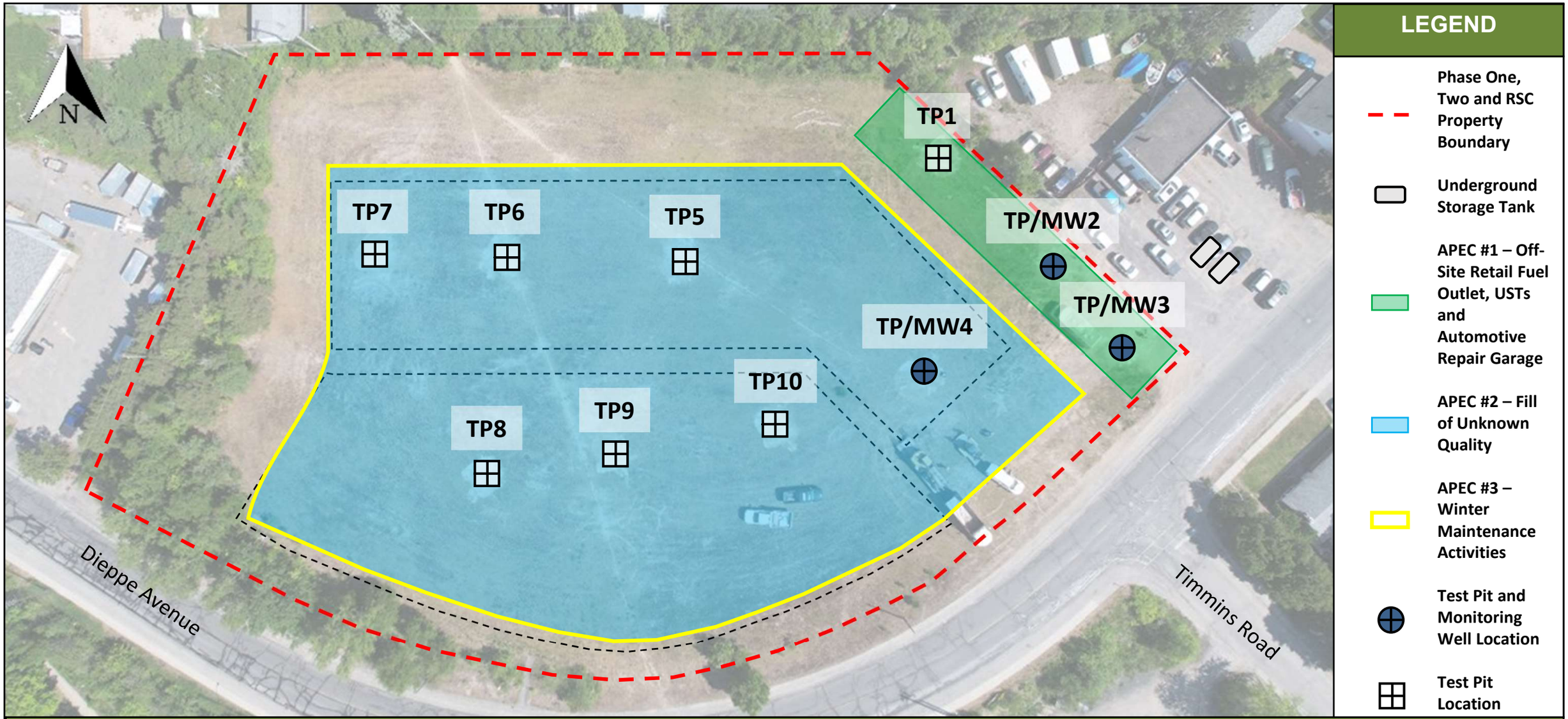


FIGURE 5: TEST PIT AND MONITORING WELL LOCATION PLAN

greenstone ENVIRONMENTAL ENGINEERING

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
Project Number: E23050	Date: August 2023
Report: Phase Two ESA	Client: City of Elliot Lake

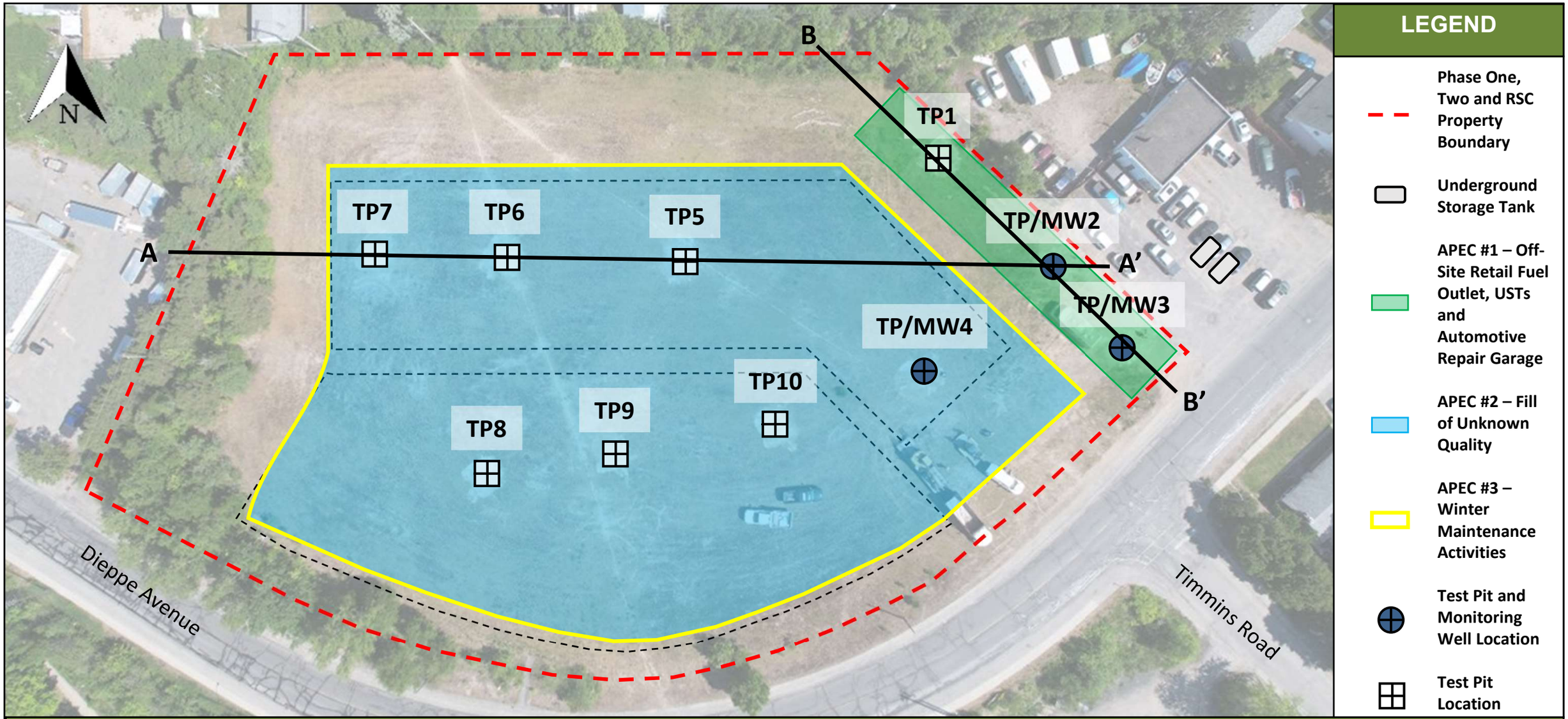
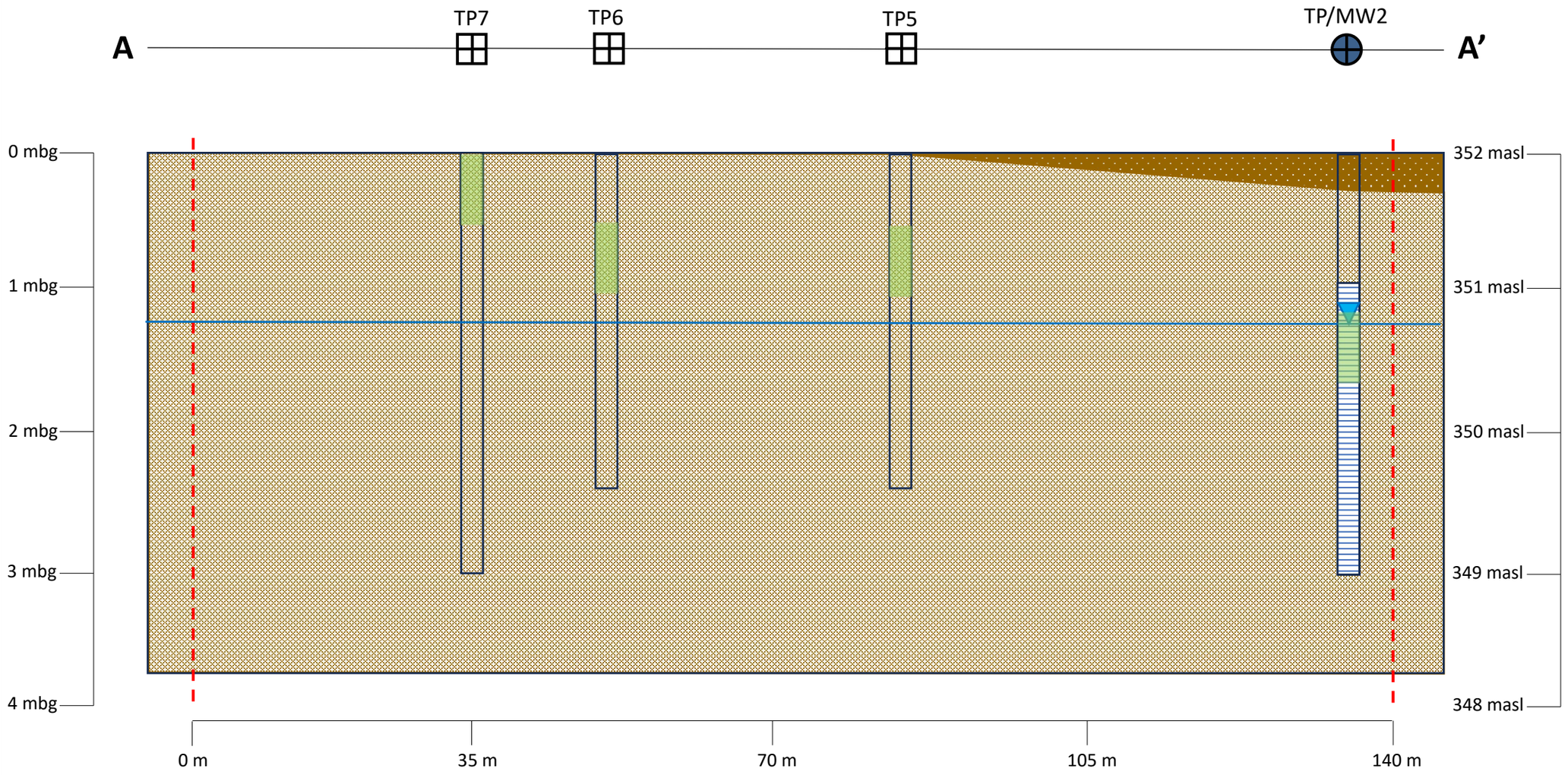


FIGURE 6: CROSS-SECTION OVERVIEW

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
Project Number: E23050	Date: August 2023
Report: Phase Two ESA	Client: City of Elliot Lake

greenstone ENVIRONMENTAL ENGINEERING



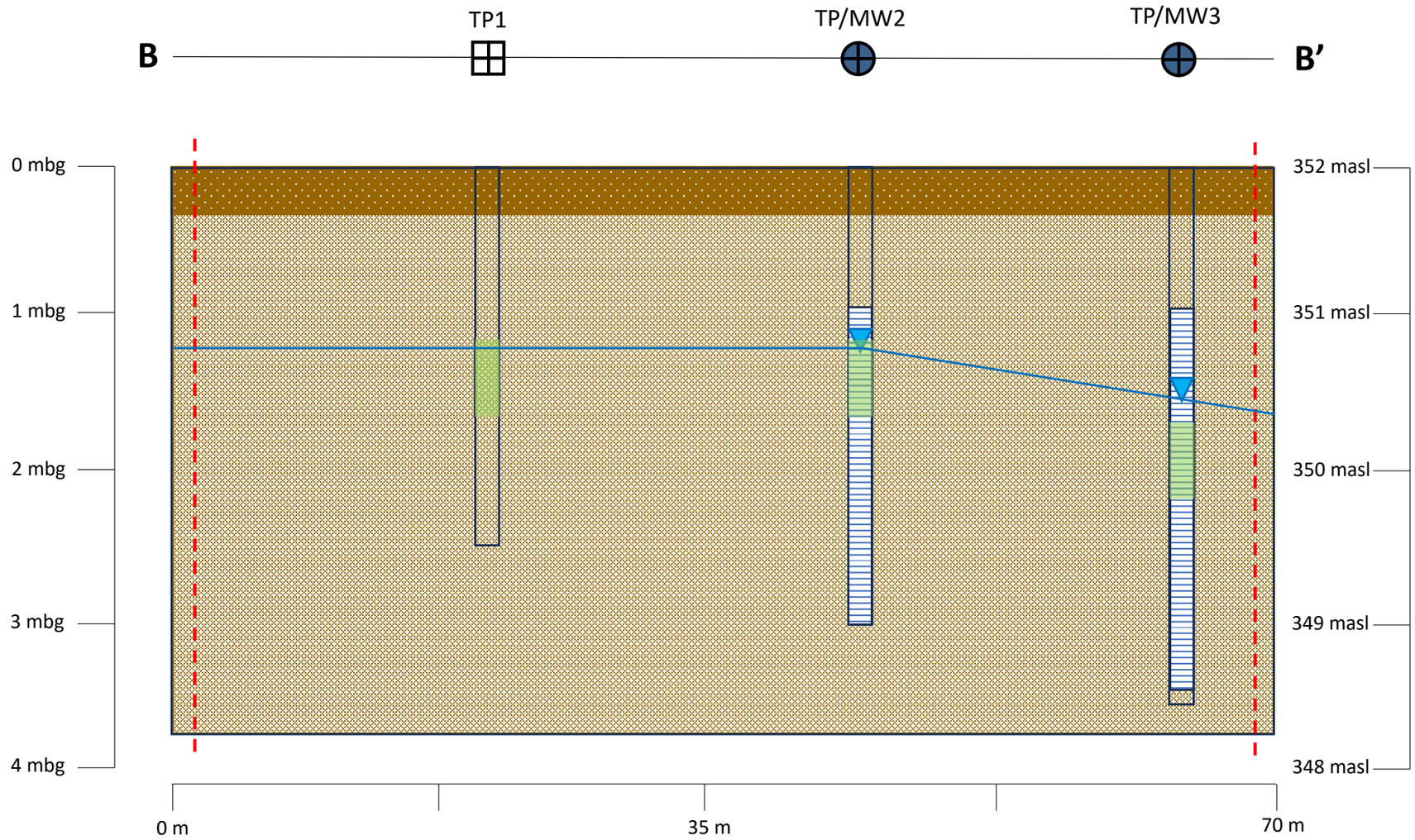
LEGEND

- Phase One, Two and RSC Property Boundary
- Test Pit and Monitoring Well Location
- Test Pit Location
- Sand and Gravel Fill
- Sand with Trace Gravel
- Soil Sample Meets Table 3 Standards

FIGURE 7: CROSS-SECTION A – A'

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
Project Number: E23050	Date: August 2023
Report: Phase Two ESA	Client: City of Elliot Lake

greenstone ENVIRONMENTAL ENGINEERING



LEGEND

- Phase One, Two and RSC Property Boundary
- Test Pit and Monitoring Well Location
- Test Pit Location
- Sand and Gravel Fill
- Sand with Trace Gravel
- Soil Sample Meets Table 3 Standards

FIGURE 8: CROSS-SECTION B – B'

greenstone ENVIRONMENTAL ENGINEERING

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
Project Number: E23050	Date: August 2023
Report: Phase Two ESA	Client: City of Elliot Lake

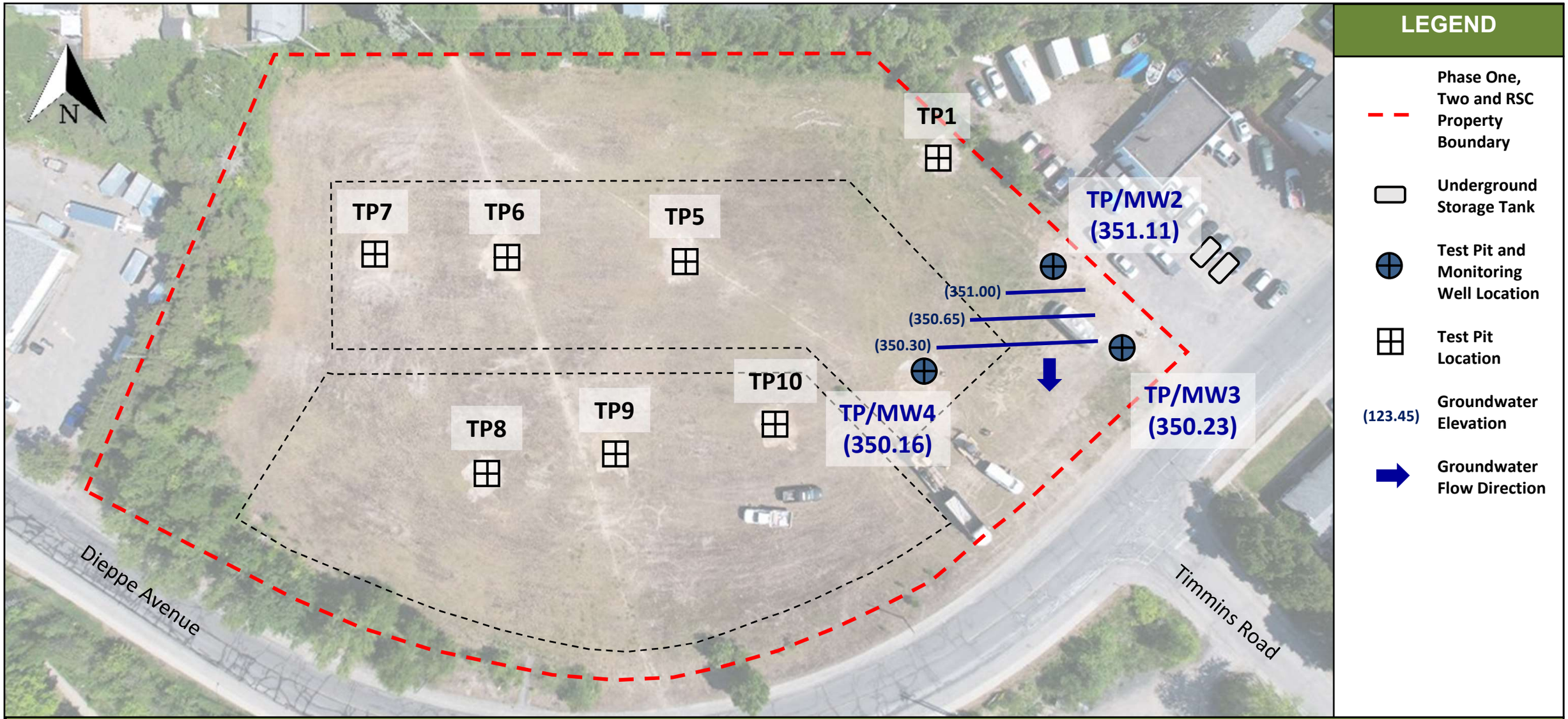


FIGURE 9: GROUNDWATER CONTOUR PLAN

greenstone ENVIRONMENTAL ENGINEERING

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
Project Number: E23050	Date: August 2023
Report: Phase Two ESA	Client: City of Elliot Lake

APPENDIX B – SAMPLING AND ANALYSIS PLAN

Sampling and Analysis Plan

Site: 80 Dieppe Avenue, Elliot Lake, Ontario

City of Elliot Lake

Attention: Steven Antunes
45 Hillside Drive North
Elliot Lake, Ontario
P5A 1X5

June 6, 2023
Project Reference Number: E23050

INTRODUCTION

The following Sampling and Analysis Plan (SAP) has been developed for the Phase Two Environmental Site Assessment (ESA) for the vacant property located at 80 Dieppe Avenue in Elliot Lake, Ontario (the Site). The intent of the Phase Two ESA is to satisfy the regulatory requirement for the filing of a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 (O. Reg. 153/04). This SAP outlines the sampling plan and procedures for the field component of the Phase Two ESA.

BACKGROUD

Greenstone was commissioned to complete a Phase One Environmental Site Assessment (ESA) for the Site. At the time the Phase One ESA was conducted, the Site was a vacant property formerly utilized as a multi-tenant commercial facility known as the Dieppe Plaza which was demolished in the early 2000s. The Site is currently not utilized or occupied.

The Phase One ESA was completed in accordance with O. Reg. 153/04 to support the land use change from commercial to residential. The Phase One ESA included the completion of all principle components of a Phase One ESA, such as a records review, interviews, site inspection and evaluation and reporting. A Phase Two ESA will be required to be completed prior to the filing of a Record of Site Condition.

The Phase Two ESA will assess the following potential contaminating activities (PCA), contaminants of potential concern (COPC) and related areas of potential environmental concern (APECs) identified during the Phase One ESA:

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	PCA	Location of PCA (on-site or off-site)	COPCs	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC #1 (Adjacent Automotive Repair Garage and Retail Fuel Outlet)	Eastern portion of the Phase One Property	Item 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles Item 28 – Gasoline and Associated Products	Off-Site	VOCs PHCs PAHs	Soil and Groundwater

		Storage in Fixed Tanks			
APEC #2 (Fill of Unknown Quality)	Central portion of the Phase One Property	Item 30 – Importation of Fill Material of Unknown Quality	On-Site	PHCs PAHs Metals EC	Soil
APEC #3 (Winter Maintenance Activities)	Central portion of the Phase One Property	Item Other – Winter Maintenance Activities	On-Site	EC SAR	Soil

PHCs – Petroleum Hydrocarbon Fractions F1 to F4
VOC – Volatile Organic Compounds
PAHs – Polycyclic Aromatic Hydrocarbons
EC – Electrical Conductivity
SAR – Sodium Adsorption Ratio

SCOPE OF WORK

The Phase Two ESA will be completed in accordance with the O. Reg. 153/04 and in accordance with the document developed by the Ministry of Environment, Conservation and Parks (MECP) entitled "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*", dated December 1996.

The Phase Two ESA will include the following project tasks and timeline:

- Advance a total of ten (10) test pits across the APECs to assess soil and groundwater conditions on the property. Three (3) borehole locations will be instrumented with a monitoring well in accordance with Ontario Regulation 903 (O. Reg. 903). The test pits will be advanced using a track-mounted excavator. The excavations will be advanced to a maximum depth of 4.5 meters below ground (mbg), or until refusal is met, or groundwater table interception is achieved. All monitoring wells will be screened across shallow groundwater aquifer interface and will be fitted with a stickup protective cover.

- Field screen all the collected soil samples for the presence or absence of environmental impacts using a calibrated photo-ionization detector (PID) and record all visual and olfactory observations and geological conditions.

- Submit a minimum of one worst-case soil sample (based on field screening results) from each borehole for laboratory analysis of the COPCs corresponding to the APECs above. All samples will be submitted to an accredited laboratory under chain of custody.

- Complete site sensitivity characterization of the property including potable supply, land use, pH, soil texture, natural environment sensitivity, etc., in order to confirm the applicable standards identified in the MECP document entitled "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011.

- All monitoring wells will be developed using dedicated inertial foot valves and Waterra tubing. Once development activities are completed all wells will be sampled for their corresponding COPCs noted above. All sampling activities will be completed by general low flow methods using a peristaltic pump and dedicated Waterra tubing. Well development and sampling activities will include groundwater level monitoring using an interface probe to measure the static groundwater elevation within each monitoring well and the presence of any non-aqueous phase liquids (NAPL).

- Complete an elevation survey of all well casings relative to an established benchmark on-site. All groundwater level data will be correlated to monitoring well elevation data to establish groundwater flow contours.

- A quality assurance and quality control (QA/QC) program will be implemented during the investigation and will include, but not be limited to, the calibration of field equipment, decontamination of sampling tools, field duplicates and management of samples under chain of custody and seal with temperature control.

- Complete an evaluation of all geological and analytical data in comparison to the applicable MECP standards and prepare a comprehensive Phase Two ESA summary report, inclusive of logs, data tables, analytical certificates, and figures. The Phase Two ESA report will be completed to meet the Table 1 – Mandatory Requirements for Phase Two Environmental Site Assessment Reports as presented in Schedule E, Part V of O. Reg. 153/04.

QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

The following QA/QC program will be implemented during the completion of the Phase Two ESA:

- All non-dedicated and monitoring equipment will be cleaned prior to and following each use to ensure no cross-contamination.
- For every ten (10) samples collected, one (1) field duplicate will also be submitted for laboratory analysis.
- One trip blank will be submitted for each laboratory submission and will be analyzed for volatile organic compounds (VOCs) and BTEX.
- Calibration of all field equipment in accordance with manufacturers specifications.

STANDARD OPERATING PROCEDURES

The following Standard Operating Procedures will be followed for the duration of the Phase Two ESA program:

- Test pit excavating
- Soil sampling
- Field screening measurements, including calibration procedures
- Monitoring well installation
- Monitoring well development
- Field measurement of water quality indicators, including calibration procedures
- Groundwater sampling

SAMPLING SYSTEM & RATIONALE

Using the information from the Phase One ESA, three APECs were identified and the sampling locations were selected to maximize the probably of finding the highest COPC concentrations. The following rational was considered during the development of the SAP in compliance with O. Reg. 153/04:

- The choice of sampling system, such as a judgmental, random or grid sampling system
    - A judgmental sampling system was implemented to determine the location of the test pits and monitoring wells with the intent of targeting the highest likelihood area finding contaminants, both vertically and laterally within the prescribed APEC.
- The sampling media
    - The media chosen as noted above in the APEC table have been selected based on the fate and transport characteristics of the COPCs for the related APEC (i.e., fuel storage off-site has the potential to migrate through soil and groundwater onto the Phase Two Property).
- The number of samples
    - The number of samples for laboratory submission have been established based on worst-case observations during the field investigation. At a minimum, one sample (worst case) will be submitted for laboratory analysis. In the event that visual, olfactory or elevated field readings are identified, a deeper, non-impacted sample will be submitted for laboratory analysis to complete vertical delineation of the contaminated zone.
- Sampling frequency
    - The sampling frequency is the same as the number of samples as specified above.
- Sampling points
    - Sampling points will be prescribed based on the hydrogeological condition of the site and the COPCs (i.e., more focus will be on sampling points and submission for samples

collected in the vicinity of the capillary fringe where the presence of LNAPL will be identified).

- Sampling depth intervals, including the screened intervals of the monitoring wells
    - The sampling depth and screened intervals of the monitoring wells are as follows:
        - All test pits soil sampling depth will be 0 to 4.5 mbg.
        - All monitoring wells will be screened between 1.5 to 4.5 mbg.
- Samples to be submitted for laboratory analysis
    - Samples to be sent for laboratory analysis will be determined based on visual, olfactory, or elevated field readings to target worst case zones and will be analysed for the COPCs noted above.
- Other field information to be obtained, including water levels, field measurements and elevation surveying;
    - Water levels
    - NAPL presence
    - Field water quality measurements (conductivity, temperature, pH)
    - Field filtering
    - PID measurements of soil
    - Soil texture
    - Olfactory and visual staining
    - Elevation survey of ground and top of casing
    - UTM Coordinates
    - QA/QC samples
    - Field calibration and checks of equipment
    - Photographs

DATA QUALITY OBJECTIVES

The Phase Two ESA data quality objectives (DQOs) will ensure soil and groundwater samples collected are representative of site conditions and will produce unbiased analytical data. The purpose of the DQOs is to produce reliable analytical data which can be trusted to accomplish the overall objectives. The DQOs will be achieved through the implementation of the QA/QC program and the SOPs outlined in the above sections.

PHYSICAL IMPEDIMENTS

No physical impediments are anticipated for the Phase Two ESA scope of work.

CLOSING

Should you find the terms and conditions acceptable within the attached Work Authorization Form, please sign it and return it to Greenstone via email to the undersigned.

Should you wish to discuss any aspect of this work, please contact us at your convenience.

Sincerely yours,

Sincerely yours,

Christian Tenaglia, M.Env.Sc., P.Eng., QP_{ESA}
President
chris@greenstoneengineering.ca

Alexandra Duchesne, M.E.Sc., EIT
Project Manager
alexandra@greenstoneengineering.ca

Enclosed (2 pages): Work Authorization Form

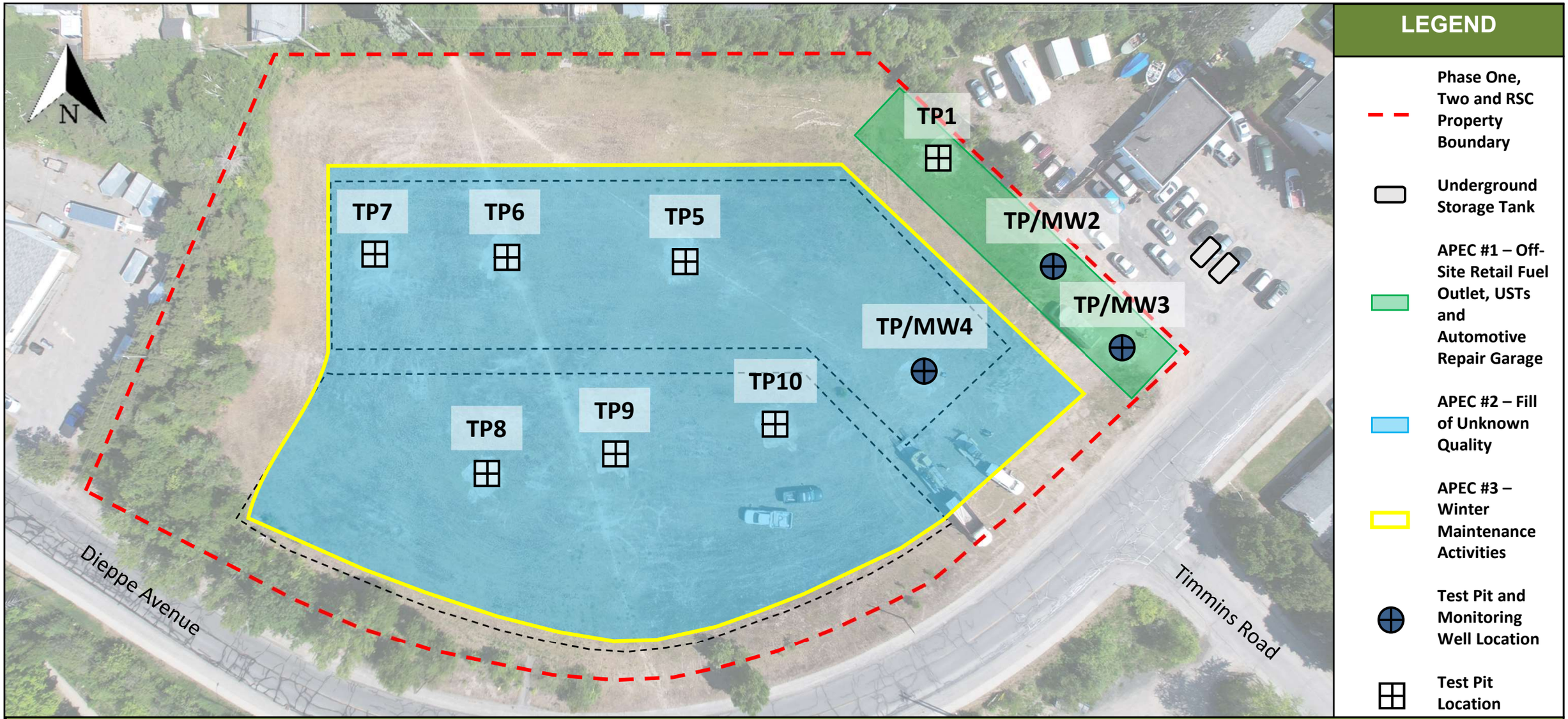


FIGURE 1: SAMPLING AND ANALYSIS PLAN

greenstone ENVIRONMENTAL ENGINEERING

Address: 80 Dieppe Avenue, Elliot Lake, ON	Scale: 1:1170
Project Number: E23050	Date: June 2023
Report: Phase Two ESA	Client: City of Elliot Lake

APPENDIX C – TEST PIT LOGS

TEST PIT LOG - TP1

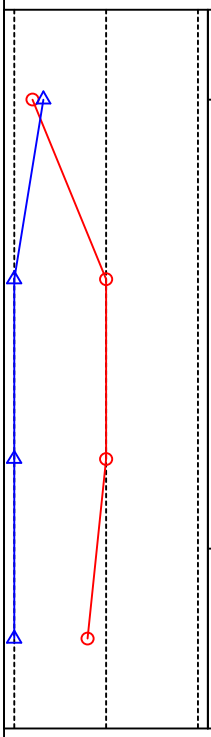
Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/08/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372760 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136750 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis



Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	ORGANICS AND SAND AND GRAVEL, brown, coarse grained, dry					
		SAND AND GRAVEL, brown, medium grained, moist			SS1		
					SS2		
5	1				TP1-3		VOC, PHC, PAH
	2	SAND WITH TRACE GRAVEL, brownish grey, medium to fine grained, moist to wet			SS4		
						Groundwater Observed at 2.3 mbg	
		End of Test Pit Due to Refusal					
10	3						
	4						
15							

TEST PIT LOG - TP/MW2

Phase Two ESA
80 Dieppe Avenue
Elliot Lake, ON

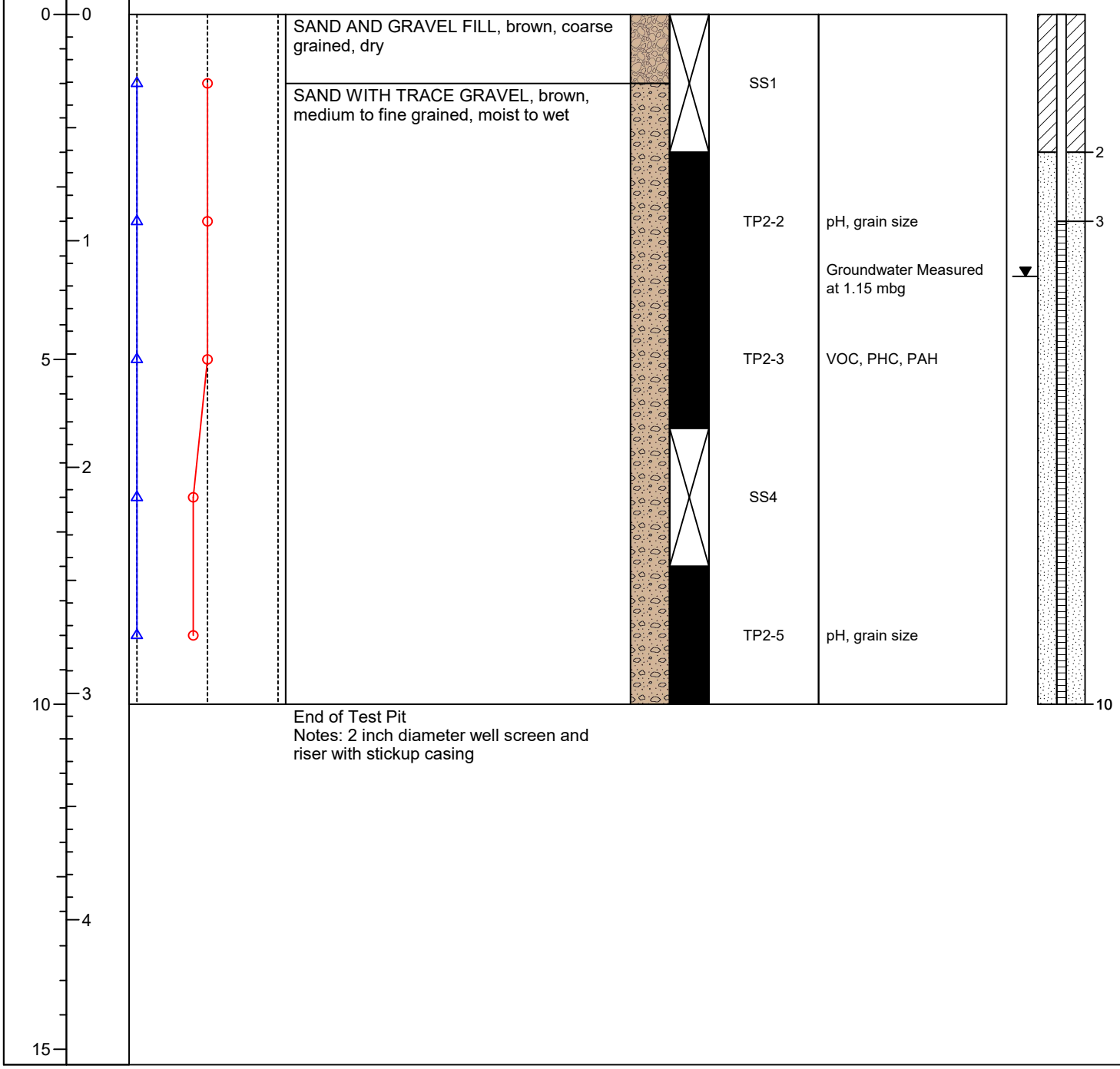
City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/08/2023	Zone	: 17T
Equipment Type	: Track Mounted Excavator	Easting	: 372778 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136731 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

TOR Elev.: 352.91



End of Test Pit
Notes: 2 inch diameter well screen and riser with stickup casing

TEST PIT LOG - TP/MW3

Phase Two ESA
80 Dieppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/08/2023	Zone	: 17T
Equipment Type	: Track Mounted Excavator	Easting	: 372789 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136721 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

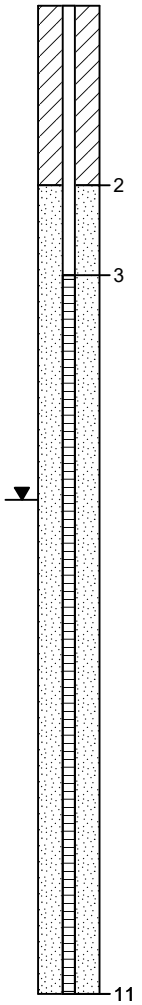
Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

HVM (ppm)
PID (ppm)
0 25 50

TOR Elev.: 352.64

Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	REMARKS
0	0	SAND AND GRAVEL FILL, brown, coarse grained, dry				
		SAND WITH TRACE GRAVEL, brown, medium to fine grained, moist to wet			SS1	
					SS2	
5	1				SS3	Groundwater Measured at 1.67 mbg
	2				TP3-4	VOC, PHC, PAH
					SS5	
10	3				SS6	
	4					
15						

End of Test Pit
Notes: 2 inch diameter well screen and riser with stickup casing



TEST PIT LOG - TP/MW4

Phase Two ESA
80 Dieppe Avenue
Elliot Lake, ON

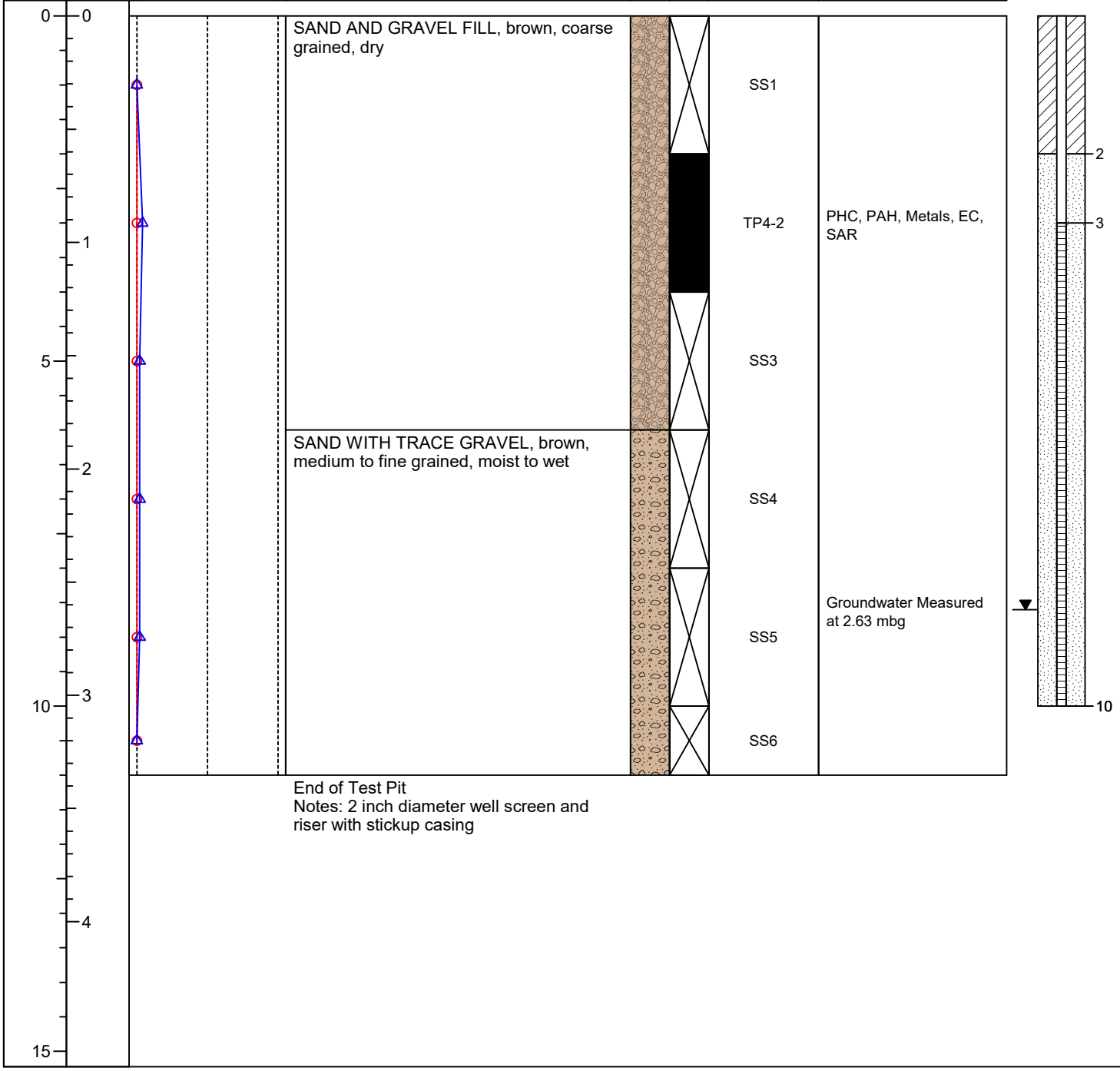
City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track Mounted Excavator	Easting	: 372766 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136717 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

TOR Elev.: 352.64



End of Test Pit
Notes: 2 inch diameter well screen and riser with stickup casing

TEST PIT LOG - TP5

Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372730 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136733 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

HVM (ppm)
PID (ppm)
0 25 50

Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	SAND WITH TRACE GRAVEL, brown, medium to fine grained, dry to moist			SS1		
	1				TP5-2		PHC, PAH, Metals, EC, SAR
5					SS3		
	2				SS4		
		End of Test Pit					No Groundwater Observed
10	3						
	4						
15							

TEST PIT LOG - TP6

Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372697 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136729 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

HVM (ppm)
PID (ppm)
0 25 50

Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	SAND WITH TRACE GRAVEL, brown, medium to fine grained, dry to moist			SS1		
					TP6-2		PHC, PAH, Metals, EC, SAR
5	1	SAND WITH TRACE GRAVEL, greyish brown, medium to fine grained, dry to moist			SS3		
	2				SS4		No Groundwater Observed
		End of Test Pit					
10	3						
	4						
15							

TEST PIT LOG - TP7

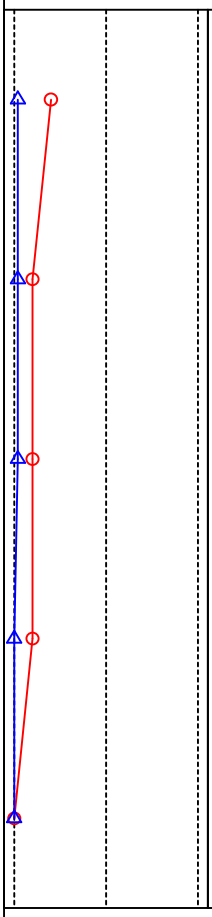
Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372675 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136731 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis



Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	SAND WITH TRACE GRAVEL, brown, coarse to medium grained, dry to wet			TP7-1		PHC, PAH, Metals, EC, SAR
					TP7-2		pH, grain size
5	1				SS3		
	2				TP7-4		pH, grain size
					SS5		
10	3						No Groundwater Observed
		End of Test Pit					
	4						
15							

greenstone ENVIRONMENTAL ENGINEERING

TEST PIT LOG - TP8

Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372685 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136709 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

HVM (ppm)
PID (ppm)
0 25 50

Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	SAND WITH TRACE GRAVEL, brown, medium to fine grained, moist to wet			SS1		
					SS2		
5	1				TP8-3		PHC, PAH, Metals, EC, SAR
	2				SS4		No Groundwater Observed
		End of Test Pit					
10	3						
	4						
15							

TEST PIT LOG - TP9

Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372712 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136709 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis

HVM (ppm)
PID (ppm)
0 25 50

Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	SAND WITH TRACE GRAVEL FILL, brown, medium to fine grained, dry			SS1		
		SAND WITH TRACE GRAVEL, brown, medium to fine grained, dry to moist			TP9-2		PHC, PAH, Metals, EC, SAR
5	1				SS3		
	2				SS4		
						▼	Groundwater Observed at 2.3 mbg
10	3	End of Test Pit					
	4						
15							

TEST PIT LOG - TP10

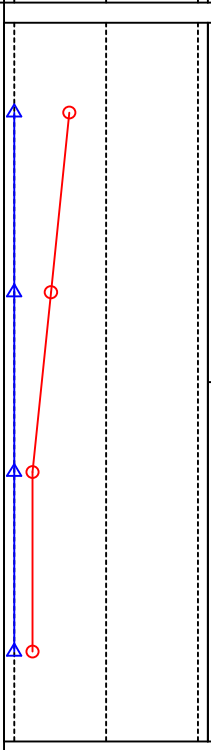
Phase Two ESA
80 Dleppe Avenue
Elliot Lake, ON

City of Elliot Lake

Greenstone Project #E23050

Date Completed	: 06/09/2023	Zone	: 17T
Equipment Type	: Track-Mounted Excavator	Easting	: 372742 m
Excavating Company	: Lajoie Bros. Contracting Ltd.	Northing	: 5136714 m
Sampling Method	: Continuous Grab Samples		
Field Technician	: C.Tenaglia		

Sample Collection
- Field Screened
- Sample Submitted for Lab Analysis



Depth in Feet	Depth in Meters	DESCRIPTION	Graphic	Sample	Sample ID	Water Levels	REMARKS
0	0	SAND WITH TRACE GRAVEL FILL, brown, medium to fine grained, dry			TP10-1		PHC, PAH, Metals, EC, SAR
					SS2		
	1	SAND WITH TRACE GRAVEL, brown, medium to fine grained, dry to moist					
5					SS3		
	2						
					SS4		No Groundwater Observed
		End of Test Pit					
10	3						
	4						
15							

APPENDIX D – TABLES

TABLE 1 - WELL CONSTRUCTION INFORMATION
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

Monitoring Well ID	UTM Coordinates			Ground Surface Elevation (masl)[1]	Top of Riser Elevation (masl)	Date of Construction (mm/dd/yyyy)	Height of Riser (meters)	Depth to Bottom of Well from Top of Riser (meters)	Depth to Bottom of Well from Ground Surface (meters)	Screen Length (meters)	Depth to Top of Screen from Ground Surface (meters)	Depth of Bentonite Seal from Ground Surface (meters)	Depth of Sand Filter Pack from Ground Surface (meters)	Comments
	Zone	Easting	Northing											
TP/MW2	17	372778	5136731	352.26	352.91	06/08/2023	0.65	3.78	3.13	2.13	1.00	0 - 0.6	0.6 - 3.13	None
TP/MW3	17	372789	5136721	351.90	352.64	06/08/2023	0.74	4.27	3.53	2.44	1.09	0 - 0.6	0.6 - 3.53	None
TP/MW4	17	372766	5136717	352.17	352.73	06/09/2023	-0.06	3.56	3.62	2.70	1.18	0 - 0.6	0.6 - 3.62	None

Notes:
[1]All elevations are measured to meters above sea level (masl).

TABLE 2 - GROUNDWATER MONITORING DATA
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

Monitoring Well ID	UTM Coordinates			Ground Surface Elevation (masl)[1]	Top of Riser Elevation (masl)	Date of Monitoring (mm/dd/yyyy)	Depth to NAPL[2] (mbg)[3]	NAPL Thickness (meters)	Height of Riser (meters)	Depth to Groundwater from Top of Riser (meters)	Depth to Groundwater (mbg)	Relative Groundwater Elevation (meters)	Final Field pH Reading During Sampling Event	Final Field Conductivity Reading During Sampling Event	Final Field Temperature Reading During Sampling Event	Visual/Olfactory Observation
	Zone	Easting	Northing													
TP/MW2	17	372778	5136731	352.26	352.91	06/16/2023	ND[4]	ND	0.65	1.80	1.15	351.11	6.16	207 uS/cm	14.19 C	Clear, light brown, no PHC sheen or odours.
TP/MW3	17	372789	5136721	351.90	352.64	06/16/2023	ND	ND	0.74	2.41	1.67	350.23	6.17	265 uS/cm	14.81 C	Clear, light brown, no PHC sheen or odours.
TP/MW4	17	372766	5136717	352.17	352.73	06/16/2023	ND	ND	-0.06	2.57	2.63	350.16	6.71	282 uS/cm	14.27 C	Opaque, brown, no PHC sheen or odours.

Notes:
[1]All elevations are measured to meters above sea level (masl).
[2]NAPL means "Non-Aqueous Phase Liquid".
[3]All subsurface measurements are in "metres below grade" (mbg).
[4]ND means "Not Detected".

Greenstone Project #E23050

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TABLE 3 - SOIL ANALYTICAL RESULTS
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

Sample ID		TP1-3	TP2-2	TP2-3	DUP-1	TP2-5	TP3-4	TP4-2	TP5-2	STANDARDS, CRITERIA & OBJECTIVES
Date Sampled		2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-08	2023-06-09	2023-06-09	
Laboratory Sample #		1691153	1691154	1691155	1691156	1691157	1691158	1691159	1691160	
Test Pit or Borehole Location ID		TP1	TP2	TP2	TP2	TP2	TP3	TP4	TP5	
Sample Depth (mbg[1])		1.8	1.2	1.8	1.8	3.1	2.4	1.2	1.2	
Combustible Organic Vapor Reading[2]		25/0	25/0	25/0	25/0	20/0	5/0	0/2	0/2	
Sample Visual Observation		Brownish grey, medium to fine sand with trace gravel, moist, no PHC odours or staining	Brown, medium to fine sand with trace gravel, moist to wet, no PHC odours or staining	Brown, medium to fine sand with trace gravel, moist to wet, no PHC odours or staining	Field QA/QC duplicate of TP2-3	Brown, medium to fine sand with trace gravel, wet, no PHC odours or staining	Brown, medium to fine sand with trace gravel, moist, no PHC odours or staining	Brown, coarse sand and gravel fill, moist, no PHC odours or staining	Brown, medium to fine sand with trace gravel, moist, no PHC odours or staining	MECP Table 3 SCS[3]
PARAMETER	**UNITS**									
Volatile Organic Compounds										
Acetone	µg/L	<0.50	-	<0.50	<0.50	-	<0.50	-	-	16
Benzene	µg/g	<0.0068	-	<0.0068	<0.0068	-	<0.0068	-	-	0.21
Bromodichloromethane	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	13
Bromoform	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.27
Bromomethane	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Carbon Tetrachloride	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Chlorobenzene	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	2.4
Chloroform	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Dibromochloromethane	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	9.4
Dichlorobenzene, 1,2-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	3.4
Dichlorobenzene, 1,3-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	4.8
Dichlorobenzene, 1,4-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.083
Dichlorodifluoromethane	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	16
Dichloroethane, 1,1-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	3.5
Dichloroethane, 1,2-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Dichloroethylene, 1,1-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Dichloroethylene, 1,2-cis-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	3.4
Dichloroethylene, 1,2-trans-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.084
Dichloropropane, 1,2-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Dichloropropene,1,3-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Dichloropropylene, 1,3-cis-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	-
Dichloropropylene, 1,3-trans-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	-
Ethylbenzene	µg/g	<0.018	-	<0.018	<0.018	-	<0.018	-	-	2
Ethylene dibromide	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Hexane (n)	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	2.8
Methyl Ethyl Ketone	µg/L	<0.50	-	<0.50	<0.50	-	<0.50	-	-	16
Methyl Isobutyl Ketone	µg/L	<0.50	-	<0.50	<0.50	-	<0.50	-	-	1.7
Methyl tert-Butyl Ether (MTBE)	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.75
Methylene Chloride	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.1
Styrene	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.7
Tetrachloroethane, 1,1,1,2-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.058
Tetrachloroethane, 1,1,2,2-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Tetrachloroethylene	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.28
Toluene	µg/g	<0.08	-	<0.08	<0.08	-	<0.08	-	-	2.3
Trichloroethane, 1,1,1-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.38
Trichloroethane, 1,1,2-	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.05
Trichloroethylene	µg/L	<0.01	-	<0.01	<0.01	-	<0.01	-	-	0.061
Trichlorofluoromethane	µg/L	<0.05	-	<0.05	<0.05	-	<0.05	-	-	4
Vinyl Chloride	µg/L	<0.02	-	<0.02	<0.02	-	<0.02	-	-	0.02
Xylenes[4]	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	-	-	3.1
Metals										
Antimony	µg/g	-	-	-	-	-	-	<1	<1	7.5
Arsenic	µg/g	-	-	-	-	-	-	2	2	18
Barium	µg/g	-	-	-	-	-	-	26	27	390
Beryllium	µg/g	-	-	-	-	-	-	<1	<1	4
Boron (total)	µg/g	-	-	-	-	-	-	<5	<5	120
Cadmium	µg/g	-	-	-	-	-	-	<0.4	<0.4	1.2
Chromium Total	µg/g	-	-	-	-	-	-	38	19	160
Cobalt	µg/g	-	-	-	-	-	-	5	4	22
Copper	µg/g	-	-	-	-	-	-	20	19	140
Lead	µg/g	-	-	-	-	-	-	9	6	120
Molybdenum	µg/g	-	-	-	-	-	-	<1	<1	6.9
Nickel	µg/g	-	-	-	-	-	-	21	12	100
Selenium	µg/g	-	-	-	-	-	-	<0.5	<0.5	2.4
Silver	µg/g	-	-	-	-	-	-	<0.2	<0.2	20
Thallium	µg/g	-	-	-	-	-	-	<1	<1	1
Uranium	µg/g	-	-	-	-	-	-	0.9	1.1	23
Vanadium	µg/g	-	-	-	-	-	-	20	20	86
Zinc	µg/g	-	-	-	-	-	-	20	16	340
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	7.9
Acenaphthylene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.15
Anthracene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.67
Benz[a]anthracene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.5
Benzo[a]pyrene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.3
Benzo[b]fluoranthene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.78
Benzo[ghi]perylene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	6.6
Benzo[k]fluoranthene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.78
Chrysene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	7
Dibenz[a h]anthracene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.1
Fluoranthene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.69
Fluorene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	62
Indeno[1 2 3-cd]pyrene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.38
Methylnaphthalene, 1 + 2-	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-
Methlynapthalene, 1-	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.99
Methlynapthalene, 2-	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.99
Naphthalene	µg/g	<0.013	-	<0.013	<0.013	-	<0.013	<0.013	<0.013	0.6
Phenanthrene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	6.2
Pyrene	µg/g	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	78
PHC Fractions F1 to F4										
F1 (C6-C10) - Less BTEX[5]	µg/g	<10	-	<10	<10	-	<10	<10	<10	55
F2 (C10-C16)	µg/g	<2	-	<2	<2	-	<2	<2	<2	98
F3 (C16-C34)	µg/g	<20	-	<20	<20	-	<20	<20	<20	300
F4 (C34-C50)	µg/g	<20	-	<20	<20	-	<20	<20	<20	2800
General Chemistry										
pH	pH Units	-	4.81	-	-	6.80	-	-	-	-
Electrical Conductivity (EC)	mS/cm	-	-	-	-	-	-	0.08	<0.05	0.7
Sodium Adsorption Ratio (SAR)	-	-	-	-	-	-	-	0.17	0.09	5
Grain Size % > 75 um	%	-	63.2	-	-	56.6	-	-	-	-
Grain Size Characterization	-	-	Coarse	-	-	Coarse	-	-	-	-

[1]All sample depths are recorded as "metres below grade".

[2]Headspace readings are conducted using an RKI-Eagle II COV meter. Results are reported in parts per million (ppm) or lower explosive limit (LEL).

[3]Ministry of the Environment Conservation and Parks, "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 - Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition "residential" land use and "coarse" textured soil.

[4]Total Xylene values are given as the sum of the m+p-Xylene and o-Xylene values.

[5]F1 values represent the results for the C6 - C10 hydrocarbon fraction, with the BTEX results subtracted.

Shaded Cells - Result exceeds MECP Table 3 SCS.

Greenstone Project #E23050

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TABLE 3 - SOIL ANALYTICAL RESULTS
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

Sample ID		TP6-2	TP7-1	TP7-2	TP7-4	TP8-3	TP9-2	TP10-1	DUP-2	STANDARDS, CRITERIA & OBJECTIVES
Date Sampled		2023-06-09	2023-06-09	2023-06-09	2023-06-09	2023-06-09	2023-06-09	2023-06-09	2023-06-09	
Laboratory Sample #		1691161	1691162	1691163	1691164	1691165	1691166	1691167	1691168	
Test Pit or Borehole Location ID		TP6	TP7	TP7	TP7	TP8	TP9	TP10	TP10	
Sample Depth (mbg[1])		1.2	0.6	1.2	2.4	1.8	1.2	0.6	0.6	
Combustible Organic Vapor Reading[2]		5/1	10/1	5/1	5/0	5/1	10/1	15/0	15/0	
Sample Visual Observation		Brown, medium to fine sand with trace gravel, moist, no PHC odours or staining	Brown, coarse to medium grained sand with trace gravel, dry, no PHC odours or staining	Brown, coarse to medium grained sand with trace gravel, moist, no PHC odours or staining	Brown, coarse to medium grained sand with trace gravel, wet, no PHC odours or staining	Brown, medium to fine sand with trace gravel, moist to wet, no PHC odours or staining	Brown, medium to fine sand with trace gravel, moist, no PHC odours or staining	Brown, gravel fill with some medium to fine sand, dry, no PHC odours or staining	Field QA/QC duplicate of TP10-1	MECP Table 3 SCS[3]
PARAMETER	**UNITS**									
Volatile Organic Compounds										
Acetone	µg/L	-	-	-	-	-	-	-	-	16
Benzene	µg/g	-	-	-	-	-	-	-	-	0.21
Bromodichloromethane	µg/L	-	-	-	-	-	-	-	-	13
Bromoform	µg/L	-	-	-	-	-	-	-	-	0.27
Bromomethane	µg/L	-	-	-	-	-	-	-	-	0.05
Carbon Tetrachloride	µg/L	-	-	-	-	-	-	-	-	0.05
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-	2.4
Chloroform	µg/L	-	-	-	-	-	-	-	-	0.05
Dibromochloromethane	µg/L	-	-	-	-	-	-	-	-	9.4
Dichlorobenzene, 1,2-	µg/L	-		-	-	-	-	-	-	3.4
Dichlorobenzene, 1,3-	µg/L	-	-	-	-	-	-	-	-	4.8
Dichlorobenzene, 1,4-	µg/L	-	-	-	-	-	-	-	-	0.083
Dichlorodifluoromethane	µg/L	-	-	-	-	-	-	-	-	16
Dichloroethane, 1,1-	µg/L	-	-	-	-	-	-	-	-	3.5
Dichloroethane, 1,2-	µg/L	-	-	-	-	-	-	-	-	0.05
Dichloroethylene, 1,1-	µg/L	-	-	-	-	-	-	-	-	0.05
Dichloroethylene, 1,2-cis-	µg/L	-	-	-	-	-	-	-	-	3.4
Dichloroethylene, 1,2-trans-	µg/L	-	-	-	-	-	-	-	-	0.084
Dichloropropane, 1,2-	µg/L	-	-	-	-	-	-	-	-	0.05
Dichloropropene,1,3-	µg/L	-	-	-	-	-	-	-	-	0.05
Dichloropropylene, 1,3-cis-	µg/L	-	-	-	-	-	-	-	-	-
Dichloropropylene, 1,3-trans-	µg/L	-	-	-	-	-	-	-	-	-
Ethylbenzene	µg/g	-	-	-	-	-	-	-	-	2
Ethylene dibromide	µg/L	-	-	-	-	-	-	-	-	0.05
Hexane (n)	µg/L	-	-	-	-	-	-	-	-	2.8
Methyl Ethyl Ketone	µg/L	-	-	-	-	-	-	-	-	16
Methyl Isobutyl Ketone	µg/L	-	-	-	-	-	-	-	-	1.7
Methyl tert-Butyl Ether (MTBE)	µg/L	-	-	-	-	-	-	-	-	0.75
Methylene Chloride	µg/L	-	-	-	-	-	-	-	-	0.1
Styrene	µg/L	-	-	-	-	-	-	-	-	0.7
Tetrachloroethane, 1,1,1,2-	µg/L	-	-	-	-	-	-	-	-	0.058
Tetrachloroethane, 1,1,2,2-	µg/L	-	-	-	-	-	-	-	-	0.05
Tetrachloroethylene	µg/L	-	-	-	-	-	-	-	-	0.28
Toluene	µg/g	-	-	-	-	-	-	-	-	2.3
Trichloroethane, 1,1,1-	µg/L	-	-	-	-	-	-	-	-	0.38
Trichloroethane, 1,1,2-	µg/L	-	-	-	-	-	-	-	-	0.05
Trichloroethylene	µg/L	-	-	-	-	-	-	-	-	0.061
Trichlorofluoromethane	µg/L	-	-	-	-	-	-	-	-	4
Vinyl Chloride	µg/L	-	-	-	-	-	-	-	-	0.02
Xylenes[4]	µg/g	-	-	-	-	-	-	-	-	3.1
Metals										
Antimony	µg/g	<1	<1	-	-	<1	<1	<1	<1	7.5
Arsenic	µg/g	2	2	-	-	2	1	2	2	18
Barium	µg/g	22	17	-	-	30	16	19	16	390
Beryllium	µg/g	<1	<1	-	-	<1	<1	<1	<1	4
Boron (total)	µg/g	<5	<5	-	-	<5	<5	<5	<5	120
Cadmium	µg/g	<0.4	<0.4	-	-	<0.4	<0.4	<0.4	<0.4	1.2
Chromium Total	µg/g	18	39	-	-	48	25	67	39	160
Cobalt	µg/g	5	5	-	-	5	4	6	5	22
Copper	µg/g	15	17	-	-	20	10	18	18	140
Lead	µg/g	6	5	-	-	6	4	6	5	120
Molybdenum	µg/g	<1	<1	-	-	<1	<1	1	<1	6.9
Nickel	µg/g	11	22	-	-	25	13	35	22	100
Selenium	µg/g	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	2.4
Silver	µg/g	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	20
Thallium	µg/g	<1	<1	-	-	<1	<1	<1	<1	1
Uranium	µg/g	0.8	0.7	-	-	0.9	0.6	0.8	0.7	23
Vanadium	µg/g	21	18	-	-	23	21	22	20	86
Zinc	µg/g	13	17	-	-	16	9	14	12	340
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	7.9
Acenaphthylene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.15
Anthracene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.67
Benz[a]anthracene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.5
Benzo[a]pyrene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.3
Benzo[b]fluoranthene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.78
Benzo[ghi]perylene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	6.6
Benzo[k]fluoranthene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.78
Chrysene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	7
Dibenz[a h]anthracene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.1
Fluoranthene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.69
Fluorene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	62
Indeno[1 2 3-cd]pyrene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.38
Methylnaphthalene, 1 + 2-	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
Methlynapthalene, 1-	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.99
Methlynapthalene, 2-	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	0.99
Naphthalene	µg/g	<0.013	<0.013	-	-	<0.013	<0.013	<0.013	<0.013	0.6
Phenanthrene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	6.2
Pyrene	µg/g	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	78
PHC Fractions F1 to F4										
F1 (C6-C10) - Less BTEX[5]	µg/g	<10	<10	-	-	<10	<10	<10	<10	55
F2 (C10-C16)	µg/g	<2	<2	-	-	<2	<2	<2	<2	98
F3 (C16-C34)	µg/g	<20	<20	-	-	<20	<20	<20	<20	300
F4 (C34-C50)	µg/g	<20	<20	-	-	<20	<20	<20	<20	2800
General Chemistry										
pH	pH Units	-	-	6.19	5.16	-	-	-	-	-
Electrical Conductivity (EC)	mS/cm	<0.05	<0.05	-	-	0.18	<0.05	<0.05	<0.05	0.7
Sodium Adsorption Ratio (SAR)	-	0.3	0.09	-	-	1.33	0.21	0.11	0.11	5
Grain Size % > 75 um	%	-	-	93.7	97.7	-	-	-	-	-
Grain Size Characterization	-	-	-	Coarse	Coarse	-	-	-	-	-

[1]All sample depths are recorded as "metres below grade".

[2]Headspace readings are conducted using an RKI-Eagle II COV meter. Results are reported in parts per million (ppm) or lower explosive limit (LEL).

3Ministry of the Environment Conservation and Parks, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011 - Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition "residential" land use and "coarse" textured soil.

[4]Total Xylene values are given as the sum of the m+p-Xylene and o-Xylene values.

[5]F1 values represent the results for the C6 - C10 hydrocarbon fraction, with the BTEX results subtracted.

Shaded Cells - Result exceeds MECP Table 3 SCS.

Greenstone Project #E23050

TABLE 4 - GROUNDWATER ANALYTICAL RESULTS
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

Sample ID		TP/MW-2	Dup-1	TP/MW-3	TP/MW-4	Trip Blank	**STANDARDS, CRITERIA & OBJECTIVES**
Date Sampled		2023-06-16	2023-06-16	2023-06-16	2023-06-16	2023-06-16	
Laboratory Sample #		1691969	1691970	1691971	1691972	1691973	
Monitoring Well Location ID		TP/MW-2	TP/MW-2	TP/MW-3	TP/MW-4	-	
Sample Depth (mbg)		1.15 - 3.13	1.15 - 3.13	1.67 - 3.53	2.63 - 3.62	-	
Sample Visual Observation		Clear, light brown, no PHC sheen or odours.	Field QA/QC duplicate of TP/MW2	Clear, light brown, no PHC sheen or odours.	Opaque, brown, no PHC sheen or odours.	-	MECP Table 3 SCS[1]
PARAMETER	**UNITS**						
Volatile Organic Compounds							
Acetone	µg/L	<5	<5	<5	<5	<5	130000
Benzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	44
Bromodichloromethane	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	85000
Bromoform	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	380
Bromomethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	5.6
Carbon Tetrachloride	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.79
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	630
Chloroform	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	2.4
Dibromochloromethane	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	82000
Dichlorobenzene, 1,2-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	4600
Dichlorobenzene, 1,3-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	9600
Dichlorobenzene, 1,4-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	8
Dichlorodifluoromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	4400
Dichloroethane, 1,1-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	320
Dichloroethane, 1,2-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.6
Dichloroethylene, 1,1-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.6
Dichloroethylene, 1,2-cis-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	1.6
Dichloroethylene, 1,2-trans-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	1.6
Dichloropropane, 1,2-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	16
Dichloropropene,1,3-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	5.2
Dichloropropylene, 1,3-cis-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	-
Dichloropropylene, 1,3-trans-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	-
Ethylbenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	2300
Ethylene dibromide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.25
Hexane (n)	µg/L	<5	<5	<5	<5	<5	51
Methyl Ethyl Ketone	µg/L	<2	<2	<2	<2	<2	470000
Methyl Isobutyl Ketone	µg/L	<5	<5	<5	<5	<5	140000
Methyl tert-Butyl Ether (MTBE)	µg/L	<2	<2	<2	<2	<2	190
Methylene Chloride	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	610
Styrene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	1300
Tetrachloroethane, 1,1,1,2-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	3.3
Tetrachloroethane, 1,1,2,2-	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	3.2
Tetrachloroethylene	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	1.6
Toluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	18000
Trichloroethane, 1,1,1-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	640
Trichloroethane, 1,1,2-	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	4.7
Trichloroethylene	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	1.6
Trichlorofluoromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	2500
Vinyl Chloride	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.5
Xylenes[2]	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	4200
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	-	600
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	-	1.8
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	-	2.4
Benz[a]anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	-	4.7
Benzo(b+k)fluoranthene	µg/L	<0.05	<0.05	<0.05	<0.05	-	-
Benzo[a]pyrene	µg/L	<0.01	<0.01	0.02	<0.01	-	0.81
Benzo[b]fluoranthene	µg/L	<0.05	<0.05	<0.05	<0.05	-	0.75
Benzo[ghi]perylene	µg/L	<0.1	<0.1	<0.1	<0.1	-	0.2
Benzo[k]fluoranthene	µg/L	<0.05	<0.05	<0.05	<0.05	`	0.4
Chrysene	µg/L	<0.05	<0.05	<0.05	<0.05	-	1
Dibenz[a h]anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	-	0.52
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	-	130
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	-	400
Indeno[1 2 3-cd]pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	-	0.2
Methlynaphthalene, 1-	µg/L	<0.1	<0.1	<0.1	<0.1	-	1800
Methlynaphthalene, 2-	µg/L	<0.1	<0.1	<0.1	<0.1	-	1800
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1	-	1400
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	-	580
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	-	68
PHC Fractions F1 to F4							
F1 (C6-C10) - Less BTEX[3]	µg/L	<20	<20	<20	<20	<20	750
F2 (C10-C16)	µg/L	<20	<20	<20	<20	<20	150
F3 (C16-C34)	µg/L	<50	<50	<50	<50	<50	500
F4 (C34-C50)	µg/L	<50	<50	<50	<50	<50	500

[1]Ministry of the Environment Conservation and Parks, "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 - Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition "residential" land use and "coarse" textured soil.

[2]Total Xylene values are given as the sum of the m+p-Xylene and o-Xylene values.

[3]F1 values represent the results for the C6 - C10 hydrocarbon fraction, with the BTEX results subtracted.

Shaded Cells - Result exceeds MECP Table 3 SCS.

Greenstone Project #E23050

TABLE 5 - MAXIMUM SOIL CONCENTRATIONS
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

PARAMETER	UNITS	Maximum Concentration	Sample ID and Location	Depth (mbg)	STANDARDS, CRITERIA & OBJECTIVES
					MECP Table 3 SCS[3]
Volatile Organic Compounds					
Acetone	µg/L	<0.50	TP1-3	1.8	16
Benzene	µg/g	<0.0068	TP1-3	1.8	0.21
Bromodichloromethane	µg/L	<0.05	TP1-3	1.8	13
Bromoform	µg/L	<0.05	TP1-3	1.8	0.27
Bromomethane	µg/L	<0.05	TP1-3	1.8	0.05
Carbon Tetrachloride	µg/L	<0.05	TP1-3	1.8	0.05
Chlorobenzene	µg/L	<0.05	TP1-3	1.8	2.4
Chloroform	µg/L	<0.05	TP1-3	1.8	0.05
Dibromochloromethane	µg/L	<0.05	TP1-3	1.8	9.4
Dichlorobenzene, 1,2-	µg/L	<0.05	TP1-3	1.8	3.4
Dichlorobenzene, 1,3-	µg/L	<0.05	TP1-3	1.8	4.8
Dichlorobenzene, 1,4-	µg/L	<0.05	TP1-3	1.8	0.083
Dichlorodifluoromethane	µg/L	<0.05	TP1-3	1.8	16
Dichloroethane, 1,1-	µg/L	<0.05	TP1-3	1.8	3.5
Dichloroethane, 1,2-	µg/L	<0.05	TP1-3	1.8	0.05
Dichloroethylene, 1,1-	µg/L	<0.05	TP1-3	1.8	0.05
Dichloroethylene, 1,2-cis-	µg/L	<0.05	TP1-3	1.8	3.4
Dichloroethylene, 1,2-trans-	µg/L	<0.05	TP1-3	1.8	0.084
Dichloropropane, 1,2-	µg/L	<0.05	TP1-3	1.8	0.05
Dichloropropene,1,3-	µg/L	<0.05	TP1-3	1.8	0.05
Dichloropropylene, 1,3-cis-	µg/L	<0.05	TP1-3	1.8	-
Dichloropropylene, 1,3-trans-	µg/L	<0.05	TP1-3	1.8	-
Ethylbenzene	µg/g	<0.018	TP1-3	1.8	2
Ethylene dibromide	µg/L	<0.05	TP1-3	1.8	0.05
Hexane (n)	µg/L	<0.05	TP1-3	1.8	2.8
Methyl Ethyl Ketone	µg/L	<0.50	TP1-3	1.8	16
Methyl Isobutyl Ketone	µg/L	<0.50	TP1-3	1.8	1.7
Methyl tert-Butyl Ether (MTBE)	µg/L	<0.05	TP1-3	1.8	0.75
Methylene Chloride	µg/L	<0.05	TP1-3	1.8	0.1
Styrene	µg/L	<0.05	TP1-3	1.8	0.7
Tetrachloroethane, 1,1,1,2-	µg/L	<0.05	TP1-3	1.8	0.058
Tetrachloroethane, 1,1,2,2-	µg/L	<0.05	TP1-3	1.8	0.05
Tetrachloroethylene	µg/L	<0.05	TP1-3	1.8	0.28
Toluene	µg/g	<0.08	TP1-3	1.8	2.3
Trichloroethane, 1,1,1-	µg/L	<0.05	TP1-3	1.8	0.38
Trichloroethane, 1,1,2-	µg/L	<0.05	TP1-3	1.8	0.05
Trichloroethylene	µg/L	<0.01	TP1-3	1.8	0.061
Trichlorofluoromethane	µg/L	<0.05	TP1-3	1.8	4
Vinyl Chloride	µg/L	<0.02	TP1-3	1.8	0.02
Xylenes[4]	µg/g	<0.05	TP1-3	1.8	3.1
Metals					
Antimony	µg/g	<1	TP4-2	1.2	7.5
Arsenic	µg/g	2	TP4-2	1.2	18
Barium	µg/g	30	TP8-3	1.8	390
Beryllium	µg/g	<1	TP4-2	1.2	4
Boron (total)	µg/g	<5	TP4-2	1.2	120
Cadmium	µg/g	<0.4	TP4-2	1.2	1.2
Chromium Total	µg/g	67	TP10-1	0.6	160
Cobalt	µg/g	6	TP10-1	0.6	22
Copper	µg/g	20	TP4-2	1.2	140
Lead	µg/g	9	TP4-2	1.2	120
Molybdenum	µg/g	<1	TP4-2	1.2	6.9
Nickel	µg/g	35	TP10-1	0.6	100
Selenium	µg/g	<0.5	TP4-2	1.2	2.4
Silver	µg/g	<0.2	TP4-2	1.2	20
Thallium	µg/g	<1	TP4-2	1.2	1
Uranium	µg/g	1.1	TP5-2	1.2	23
Vanadium	µg/g	23	TP8-3	1.8	86
Zinc	µg/g	20	TP4-2	1.2	340
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	µg/g	<0.05	TP1-3	1.8	7.9
Acenaphthylene	µg/g	<0.05	TP1-3	1.8	0.15
Anthracene	µg/g	<0.05	TP1-3	1.8	0.67
Benz[a]anthracene	µg/g	<0.05	TP1-3	1.8	0.5
Benzo[a]pyrene	µg/g	<0.05	TP1-3	1.8	0.3
Benzo[b]fluoranthene	µg/g	<0.05	TP1-3	1.8	0.78
Benzo[ghi]perylene	µg/g	<0.05	TP1-3	1.8	6.6
Benzo[k]fluoranthene	µg/g	<0.05	TP1-3	1.8	0.78
Chrysene	µg/g	<0.05	TP1-3	1.8	7
Dibenz[a h]anthracene	µg/g	<0.05	TP1-3	1.8	0.1
Fluoranthene	µg/g	<0.05	TP1-3	1.8	0.69
Fluorene	µg/g	<0.05	TP1-3	1.8	62
Indeno[1 2 3-cd]pyrene	µg/g	<0.05	TP1-3	1.8	0.38
Methylnaphthalene, 1 + 2-	µg/g	<0.05	TP1-3	1.8	-
Methlynapthalene, 1-	µg/g	<0.05	TP1-3	1.8	0.99
Methlynapthalene, 2-	µg/g	<0.05	TP1-3	1.8	0.99
Naphthalene	µg/g	<0.013	TP1-3	1.8	0.6
Phenanthrene	µg/g	<0.05	TP1-3	1.8	6.2
Pyrene	µg/g	<0.05	TP1-3	1.8	78
PHC Fractions F1 to F4					
F1 (C6-C10) - Less BTEX[5]	µg/g	<10	TP1-3	1.8	55
F2 (C10-C16)	µg/g	<2	TP1-3	1.8	98
F3 (C16-C34)	µg/g	<20	TP1-3	1.8	300
F4 (C34-C50)	µg/g	<20	TP1-3	1.8	2800
General Chemistry					
Electrical Conductivity (EC)	mS/cm	0.18	TP8-3	1.8	0.7
Sodium Adsorption Ratio (SAR)	-	1.33	TP8-3	1.8	5

[1]All sample depths are recorded as "metres below grade".

[2]Headspace readings are conducted using an RKI-Eagle II COV meter. Results are reported in parts per million (ppm) or lower explosive limit (LEL).

[3]Ministry of the Environment Conservation and Parks, "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* ", dated April 15, 2011 - Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition "residential" land use and "coarse" textured soil.

[4]Total Xylene values are given as the sum of the m+p-Xylene and o-Xylene values.

[5]F1 values represent the results for the C6 - C10 hydrocarbon fraction, with the BTEX results subtracted.

Shaded Cells - Result exceeds MECP Table 3 SCS.

Greenstone Project #E23050

TABLE 6 - MAXIMUM GROUNDWATER CONCENTRATIONS
Phase Two Environmental Site Assessment
80 Dieppe Avenue, Elliot Lake

PARAMETER	UNITS	Maximum Concentration	Sample ID and Location	Depth (mbg)	STANDARDS, CRITERIA & OBJECTIVES
					MECP Table 3 SCS[1]
Volatile Organic Compounds					
Acetone	µg/L	<5	TP/MW-3	1.67 - 3.53	130000
Benzene	µg/L	<0.5	TP/MW-3	1.67 - 3.53	44
Bromodichloromethane	µg/L	<0.3	TP/MW-3	1.67 - 3.53	85000
Bromoform	µg/L	<0.4	TP/MW-3	1.67 - 3.53	380
Bromomethane	µg/L	<0.5	TP/MW-3	1.67 - 3.53	5.6
Carbon Tetrachloride	µg/L	<0.2	TP/MW-3	1.67 - 3.53	0.79
Chlorobenzene	µg/L	<0.5	TP/MW-3	1.67 - 3.53	630
Chloroform	µg/L	<0.5	TP/MW-3	1.67 - 3.53	2.4
Dibromochloromethane	µg/L	<0.3	TP/MW-3	1.67 - 3.53	82000
Dichlorobenzene, 1,2-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	4600
Dichlorobenzene, 1,3-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	9600
Dichlorobenzene, 1,4-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	8
Dichlorodifluoromethane	µg/L	<0.5	TP/MW-3	1.67 - 3.53	4400
Dichloroethane, 1,1-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	320
Dichloroethane, 1,2-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	1.6
Dichloroethylene, 1,1-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	1.6
Dichloroethylene, 1,2-cis-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	1.6
Dichloroethylene, 1,2-trans-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	1.6
Dichloropropane, 1,2-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	16
Dichloropropene,1,3-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	5.2
Dichloropropylene, 1,3-cis-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	-
Dichloropropylene, 1,3-trans-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	-
Ethylbenzene	µg/L	<0.5	TP/MW-3	1.67 - 3.53	2300
Ethylene dibromide	µg/L	<0.2	TP/MW-3	1.67 - 3.53	0.25
Hexane (n)	µg/L	<5	TP/MW-3	1.67 - 3.53	51
Methyl Ethyl Ketone	µg/L	<2	TP/MW-3	1.67 - 3.53	470000
Methyl Isobutyl Ketone	µg/L	<5	TP/MW-3	1.67 - 3.53	140000
Methyl tert-Butyl Ether (MTBE)	µg/L	<2	TP/MW-3	1.67 - 3.53	190
Methylene Chloride	µg/L	<4.0	TP/MW-3	1.67 - 3.53	610
Styrene	µg/L	<0.5	TP/MW-3	1.67 - 3.53	1300
Tetrachloroethane, 1,1,1,2-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	3.3
Tetrachloroethane, 1,1,2,2-	µg/L	<0.5	TP/MW-3	1.67 - 3.53	3.2
Tetrachloroethylene	µg/L	<0.3	TP/MW-3	1.67 - 3.53	1.6
Toluene	µg/L	<0.4	TP/MW-3	1.67 - 3.53	18000
Trichloroethane, 1,1,1-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	640
Trichloroethane, 1,1,2-	µg/L	<0.4	TP/MW-3	1.67 - 3.53	4.7
Trichloroethylene	µg/L	<0.3	TP/MW-3	1.67 - 3.53	1.6
Trichlorofluoromethane	µg/L	<0.5	TP/MW-3	1.67 - 3.53	2500
Vinyl Chloride	µg/L	<0.2	TP/MW-3	1.67 - 3.53	0.5
Xylenes[2]	µg/L	<0.5	TP/MW-3	1.67 - 3.53	4200
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	600
Acenaphthylene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	1.8
Anthracene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	2.4
Benz[a]anthracene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	4.7
Benzo(b+k)fluoranthene	µg/L	<0.05	TP/MW-3	1.67 - 3.53	-
Benzo[a]pyrene	µg/L	0.02	TP/MW-3	1.67 - 3.53	0.81
Benzo[b]fluoranthene	µg/L	<0.05	TP/MW-3	1.67 - 3.53	0.75
Benzo[ghi]perylene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	0.2
Benzo[k]fluoranthene	µg/L	<0.05	TP/MW-3	1.67 - 3.53	0.4
Chrysene	µg/L	<0.05	TP/MW-3	1.67 - 3.53	1
Dibenz[a h]anthracene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	0.52
Fluoranthene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	130
Fluorene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	400
Indeno[1 2 3-cd]pyrene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	0.2
Methlynaphthalene, 1-	µg/L	<0.1	TP/MW-3	1.67 - 3.53	1800
Methlynaphthalene, 2-	µg/L	<0.1	TP/MW-3	1.67 - 3.53	1800
Naphthalene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	1400
Phenanthrene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	580
Pyrene	µg/L	<0.1	TP/MW-3	1.67 - 3.53	68
PHC Fractions F1 to F4					
F1 (C6-C10) - Less BTEX[3]	µg/L	<20	TP/MW-3	1.67 - 3.53	750
F2 (C10-C16)	µg/L	<20	TP/MW-3	1.67 - 3.53	150
F3 (C16-C34)	µg/L	<50	TP/MW-3	1.67 - 3.53	500
F4 (C34-C50)	µg/L	<50	TP/MW-3	1.67 - 3.53	500

[1]Ministry of the Environment Conservation and Parks, "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 - Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition "residential" land use and "coarse" textured soil.

[2]Total Xylene values are given as the sum of the m+p-Xylene and o-Xylene values.

[3]F1 values represent the results for the C6 - C10 hydrocarbon fraction, with the BTEX results subtracted.

Shaded Cells - Result exceeds MECP Table 3 SCS.

APPENDIX E – PHOTOGRAPHS

Photograph 1: View of test pit excavation TP8, looking northwest.

Photograph 2: View of test pit excavation TP9, looking northwest.

Photograph 3: View of typical soil conditions as shown in test pit locationTP4.

Photograph 4: View of typical soil conditions as shown in test pit location TP6.

Photograph 5: View of monitoring well installation of TP/MW4, looking north.

Photograph 6: View of common utility manhole on-site.

APPENDIX F – RESIDUE MANAGMENT

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APPENDIX G – LABORATORY CERTIFICATES OF ANALYSIS

Certificate of Analysis

Environment Testing

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
Invoice to: Greenstone Engineering Ltd.
PO#:

Report Number:	1998112
Date Submitted:	2023-06-13
Date Reported:	2023-06-20
Project:	E23050
COC #:	219723
Temperature (C):	1
Custody Seal:	

Dear Alex Duchesne:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Raheleh Zafari, Environmental Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated
.
Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at https://directory.cala.ca/

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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67 Elgin Street
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PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.		
					1691153 Soil153 2023-06-08 14:35 TP1-3	1691155 Soil153 2023-06-08 15:30 TP2-3	1691156 Soil153 2023-06-08 15:30 DUP-1
PHC's F1	443483	10	ug/g	STD 55	<10	<10	<10
PHC's F1-BTEX	443488	10	ug/g		<10	<10	<10
PHC's F2	443538	2	ug/g	STD 98		<2	
	443580	2	ug/g	STD 98	<2		
	443635	2	ug/g	STD 98			<2
PHC's F2-Napth	443662	2	ug/g		<2	<2	<2
PHC's F3	443538	20	ug/g	STD 300		<20	
	443580	20	ug/g	STD 300	<20		
	443635	20	ug/g	STD 300			<20
PHC's F3-PAH	443663	20	ug/g		<20	<20	<20
PHC's F4	443538	20	ug/g	STD 2800		<20	
	443580	20	ug/g	STD 2800	<20		
	443635	20	ug/g	STD 2800			<20

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1691158 Soil153 2023-06-08 16:30 TP3-4	1691159 Soil153 2023-06-09 06:30 TP4-2	1691160 Soil153 2023-06-09 07:15 TP5-2	1691161 Soil153 2023-06-09 07:30 TP6-2	1691162 Soil153 2023-06-09 08:00 TP7-1
PHC's F1	443483	10	ug/g	STD 55	<10	<10	<10	<10	<10
PHC's F1-BTEX	443488	10	ug/g		<10				
PHC's F2	443537	2	ug/g	STD 98			<2	<2	<2
	443538	2	ug/g	STD 98	<2	<2			
PHC's F2-Napth	443662	2	ug/g		<2	<2	<2	<2	<2
PHC's F3	443537	20	ug/g	STD 300			<20	<20	<20

Results relate only to the parameters tested on the samples submitted.
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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
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Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158	1691159	1691160	1691161	1691162
					Sample Matrix Soil153	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date 2023-06-08	2023-06-09	2023-06-09	2023-06-09	2023-06-09
					Sampling Time 16:30	06:30	07:15	07:30	08:00
					Sample I.D. TP3-4	TP4-2	TP5-2	TP6-2	TP7-1
PHC's F3	443538	20	ug/g	STD 300	<20	<20			
PHC's F3-PAH	443663	20	ug/g		<20	<20	<20	<20	<20
PHC's F4	443537	20	ug/g	STD 2800			<20	<20	<20
	443538	20	ug/g	STD 2800	<20	<20			

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691165	1691166	1691167
					Sample Matrix Soil153	Soil153	Soil153
					Sample Type		
					Sample Date 2023-06-09	2023-06-09	2023-06-09
					Sampling Time 08:25	08:45	09:15
					Sample I.D. TP8-3	TP9-2	TP10-1
PHC's F1	443483	10	ug/g	STD 55	<10	<10	<10
PHC's F2	443537	2	ug/g	STD 98	<2	<2	
	443538	2	ug/g	STD 98			<2
PHC's F2-Napth	443662	2	ug/g		<2	<2	<2
PHC's F3	443537	20	ug/g	STD 300	<20	<20	
	443538	20	ug/g	STD 300			<20
PHC's F3-PAH	443663	20	ug/g		<20	<20	<20
PHC's F4	443537	20	ug/g	STD 2800	<20	<20	
	443538	20	ug/g	STD 2800			<20

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Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.
					1691168 Soil153 2023-06-09 09:15 DUP-2
PHC's F1	443483	10	ug/g	STD 55	<10
PHC's F2	443537	2	ug/g	STD 98	<2
PHC's F2-Napth	443662	2	ug/g		<2
PHC's F3	443537	20	ug/g	STD 300	<20
PHC's F3-PAH	443663	20	ug/g		<20
PHC's F4	443537	20	ug/g	STD 2800	<20

Metals

Analyte	Batch No	MRL	Units	Guideline	1691159 Soil153 2023-06-09 06:30 TP4-2	1691160 Soil153 2023-06-09 07:15 TP5-2	1691161 Soil153 2023-06-09 07:30 TP6-2	1691162 Soil153 2023-06-09 08:00 TP7-1
Antimony	443543	1	ug/g	STD 7.5	<1	<1	<1	<1
Arsenic	443543	1	ug/g	STD 18	2	2	2	2
Barium	443543	1	ug/g	STD 390	26	27	22	17
Beryllium	443543	1	ug/g	STD 4	<1	<1	<1	<1
Boron (total)	443543	5	ug/g	STD 120	<5	<5	<5	<5
Cadmium	443543	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4	<0.4
Chromium Total	443543	1	ug/g	STD 160	38	19	18	39
Cobalt	443543	1	ug/g	STD 22	5	4	5	5
Copper	443543	1	ug/g	STD 140	20	19	15	17
Lead	443543	1	ug/g	STD 120	9	6	6	5
Molybdenum	443543	1	ug/g	STD 6.9	<1	<1	<1	<1
Nickel	443543	1	ug/g	STD 100	21	12	11	22
Selenium	443543	0.5	ug/g	STD 2.4	<0.5	<0.5	<0.5	<0.5

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691159	1691160	1691161	1691162
Sample Matrix					Soil153	Soil153	Soil153	Soil153
Sample Type								
Sample Date					2023-06-09	2023-06-09	2023-06-09	2023-06-09
Sampling Time					06:30	07:15	07:30	08:00
Sample I.D.					TP4-2	TP5-2	TP6-2	TP7-1
Silver	443543	0.2	ug/g	STD 20	<0.2	<0.2	<0.2	<0.2
Thallium	443543	1	ug/g	STD 1	<1	<1	<1	<1
Uranium	443543	0.5	ug/g	STD 23	0.9	1.1	0.8	0.7
Vanadium	443543	2	ug/g	STD 86	20	20	21	18
Zinc	443543	2	ug/g	STD 340	20	16	13	17

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691165	1691166	1691167
Sample Matrix					Soil153	Soil153	Soil153
Sample Type							
Sample Date					2023-06-09	2023-06-09	2023-06-09
Sampling Time					08:25	08:45	09:15
Sample I.D.					TP8-3	TP9-2	TP10-1
Antimony	443543	1	ug/g	STD 7.5	<1	<1	<1
Arsenic	443543	1	ug/g	STD 18	2	1	2
Barium	443543	1	ug/g	STD 390	30	16	19
Beryllium	443543	1	ug/g	STD 4	<1	<1	<1
Boron (total)	443543	5	ug/g	STD 120	<5	<5	<5
Cadmium	443543	0.4	ug/g	STD 1.2	<0.4	<0.4	<0.4
Chromium Total	443543	1	ug/g	STD 160	48	25	67
Cobalt	443543	1	ug/g	STD 22	5	4	6
Copper	443543	1	ug/g	STD 140	20	10	18
Lead	443543	1	ug/g	STD 120	6	4	6
Molybdenum	443543	1	ug/g	STD 6.9	<1	<1	1
Nickel	443543	1	ug/g	STD 100	25	13	35
Selenium	443543	0.5	ug/g	STD 2.4	<0.5	<0.5	<0.5
Silver	443543	0.2	ug/g	STD 20	<0.2	<0.2	<0.2

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Metals

Analyte	Batch No	MRL	Units	Guideline	1691165 Soil153 2023-06-09 08:25 TP8-3	1691166 Soil153 2023-06-09 08:45 TP9-2	1691167 Soil153 2023-06-09 09:15 TP10-1
Lab I.D.					1691165	1691166	1691167
Sample Matrix					Soil153	Soil153	Soil153
Sample Type							
Sample Date					2023-06-09	2023-06-09	2023-06-09
Sampling Time					08:25	08:45	09:15
Sample I.D.					TP8-3	TP9-2	TP10-1
Thallium	443543	1	ug/g	STD 1	<1	<1	<1
Uranium	443543	0.5	ug/g	STD 23	0.9	0.6	0.8
Vanadium	443543	2	ug/g	STD 86	23	21	22
Zinc	443543	2	ug/g	STD 340	16	9	14

Metals

Analyte	Batch No	MRL	Units	Guideline	1691168 Soil153 2023-06-09 09:15 DUP-2
Lab I.D.					1691168
Sample Matrix					Soil153
Sample Type					
Sample Date					2023-06-09
Sampling Time					09:15
Sample I.D.					DUP-2
Antimony	443543	1	ug/g	STD 7.5	<1
Arsenic	443543	1	ug/g	STD 18	2
Barium	443543	1	ug/g	STD 390	16
Beryllium	443543	1	ug/g	STD 4	<1
Boron (total)	443543	5	ug/g	STD 120	<5
Cadmium	443543	0.4	ug/g	STD 1.2	<0.4
Chromium Total	443543	1	ug/g	STD 160	39
Cobalt	443543	1	ug/g	STD 22	5
Copper	443543	1	ug/g	STD 140	18
Lead	443543	1	ug/g	STD 120	5
Molybdenum	443543	1	ug/g	STD 6.9	<1
Nickel	443543	1	ug/g	STD 100	22
Selenium	443543	0.5	ug/g	STD 2.4	<0.5
Silver	443543	0.2	ug/g	STD 20	<0.2
Thallium	443543	1	ug/g	STD 1	<1

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691168
					Sample Matrix Soil153
					Sample Type
					Sample Date 2023-06-09
					Sampling Time 09:15
					Sample I.D. DUP-2
Uranium	443543	0.5	ug/g	STD 23	0.7
Vanadium	443543	2	ug/g	STD 86	20
Zinc	443543	2	ug/g	STD 340	12

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691153	1691155	1691156
					Sample Matrix Soil153	Soil153	Soil153
					Sample Type		
					Sample Date 2023-06-08	2023-06-08	2023-06-08
					Sampling Time 14:35	15:30	15:30
					Sample I.D. TP1-3	TP2-3	DUP-1
1+2-methylnaphthalene	443564	0.05	ug/g		<0.05	<0.05	<0.05
Acenaphthene	443491	0.05	ug/g	STD 7.9	<0.05	<0.05	<0.05
Acenaphthylene	443491	0.05	ug/g	STD 0.15	<0.05	<0.05	<0.05
Anthracene	443491	0.05	ug/g	STD 0.67	<0.05	<0.05	<0.05
Benz[a]anthracene	443491	0.05	ug/g	STD 0.5	<0.05	<0.05	<0.05
Benzo[a]pyrene	443491	0.05	ug/g	STD 0.3	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05	<0.05	<0.05
Benzo[ghi]perylene	443491	0.05	ug/g	STD 6.6	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05	<0.05	<0.05
Chrysene	443491	0.05	ug/g	STD 7	<0.05	<0.05	<0.05
Dibenz[a h]anthracene	443491	0.05	ug/g	STD 0.1	<0.05	<0.05	<0.05
Fluoranthene	443491	0.05	ug/g	STD 0.69	<0.05	<0.05	<0.05
Fluorene	443491	0.05	ug/g	STD 62	<0.05	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	443491	0.05	ug/g	STD 0.38	<0.05	<0.05	<0.05
Methlynaphthalene, 1-	443491	0.05	ug/g	STD 0.99	<0.05	<0.05	<0.05
Methlynaphthalene, 2-	443491	0.05	ug/g	STD 0.99	<0.05	<0.05	<0.05

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691153	1691155	1691156
					Sample Matrix Soil153	Soil153	Soil153
					Sample Type		
					Sample Date 2023-06-08	2023-06-08	2023-06-08
					Sampling Time 14:35	15:30	15:30
					Sample I.D. TP1-3	TP2-3	DUP-1
Naphthalene	443491	0.013	ug/g	STD 0.6	<0.013	<0.013	<0.013
Phenanthrene	443491	0.05	ug/g	STD 6.2	<0.05	<0.05	<0.05
Pyrene	443491	0.05	ug/g	STD 78	<0.05	<0.05	<0.05

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158	1691159	1691160	1691161	1691162
					Sample Matrix Soil153	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date 2023-06-08	2023-06-09	2023-06-09	2023-06-09	2023-06-09
					Sampling Time 16:30	06:30	07:15	07:30	08:00
					Sample I.D. TP3-4	TP4-2	TP5-2	TP6-2	TP7-1
1+2-methylnaphthalene	443500	0.05	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	443491	0.05	ug/g	STD 7.9	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	443491	0.05	ug/g	STD 0.15	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	443491	0.05	ug/g	STD 0.67	<0.05	<0.05	<0.05	<0.05	<0.05
Benz[a]anthracene	443491	0.05	ug/g	STD 0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[a]pyrene	443491	0.05	ug/g	STD 0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[ghi]perylene	443491	0.05	ug/g	STD 6.6	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	443491	0.05	ug/g	STD 7	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz[a h]anthracene	443491	0.05	ug/g	STD 0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	443491	0.05	ug/g	STD 0.69	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	443491	0.05	ug/g	STD 62	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	443491	0.05	ug/g	STD 0.38	<0.05	<0.05	<0.05	<0.05	<0.05
Methlynaphthalene, 1-	443491	0.05	ug/g	STD 0.99	<0.05	<0.05	<0.05	<0.05	<0.05
Methlynaphthalene, 2-	443491	0.05	ug/g	STD 0.99	<0.05	<0.05	<0.05	<0.05	<0.05

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Methods references and/or additional QA/QC information available on request.

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158	1691159	1691160	1691161	1691162
					Sample Matrix Soil153	Soil153	Soil153	Soil153	Soil153
					Sample Type				
					Sample Date 2023-06-08	2023-06-09	2023-06-09	2023-06-09	2023-06-09
					Sampling Time 16:30	06:30	07:15	07:30	08:00
					Sample I.D. TP3-4	TP4-2	TP5-2	TP6-2	TP7-1
Naphthalene	443491	0.013	ug/g	STD 0.6	<0.013	<0.013	<0.013	<0.013	<0.013
Phenanthrene	443491	0.05	ug/g	STD 6.2	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	443491	0.05	ug/g	STD 78	<0.05	<0.05	<0.05	<0.05	<0.05

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691165	1691166	1691167
					Sample Matrix Soil153	Soil153	Soil153
					Sample Type		
					Sample Date 2023-06-09	2023-06-09	2023-06-09
					Sampling Time 08:25	08:45	09:15
					Sample I.D. TP8-3	TP9-2	TP10-1
1+2-methylnaphthalene	443500	0.05	ug/g			<0.05	<0.05
	443531	0.05	ug/g		<0.05		
Acenaphthene	443491	0.05	ug/g	STD 7.9	<0.05	<0.05	<0.05
Acenaphthylene	443491	0.05	ug/g	STD 0.15	<0.05	<0.05	<0.05
Anthracene	443491	0.05	ug/g	STD 0.67	<0.05	<0.05	<0.05
Benz[a]anthracene	443491	0.05	ug/g	STD 0.5	<0.05	<0.05	<0.05
Benzo[a]pyrene	443491	0.05	ug/g	STD 0.3	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05	<0.05	<0.05
Benzo[ghi]perylene	443491	0.05	ug/g	STD 6.6	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05	<0.05	<0.05
Chrysene	443491	0.05	ug/g	STD 7	<0.05	<0.05	<0.05
Dibenz[a h]anthracene	443491	0.05	ug/g	STD 0.1	<0.05	<0.05	<0.05
Fluoranthene	443491	0.05	ug/g	STD 0.69	<0.05	<0.05	<0.05
Fluorene	443491	0.05	ug/g	STD 62	<0.05	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	443491	0.05	ug/g	STD 0.38	<0.05	<0.05	<0.05
Methlynaphthalene, 1-	443491	0.05	ug/g	STD 0.99	<0.05	<0.05	<0.05

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
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Attention: Alex Duchesne
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Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691165	1691166	1691167
					Sample Matrix Soil153	Soil153	Soil153
					Sample Type		
					Sample Date 2023-06-09	2023-06-09	2023-06-09
					Sampling Time 08:25	08:45	09:15
					Sample I.D. TP8-3	TP9-2	TP10-1
Methlynaphthalene, 2-	443491	0.05	ug/g	STD 0.99	<0.05	<0.05	<0.05
Naphthalene	443491	0.013	ug/g	STD 0.6	<0.013	<0.013	<0.013
Phenanthrene	443491	0.05	ug/g	STD 6.2	<0.05	<0.05	<0.05
Pyrene	443491	0.05	ug/g	STD 78	<0.05	<0.05	<0.05

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691168
					Sample Matrix Soil153
					Sample Type
					Sample Date 2023-06-09
					Sampling Time 09:15
					Sample I.D. DUP-2
1+2-methylnaphthalene	443500	0.05	ug/g		<0.05
Acenaphthene	443491	0.05	ug/g	STD 7.9	<0.05
Acenaphthylene	443491	0.05	ug/g	STD 0.15	<0.05
Anthracene	443491	0.05	ug/g	STD 0.67	<0.05
Benz[a]anthracene	443491	0.05	ug/g	STD 0.5	<0.05
Benzo[a]pyrene	443491	0.05	ug/g	STD 0.3	<0.05
Benzo[b]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05
Benzo[ghi]perylene	443491	0.05	ug/g	STD 6.6	<0.05
Benzo[k]fluoranthene	443491	0.05	ug/g	STD 0.78	<0.05
Chrysene	443491	0.05	ug/g	STD 7	<0.05
Dibenz[a h]anthracene	443491	0.05	ug/g	STD 0.1	<0.05
Fluoranthene	443491	0.05	ug/g	STD 0.69	<0.05
Fluorene	443491	0.05	ug/g	STD 62	<0.05
Indeno[1 2 3-cd]pyrene	443491	0.05	ug/g	STD 0.38	<0.05
Methlynaphthalene, 1-	443491	0.05	ug/g	STD 0.99	<0.05

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Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691168 Sample Matrix Soil153 Sample Type Sample Date 2023-06-09 Sampling Time 09:15 Sample I.D. DUP-2
Methlynaphthalene, 2-	443491	0.05	ug/g	STD 0.99	<0.05
Naphthalene	443491	0.013	ug/g	STD 0.6	<0.013
Phenanthrene	443491	0.05	ug/g	STD 6.2	<0.05
Pyrene	443491	0.05	ug/g	STD 78	<0.05

Particle Size

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691154 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 15:25 Sample I.D. TP2-2	1691157 Soil153 2023-06-08 15:40 TP2-5
Soil < 75um	443636	0.1	%		36.8	43.5
Soil > 75um	443636	0.1	%		63.2	56.6
Texture - Coarse Med/Fine	443636		%		coarse	coarse

Results relate only to the parameters tested on the samples submitted.
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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Particle Size

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691163 Sample Matrix Soil153 Sample Type Sample Date 2023-06-09 Sampling Time 08:05 Sample I.D. TP7-2	Lab I.D. 1691164 Sample Matrix Soil153 Sample Type Sample Date 2023-06-09 Sampling Time 08:10 Sample I.D. TP7-4
Soil < 75um	443636	0.1	%		6.3	2.3
Soil > 75um	443636	0.1	%		93.7	97.7
Texture - Coarse Med/Fine	443636		%		coarse	coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691153 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 14:35 Sample I.D. TP1-3	Lab I.D. 1691155 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 15:30 Sample I.D. TP2-3	Lab I.D. 1691156 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 15:30 Sample I.D. DUP-1
Acetone	443483	0.50	ug/g	STD 16	<0.50	<0.50	<0.50
Benzene	443483	0.0068	ug/g	STD 0.21	<0.0068	<0.0068	<0.0068
Bromodichloromethane	443483	0.05	ug/g	STD 13	<0.05	<0.05	<0.05
Bromoform	443483	0.05	ug/g	STD 0.27	<0.05	<0.05	<0.05
Bromomethane	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Chlorobenzene	443483	0.05	ug/g	STD 2.4	<0.05	<0.05	<0.05
Chloroform	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Dibromochloromethane	443483	0.05	ug/g	STD 9.4	<0.05	<0.05	<0.05
Dichlorobenzene, 1,2-	443483	0.05	ug/g	STD 3.4	<0.05	<0.05	<0.05
Dichlorobenzene, 1,3-	443483	0.05	ug/g	STD 4.8	<0.05	<0.05	<0.05
Dichlorobenzene, 1,4-	443483	0.05	ug/g	STD 0.083	<0.05	<0.05	<0.05
Dichlorodifluoromethane	443483	0.05	ug/g	STD 16	<0.05	<0.05	<0.05

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Client: Greenstone Engineering Ltd.
67 Elgin Street
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Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691153	1691155	1691156
Sample Matrix					Soil153	Soil153	Soil153
Sample Type							
Sample Date					2023-06-08	2023-06-08	2023-06-08
Sampling Time					14:35	15:30	15:30
Sample I.D.					TP1-3	TP2-3	DUP-1
Dichloroethane, 1,1-	443483	0.05	ug/g	STD 3.5	<0.05	<0.05	<0.05
Dichloroethane, 1,2-	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,1-	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,2-cis-	443483	0.05	ug/g	STD 3.4	<0.05	<0.05	<0.05
Dichloroethylene, 1,2-trans-	443483	0.05	ug/g	STD 0.084	<0.05	<0.05	<0.05
Dichloropropane, 1,2-	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-cis-	443483	0.05	ug/g		<0.05	<0.05	<0.05
Dichloropropene,1,3-trans-	443483	0.05	ug/g		<0.05	<0.05	<0.05
Ethylbenzene	443483	0.018	ug/g	STD 2	<0.018	<0.018	<0.018
Ethylene dibromide	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Hexane (n)	443483	0.05	ug/g	STD 2.8	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	443483	0.50	ug/g	STD 16	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	443483	0.50	ug/g	STD 1.7	<0.50	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	443483	0.05	ug/g	STD 0.75	<0.05	<0.05	<0.05
Methylene Chloride	443483	0.05	ug/g	STD 0.1	<0.05	<0.05	<0.05
Styrene	443483	0.05	ug/g	STD 0.7	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	443483	0.05	ug/g	STD 0.058	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,2,2-	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	443483	0.05	ug/g	STD 0.28	<0.05	<0.05	<0.05
Toluene	443483	0.08	ug/g	STD 2.3	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	443483	0.05	ug/g	STD 0.38	<0.05	<0.05	<0.05
Trichloroethane, 1,1,2-	443483	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05

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Client: Greenstone Engineering Ltd.
67 Elgin Street
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Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691153	1691155	1691156
Sample Matrix					Soil153	Soil153	Soil153
Sample Type							
Sample Date					2023-06-08	2023-06-08	2023-06-08
Sampling Time					14:35	15:30	15:30
Sample I.D.					TP1-3	TP2-3	DUP-1
Trichloroethylene	443483	0.01	ug/g	STD 0.061	<0.01	<0.01	<0.01
Trichlorofluoromethane	443483	0.05	ug/g	STD 4	<0.05	<0.05	<0.05
Vinyl Chloride	443483	0.02	ug/g	STD 0.02	<0.02	<0.02	<0.02
Xylene Mixture	443487	0.05	ug/g	STD 3.1	<0.05	<0.05	<0.05
Xylene, m/p-	443483	0.05	ug/g		<0.05	<0.05	<0.05
Xylene, o-	443483	0.05	ug/g		<0.05	<0.05	<0.05

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158
Sample Matrix					Soil153
Sample Type					
Sample Date					2023-06-08
Sampling Time					16:30
Sample I.D.					TP3-4
Acetone	443483	0.50	ug/g	STD 16	<0.50
Benzene	443483	0.0068	ug/g	STD 0.21	<0.0068
Bromodichloromethane	443483	0.05	ug/g	STD 13	<0.05
Bromoform	443483	0.05	ug/g	STD 0.27	<0.05
Bromomethane	443483	0.05	ug/g	STD 0.05	<0.05
Carbon Tetrachloride	443483	0.05	ug/g	STD 0.05	<0.05
Chlorobenzene	443483	0.05	ug/g	STD 2.4	<0.05
Chloroform	443483	0.05	ug/g	STD 0.05	<0.05
Dibromochloromethane	443483	0.05	ug/g	STD 9.4	<0.05
Dichlorobenzene, 1,2-	443483	0.05	ug/g	STD 3.4	<0.05
Dichlorobenzene, 1,3-	443483	0.05	ug/g	STD 4.8	<0.05
Dichlorobenzene, 1,4-	443483	0.05	ug/g	STD 0.083	<0.05
Dichlorodifluoromethane	443483	0.05	ug/g	STD 16	<0.05

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67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 16:30 Sample I.D. TP3-4
Dichloroethane, 1,1-	443483	0.05	ug/g	STD 3.5	<0.05
Dichloroethane, 1,2-	443483	0.05	ug/g	STD 0.05	<0.05
Dichloroethylene, 1,1-	443483	0.05	ug/g	STD 0.05	<0.05
Dichloroethylene, 1,2-cis-	443483	0.05	ug/g	STD 3.4	<0.05
Dichloroethylene, 1,2-trans-	443483	0.05	ug/g	STD 0.084	<0.05
Dichloropropane, 1,2-	443483	0.05	ug/g	STD 0.05	<0.05
Dichloropropene,1,3-	443483	0.05	ug/g	STD 0.05	<0.05
Dichloropropene,1,3-cis-	443483	0.05	ug/g		<0.05
Dichloropropene,1,3-trans-	443483	0.05	ug/g		<0.05
Ethylbenzene	443483	0.018	ug/g	STD 2	<0.018
Ethylene dibromide	443483	0.05	ug/g	STD 0.05	<0.05
Hexane (n)	443483	0.05	ug/g	STD 2.8	<0.05
Methyl Ethyl Ketone	443483	0.50	ug/g	STD 16	<0.50
Methyl Isobutyl Ketone	443483	0.50	ug/g	STD 1.7	<0.50
Methyl tert-Butyl Ether (MTBE)	443483	0.05	ug/g	STD 0.75	<0.05
Methylene Chloride	443483	0.05	ug/g	STD 0.1	<0.05
Styrene	443483	0.05	ug/g	STD 0.7	<0.05
Tetrachloroethane, 1,1,1,2-	443483	0.05	ug/g	STD 0.058	<0.05
Tetrachloroethane, 1,1,2,2-	443483	0.05	ug/g	STD 0.05	<0.05
Tetrachloroethylene	443483	0.05	ug/g	STD 0.28	<0.05
Toluene	443483	0.08	ug/g	STD 2.3	<0.08
Trichloroethane, 1,1,1-	443483	0.05	ug/g	STD 0.38	<0.05
Trichloroethane, 1,1,2-	443483	0.05	ug/g	STD 0.05	<0.05

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Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Guideline = O.Reg 153-T3-Res/Park-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 16:30 Sample I.D. TP3-4
Trichloroethylene	443483	0.01	ug/g	STD 0.061	<0.01
Trichlorofluoromethane	443483	0.05	ug/g	STD 4	<0.05
Vinyl Chloride	443483	0.02	ug/g	STD 0.02	<0.02
Xylene Mixture	443487	0.05	ug/g	STD 3.1	<0.05
Xylene, m/p-	443483	0.05	ug/g		<0.05
Xylene, o-	443483	0.05	ug/g		<0.05

Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691154 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 15:25 Sample I.D. TP2-2	1691157 Soil153 2023-06-08 15:40 TP2-5
pH - CaCl2	443533	2.00			4.81	6.80

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Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.			
					1691159 Soil153 2023-06-09 06:30 TP4-2	1691160 Soil153 2023-06-09 07:15 TP5-2	1691161 Soil153 2023-06-09 07:30 TP6-2	1691162 Soil153 2023-06-09 08:00 TP7-1
Electrical Conductivity	443671	0.05	mS/cm	STD 0.7	0.08	<0.05	<0.05	<0.05
Sodium Adsorption Ratio	443686	0.01		STD 5	0.17	0.21	0.30	0.09

Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1691163 Soil153 2023-06-09 08:05 TP7-2	1691164 Soil153 2023-06-09 08:10 TP7-4	1691165 Soil153 2023-06-09 08:25 TP8-3	1691166 Soil153 2023-06-09 08:45 TP9-2	1691167 Soil153 2023-06-09 09:15 TP10-1
Electrical Conductivity	443671	0.05	mS/cm	STD 0.7			0.18	<0.05	<0.05
pH - CaCl2	443533	2.00			6.19	5.16			
Sodium Adsorption Ratio	443686	0.01		STD 5			1.33	0.21	0.11

Results relate only to the parameters tested on the samples submitted.
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Guideline = O.Reg 153-T3-Res/Park-Coarse

Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691168 Sample Matrix Soil153 Sample Type Sample Date 2023-06-09 Sampling Time 09:15 Sample I.D. DUP-2
Electrical Conductivity	443671	0.05	mS/cm	STD 0.7	<0.05
Sodium Adsorption Ratio	443686	0.01		STD 5	0.11

Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691153 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 14:35 Sample I.D. TP1-3	Lab I.D. 1691155 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 15:30 Sample I.D. TP2-3	Lab I.D. 1691156 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 15:30 Sample I.D. DUP-1
Moisture-Humidite	443538	0.1	%			11.0	
	443580	0.1	%		9.3		
	443635	0.1	%				10.6

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Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1691158 Soil153 2023-06-08 16:30 TP3-4	1691159 Soil153 2023-06-09 06:30 TP4-2	1691160 Soil153 2023-06-09 07:15 TP5-2	1691161 Soil153 2023-06-09 07:30 TP6-2	1691162 Soil153 2023-06-09 08:00 TP7-1
Moisture-Humidite	443537	0.1	%				13.2	11.8	7.9
	443538	0.1	%		10.2	8.6			

Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.		
					1691165 Soil153 2023-06-09 08:25 TP8-3	1691166 Soil153 2023-06-09 08:45 TP9-2	1691167 Soil153 2023-06-09 09:15 TP10-1
Moisture-Humidite	443537	0.1	%		14.6	10.2	
	443538	0.1	%				10.5

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Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.
					1691168 / Soil153 / 2023-06-09 09:15 / DUP-2
Moisture-Humidite	443537	0.1	%		9.7

PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.		
					1691153 / Soil153 / 2023-06-08 14:35 / TP1-3	1691155 / Soil153 / 2023-06-08 15:30 / TP2-3	1691156 / Soil153 / 2023-06-08 15:30 / DUP-1
Alpha-androstrane	443538	0	%			69	
	443580	0	%		64		
	443635	0	%				67

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PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1691158 Soil153 2023-06-08 16:30 TP3-4	1691159 Soil153 2023-06-09 06:30 TP4-2	1691160 Soil153 2023-06-09 07:15 TP5-2	1691161 Soil153 2023-06-09 07:30 TP6-2	1691162 Soil153 2023-06-09 08:00 TP7-1
Alpha-androstrane	443537	0	%				66	66	65
	443538	0	%		60	68			

PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.		
					1691165 Soil153 2023-06-09 08:25 TP8-3	1691166 Soil153 2023-06-09 08:45 TP9-2	1691167 Soil153 2023-06-09 09:15 TP10-1
Alpha-androstrane	443537	0	%		63	62	
	443538	0	%				64

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PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.
					1691168 / Soil153 / 2023-06-09 09:15 / DUP-2
Alpha-androstrane	443537	0	%		66

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.		
					1691153 / Soil153 / 2023-06-08 14:35 / TP1-3	1691155 / Soil153 / 2023-06-08 15:30 / TP2-3	1691156 / Soil153 / 2023-06-08 15:30 / DUP-1
1,2-dichloroethane-d4	443483	0	%		110	103	117
4-bromofluorobenzene	443483	0	%		79	87	84
Toluene-d8	443483	0	%		94	96	92

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VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691158 Sample Matrix Soil153 Sample Type Sample Date 2023-06-08 Sampling Time 16:30 Sample I.D. TP3-4
1,2-dichloroethane-d4	443483	0	%		111
4-bromofluorobenzene	443483	0	%		85
Toluene-d8	443483	0	%		92

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
443483	Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	106	60-130	107	50-140	0	0-50
443483	Trichloroethane, 1,1,1-	<0.05 ug/g	107	60-130	111	50-140	0	0-50
443483	Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	93	60-130	91	50-140	0	0-30
443483	Trichloroethane, 1,1,2-	<0.05 ug/g	115	60-130	115	50-140	0	0-50
443483	Dichloroethane, 1,1-	<0.05 ug/g	109	60-130	112	50-140	0	0-50
443483	Dichloroethylene, 1,1-	<0.05 ug/g	101	60-130	87	50-140	0	0-50
443483	Dichlorobenzene, 1,2-	<0.05 ug/g	103	60-130	111	50-140	0	0-50
443483	Dichloroethane, 1,2-	<0.05 ug/g	113	60-130	114	50-140	0	0-50
443483	Dichloropropane, 1,2-	<0.05 ug/g	111	60-130	119	50-140	0	0-50
443483	Dichlorobenzene, 1,3-	<0.05 ug/g	102	60-130	112	50-140	0	0-50
443483	Dichloropropene,1,3-							
443483	Dichlorobenzene, 1,4-	<0.05 ug/g	104	60-130	112	50-140	0	0-50
443483	Acetone	<0.50 ug/g	115	60-130	112	50-140	0	0-50
443483	Benzene	<0.0068	116	60-130	114	50-140	0	0-50
443483	Bromodichloromethane	<0.05 ug/g	111	60-130	110	50-140	0	0-50
443483	Bromoform	<0.05 ug/g	112	60-130	109	50-140	0	0-50
443483	Bromomethane	<0.05 ug/g	102	60-130	105	50-140	0	0-50
443483	Dichloroethylene, 1,2-cis-	<0.05 ug/g	108	60-130	115	50-140	0	0-50
443483	Dichloropropene,1,3-cis-	<0.05 ug/g	103	60-130	115	50-140	0	0-50
443483	Carbon Tetrachloride	<0.05 ug/g	103	60-130	107	50-140	0	0-50
443483	Chloroform	<0.05 ug/g	114	60-130	115	50-140	0	0-50
443483	Dibromochloromethane	<0.05 ug/g	103	60-130	101	50-140	0	0-50
443483	Dichlorodifluoromethane	<0.05 ug/g	83	60-130	106	50-140	0	0-50
443483	Methylene Chloride	<0.05 ug/g	118	60-130	95	50-140	0	0-50
443483	Ethylbenzene	<0.018 ug/g	112	60-130	121	50-140	0	0-50
443483	Ethylene dibromide	<0.05 ug/g	111	60-130	113	50-140	0	0-50
443483	PHC's F1	<10 ug/g	96	80-120	90	60-140	0	0-30
443483	Hexane (n)	<0.05 ug/g	100	60-130	112	50-140	0	0-50
443483	Xylene, m/p-	<0.05 ug/g	116	60-130	112	50-140	0	0-50
443483	Methyl Ethyl Ketone	<0.50 ug/g	112	60-130	116	50-140	0	0-50
443483	Methyl Isobutyl Ketone	<0.50 ug/g	106	60-130	114	50-140	0	0-50
443483	Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	119	60-130	114	50-140	0	0-50

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Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
443483	Chlorobenzene	<0.05 ug/g	108	60-130	115	50-140	0	0-50
443483	Xylene, o-	<0.05 ug/g	110	60-130	118	50-140	0	0-50
443483	Styrene	<0.05 ug/g	112	60-130	117	50-140	0	0-50
443483	Dichloroethylene, 1,2-trans-	<0.05 ug/g	106	60-130	110	50-140	0	0-50
443483	Dichloropropene,1,3-trans-	<0.05 ug/g	106	60-130	115	50-140	0	0-50
443483	Tetrachloroethylene	<0.05 ug/g	116	60-130	119	50-140	0	0-50
443483	Toluene	<0.08 ug/g	117	60-130	114	50-140	0	0-50
443483	Trichloroethylene	<0.01 ug/g	116	60-130	115	50-140	0	0-50
443483	Trichlorofluoromethane	<0.05 ug/g	99	60-130	98	50-140	0	0-50
443483	Vinyl Chloride	<0.02 ug/g	96	60-130	92	50-140	0	0-50
443487	Xylene Mixture							
443488	PHC's F1-BTEX							
443491	Methlynaphthalene, 1-	<0.05 ug/g	75	50-140	60	50-140	0	0-40
443491	Methlynaphthalene, 2-	<0.05 ug/g	68	50-140	59	50-140	0	0-40
443491	Acenaphthene	<0.05 ug/g	63	50-140	57	50-140	0	0-40
443491	Acenaphthylene	<0.05 ug/g	59	50-140	53	50-140	0	0-40
443491	Anthracene	<0.05 ug/g	77	50-140	73	50-140	0	0-40
443491	Benz[a]anthracene	<0.05 ug/g	69	50-140	62	50-140	0	0-40
443491	Benzo[a]pyrene	<0.05 ug/g	65	50-140	65	50-140	0	0-40
443491	Benzo[b]fluoranthene	<0.05 ug/g	53	50-140	55	50-140	0	0-40
443491	Benzo[ghi]perylene	<0.05 ug/g	51	50-140	66	50-140	0	0-40
443491	Benzo[k]fluoranthene	<0.05 ug/g	55	50-140	51		0	0-40
443491	Chrysene	<0.05 ug/g	69	50-140	69	50-140	0	0-40
443491	Dibenz[a h]anthracene	<0.05 ug/g	57	50-140	60	50-140	0	0-40
443491	Fluoranthene	<0.05 ug/g	80	50-140	72	50-140	0	0-40
443491	Fluorene	<0.05 ug/g	60	50-140	54	50-140	0	0-40
443491	Indeno[1 2 3-cd]pyrene	<0.05 ug/g	57	50-140	58	50-140	0	0-40
443491	Naphthalene	<0.013 ug/g	76	50-140	68	50-140	0	0-40
443491	Phenanthrene	<0.05 ug/g	64	50-140	62	50-140	0	0-40
443491	Pyrene	<0.05 ug/g	75	50-140	71	50-140	0	0-40
443500	1+2-methylnaphthalene							
443531	1+2-methylnaphthalene							
443533	pH - CaCl2	5.78	98	90-110			0	

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
443537	PHC's F2	<2 ug/g	90	80-120	93	60-140	0	0-30
443537	PHC's F3	<20 ug/g	88	80-120	93	60-140	0	0-30
443537	PHC's F4	<20 ug/g	88	80-120	93	60-140	0	0-30
443537	Moisture-Humidite	<0.1 %	100	80-120			5	
443538	PHC's F2	<2 ug/g	103	80-120	68	60-140	0	0-30
443538	PHC's F3	<20 ug/g	104	80-120	68	60-140	0	0-30
443538	PHC's F4	<20 ug/g	104	80-120	68	60-140	0	0-30
443538	Moisture-Humidite	<0.1 %	100	80-120			5	
443543	Silver	<0.2 ug/g	100	70-130	17	70-130	0	0-20
443543	Arsenic	<1 ug/g	86	70-130	91	70-130	0	0-20
443543	Boron (total)	<5 ug/g	90	70-130	85	70-130	0	0-20
443543	Barium	<1 ug/g	89	70-130	105	70-130	10	0-20
443543	Beryllium	<1 ug/g	89	70-130	94	70-130	0	0-20
443543	Cadmium	<0.4 ug/g	101	70-130	105	70-130	0	0-20
443543	Cobalt	<1 ug/g	87	70-130	90	70-130	0	0-20
443543	Chromium Total	<1 ug/g	88	70-130	77	70-130	40	0-20
443543	Copper	<1 ug/g	92	70-130	102	70-130	4	0-20
443543	Molybdenum	<1 ug/g	89	70-130	91	70-130	0	0-20
443543	Nickel	<1 ug/g	88	70-130	92	70-130	0	0-20
443543	Lead	<1 ug/g	94	70-130	98	70-130	0	0-20
443543	Antimony	<1 ug/g	80	70-130	100	70-130	0	0-20
443543	Selenium	<0.5 ug/g	99	70-130	94	70-130	0	0-20
443543	Thallium	<1 ug/g	93	70-130	100	70-130	0	0-20
443543	Uranium	<0.5 ug/g	77	70-130	98	70-130	0	0-20
443543	Vanadium	<2 ug/g	88	70-130		70-130	45	0-20
443543	Zinc	<2 ug/g	97	70-130	98	70-130	12	0-20
443564	1+2-methylnaphthalene							
443580	PHC's F2	<2 ug/g	95	80-120	103	60-140	0	0-30
443580	PHC's F3	<20 ug/g	96	80-120	103	60-140	0	0-30
443580	PHC's F4	<20 ug/g	96	80-120	103	60-140	0	0-30
443580	Moisture-Humidite	<0.1 %	100	80-120			3	
443635	PHC's F2	<2 ug/g	95	80-120	103	60-140	0	0-30
443635	PHC's F3	<20 ug/g	96	80-120	103	60-140		0-30

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Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
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P6A 2Y4
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PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
443635	PHC's F4	<20 ug/g	96	80-120	103	60-140		0-30
443635	Moisture-Humidite	<0.1 %	100	80-120			3	
443636	Soil < 75um							
443636	Soil > 75um							
443636	Texture - Coarse Med/Fine							
443662	PHC's F2-Napth							
443663	PHC's F3-PAH							
443671	Electrical Conductivity	<0.05	99	90-110			0	0-10
443686	Sodium Adsorption Ratio	<0.01					6	

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Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
443483	Tetrachloroethane, 1,1,1,2-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Trichloroethane, 1,1,1-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Tetrachloroethane, 1,1,2,2-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Trichloroethane, 1,1,2-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloroethane, 1,1-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloroethylene, 1,1-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichlorobenzene, 1,2-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloroethane, 1,2-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloropropane, 1,2-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichlorobenzene, 1,3-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloropropene,1,3-	GC-MS	2023-06-14	2023-06-14	PJ	V 8260B
443483	Dichlorobenzene, 1,4-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Acetone	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Benzene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Bromodichloromethane	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Bromoform	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Bromomethane	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloroethylene, 1,2-cis-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloropropene,1,3-cis-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Carbon Tetrachloride	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Chloroform	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dibromochloromethane	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichlorodifluoromethane	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Methylene Chloride	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Ethylbenzene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Ethylene dibromide	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	PHC's F1	GC/FID	2023-06-14	2023-06-14	PJ	CCME
443483	Hexane (n)	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Xylene, m/p-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Methyl Ethyl Ketone	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Methyl Isobutyl Ketone	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Methyl tert-Butyl Ether (MTBE)	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B

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Client: Greenstone Engineering Ltd.
67 Elgin Street
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P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998112
Date Submitted: 2023-06-13
Date Reported: 2023-06-20
Project: E23050
COC #: 219723

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
443483	Chlorobenzene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Xylene, o-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Styrene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloroethylene, 1,2-trans-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Dichloropropene,1,3-trans-	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Tetrachloroethylene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Toluene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Trichloroethylene	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Trichlorofluoromethane	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443483	Vinyl Chloride	GC-MS	2023-06-14	2023-06-15	PJ	V 8260B
443487	Xylene Mixture	GC-MS	2023-06-15	2023-06-15	PJ	V 8260B
443488	PHC's F1-BTEX	GC/FID	2023-06-15	2023-06-15	PJ	CCME
443491	Methlynaphthalene, 1-	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Methlynaphthalene, 2-	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Acenaphthene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Acenaphthylene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Anthracene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Benz[a]anthracene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Benzo[a]pyrene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Benzo[b]fluoranthene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Benzo[ghi]perylene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Benzo[k]fluoranthene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Chrysene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Dibenz[a h]anthracene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Fluoranthene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Fluorene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Indeno[1 2 3-cd]pyrene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Naphthalene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Phenanthrene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443491	Pyrene	GC-MS	2023-06-15	2023-06-15	C_M	P 8270
443500	1+2-methylnaphthalene	GC-MS	2023-06-16	2023-06-16	C_M	P 8270
443531	1+2-methylnaphthalene	GC-MS	2023-06-16	2023-06-16	C_M	P 8270
443533	pH - CaCl2	pH Meter	2023-06-16	2023-06-16	IP	Ag Soil

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Project: E23050
COC #: 219723

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
443537	PHC's F2	GC/FID	2023-06-16	2023-06-16	SS	CCME
443537	PHC's F3	GC/FID	2023-06-16	2023-06-16	SS	CCME
443537	PHC's F4	GC/FID	2023-06-16	2023-06-16	SS	CCME
443537	Moisture-Humidite	Oven	2023-06-16	2023-06-16	SS	ASTM 2216
443538	PHC's F2	GC/FID	2023-06-16	2023-06-16	SS	CCME
443538	PHC's F3	GC/FID	2023-06-16	2023-06-16	SS	CCME
443538	PHC's F4	GC/FID	2023-06-16	2023-06-16	SS	CCME
443538	Moisture-Humidite	Oven	2023-06-16	2023-06-16	SS	ASTM 2216
443543	Silver	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Arsenic	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Boron (total)	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Barium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Beryllium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Cadmium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Cobalt	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Chromium Total	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Copper	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Molybdenum	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Nickel	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Lead	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Antimony	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Selenium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Thallium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Uranium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Vanadium	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443543	Zinc	ICAPQ-MS	2023-06-16	2023-06-16	SD	EPA 200.8/6020
443564	1+2-methylnaphthalene	GC-MS	2023-06-19	2023-06-19	C_M	P 8270
443580	PHC's F2	GC/FID	2023-06-19	2023-06-19	SS	CCME
443580	PHC's F3	GC/FID	2023-06-19	2023-06-19	SS	CCME
443580	PHC's F4	GC/FID	2023-06-19	2023-06-19	SS	CCME
443580	Moisture-Humidite	Oven	2023-06-19	2023-06-19	SS	ASTM 2216
443635	PHC's F2	GC/FID	2023-06-20	2023-06-20	SS	CCME
443635	PHC's F3	GC/FID	2023-06-20	2023-06-20	SS	CCME

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Certificate of Analysis

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COC #: 219723

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
443635	PHC's F4	GC/FID	2023-06-20	2023-06-20	SS	CCME
443635	Moisture-Humidite	Oven	2023-06-20	2023-06-20	SS	ASTM 2216
443636	Soil < 75um	Manual	2023-06-20	2023-06-20	IP	C Ag Particle
443636	Soil > 75um	Manual	2023-06-20	2023-06-20	IP	C Ag Particle
443636	Texture - Coarse Med/Fine	Manual	2023-06-20	2023-06-20	IP	C Ag Particle
443662	PHC's F2-Napth	GC/FID	2023-06-20	2023-06-20	SS	CCME
443663	PHC's F3-PAH	GC/FID	2023-06-20	2023-06-20	SS	CCME
443671	Electrical Conductivity	Electrical Conductivity Mete	2023-06-20	2023-06-20	Z_S	Cond-Soil
443686	Sodium Adsorption Ratio	iCAP OES	2023-06-20	2023-06-20	Z_S	Ag Soil

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CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:

   - nC6 and nC10 response factors within 30% of response factor for toluene;
   - nC10, nC16, and nC34 response factors within 10% of each other;
   - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
   - Linearity is within 15%.

7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

eurofins 219723

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

Eurofins Workorder #: 1998112

CLIENT INFORMATION

Company: Greenstone Engineering
Contact: Alex Duchesne
Address: 67 Elgin St. Sault Ste. Marie
Telephone: Cell: 705 688 4587
Email: #1: alexandra@greenstoneengineering.ca
Email: #2: chris@greenstoneengineering.ca
Project: E23050 Quote #:

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☒ NO ☐)

Company: Fax:
Contact: Email: #1:
Address: Email: #2:
Telephone: PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.
**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☐ ODWSOG (Use DW CoC if analyzing drinking water)
☐ PWQO
☐ O.Reg 347
☐ Other:

☒ O. Reg 153
The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full paramter list only Yes ☒ No ☐
Table # 3 Coarse / Fine, Surface / subsurface
Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils
Table # _____ Full depth/Strat/Ceiling/mSPLP Leachate
Type: Com-Ind /Res-Park /Agri/All Other
Category: Surface /Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	pH	grain size	EC	SAR	RN# (Lab Use Only)
TP1-3	8-JUN-23 14:35	S	4	X		X	X								1691153
TP2-2	15:25	S	2								X	X			54
TP2-3	15:30	S	4	X		X	X								55
DUP-1	15:30	S	4	X		X	X								56
TP2-5	15:40	S	2								X	X			57
TP3-4	16:30	S	4	X		X	X								58
TP4-2	9-JUN-23 6:30	S	4	X			X			X			X	X	59
TP5-2	7:15	S	4	X			X			X			X	X	60
TP6-2	7:30	S	4	X			X			X			X	X	61
TP7-1	8:00	S	4	X			X			X			X	X	62

	PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	Alex Duchesne		8-9 June/23	
Relinquished By:	Alex Duchesne		12 June/23	
Received By:			13-06-23 @ 9:00	0.9

COMMENTS: On ice

CUSTODY SEAL: ☒ YES ☐ NO Ice packs submit ☐ Yes ☐ No

eurofins 222984

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

Eurofins Workorder #: 1998112

CLIENT INFORMATION

Company:

Contact:

Address: SAME AS PG 1

Telephone: Cell:

Email: #1:

Email: #2:

Project: Quote #:

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☐ NO ☐)

Company: Fax:

Contact: Email: #1:

Address: Email: #2:

Telephone: PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.

*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.

**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:

☐ Storm Sewer, City:

☐ ODWSOG (Use DW CoC if analyzing drinking water)

☐ PWQO

☐ O.Reg 347

☐ Other:

☒ O. Reg 153

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full paramter list only Yes ☒ No ☐

Table # 3 (Coarse / Fine, Surface / subsurface)

Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils

Table # _____ Full depth/Strat/Ceiling/mSPLP Leachate

Type: Com-Ind /Res-Park /Agri/All Other

Category: Surface /Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	pH	grain size	EC	SAR	RN# (Lab Use Only)
TP7-2	9-JUN-23 8:05	S	2	X							X	X			1691163
TP 7-4	8:10	S	2								X	X			64
TP8-3	8:25	S	4	X			X			X			X	X	65
TP9-2	8:45	S	4	X			X			X			X	X	66
TP10-1	9:15	S	4	X			X			X			X	X	67
DUP-2	9-JUN-23 9:15	S	4	X			X			X			X	X	68

	PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	Alex Duchesne		9-JUN-23	
Relinquished By:	Alex Duchesne		12-JUN-23	0.9
Received By:			13-06-23 0900	

COMMENTS: On ice

CUSTODY SEAL: ☒ YES ☐ NO Ice packs submit ☐ Yes ☐ No

Certificate of Analysis

Environment Testing

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
Invoice to: Greenstone Engineering Ltd.
PO#:

Report Number:	1998330
Date Submitted:	2023-06-20
Date Reported:	2023-06-26
Project:	E23050
COC #:	219702
Temperature (C):	5
Custody Seal:	

Dear Alex Duchesne:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Raheleh Zafari, Environmental Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated
.
Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at https://directory.cala.ca/

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	1691969 GW153 2023-06-16 11:40 TP/MW-2	1691970 GW153 2023-06-16 11:40 Dup-1	1691971 GW153 2023-06-16 13:25 TP/MW-3	1691972 GW153 2023-06-16 14:37 TP/MW-4	1691973 GW153 2023-06-16 09:00 Trip Blank
Lab I.D.					1691969	1691970	1691971	1691972	1691973
Sample Matrix					GW153	GW153	GW153	GW153	GW153
Sample Type									
Sample Date					2023-06-16	2023-06-16	2023-06-16	2023-06-16	2023-06-16
Sampling Time					11:40	11:40	13:25	14:37	09:00
Sample I.D.					TP/MW-2	Dup-1	TP/MW-3	TP/MW-4	Trip Blank
PHC's F1	443803	20	ug/L	STD 750	<20	<20	<20	<20	<20
PHC's F1-BTEX	443814	20	ug/L		<20	<20	<20	<20	<20
PHC's F2	443917	20	ug/L	STD 150	<20	<20	<20	<20	<20
PHC's F2-Napth	443926	20	ug/L		<20	<20	<20	<20	
PHC's F3	443917	50	ug/L	STD 500	<50	<50	<50	<50	<50
PHC's F3-PAH	443927	50	ug/L		<50	<50	<50	<50	
PHC's F4	443917	50	ug/L	STD 500	<50	<50	<50	<50	<50

PAH

Analyte	Batch No	MRL	Units	Guideline	1691969 GW153 2023-06-16 11:40 TP/MW-2	1691970 GW153 2023-06-16 11:40 Dup-1	1691971 GW153 2023-06-16 13:25 TP/MW-3	1691972 GW153 2023-06-16 14:37 TP/MW-4
Lab I.D.					1691969	1691970	1691971	1691972
Sample Matrix					GW153	GW153	GW153	GW153
Sample Type								
Sample Date					2023-06-16	2023-06-16	2023-06-16	2023-06-16
Sampling Time					11:40	11:40	13:25	14:37
Sample I.D.					TP/MW-2	Dup-1	TP/MW-3	TP/MW-4
1+2-methylnaphthalene	443918	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Acenaphthene	442075	0.1	ug/L	STD 600	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	442075	0.1	ug/L	STD 1.8	<0.1	<0.1	<0.1	<0.1
Anthracene	442075	0.1	ug/L	STD 2.4	<0.1	<0.1	<0.1	<0.1
Benz[a]anthracene	442075	0.1	ug/L	STD 4.7	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	208523	0.05	ug/g		<0.05	<0.05	<0.05	<0.05
Benzo[a]pyrene	442075	0.01	ug/L	STD 0.81	<0.01	<0.01	0.02	<0.01
Benzo[b]fluoranthene	442075	0.05	ug/L	STD 0.75	<0.05	<0.05	<0.05	<0.05
Benzo[ghi]perylene	442075	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1
Benzo[k]fluoranthene	442075	0.05	ug/L	STD 0.4	<0.05	<0.05	<0.05	<0.05
Chrysene	442075	0.05	ug/L	STD 1	<0.05	<0.05	<0.05	<0.05
Dibenz[a h]anthracene	442075	0.1	ug/L	STD 0.52	<0.1	<0.1	<0.1	<0.1

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse

PAH

Analyte	Batch No	MRL	Units	Guideline	1691969 GW153 2023-06-16 11:40 TP/MW-2	1691970 GW153 2023-06-16 11:40 Dup-1	1691971 GW153 2023-06-16 13:25 TP/MW-3	1691972 GW153 2023-06-16 14:37 TP/MW-4
Lab I.D.					1691969	1691970	1691971	1691972
Sample Matrix					GW153	GW153	GW153	GW153
Sample Type								
Sample Date					2023-06-16	2023-06-16	2023-06-16	2023-06-16
Sampling Time					11:40	11:40	13:25	14:37
Sample I.D.					TP/MW-2	Dup-1	TP/MW-3	TP/MW-4
Fluoranthene	442075	0.1	ug/L	STD 130	<0.1	<0.1	<0.1	<0.1
Fluorene	442075	0.1	ug/L	STD 400	<0.1	<0.1	<0.1	<0.1
Indeno[1 2 3-cd]pyrene	442075	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1
Methlynaphthalene, 1-	442075	0.1	ug/L	STD 1800	<0.1	<0.1	<0.1	<0.1
Methlynaphthalene, 2-	442075	0.1	ug/L	STD 1800	<0.1	<0.1	<0.1	<0.1
Naphthalene	442075	0.1	ug/L	STD 1400	<0.1	<0.1	<0.1	<0.1
Phenanthrene	442075	0.1	ug/L	STD 580	<0.1	<0.1	<0.1	<0.1
Pyrene	442075	0.1	ug/L	STD 68	<0.1	<0.1	<0.1	<0.1

Volatiles

Analyte	Batch No	MRL	Units	Guideline	1691969 GW153 2023-06-16 11:40 TP/MW-2	1691970 GW153 2023-06-16 11:40 Dup-1	1691971 GW153 2023-06-16 13:25 TP/MW-3	1691972 GW153 2023-06-16 14:37 TP/MW-4	1691973 GW153 2023-06-16 09:00 Trip Blank
Lab I.D.					1691969	1691970	1691971	1691972	1691973
Sample Matrix					GW153	GW153	GW153	GW153	GW153
Sample Type									
Sample Date					2023-06-16	2023-06-16	2023-06-16	2023-06-16	2023-06-16
Sampling Time					11:40	11:40	13:25	14:37	09:00
Sample I.D.					TP/MW-2	Dup-1	TP/MW-3	TP/MW-4	Trip Blank
Acetone	443803	5	ug/L	STD 130000	<5	<5	<5	<5	<5
Benzene	443803	0.5	ug/L	STD 44	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	443803	0.3	ug/L	STD 85000	<0.3	<0.3	<0.3	<0.3	<0.3
Bromoform	443803	0.4	ug/L	STD 380	<0.4	<0.4	<0.4	<0.4	<0.4
Bromomethane	443803	0.5	ug/L	STD 5.6	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	443803	0.2	ug/L	STD 0.79	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	443803	0.5	ug/L	STD 630	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	443803	0.5	ug/L	STD 2.4	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	443803	0.3	ug/L	STD 82000	<0.3	<0.3	<0.3	<0.3	<0.3
Dichlorobenzene, 1,2-	443803	0.4	ug/L	STD 4600	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	443803	0.4	ug/L	STD 9600	<0.4	<0.4	<0.4	<0.4	<0.4

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1691969 GW153 2023-06-16 11:40 TP/MW-2	1691970 GW153 2023-06-16 11:40 Dup-1	1691971 GW153 2023-06-16 13:25 TP/MW-3	1691972 GW153 2023-06-16 14:37 TP/MW-4	1691973 GW153 2023-06-16 09:00 Trip Blank
Dichlorobenzene, 1,4-	443803	0.4	ug/L	STD 8	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	443803	0.5	ug/L	STD 4400	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	443803	0.4	ug/L	STD 320	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	443803	0.5	ug/L	STD 1.6	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,1-	443803	0.5	ug/L	STD 1.6	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	443803	0.4	ug/L	STD 1.6	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, 1,2-trans-	443803	0.4	ug/L	STD 1.6	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	443803	0.5	ug/L	STD 16	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-	443803	0.5	ug/L	STD 5.2	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-cis-	443803	0.5	ug/L		<0.5	<0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-trans-	443803	0.5	ug/L		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	443803	0.5	ug/L	STD 2300	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide	443803	0.2	ug/L	STD 0.25	<0.2	<0.2	<0.2	<0.2	<0.2
Hexane (n)	443803	5	ug/L	STD 51	<5	<5	<5	<5	<5
Methyl Ethyl Ketone	443803	2	ug/L	STD 470000	<2	<2	<2	<2	<2
Methyl Isobutyl Ketone	443803	5	ug/L	STD 140000	<5	<5	<5	<5	<5
Methyl tert-Butyl Ether (MTBE)	443803	2	ug/L	STD 190	<2	<2	<2	<2	<2
Methylene Chloride	443803	4.0	ug/L	STD 610	<4.0	<4.0	<4.0	<4.0	<4.0
Styrene	443803	0.5	ug/L	STD 1300	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	443803	0.5	ug/L	STD 3.3	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	443803	0.5	ug/L	STD 3.2	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	443803	0.3	ug/L	STD 1.6	<0.3	<0.3	<0.3	<0.3	<0.3
Toluene	443803	0.4	ug/L	STD 18000	<0.4	<0.4	<0.4	<0.4	<0.4

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Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691969	1691970	1691971	1691972	1691973
Sample Matrix					GW153	GW153	GW153	GW153	GW153
Sample Type									
Sample Date					2023-06-16	2023-06-16	2023-06-16	2023-06-16	2023-06-16
Sampling Time					11:40	11:40	13:25	14:37	09:00
Sample I.D.					TP/MW-2	Dup-1	TP/MW-3	TP/MW-4	Trip Blank
Trichloroethane, 1,1,1-	443803	0.4	ug/L	STD 640	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	443803	0.4	ug/L	STD 4.7	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethylene	443803	0.3	ug/L	STD 1.6	<0.3	<0.3	<0.3	<0.3	<0.3
Trichlorofluoromethane	443803	0.5	ug/L	STD 2500	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	443803	0.2	ug/L	STD 0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene Mixture	443813	0.5	ug/L	STD 4200	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m/p-	443803	0.4	ug/L		<0.4	<0.4	<0.4	<0.4	<0.4
Xylene, o-	443803	0.4	ug/L		<0.4	<0.4	<0.4	<0.4	<0.4

PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1691969	1691970	1691971	1691972	1691973
Sample Matrix					GW153	GW153	GW153	GW153	GW153
Sample Type									
Sample Date					2023-06-16	2023-06-16	2023-06-16	2023-06-16	2023-06-16
Sampling Time					11:40	11:40	13:25	14:37	09:00
Sample I.D.					TP/MW-2	Dup-1	TP/MW-3	TP/MW-4	Trip Blank
Alpha-androstrane	443917	0	%		89	98	85	89	79

Results relate only to the parameters tested on the samples submitted.
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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
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Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1691969 GW153 2023-06-16 11:40 TP/MW-2	1691970 GW153 2023-06-16 11:40 Dup-1	1691971 GW153 2023-06-16 13:25 TP/MW-3	1691972 GW153 2023-06-16 14:37 TP/MW-4	1691973 GW153 2023-06-16 09:00 Trip Blank
1,2-dichloroethane-d4	443803	0	%		124	125	124	123	124
4-bromofluorobenzene	443803	0	%		88	88	87	87	87
Toluene-d8	443803	0	%		102	103	103	103	102

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
208523	Benzo(b+k)fluoranthene							
442075	Methlynaphthalene, 1-	<0.1 ug/L	56	50-140		50-140		0-30
442075	Methlynaphthalene, 2-	<0.1 ug/L	56	50-140		50-140		0-30
442075	Acenaphthene	<0.1 ug/L	58	50-140		50-140		0-30
442075	Acenaphthylene	<0.1 ug/L	58	50-140		50-140		0-30
442075	Anthracene	<0.1 ug/L	54	50-140		50-140		0-30
442075	Benz[a]anthracene	<0.1 ug/L	54	50-140		50-140		0-30
442075	Benzo[a]pyrene	<0.01 ug/L	50	50-140		50-140		0-30
442075	Benzo[b]fluoranthene	<0.05 ug/L	72	50-140		50-140		0-30
442075	Benzo[ghi]perylene	<0.1 ug/L	62	50-140		50-140		0-30
442075	Benzo[k]fluoranthene	<0.05 ug/L	58	50-140		50-140		0-30
442075	Chrysene	<0.05 ug/L	56	50-140		50-140		0-30
442075	Dibenz[a h]anthracene	<0.1 ug/L	58	50-140		50-140		0-30
442075	Fluoranthene	<0.1 ug/L	58	50-140		50-140		0-30
442075	Fluorene	<0.1 ug/L	56	50-140		50-140		0-30
442075	Indeno[1 2 3-cd]pyrene	<0.1 ug/L	60	50-140		50-140		0-30
442075	Naphthalene	<0.1 ug/L	58	50-140		50-140		0-30
442075	Phenanthrene	<0.1 ug/L	52	50-140		50-140		0-30
442075	Pyrene	<0.1 ug/L	58	50-140		50-140		0-30
443803	Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	88	60-130	109	50-140	0	0-30
443803	Trichloroethane, 1,1,1-	<0.4 ug/L	81	60-130	113	50-140	0	0-30
443803	Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	109	60-130	110	50-140	0	0-30
443803	Trichloroethane, 1,1,2-	<0.4 ug/L	87	60-130	107	50-140	0	0-30
443803	Dichloroethane, 1,1-	<0.4 ug/L	102	60-130	119	50-140	0	0-30
443803	Dichloroethylene, 1,1-	<0.5 ug/L	91	60-130	112	50-140	0	0-30
443803	Dichlorobenzene, 1,2-	<0.4 ug/L	104	60-130	102	50-140	0	0-30
443803	Dichloroethane, 1,2-	<0.5 ug/L	82	60-130	124	50-140	0	0-30
443803	Dichloropropane, 1,2-	<0.5 ug/L	82	60-130	120	50-140	0	0-30
443803	Dichlorobenzene, 1,3-	<0.4 ug/L	100	60-130	101	50-140	0	0-30
443803	Dichloropropene,1,3-							
443803	Dichlorobenzene, 1,4-	<0.4 ug/L	100	60-130	101	50-140	0	0-30
443803	Acetone	<5 ug/L	80	60-130	71	50-140	0	0-30

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Certificate of Analysis

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67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
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Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
443803	Benzene	<0.5 ug/L	84	60-130	120	50-140	0	0-30
443803	Bromodichloromethane	<0.3 ug/L	102	60-130	121	50-140	0	0-30
443803	Bromoform	<0.4 ug/L	84	60-130	101	50-140	0	0-30
443803	Bromomethane	<0.5 ug/L	101	60-130	112	50-140	0	0-30
443803	Dichloroethylene, 1,2-cis-	<0.4 ug/L	110	60-130	119	50-140	0	0-30
443803	Dichloropropene,1,3-cis-	<0.5 ug/L	102	60-130	112	50-140	0	0-30
443803	Carbon Tetrachloride	<0.2 ug/L	83	60-130	113	50-140	0	0-30
443803	Chloroform	<0.5 ug/L	103	60-130	119	50-140	0	0-30
443803	Dibromochloromethane	<0.3 ug/L	83	60-130	103	50-140	0	0-30
443803	Dichlorodifluoromethane	<0.5 ug/L	92	60-130	101	50-140	0	0-30
443803	Methylene Chloride	<4.0 ug/L	107	60-130	103	50-140	0	0-30
443803	Ethylbenzene	<0.5 ug/L	80	60-130	112	50-140	0	0-30
443803	Ethylene dibromide	<0.2 ug/L	89	60-130	100	50-140	0	0-30
443803	PHC's F1	<20 ug/L	91	60-140	105	60-140	0	0-30
443803	Hexane (n)	<5 ug/L	100	60-130	107	50-140	0	0-30
443803	Xylene, m/p-	<0.4 ug/L	102	60-130	112	50-140	0	0-30
443803	Methyl Ethyl Ketone	<2 ug/L	120	60-130	121	50-140	0	0-30
443803	Methyl Isobutyl Ketone	<5 ug/L	110	60-130	107	50-140	0	0-30
443803	Methyl tert-Butyl Ether (MTBE)	<2 ug/L	100	60-130	114	50-140	0	0-30
443803	Chlorobenzene	<0.5 ug/L	83	60-130	109	50-140	0	0-30
443803	Xylene, o-	<0.4 ug/L	102	60-130	113	50-140	0	0-30
443803	Styrene	<0.5 ug/L	99	60-130	111	50-140	0	0-30
443803	Dichloroethylene, 1,2-trans-	<0.4 ug/L	103	60-130	118	50-140	0	0-30
443803	Dichloropropene,1,3-trans-	<0.5 ug/L	96	60-130	111	50-140	0	0-30
443803	Tetrachloroethylene	<0.3 ug/L	110	60-130	112	50-140	0	0-30
443803	Toluene	<0.4 ug/L	108	60-130	125	50-140	0	0-30
443803	Trichloroethylene	<0.3 ug/L	99	60-130	112	50-140	0	0-30
443803	Trichlorofluoromethane	<0.5 ug/L	110	60-130	105	50-140	0	0-30
443803	Vinyl Chloride	<0.2 ug/L	99	60-130	111	50-140	0	0-30
443813	Xylene Mixture							
443814	PHC's F1-BTEX							
443917	PHC's F2	<20 ug/L	88	60-140		60-140		0-30
443917	PHC's F3	<50 ug/L	88	60-140		60-140		0-30

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Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
Sault Ste. Marie, ON
P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
443917	PHC's F4	<50 ug/L	88	60-140		60-140		0-30
443918	1+2-methylnaphthalene							
443926	PHC's F2-Napth							
443927	PHC's F3-PAH							

Results relate only to the parameters tested on the samples submitted.
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Report Number: 1998330
Date Submitted: 2023-06-20
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Project: E23050
COC #: 219702

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
208523	Benzo(b+k)fluoranthene	GC-MS	2023-06-26	2023-06-26	C_M	P 8270
442075	Methlynaphthalene, 1-	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Methlynaphthalene, 2-	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Acenaphthene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Acenaphthylene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Anthracene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Benz[a]anthracene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Benzo[a]pyrene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Benzo[b]fluoranthene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Benzo[ghi]perylene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Benzo[k]fluoranthene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Chrysene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Dibenz[a h]anthracene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Fluoranthene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Fluorene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Indeno[1 2 3-cd]pyrene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Naphthalene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Phenanthrene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
442075	Pyrene	GC-MS	2023-06-23	2023-06-23	C_M	P 8270
443803	Tetrachloroethane, 1,1,1,2-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Trichloroethane, 1,1,1-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Tetrachloroethane, 1,1,2,2-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Trichloroethane, 1,1,2-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloroethane, 1,1-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloroethylene, 1,1-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichlorobenzene, 1,2-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloroethane, 1,2-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloropropane, 1,2-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichlorobenzene, 1,3-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloropropene,1,3-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichlorobenzene, 1,4-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Acetone	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260

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Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
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P6A 2Y4
Attention: Alex Duchesne
PO#:
Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
443803	Benzene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Bromodichloromethane	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Bromoform	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Bromomethane	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloroethylene, 1,2-cis-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloropropene,1,3-cis-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Carbon Tetrachloride	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Chloroform	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dibromochloromethane	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichlorodifluoromethane	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Methylene Chloride	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Ethylbenzene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Ethylene dibromide	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	PHC's F1	GC/FID	2023-06-21	2023-06-21	PJ	CCME O.Reg 153/04
443803	Hexane (n)	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Xylene, m/p-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Methyl Ethyl Ketone	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Methyl Isobutyl Ketone	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Methyl tert-Butyl Ether (MTBE)	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Chlorobenzene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Xylene, o-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Styrene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloroethylene, 1,2-trans-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Dichloropropene,1,3-trans-	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Tetrachloroethylene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Toluene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Trichloroethylene	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Trichlorofluoromethane	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443803	Vinyl Chloride	GC-MS	2023-06-21	2023-06-21	PJ	EPA 8260
443813	Xylene Mixture	GC-MS	2023-06-22	2023-06-22	PJ	EPA 8260
443814	PHC's F1-BTEX	GC/FID	2023-06-22	2023-06-22	PJ	CCME O.Reg 153/04
443917	PHC's F2	GC/FID	2023-06-26	2023-06-26	SS	CCME O.Reg 153/04
443917	PHC's F3	GC/FID	2023-06-26	2023-06-26	SS	CCME O.Reg 153/04

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Certificate of Analysis

Client: Greenstone Engineering Ltd.
67 Elgin Street
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P6A 2Y4
Attention: Alex Duchesne
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Invoice to: Greenstone Engineering Ltd.

Report Number: 1998330
Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
443917	PHC's F4	GC/FID	2023-06-26	2023-06-26	SS	CCME O.Reg 153/04
443918	1+2-methylnaphthalene	GC-MS	2023-06-26	2023-06-26	C_M	P 8270
443926	PHC's F2-Napth	GC/FID	2023-06-26	2023-06-26	SS	CCME O.Reg 153/04
443927	PHC's F3-PAH	GC/FID	2023-06-26	2023-06-26	SS	CCME O.Reg 153/04

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Date Submitted: 2023-06-20
Date Reported: 2023-06-26
Project: E23050
COC #: 219702

CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:

   - nC6 and nC10 response factors within 30% of response factor for toluene;
   - nC10, nC16, and nC34 response factors within 10% of each other;
   - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
   - Linearity is within 15%.

7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

eurofins 219702

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

1998330

Eurofins Workorder #: _____

CLIENT INFORMATION

Company: Greenstone Engineering
Contact: Alex Duchesne
Address: 67 Elgin St. Sault Ste Marie
Telephone: Cell: 705 688 4587
Email: #1: alexandra@greenstoneengineering.ca
Email: #2: chris@greenstoneengineering.ca
Project: E23050 Quote #:

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☒ NO ☐)

Company: Fax:
Contact: Email: #1:
Address: Email: #2:
Telephone: PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.
**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City: _____
☐ Storm Sewer, City: _____
☐ ODWSOG (Use DW CoC if analyzing drinking water)
☐ PWQO
☐ O.Reg 347
☐ Other: _____

☒ O. Reg 153
The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full paramter list only Yes ☒ No ☐
Table # 3, Coarse / Fine, Surface / subsurface
Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils
Table # _____ Full depth/Strat/Ceiling/mSPLP Leachate
Type: Com-Ind /Res-Park /Agri/All Other
Category: Surface /Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	RN# (Lab Use Only)
TP/MW-2	16-JUN-23 11:40	W	4	X		X	X				69
DUP-1	11:40	W	4	X		X	X				70
TP/MW-3	13:25	W	4	X		X	X				71
TP/MW-4	14:37	W	4	X		X	X				72
TRIP BLANK	9:00	W	3	X		X					73

	PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	A. Duchesne		16-JUN-23	
Relinquished By:	A. Duchesne		19-JUN-23	
Received By:			6/20/23 9a	5.3

COMMENTS: On ice

CUSTODY SEAL: ☒ YES ☐ NO Ice packs submit ☐ Yes ☐ No

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APPENDIX H – PLAN OF SURVEY

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REPORT LIMITATIONS & GUIDELINES FOR USE

This report has been prepared for the exclusive use and sole benefit of the Client or its authorized agent(s) and may not be used by any third party without the express written consent of Greenstone Engineering Ltd. and the Client. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of third parties. This report is not to be construed as legal advice. Greenstone Engineering Ltd. disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranty is expressed or implied.

Misinterpretation of this report by other design or project team members or contractors could result in significant financial and/or safety issues. Retaining Greenstone Engineering Ltd. to confer with the appropriate members of future related project teams can substantially lower those potential issues.

BASIS OF THE REPORT

The information, opinions, and/or recommendations made in this report are in accordance with Greenstone Engineering Ltd.'s present understanding of the site-specific conditions as described by the Client. The applicability of this report is restricted to the current site conditions encountered at the time of the investigation or study. If the proposed site specific conditions differs or is modified from what is described in this report or if the site conditions are altered, this report is no longer valid unless Greenstone Engineering Ltd. is requested by the Client to review and revise the report to reflect the differing or modified project specifics and/or the altered site conditions.

STANDARD OF CARE

Based on the limitations of the scope of work, schedule, and budget, the preparation of this report, and all associated work, was carried out in accordance with the normally accepted standard of care for the specific professional service provided to the Client. The environmental conditions that have been presented are based on the factual data obtained from this investigation. No other warranty is expressed or implied.

INTERPRETATION OF SITE CONDITIONS

Descriptions of environmental conditions made in this report are based on site conditions encountered by Greenstone Engineering Ltd. at the time of the work, and at the specific inspected, tested, monitored and/or sampled locations. Classifications and statements of condition(s) have been made in accordance with commonly accepted practices, which are judgmental in nature; no specific description should be considered exact. Extrapolation of in-situ conditions can only be made to some limited extent beyond the sampling or test points, if completed. The extent depends on variability of the specific media conditions (building materials, soil, groundwater, rock, sediment, etc.) as influenced by natural, environmental, geological and/or hydrogeological processes, construction activity, and site/building use. No warranty or other conditions, expressed or implied, should be understood.

VARYING OR UNEXPECTED CONDITIONS

Regardless of how exhaustive an environmental investigation is performed, the investigation cannot identify all the subsurface conditions, which may differ from the conditions encountered at the test locations at the time of our investigation. Further, subsurface conditions can change with time due to natural and direct or indirect human impacts at or away from the site. As such, no warranty is expressed or implied that the entire site is representative of the subsurface information obtained at the specific locations of our investigation, which may also change with time.

Should any site or subsurface conditions be encountered that are different from those described in this report or encountered at the test locations, Greenstone Engineering Ltd. must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments of the report conclusions or recommendations are required. Greenstone Engineering Ltd. will not be responsible to any party for damages incurred as a result of failing to notify Greenstone Engineering Ltd. that differing site or subsurface conditions are present upon becoming aware of such conditions.

PLANNING, DESIGN, AND CONSTRUCTION

If there are any changes in the project scope or development features, which may affect our assessment, the information obtained during the investigation may be inadequate. In this case, Greenstone Engineering Ltd. should be retained to review the project changes to evaluate if the changes will affect the conclusions and recommendations within our report, and if additional field investigation work, as well as reporting is required as part of the reassessment.

Development or design plans and specifications should be reviewed by Greenstone Engineering Ltd., sufficiently ahead of initiating the next project stage (property acquisition, financing, tender, construction, etcetera), to confirm that this report completely addresses the elaborated project specifics and that the contents of this report have been properly interpreted. Specialty quality assurance services (field observations and testing) during construction can be a necessary part of the evaluation of subsurface conditions and site preparation works. Site work relating to the recommendations included in this report should only be carried out in the presence of a qualified environmental engineer. Greenstone Engineering Ltd. cannot be responsible for site work carried out without being present or consulted.

FINANCIAL DISCLAIMER

Greenstone Engineering Ltd. will not be responsible for any consequential or indirect damages. Greenstone Engineering Ltd. will only be held liable for damages resulting from the negligence of our work completed. Any liability resulting from negligence of Greenstone Engineering Ltd. and its officers shall be limited to the lesser of fees paid and/or actual damages incurred by the Client.

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Greenstone Engineering Ltd. makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters that could be construed within this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

REGULATORY DISCLAIMER

This report has been prepared in accordance with standard environmental engineering and consulting practices and the applicable CSA Standards. This report has also been completed for the purpose of obtaining a Record of Site Condition and meets the reporting requirements as set out in Ontario Regulation 153/04.