



Ottawa-Carleton District School Board

**Phase Two Environmental Site Assessment
3853 Cambrian Road
Ottawa, Ontario**

ER1076

November 19, 2024

CM3 Environmental Inc.
5710 Akins Road Ottawa, Ontario K2S 1B8

1.0 EXECUTIVE SUMMARY

CM3 Environmental Inc. (CM3) was retained by the Ottawa-Carleton District School Board (OCDSB) to complete a Phase Two Environmental Site Assessment (ESA) for the property located at 3853 Cambrian Road in Ottawa, Ontario ("site" or "subject property"). The purpose of the Phase Two ESA was to identify contaminants of concern, if present, in soil in the areas of potential environmental concern (APECs). The Phase Two ESA was undertaken for due diligence purposes in support of a potential real estate transaction and a Site Plan Control application with the City of Ottawa. The Phase Two ESA was not completed in support of a record of site condition.

CM3 completed a Phase One ESA in November 2024 that identified two areas of potential environmental concern (APECs) on-site related to former and current above ground fuel storage tanks (ASTs) and the importation of fill materials of unknown quality. The contaminants of concern (COCs) were identified as petroleum hydrocarbons in the F1 to F4 fractions (PHCs), benzene, toluene, ethylbenzene and xylenes (BTEX), and metals. CM3 added sodium adsorption ration (SAR) and electrical conductivity (EC) to the analytical suite for future excess soil management purposes. Potentially contaminated media included soil. If soil within the APECs was found to have elevated concentrations of COCs an assessment of the on-site groundwater would be completed.

The investigation included the advancement of nine test pits to assess the soil conditions on-site. The overburden soil encountered at the site generally consisted of sand, gravel, organic soil, and silty sand with occasional cobbles to a maximum observed depth of 1.52 meters below ground (m bg). Metal, plastic, and fabric debris was observed during the test pit excavation. Groundwater was observed in one test pit on the north side of the site at a depth of 0.61 m bg. Bedrock was not observed during the investigation. Based on the regional topography and the local presence of watercourses, the inferred regional groundwater flow direction was north toward the Jock River

The Phase Two ESA identified minor and/or localized exceedances of molybdenum and EC in soil at the subject property. CM3 does not anticipate that there will be negative environmental impacts caused by these exceedances due to factors outlined in the conceptual site model.

During the construction phase of this project, these impacts should be managed by a Qualified Person (QP_{ESA}) under the MECP.

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2.0 INTRODUCTION

CM3 was retained by the OCDSB to complete a Phase Two ESA for the property located at 3853 Cambrian Road in Ottawa, Ontario. The purpose of the Phase Two ESA was to assess the soil quality within the APECs identified in CM3's November 2024 Phase One ESA report. The Phase Two ESA was undertaken for due diligence purposes in support of a potential real estate transaction and a site plan control application with the City of Ottawa.

2.1 Site Description

The subject property is located on the south side of Cambrian Road in Ottawa, Ontario. The civic address for the subject property is 3853 Cambrian Road, Ottawa, Ontario. The property identification number is 04592-2847 (LT). The current land use designation is minor institutional.

The subject property is rectangular in shape and is bound by Cambrian Road to the north, undeveloped mixed-use land to the east, in-development residential and institutional land to the south, and Elevation Road to the west. The site is in an area primarily consisting of recently developed residential buildings and has been used for the construction and sales office for the developer "Mattamy (Half Moon Bay) Limited" (Mattamy). The site appears to have also been used for the stockpiling of soil and fill materials during the development of surrounding areas. The subject property is approximately 6.05 hectares in size and ground cover consisted primarily of soil and vegetation; the construction office and storage containers are located on the north side of the site and ground cover in this approximate 4,300 m² section consisted of gravel. The construction office area was surrounded by fill piles on the west, south, and east sides; vehicle access could be made from the north from Cambrian Road. Additional fill piles were previously located on other areas of the site. The location of the site is provided on **Figure 1**, the site plan is provided on **Figure 2**.

2.2 Property Ownership

The owner of the subject property as of November 1, 2024, was Mattamy (Half Moon Bay) Limited. CM3's main point of contact with the property owner was Ms. Olivia Hughes, the contact information for Ms. Hughes is provided below:

Ms. Olivia Hughes
Land Development Manager
Mattamy Homes
olivia.hughes@mattamycorp.com

CM3's main point of contact with the OCDSB was Mr. David Lacelle, the contact information for Mr. Lacelle is provided below:

Mr. David Lacelle
Team Manager, Design and Construction
Ottawa Carleton District School Board

613-596-8211 ex 8644
david.lacelle@ocdsb.ca

2.3 Current and Proposed Future Uses

The property is currently used for the temporary sales and construction office for Mattamy (Half Moon Bay) Limited ("Mattamy"). The development of a secondary public school is proposed for the site.

2.4 Applicable Site Condition Standard

The environmental condition of the subject property was evaluated in comparison to the Ontario Ministry of Environment, Conservation and Parks (MECP) *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, under O. Reg. 153/04. The following site conditions were used in the selection of the appropriate site condition standards (SCS):

- No environmentally sensitive areas were located on site or in the immediate vicinity;
- The site is not considered a shallow soil property (i.e., bedrock is greater than 2 metres below grade);
- The site was not located within 30 m of a water body;
- Municipal water is used as the potable water source in the area;
- Land use at the site was considered institutional; and
- Surrounding land use was considered residential.

For the purposes of the Phase Two ESA, the Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition and institutional land use with coarse soils were selected for evaluation of the analytical results, based on the above.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The site elevation is approximately 93.53 meters above sea level (m asl) and the site has a gentle slope to the south-east. The surrounding area slopes downward from south (112 m asl) to north (93 m asl) and is generally flat from east to west.

Surface drainage at the site is expected to be primarily by overland flow to intermittent streams identified to the east of the site on the ERIS topographic map and on the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Areas map, provided in the Phase One ESA. The streams were not identified during site reconnaissance and were likely buried during the development of surrounding areas. The streams may discharge to new stormwater management ponds located in new residential developments to the north and eventually discharge to the Jock River (approximately 1 km north of the site). A ditch is located along the north property boundary and likely conveys stormwater runoff from Cambrian Road to the east to the intermittent streams.

Soils at the site were described as recently deposited organic wetland soils and clay with very poor drainage and a high runoff potential. Bedrock at the site was described as dolostone and sandstone of the Beekmantown Group.

Water bodies were not identified within the Phase One study area. The intermittent streams (east of the site) and the Jock River (1 km north of the site) were identified on the MNRF Natural Heritage Areas map. Pooled water was noted on-site in historic aerial photographs but was not identified during site reconnaissance.

Areas of Natural and Scientific Interest (ANSI) were not identified within the Phase One study area. Significant wetlands were not identified within the Phase One study area.

Based on the regional topography and the local presence of watercourses, the inferred regional groundwater flow direction was north toward the Jock River.

Water and hydro were provided to the site underground from the north from Cambrian Road.

3.2 Past Investigations

The following environmental reports were available for review and are summarized below:

Three previous environmental reports were available for review and are summarized below:

1. CM3 Environmental Inc. "*Phase One Environmental Site Assessment, 3853 Cambrian Road, Ottawa, Ontario*". November 1, 2024.

The Phase One ESA conducted by CM3 in 2024 was prepared for the OCDSB and included the subject property. Two on-site PCAs related to the importation of fill materials of unknown quality and the use of ASTs were identified. One off-site PCA related to the use of pole mounted

transformers was identified. CM3 identified two areas of concern on the subject property related to the on-site PCAs.

2. Paterson Group Inc. *"Phase I Environmental Site Assessment, Half Moon Bay West, Ottawa, Ontario"*. October 24, 2016.

The Phase I ESA conducted by the Paterson Group Inc. (Paterson) in 2016 was prepared for Mattamy Homes and included an approximate 60-hectare area of undeveloped land north and south of Cambrian Road, west of Seeley's Bay Street, and east of Borrisokane Road. The subject property (3583 Cambrian Road) was included in Paterson's Phase I property.

No potentially contaminating activities or areas of potential environmental concern were identified in the Phase I ESA. A Phase II ESA was not recommended.

3. SLR Consulting (Canada) Ltd. *"Phase One Environmental Site Assessment, 3850 Cambrian Road, Ottawa, Ontario"*. January 31, 2023.

The Phase One ESA conducted by SLR Consulting (Canada) Ltd. (SLR) in 2023 was prepared for Choice Properties Limited Partnership and included the 1.36-hectare vacant land parcel located at 3850 Cambrian Road. SLR's Phase One property is on the north side of Cambrian Road, just north of the subject property (3853 Cambrian Road).

Two on-site PCAs were identified related to the importation of fill materials of unknown quality and commercial trucking and the storage of heavy equipment. Two off-site PCAs were identified related to the importation of fill materials of unknown quality and the use of transformers. Based on the evaluation of the PCAs, SLR identified two APECs on the Phase One property related to the on-site importation of fill materials and the commercial trucking and heavy equipment storage. Potentially contaminated media included soil and groundwater, and contaminants of concern included volatile organic compounds (VOCs), PHCs, PAHs, and metals.

During SLR's site reconnaissance, they made the following observations of the subject property: "A Mattamy Homes Sales Centre, along with a sales building, office trailer and several shipping containers (presumed for storage), were observed to be located approximately 25 m to the southwest of the Phase One Property (across Cambrian Road). The vacant land to the south and southwest of the Mattamy Homes Sales Centre was undeveloped and contained several soil piles (presumed fill materials);"

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The purpose of the investigation was to assess the presence of potential contaminants of concern at two APECs, identified in the Phase One ESA, and to assess the general soil quality on-site for excess soil management. The site investigation was completed following O. Reg. 153/04 and in general accordance with the Canadian Standards Association (CSA) Standard Z769-00 (R2008). The scope of work for the investigation included:

- The determination of the locations of all underground utilities by a third-party utility locator;
- The excavation of nine test pits;
- The continuous collection of soil samples during the test pit excavations for soil logging and on-site field screening;
- The selection of soil samples from all boreholes for laboratory analysis of one or more of PHCs, BTEX, metals, pH, SAR, and EC;
- The evaluation of the analytical results with respect to applicable site condition standards (SCS).

4.2 Media Investigated

The Phase Two ESA investigation included the sampling and analysis of soil in the APECs. Based on the results of the soil analysis, groundwater is not expected to be contaminated. Sediment was not present at the subject property.

4.3 Phase One Conceptual Site Model

Two PCAs were identified on-site related to the former and current use of ASTs and the importation of fill materials of unknown quality. One off-site PCA was identified related to a pole mounted transformer. The two on-site PCAs resulted in APECs on the subject property. The contaminants of concern were PHCs, BTEX, and metals.

The site is in an area primarily consisting of recently developed residential buildings and has been used for the home construction and sales office for Mattamy. The site appears to have also been used for the stockpiling of soil and fill materials during the development of surrounding areas. Underground utilities (water, sewer, hydro) are likely to enter the site from the north from Cambrian Road and run to the semi-temporary Mattamy site office.

Surface drainage at the site is expected to be primarily by overland flow to intermittent streams identified to the east of the site. The streams may discharge to new stormwater management ponds located in new residential developments to the north and eventually discharge to the Jock River (approximately 1 km north of the site). A ditch is located along the north property boundary and likely conveys stormwater runoff from Cambrian Road to the east to the intermittent streams.

4.4 Deviations From Sampling and Analysis Plan

The analysis of pH, SAR, EC, and synthetic precipitation leaching procedure for metals (mSPLP) were added to the sampling and analysis plan for future excess soil management purposes.

4.5 Impediments

Impediments were not encountered during the Phase Two site investigation.

5.0 INVESTIGATION METHOD

5.1 General

CM3 was on-site with Hodges Home Excavating (Hodges) of Kemptville, Ontario on September 4, 2024, to excavate test pits. CM3 collected soil samples during the test pit excavations for soil logging, field screening, and potential submission to the laboratory for the analysis of COCs.

5.2 Drilling and Excavating

A total of nine test pits (TP1 through TP9) were excavated on September 4, 2024. The excavations were completed by Hodges using a Yanmar ViO80 excavator. Test pit TP1 was excavated in APEC 1, test pits TP1 through TP9 were excavated in APEC 2. The test pit locations are provided on **Figure 3**. CM3 returned to the site on October 3, 2024, to resample TP6. The test pit was hand dug by CM3 personnel.

5.3 Soil Sampling

Soil samples were collected from 0.0 m bg to a maximum of 1.52 m bg. Samples were collected by hand from the excavator bucket using new nitrile gloves in between samples. Soil samples were logged for grain size, colour, moisture content, and visual or olfactory evidence of impacts.

At the time of recovery, a portion of each sample was placed into a polyethylene bag for headspace combustible vapour analysis. The remainder of each sample was placed into the appropriate laboratory supplied sample containers for the required analysis following MECP sampling protocols. The sample containers were placed into an ice chilled cooler pending submission to the laboratory for analysis.

5.4 Field Screening Measurements

The bagged soil samples were allowed to equilibrate to ambient temperature prior to combustible vapour readings being collected. The vapour concentrations were measured and recorded from the bag sample headspace using an RKI Eagle combustible vapour meter calibrated to hexane and operated in methane elimination mode. The intake probe of the vapour meter was inserted into the plastic bag and the highest vapour reading from each sample was recorded in parts per million (ppm). The results of the vapour analysis and field screening were used in the selection of samples for laboratory analysis.

5.5 Analytical Testing

Soil samples selected for analysis were submitted to Paracel Laboratories Limited (Paracel) of Ottawa, Ontario. Samples were submitted on the day of collection for regular turnaround.

5.6 Residue Management Procedures

Excavated soil was immediately used to backfill the test pit following the collecting of soil samples. The soil was placed and compacted in lifts to avoid extra soil being left on the ground surface.

5.7 Elevation Surveying

An elevation survey was not completed as part of this assessment. General topographic trends and the coordinates of the test pit excavations were noted.

5.8 Quality Assurance and Quality Control Measures

CM3 followed a quality assurance and quality control (QA/QC) program to ensure that the results of the Phase Two ESA were representative of site conditions. The QA/QC program included general field procedures to maintain sample integrity to demonstrate that the field sampling techniques were capable of yielding reproducible results. The general field QA/QC procedures included, but were not limited to:

- A new pair of disposable nitrile gloves was used for each sample collected;
- Sampling equipment was either single use or was dedicated to a specific location;
- Equipment that came into contact with the media to be collected (interface probe, stainless-steel trowel, etc.) was decontaminated between each monitoring location or sample;
- Clean, laboratory prepared sample containers containing the required preservatives were obtained from the laboratory for the proposed analyses;
- Sample containers were labelled prior to sample collection;
- Samples were placed in the appropriate sample containers for the selected analyses, following CM3 standard operating procedures and MECP protocols;
- Immediately following collection, all samples were stored in laboratory supplied coolers with the appropriate packing materials and ice packs, pending shipment to the laboratory; and
- Chain of Custody forms with CM3 contact information, date sampled, sample matrix, number and type of containers, and requested analyses travelled with all samples delivered to the laboratory for analysis.

All samples collected by CM3 were given unique sample identification and field staff recorded the location and identification of each sample collected using field logs and/or notebooks. Chain of Custody forms were filled out on site and travelled with all samples placed in coolers delivered to the laboratory for analysis. Each Chain of Custody included the CM3 contact information, date sampled, sample matrix, number and type of containers, and requested analyses.

Paracel is a Canadian Association for Laboratory Accreditation Inc. (CALA) accredited laboratory that uses Ministry of Environment recognized methods to conduct analyses and follows an in-house QA/QC program. Paracel employs method blanks, control standard samples, certified reference material standards, method spikes, replicates, duplicates and instrument blanks as part

of their internal QA/QC programs. The results of the laboratory QA/QC are reported in the laboratory certificates. If the internal QA/QC criteria are not met, the laboratory either re-analyses the affected samples or qualifies the results.

6.0 REVIEW AND EVALUATION

6.1 Geology

The site geology was determined based on the test pit excavations and soil logging. Surface materials included gravel, soil, and vegetation, typically underlain by sand, organic soil, and silty sand with occasional gravel and cobbles observed to a maximum depth of 1.52 m bg. Bedrock was not encountered during the investigation. The site stratigraphy is provided on the test pit logs, **Appendix A**.

6.2 Groundwater: Elevations and Flow Direction

Groundwater flow direction could not be determined based on the information collected as part of this assessment. The regional groundwater flow direction was inferred to be north toward the Jock River.

Groundwater was identified at a depth of 0.61 m bg in test pit 2. The test pit locations are provided on **Figure 3**.

6.3 Groundwater: Hydraulic Gradients

The hydraulic gradient was not calculated as part of this assessment.

6.4 Fine-Medium Soil Texture

Based on visual observations, the soil at the site consists of both coarse grained and medium to fine grained soils. The soils were considered coarse grained for the comparison to the MECP SCS. The stratigraphy observed at the site is provided on the test pit logs, **Appendix A**.

6.5 Soil: Field Screening

A total of 18 soil samples were collected from test pits for field screening and combustible vapour analysis. The samples showed combustible vapour concentrations ranging from 0 ppm (not detected) to 25 ppm. The soil combustible vapour concentrations are included on the test pit logs, **Appendix A**.

6.6 Phase Two Soil Quality

A total of ten soil samples were analyzed for one or more COCs. The soil sample analytical results are summarized in **Table 1**. The test pit locations and soil quality are provided on **Figure 3**. The soil sample laboratory reports are provided in **Appendix B**.

APEC 1 – South Corner of the Gravel Lot (location of former and current ASTs)

Test pit TP1 was advanced in APEC 1 and soil sample TP1 S2 was analyzed for PHCs, BTEX, metals, pH, SAR, EC, and mSPLP. Apart from molybdenum and EC, the laboratory results indicated that the concentrations of COCs were below the MECP Table 3 SCS.

APEC 2 – Entire Site

Test pit TP1 through TP9 were advanced in APEC 2 in a grid formation to cover the entire site. Soil samples TP1 S2, TP2 S1, TP3 S1, TP4 S1, TP5 S2, TP6 S1, TP7 S2, TP8 S1, and TP9 S2 were analyzed for PHCs, BTEX, metals, pH, SAR, and EC. TP1 S2, TP5 S2, and TP8 S1 were analyzed for mSPLP.

Samples TP3 S1 and TP6 S1 exceeded the MECP Table 3 SCS for EC. TP6 S1 exceeded the MECP Table 3 SCS for molybdenum. All other samples analyzed met the MECP Table 3 SCS for COCs.

CM3 returned to the site on October 3, 2024, to resample TP6 to confirm the elevated concentration of molybdenum at this sample location. Soil sample “S1” exceeded the MECP Table 3 SCS for molybdenum.

6.7 Ground Water Quality

Based on the soil analytical results, groundwater at the site is not expected to be impacted.

6.8 Quality Assurance and Quality Control Results

Field duplicates were not collected during the Phase Two ESA. However, all samples were collected following industry protocols and CM3’s internal QA/QC procedures. All samples were received by the laboratory within the specified holding time for the requested analyses. The laboratory did not identify any samples that did not meet the appropriate protocols with respect to container type, preservation method, or storage requirement.

The laboratory employs method blanks, control standard samples, certified reference material standards, method spikes, replicates, duplicates, and instrument blanks as part of their internal QA/QC programs. The results of the laboratory QA/QC are reported in the laboratory certificates. If the internal QA/QC criteria are not met, the laboratory either re-analyses the affected samples or qualifies the results.

The method quality control blanks, method spikes and laboratory duplicate results reported as part of the laboratory QA/QC measures were within the laboratory accepted criteria. No qualifiers were provided for any of the soil analysis. The laboratory QA/QC results for the soil analyses are provided in the laboratory reports, **Appendix B**.

6.9 Phase Two Conceptual Site Model

Two PCAs were identified on-site related to the importation of fill materials of unknown quality and the former and current use of ASTs. One PCA was identified off-site related to the use of a pole mounted transformer. The two on-site PCAs resulted in APECs on the subject property. APEC 1 was related to the former and current use of ASTs encompassed the south corner of the gravel covered area of the site. APEC 2 was related to the importation of fill materials of unknown quality encompassed the entire site.

Underground services (i.e., hydro, water, sanitary) were supplied underground from the north from Cambrian Road to the current temporary sales office for Mattamy.

The overburden soil encountered at the site generally consisted of sand, organic soil, and silty sand with occasional gravel and cobbles to a maximum observed depth of 1.52 m bg. Metal, plastic, and fabric debris was observed during the test pit excavations. Bedrock was not encountered during the Phase Two site investigation. Groundwater was observed at approximately 0.61 m bg in a test pit excavation at the central north section of the site (TP2). Groundwater was not identified the other eight test pit excavations on-site.

Surface drainage at the site is expected to be primarily by overland flow to intermittent streams identified to the east of the site on the ERIS topographic map and on the MNRF Natural Heritage Areas map. The streams were not identified during site reconnaissance and were likely buried during the development of surrounding areas. The streams may discharge to new stormwater management ponds located in new residential developments to the north and eventually discharge to the Jock River (approximately 1 km north of the site). A ditch is located along the north property boundary and likely conveys stormwater runoff from Cambrian Road to the east toward the intermittent streams.

Section 35 of O. Reg. 153/04, non-potable SCS, are applicable to the subject property based on the following:

- The subject property is not in a designated wellhead protection area.

Section 41 of O. Reg. 153/04, environmentally sensitive areas SCS does not apply to the subject property based on the following:

- the subject property:
 - o was not within an area of natural significance,
 - o did not include or is adjacent to an area of natural significance,
 - o did not include land within 30 metres of an area of natural significance.

Section 43.1 of O. Reg. 153/04, shallow soil property or water body SCS, are not applicable to the subject property based on the following:

- Bedrock at the subject property is greater than 2.0 m bg,
- The subject property is not within 30 m of a water body.

The development of a multi-storey secondary school is proposed for the site and includes sports fields and parking lots. The main school building is proposed to be in the north-west corner of the site. The development plans have not reached final approval and are subject to change.

The Phase Two ESA identified the following contaminants with concentrations that exceeded the applicable SCS in soil:

TP6 – Central east section of the site. 10.4 µg/g of molybdenum vs. 6.9 ug/g (SCS)

The release mechanism for molybdenum at the TP6 sample location is anticipated to be from soil being imported to the site that has high background concentrations of molybdenum or was previously contaminated from anthropogenic processes. Based on the presence of debris (landscape fabric) identified between 0.61 m bg and 1.22 m bg in TP6, it is suspected that the soil in this area came from a landscaped site that may have had fertilizer added to the soil; molybdenum is a common constituent of fertilizer. The soil identified at the central east section of the site consisted of topsoil (i.e., sand with high organic content). The natural concentrations of molybdenum in soils with high organic content can be greater due to the ability of organic matter to bind trace metals.

The elevated concentration of molybdenum at the site appears to be localized. Molybdenum was not detected at six out of nine test pits at the site and two test pits had detections of molybdenum well below the SCS (between 1.0 µg/g and 3.7 µg/g). Additionally, the exceedance of molybdenum at TP6 was close to the SCS (3.5 µg/g above the standard).

The MECP's rationale for the development of the molybdenum in soil standard considered three exposure pathways and provides a standard for each, with the lowest being selected as the applicable SCS. The exposure pathways and their limits are:

- Soil contact (S1 risk): 110 µg/g
- Plants and soil organisms: 40 µg/g
- Mammals and birds: 6.9 µg/g

The soil contact (S1 risk) scenario represents a high-frequency, high-intensity human health exposure similar to that of surface soil in residential, parkland, institutional, or agricultural settings where children and pregnant women may be present. The soil value is determined using toxicity reference values (TRVs) and a model that accounts for soil ingestion and dermal exposure. Based on the soil contact (S1 risk) limit, there is no human health concern at the site with respect to the concentration of molybdenum in the soil.

The contaminant transport pathways for molybdenum at the site could include plant uptake, leaching to groundwater (vertical transport), and surface runoff to additional soil at the site (horizontal transport). Based on the highest concentration of molybdenum identified in the soil (10.4 µg/g) and the localized nature of the exceedance, molybdenum is not expected to contaminate groundwater at the site above the SCS (9,200 µg/L). In most scenarios, an increase in groundwater concentration to the standard would require specific circumstances like highly permeable soils, minimal dilution and retardation, and a long-term, consistent source of molybdenum leaching. Additionally, the soil in this area has high organic content and a pH greater than 7, therefore, molybdenum would have a relatively lower partitioning coefficient, meaning it is less likely to partition from soil to water. The MECP rationale for the limit of molybdenum for plant and soil organisms is 40 µg/g, therefore, plants and soil organisms at the site are not expected to be impacted by the localized, elevated concentration of molybdenum.

The concentration of molybdenum at this sample location exceeded the mammal and bird exposure limit by 3.5 µg/g. Due to the localized nature and magnitude of the exceedance, it is

CM3's opinion that mammal and bird exposure to elevated molybdenum concentrations at the site would be insignificant.

TP6 – central east section of the site. 870 microsiemens per centimeter (uS/cm) EC.

TP3 – north-west section of the site. 1350 uS/cm EC.

CM3 added electrical conductivity to the analytical suite for future excess soil management purposes. Two out of nine test pits had EC values above the applicable standard of 700 uS/cm.

There are multiple possible causes for soil at this site to have elevated EC concentrations, such as:

- The soils that were brought to the site in these locations were irrigated with water with high concentrations of dissolved salts.
- The soils that were brought to the site in these locations had fertilizer applied; certain chemical fertilizers contain salts.
- The soils had high background concentrations of salts due to salt-rich parent materials.
- The water table is close to the soil surface and capillary action can draw up water that contains dissolved salts, leaving them behind when the water evaporates.

The analytical results indicated that the SAR values for all nine test pits were well below the SCS. When soil has high EC and low SAR, it indicates that the soil has high concentrations of non-sodium salts such as calcium chloride or magnesium sulphate.

The MECP's rationale for the development of the EC in soil standard considered one exposure pathway and provides a standard for the pathway, the standard for the exposure pathway is the applicable SCS. The exposure pathway and its limit are:

- Plants and soil organisms: 700 uS/cm.

Based on the MECP rationale, the presence of elevated EC values in the two localized areas does not represent a concern for human health at the site. With adequate irrigation, the negative impacts of EC on plant growth and soil organisms (if present) can be minimized. It is CM3's opinion that the impacts on plant growth and soil organisms at the site due to elevated EC concentrations would be insignificant.

7.0 CONCLUSIONS

CM3 Environmental Inc. was retained by the OCDSB to complete a Phase Two ESA for the property located at 3853 Cambrian Road in Ottawa, Ontario. The purpose of the Phase Two ESA was to assess concentrations of contaminants of concern in soil, if present. The Phase Two ESA was undertaken for due diligence purposes in support of a potential real estate transaction and a site plan control application with the City of Ottawa. The Phase Two ESA was not completed in support of a record of site condition.

The investigation included the advancement of nine test pits to assess soil conditions at the site. The results of the Phase Two ESA investigation are summarized as follows:

Site Characterization

- The overburden soil generally consisted of sand, gravel, organic soil, and silty sand with occasional cobbles to a maximum observed depth of 1.52 m bg. Bedrock was not encountered during the investigation.
- Groundwater was observed in one test pit on the north side of the site at a depth of 0.61 m bg.
- On-site groundwater flow direction could not be determined based on the information gathered in this assessment. The inferred regional groundwater flow direction was north toward the Jock River.

Soil Quality

- One soil sample (TP1 S2) was collected from APEC 1. The laboratory results indicated that the concentrations of COCs were below the SCS.
- Nine soil samples (TP1 S2, TP2 S1, TP3 S1, TP4 S1, TP5 S2, TP6 S1, TP7 S2, TP8 S1, and TP9 S2) were collected from APEC 2. The laboratory results indicated that one soil sample (TP6 S1) exceeded the SCS for molybdenum, two soil samples (TP3 S1 and TP6 S1) exceeded the SCS for EC, and all other soil samples met the SCS.
- One additional soil sample (S1) was collected from TP6 at a later date to confirm the elevated concentration of molybdenum. The laboratory results indicated that sample S1 exceeded the SCS for molybdenum.
- Based on factors identified in the conceptual site model, it is CM3's opinion that the general soil quality at the site is adequate for the proposed land use.

Groundwater Quality

- Based on factors identified in the conceptual site model, CM3 does not expect groundwater at the site to be impacted by COCs.

The Phase Two ESA identified minor and/or localized exceedances of molybdenum and EC in soil at the subject property. CM3 does not anticipate that there will be negative environmental impacts caused by these exceedances due to factors outlined in the conceptual site model.

8.0 LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by CM3 Environmental Inc. for the **Ottawa-Carleton District School Board**. It is intended for the sole and exclusive use of the **Ottawa-Carleton District School Board**, its affiliated companies and partners and their respective insurers, agents, employees and advisors. Any use, reliance on, or decision made by any person other than the **Ottawa-Carleton District School Board** based on this report is the sole responsibility of such other person. CM3 Environmental Inc. and the **Ottawa-Carleton District School Board** make no representation or warranty to any other person with regard to this report and the work referred to in this report, and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by CM3 Environmental Inc. with respect to this report and any conclusions or recommendations made in this report reflect CM3 Environmental Inc.'s judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site and substances addressed by the investigation may exist in areas of the site not investigated.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by the **Ottawa-Carleton District School Board**, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of CM3 Environmental Inc. Nothing in this report is intended to constitute or provide a legal opinion.

During the construction phase of this project, these impacts should be managed by a Qualified Person (QP_{ESA}) under the MECP.

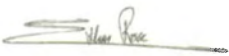
7.1 Signatures

This Phase Two ESA was completed under supervision of Mr. Marc MacDonald, P.Eng. of CM3 Environmental Inc. Mr. MacDonald is a Qualified Person as defined in O.Reg. 153/04 and confirms that this report includes all findings and conclusions of the Phase Two ESA.

We trust that the above is satisfactory for your purposes at this time. Please feel free to contact the undersigned if you have any questions.

Yours sincerely,

CM3 Environmental Inc.



Ethan Risk, B.Eng., EIT
Project Manager



Karl Bilyj, B.Sc. P. Geo., QP_{ESA}
Geoscientist



Marc MacDonald, P.Eng. QP_{ESA}, EP
Principal



9.0 REFERENCES

Environmental Protection Act, R.S.O. 1990, Chapter E.19, as amended, Ontario Ministry of Environment, 2004.

Guide for Completing Phase Two Site Assessments under Ontario Regulation 153/04, Ontario Ministry of Environment, June 2011.

Guide for Completing Phase One Site Assessments under Ontario Regulation 153/04, Ontario Ministry of Environment, June 2011.

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City of Ottawa Online Mapping Tool. Available online at: <https://maps.ottawa.ca/geoottawa/>

Ontario Ministry of Natural Resources and Forestry Natural Heritage Interactive Mapping Tool. Available online at: https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA

Rational for the Development of Soil and Ground Water Standards for Use at Contaminated Sites in Ontario. Standards Development Branch, Ontario Ministry of the Environment. April 2011.

FIGURES

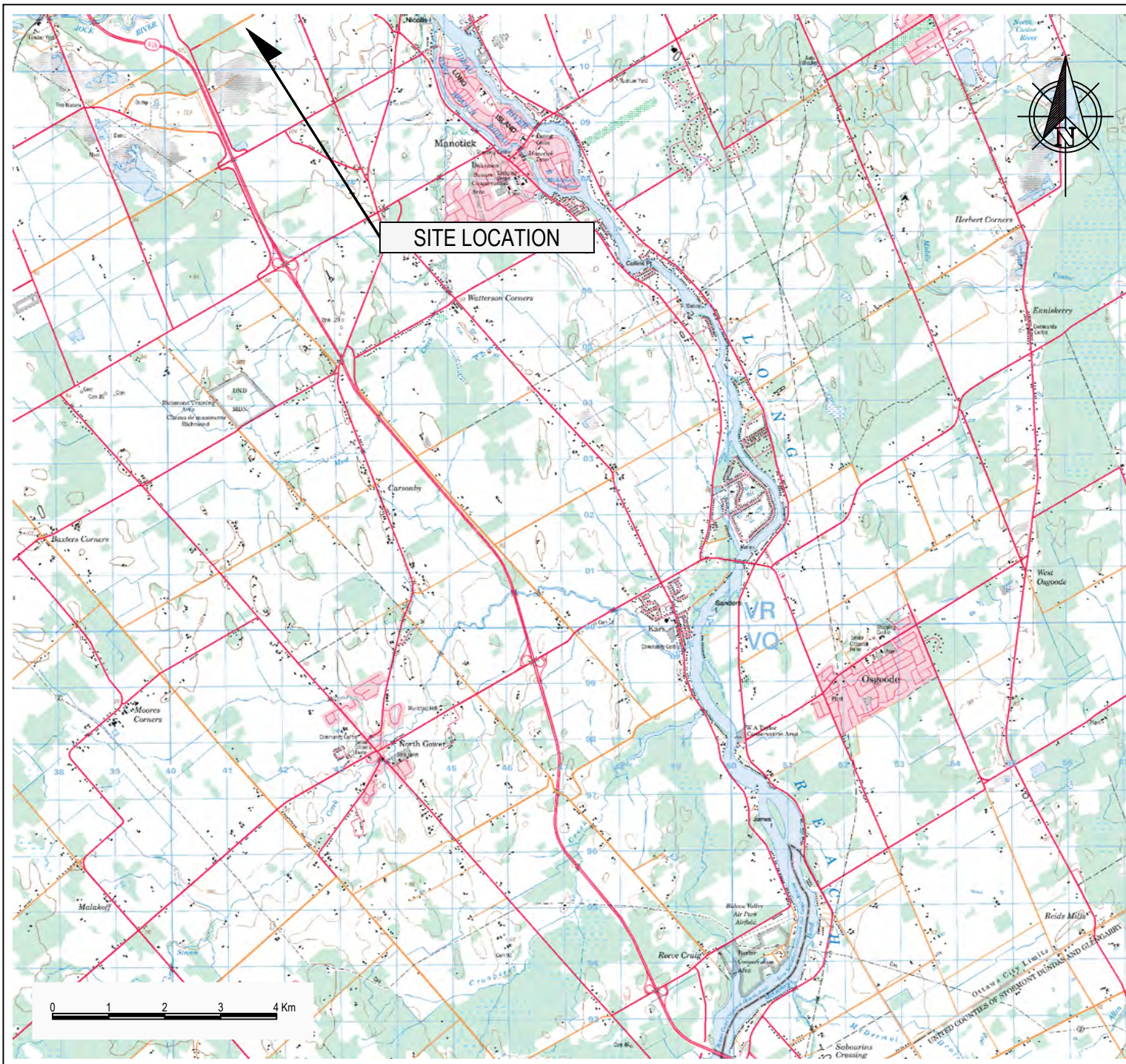
Phase Two Environmental Site Assessment

3853 Cambrian Road

Ottawa, Ontario

Ottawa-Carleton District School Board

ER1076



cm3
environmental

5710 AKINS ROAD, OTTAWA, ON
K2S 1B8

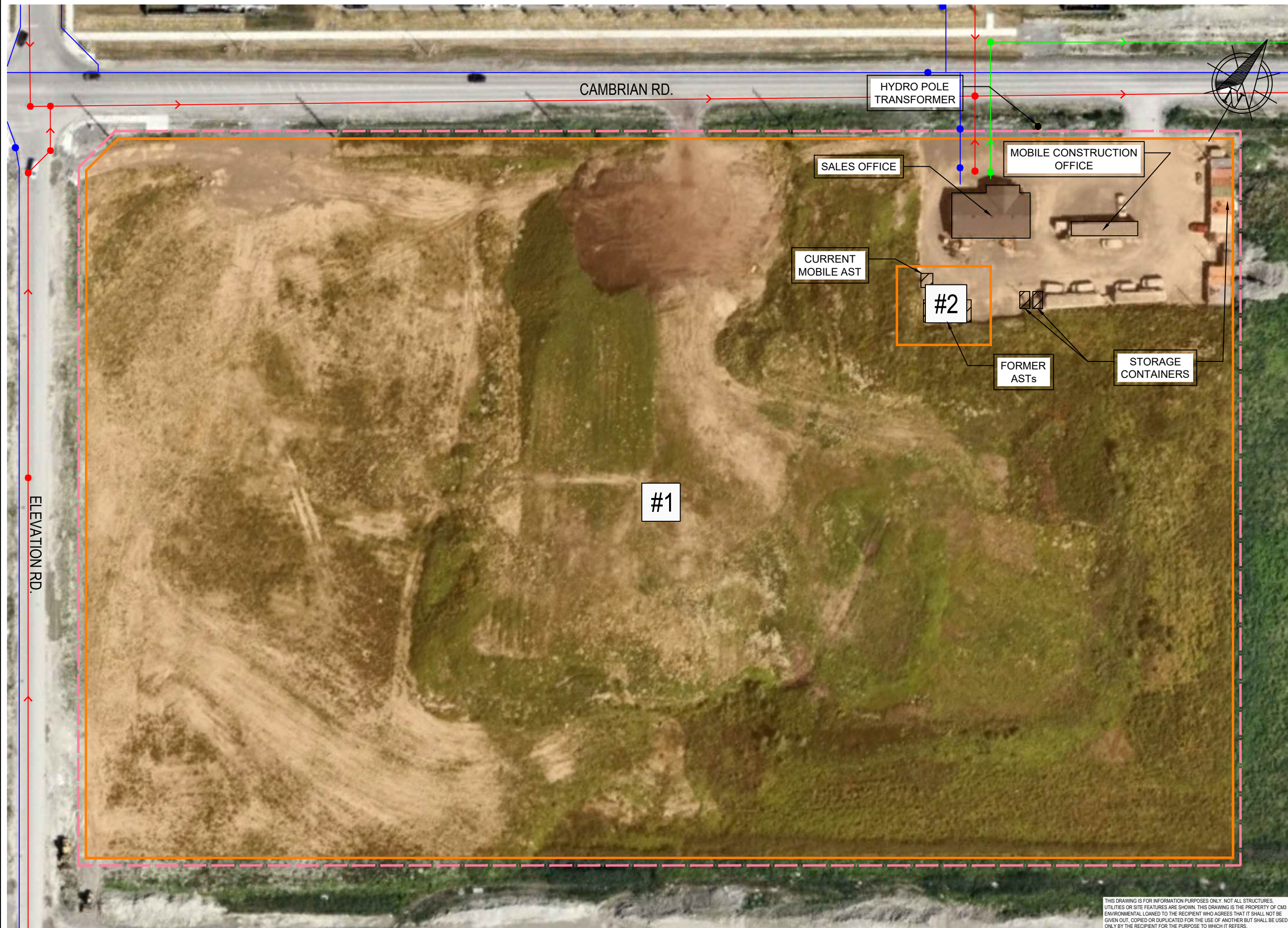


OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
3853 CAMBRIAN ROAD,
OTTAWA, ONTARIO

SITE LOCATION

Project:	ER1076	Drawn By:	KS
Date:	NOV 2024	Reviewed By:	ER
Scale:	AS SHOWN	Figure:	1



LEGEND

- PHASE I SITE
- PUBLIC WATER MAIN
- STORM PUBLIC
- SANITARY PUBLIC
- MANHOLE (STORM, SANITARY)
- WATER MAIN VALVE
- APEC

APEC:
#1 - PCA 1 - ENTIRE SITE
(UNKNOWN FILL QUALITY)
#2 - PCA 2 - USE OF AST

Scale 1:1000
0 10 20 30 40 m
(Approx. When plotted 11x17)

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K2S 1B8

OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
3853 CAMBRIAN ROAD,
OTTAWA, ONTARIO

AREA OF POTENTIAL ENVIRONMENTAL
CONCERN

Project:	ER1076	Drawn By:	KS
Date:	NOV 2024	Reviewed By:	ER
Scale:	1:1000	Figure:	2

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LEGEND

- PHASE I SITE
- PUBLIC WATER MAIN
- STORM PUBLIC
- SANITARY PUBLIC
- MANHOLE (STORM , SANITARY)
- WATER MAIN VALVE

SOIL SAMPLES ANALYSED FOR CONTAMINANTS OF CONCERN (COCs) :

- COCs NOT DETECTED
- COCs < MECP TABLE 3 SCS
- COCs > MECP TABLE3 SCS

Scale 1:1000
0 10 20 30 40 m
(Approx. When plotted 11x17)

5710 AKINS ROAD, OTTAWA, ON K2S 1B8

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3853 CAMBRIAN ROAD,
OTTAWA, ONTARIO

SOIL QUALITY SITE PLAN

Project:	ER1076	Drawn By:	KS
Date:	NOV 2024	Reviewed By:	ER
Scale:	1:1000	Figure:	3

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TABLES

Phase Two Environmental Site Assessment

3853 Cambrian Road

Ottawa, Ontario

Ottawa-Carleton District School Board

ER1076

TABLE 1: Summary of Soil Analytical Results
Phase Two Environmental Site Assessment
3853 Cambrian Road, Ottawa, ON
ER1076

Parameter	Sample ID > Depth (m bg) > HSVL (ppm) > Sample Date >	MDL	MECP Table 3 SCS	TP1 S2 0.61 - 1.52 0 04-Sep-24	TP2 S1 0 - 0.61 20 04-Sep-24	TP3 S1 0.61 - 1.22 25 04-Sep-24	TP4 S1 0 - 0.61 20 04-Sep-24	TP5 S2 0.61 - 1.22 0 04-Sep-24	TP6 S1 0 - 0.61 20 04-Sep-24	TP7 S2 0.61 - 1.52 20 04-Sep-24	TP8 S1 0 - 0.61 20 04-Sep-24	TP9 S2 0.61 - 1.22 0 04-Sep-24	S1 0 - 0.61 03-Oct-24
General Inorganics													
SAR	0.01		5	0.32	0.14	0.8	0.25	0.16	0.13	0.11	0.12	0.07	N/A
Conductivity (uS/cm)	5		700	451	449	1350	326	224	879	371	229	547	N/A
pH	0.05		5 to 9	7.05	7.1	7.09	7.11	7.1	7.03	7.01	6.97	6.9	N/A
Metals													
Antimony	1		7.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	N/A
Arsenic	1		18	2.4	2.8	3.3	3.7	3.6	5.6	2.7	3.8	4.4	N/A
Barium	1		390	106	290	117	137	128	254	114	154	255	N/A
Beryllium	0.5		4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	0.5	ND (0.5)	ND (0.5)	0.5	ND (0.5)	N/A
Boron	5		120	6.6	15.8	7.7	6.2	7.2	15.6	6.9	7.3	12.4	N/A
Cadmium	0.5		1.2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	N/A
Chromium	5		160	23.7	19.7	25.3	31.7	28.9	15.8	24.6	34.1	20.5	N/A
Cobalt	1		22	6.4	6.2	7.3	8.2	7.7	6.3	5.5	9	5	N/A
Copper	5		140	14.1	11.6	14.6	13.1	13.4	13.4	13	15.5	19.2	N/A
Lead	1		120	13	7.3	4.8	6.7	5.7	9.2	5.9	8.6	11.7	N/A
Molybdenum	1		6.9	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	10.4	ND (1.0)	1	3.7	9
Nickel	5		100	14.2	13.8	14.9	16.1	15.5	13.4	13.6	17.9	13.1	N/A
Selenium	1		2.4	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	1.1	ND (1.0)	ND (1.0)	1.1	N/A
Silver	0.3		20	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	N/A
Thallium	1		1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	N/A
Uranium	1		23	ND (1.0)	ND (1.0)	1	ND (1.0)	ND (1.0)	13.8	2.1	1.4	8.1	N/A
Vanadium	10		86	30.2	24.1	35.4	41.9	40.9	20.9	31.5	46.4	24.3	N/A
Zinc	20		340	43.5	22.4	37.9	48.2	42.7	42.5	33.3	53.8	49.1	N/A
Volatiles													
Benzene	0.02		0.21	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A
Ethylbenzene	0.05		2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Toluene	0.05		2.3	0.08	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
m/p-Xylene	0.05		NV	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
o-Xylene	0.05		NV	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Xylenes, total	0.05		3.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Hydrocarbons													
F1 PHCs (C6-C10)	7		55	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	N/A
F2 PHCs (C10-C16)	4		98	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	7	N/A
F3 PHCs (C16-C34)	8		300	42	19	13	ND (8)	ND (8)	ND (8)	34	14	92	N/A
F4 PHCs (C34-C50)	6		2800	43	28	16	ND (6)	ND (6)	ND (6)	34	16	84	N/A

Notes:

mg/kg - all concentrations provided in parts per million (milligrams per kilogram) apart from general inorganics
MDL - reported analytical method detection limit

m bg - metres below grade

ppm - parts per million

NV - no standard listed

"<" or "ND ()" - less than detection limits indicated (refer to laboratory report)

NA - not applicable

MECP Table 3 SCS - Ontario Ministry of Environment, Conservation and Parks (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April, 2011.

Full Depth Generic Site Condition Standards in a Non-Potable Ground Water

Condition, institutional land use, coarse textured soil.

Bold / Italic - indicates concentration above applicable MECP Table 3 SCS

0.5 - MDL above applicable MECP Table 3 SCS (refer to laboratory reports)

APPENDIX A

TESTPIT LOGS

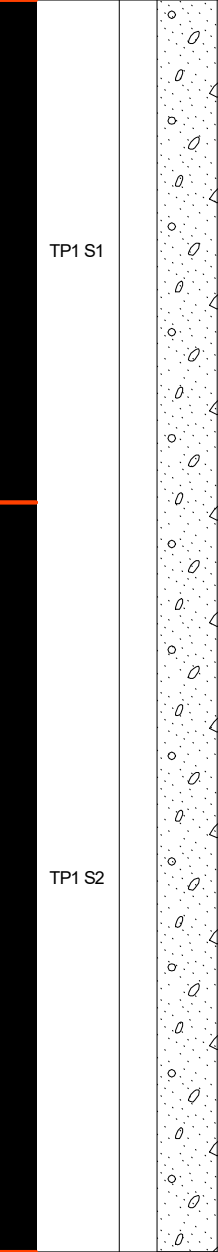
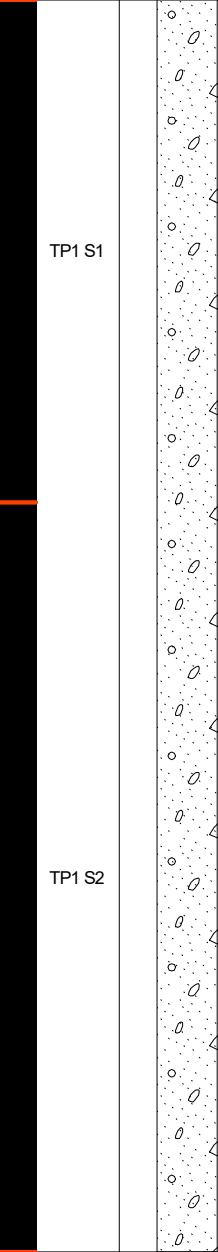
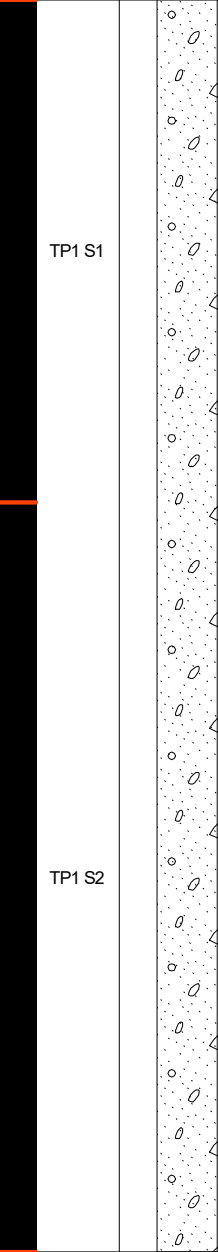
Phase Two Environmental Site Assessment

3853 Cambrian Road

Ottawa, Ontario

Ottawa-Carleton District School Board

ER1076

cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP1 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP1 S1			SAND AND GRAVEL loose, brick, plastic, and wood debris throughout, minor sulphur odour at 1.52 m bg., dark brown, moist							
1		TP1 S2										1.0
					End of testpit at 1.52 m							
DRILLING METHOD: Yanmar VIO 35					Notes:  GRAB SAMPLE							
DRILL DATE: 2024 September 4 LOGGED BY: ER					Sheet 1 of 1							

cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP2 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP2 S1			GRAVELY SAND occasional cobbles, loose, dark grey/brown, moist, standing water at 0.61 m bg.							
		TP2 S2			GRAVELY SAND some silt, loose, dark grey/brown, wet							
1												1.0
					End of testpit at 1.22 m							
DRILLING METHOD: Yanmar VIO 35					Notes: GRAB SAMPLE					Sheet 1 of 1		
DRILL DATE: 2024 September 4 LOGGED BY: ER												

cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP3 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP3 S1			SAND AND ORGANIC SOIL loose, brown, dry							
		TP3 S2			SAND AND ORGANIC SOIL some silt, brown/grey, dry							
1												1.0
					End of testpit at 1.22 m							
DRILLING METHOD: Yanmar VIO 35					Notes: GRAB SAMPLE							
DRILL DATE: 2024 September 4					LOGGED BY: ER					Sheet 1 of 1		

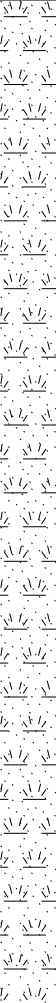
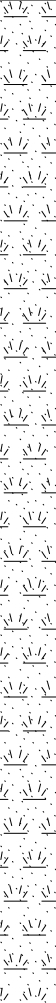
cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP4 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP4 S1			some organic soil, loose, brown dry							
		TP4 S2										
1												1.0
					End of testpit at 1.22 m							
DRILLING METHOD: Yanmar VIO 35					Notes: GRAB SAMPLE					Sheet 1 of 1		
DRILL DATE: 2024 September 4					LOGGED BY: ER							

cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP5 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP5 S1			SAND some organic soil, compact, brown, dry							
		TP5 S2			SAND some organic soil, trace silt, brown, dry							
1												1.0
					End of testpit at 1.22 m							
DRILLING METHOD: Yanmar VIO 35					Notes: GRAB SAMPLE					Sheet 1 of 1		
DRILL DATE: 2024 September 4 LOGGED BY: ER												

cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP6 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP6 S1			SAND some organic soil, loose, brown, dry, landscape fabric debris around							
		TP6 S2										
1												1.0
					End of testpit at 1.22 m							
DRILLING METHOD: Yanmar VIO 35					Notes: GRAB SAMPLE					Sheet 1 of 1		
DRILL DATE: 2024 September 4					LOGGED BY: ER							

cm3 environmental					CLIENT: Ottawa-Carleton District School Board PROJECT: 3853 Cambrian Road, Ottawa, ON		TESTPIT LOG					
CM ³ JOB NO: ER1076					TESTPIT NO: TP7 SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP7 S1			SAND some organic soil, loose, brown, dry							
1		TP7 S2			SILTY SAND loose, grey, moist, wood debris							1.0
					End of testpit at 1.52 m							
DRILLING METHOD: Yanmar VIO 35					Notes: GRAB SAMPLE					Sheet 1 of 1		
DRILL DATE: 2024 September 4 LOGGED BY: ER												

					CLIENT: Ottawa-Carleton District School Board		TESTPIT LOG					
PROJECT: 3853 Cambrian Road, Ottawa, ON					TESTPIT NO: TP8							
CM ³ JOB NO: ER1076					SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP8 S1			SAND some gravel, occasional cobbles, loose, dry, brown, metal and plastic debris around 0.90 m bg.							
		TP8 S2										
1												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
												
DRILLING METHOD: Yanmar VIO 35						Notes:  GRAB SAMPLE						
DRILL DATE: 2024 September 4						LOGGED BY: ER						
						Sheet 1 of 1						

					CLIENT: Ottawa-Carleton District School Board		TESTPIT LOG					
PROJECT: 3853 Cambrian Road, Ottawa, ON					TESTPIT NO: TP9							
CM ³ JOB NO: ER1076					SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA			TESTPIT COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)						
						1	10	100				
		TP9 S1			SAND some gravel, occasional cobbles, loose, dry, brown, metal and plastic debris around 0.90 m bg.							
		TP9 S2										
1												1.0
					End of testpit at 1.22 m							
DRILLING METHOD: Yanmar VIO 35					Notes:  GRAB SAMPLE					Sheet 1 of 1		
DRILL DATE: 2024 September 4					LOGGED BY: ER							

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

Phase Two Environmental Site Assessment

3853 Cambrian Road

Ottawa, Ontario

Ottawa-Carleton District School Board

ER1076

Certificate of Analysis

CM3 Environmental Inc.

5710 Akins Road
Ottawa, ON K2S 1B8
Attn: Ethan Risk

Client PO: 3853 Cambrian Road
Project: ER1076
Custody: 73632

Report Date: 11-Sep-2024
Order Date: 4-Sep-2024

Order #: 2436277

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2436277-01	TP1 S2
2436277-02	TP2 S1
2436277-03	TP3 S1
2436277-04	TP4 S1
2436277-05	TP5 S2
2436277-06	TP6 S1
2436277-07	TP7 S2
2436277-08	TP8 S1
2436277-09	TP9 S2

Approved By:



Mark Foto, M.Sc.

Lab Supervisor

Certificate of Analysis

Report Date: 11-Sep-2024

Client: **CM3 Environmental Inc.**

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: **ER1076**

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	6-Sep-24	6-Sep-24
Conductivity	MOE E3138 - probe @25 °C, water ext	9-Sep-24	10-Sep-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	6-Sep-24	6-Sep-24
PHC F1	CWS Tier 1 - P&T GC-FID	6-Sep-24	6-Sep-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	6-Sep-24	6-Sep-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	9-Sep-24	9-Sep-24
REG 406: Metals, leachate	mSPLP EPA 6020 - Digestion - ICP-MS	9-Sep-24	9-Sep-24
SAR	Calculated	9-Sep-24	10-Sep-24
Solids, %	CWS Tier 1 - Gravimetric	6-Sep-24	9-Sep-24

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP1 S2	TP2 S1	TP3 S1	TP4 S1	-	-
Sample Date:	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	-	-
Sample ID:	2436277-01	2436277-02	2436277-03	2436277-04	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	83.7	92.8	85.3	86.7	-	-
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mSPLP Leachate Metals

Antimony	0.5 ug/L	0.6	-	-	-	-	-
Arsenic	1.0 ug/L	1.1	-	-	-	-	-
Barium	1.0 ug/L	38.8	-	-	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-	-	-
Boron	10.0 ug/L	70.4	-	-	-	-	-
Cadmium	0.2 ug/L	<0.2	-	-	-	-	-
Chromium	1.0 ug/L	2.1	-	-	-	-	-
Cobalt	0.5 ug/L	0.8	-	-	-	-	-
Copper	0.5 ug/L	3.0	-	-	-	-	-
Lead	0.2 ug/L	1.6	-	-	-	-	-
Molybdenum	0.5 ug/L	3.2	-	-	-	-	-
Nickel	1.0 ug/L	1.7	-	-	-	-	-
Selenium	1.0 ug/L	<1.0	-	-	-	-	-
Silver	0.2 ug/L	<0.2	-	-	-	-	-
Thallium	0.5 ug/L	<0.5	-	-	-	-	-
Uranium	0.2 ug/L	0.7	-	-	-	-	-
Vanadium	0.5 ug/L	7.1	-	-	-	-	-
Zinc	5.0 ug/L	7.7	-	-	-	-	-

General Inorganics

SAR	0.01 N/A	0.32	0.14	0.80	0.25	-	-
Conductivity	5 uS/cm	451	449	1350	326	-	-
pH	0.05 pH Units	7.05	7.10	7.09	7.11	-	-

Metals

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP1 S2	TP2 S1	TP3 S1	TP4 S1	-	-
Sample Date:	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	-	-
Sample ID:	2436277-01	2436277-02	2436277-03	2436277-04	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	2.4	2.8	3.3	3.7	-	-
Barium	1.0 ug/g	106	290	117	137	-	-
Beryllium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	6.6	15.8	7.7	6.2	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	23.7	19.7	25.3	31.7	-	-
Cobalt	1.0 ug/g	6.4	6.2	7.3	8.2	-	-
Copper	5.0 ug/g	14.1	11.6	14.6	13.1	-	-
Lead	1.0 ug/g	13.0	7.3	4.8	6.7	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Nickel	5.0 ug/g	14.2	13.8	14.9	16.1	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	1.0	<1.0	-	-
Vanadium	10.0 ug/g	30.2	24.1	35.4	41.9	-	-
Zinc	20.0 ug/g	43.5	22.4	37.9	48.2	-	-

Volatiles

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	0.08	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP1 S2	TP2 S1	TP3 S1	TP4 S1		
Sample Date:	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	-	-
Sample ID:	2436277-01	2436277-02	2436277-03	2436277-04		
Matrix:	Soil	Soil	Soil	Soil		
MDL/Units						

Volatiles

Toluene-d8	Surrogate	120%	111%	118%	116%	-	-
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Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	42	19	13	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	43	28	16	<6	-	-

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP5 S2	TP6 S1	TP7 S2	TP8 S1		
Sample Date:	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	-	-
Sample ID:	2436277-05	2436277-06	2436277-07	2436277-08		
Matrix:	Soil	Soil	Soil	Soil		
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	85.2	53.9	76.2	85.4	-	-
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mSPLP Leachate Metals

Antimony	0.5 ug/L	<0.5	-	-	<0.5	-	-
Arsenic	1.0 ug/L	1.7	-	-	1.4	-	-
Barium	1.0 ug/L	35.5	-	-	120	-	-
Beryllium	0.5 ug/L	<0.5	-	-	<0.5	-	-
Boron	10.0 ug/L	41.7	-	-	24.9	-	-
Cadmium	0.2 ug/L	<0.2	-	-	<0.2	-	-
Chromium	1.0 ug/L	1.3	-	-	4.9	-	-
Cobalt	0.5 ug/L	0.6	-	-	1.4	-	-
Copper	0.5 ug/L	3.3	-	-	4.6	-	-
Lead	0.2 ug/L	1.2	-	-	3.2	-	-
Molybdenum	0.5 ug/L	3.4	-	-	1.6	-	-
Nickel	1.0 ug/L	1.2	-	-	3.2	-	-
Selenium	1.0 ug/L	<1.0	-	-	<1.0	-	-
Silver	0.2 ug/L	<0.2	-	-	<0.2	-	-
Thallium	0.5 ug/L	<0.5	-	-	<0.5	-	-
Uranium	0.2 ug/L	0.7	-	-	0.9	-	-
Vanadium	0.5 ug/L	8.0	-	-	10.4	-	-
Zinc	5.0 ug/L	5.1	-	-	16.5	-	-

General Inorganics

SAR	0.01 N/A	0.16	0.13	0.11	0.12	-	-
Conductivity	5 uS/cm	224	879	371	229	-	-
pH	0.05 pH Units	7.10	7.03	7.01	6.97	-	-

Metals

Certificate of Analysis

Report Date: 11-Sep-2024

Client: **CM3 Environmental Inc.**

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP5 S2	TP6 S1	TP7 S2	TP8 S1	-	-
Sample Date:	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	-	-
Sample ID:	2436277-05	2436277-06	2436277-07	2436277-08	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.6	5.6	2.7	3.8	-	-
Barium	1.0 ug/g	128	254	114	154	-	-
Beryllium	0.5 ug/g	0.5	<0.5	<0.5	0.5	-	-
Boron	5.0 ug/g	7.2	15.6	6.9	7.3	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	28.9	15.8	24.6	34.1	-	-
Cobalt	1.0 ug/g	7.7	6.3	5.5	9.0	-	-
Copper	5.0 ug/g	13.4	13.4	13.0	15.5	-	-
Lead	1.0 ug/g	5.7	9.2	5.9	8.6	-	-
Molybdenum	1.0 ug/g	<1.0	10.4	<1.0	1.0	-	-
Nickel	5.0 ug/g	15.5	13.4	13.6	17.9	-	-
Selenium	1.0 ug/g	<1.0	1.1	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	13.8	2.1	1.4	-	-
Vanadium	10.0 ug/g	40.9	20.9	31.5	46.4	-	-
Zinc	20.0 ug/g	42.7	42.5	33.3	53.8	-	-

Volatiles

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP5 S2	TP6 S1	TP7 S2	TP8 S1		
Sample Date:	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	04-Sep-24 09:00	-	-
Sample ID:	2436277-05	2436277-06	2436277-07	2436277-08		
Matrix:	Soil	Soil	Soil	Soil		
MDL/Units						

Volatiles

Toluene-d8	Surrogate	118%	125%	123%	116%	-	-
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Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	34 [1]	14	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	34 [1]	16	-	-

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP9 S2				
Sample Date:	04-Sep-24 09:00				-
Sample ID:	2436277-09				-
Matrix:	Soil				
MDL/Units					

Physical Characteristics

% Solids	0.1 % by Wt.	49.8	-	-	-	-
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General Inorganics

SAR	0.01 N/A	0.07	-	-	-	-
Conductivity	5 uS/cm	547	-	-	-	-
pH	0.05 pH Units	6.90	-	-	-	-

Metals

Antimony	1.0 ug/g	<1.0	-	-	-	-
Arsenic	1.0 ug/g	4.4	-	-	-	-
Barium	1.0 ug/g	255	-	-	-	-
Beryllium	0.5 ug/g	<0.5	-	-	-	-
Boron	5.0 ug/g	12.4	-	-	-	-
Cadmium	0.5 ug/g	<0.5	-	-	-	-
Chromium	5.0 ug/g	20.5	-	-	-	-
Cobalt	1.0 ug/g	5.0	-	-	-	-
Copper	5.0 ug/g	19.2	-	-	-	-
Lead	1.0 ug/g	11.7	-	-	-	-
Molybdenum	1.0 ug/g	3.7	-	-	-	-
Nickel	5.0 ug/g	13.1	-	-	-	-
Selenium	1.0 ug/g	1.1	-	-	-	-
Silver	0.3 ug/g	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	-	-	-	-
Uranium	1.0 ug/g	8.1	-	-	-	-
Vanadium	10.0 ug/g	24.3	-	-	-	-
Zinc	20.0 ug/g	49.1	-	-	-	-

Volatiles

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Client ID:	TP9 S2					
Sample Date:	04-Sep-24 09:00				-	-
Sample ID:	2436277-09					
Matrix:	Soil					
MDL/Units						

Volatiles

Benzene	0.02 ug/g	<0.02	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	-
Toluene	0.05 ug/g	<0.05	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	-
Toluene-d8	Surrogate	128%	-	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	7 [2]	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	92 [2]	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	84 [2]	-	-	-	-

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
mSPLP Leachate Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					

Certificate of Analysis

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Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	8.51		%	106	50-140			

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.95	0.01	N/A	0.96			0.8	30	
Conductivity	248	5	uS/cm	255			2.7	5	
pH	6.78	0.05	pH Units	6.80			0.3	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	50	7	ug/g	42			16.1	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	2.2	1.0	ug/g	2.4			6.3	30	
Arsenic	13.0	1.0	ug/g	13.4			2.8	30	
Barium	109	1.0	ug/g	114			4.0	30	
Beryllium	0.6	0.5	ug/g	0.6			7.1	30	
Boron	7.6	5.0	ug/g	8.0			5.4	30	
Cadmium	0.6	0.5	ug/g	0.7			10.6	30	
Chromium	23.9	5.0	ug/g	24.0			0.5	30	
Cobalt	5.8	1.0	ug/g	5.8			0.3	30	
Copper	28.0	5.0	ug/g	28.0			0.1	30	
Lead	179	1.0	ug/g	214			17.8	30	
Molybdenum	1.6	1.0	ug/g	1.6			3.3	30	
Nickel	16.2	5.0	ug/g	15.8			2.1	30	
Selenium	ND	1.0	ug/g	1.1			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	38.2	10.0	ug/g	37.8			1.1	30	
Zinc	185	20.0	ug/g	186			0.6	30	
mSPLP Leachate Metals									
Antimony	ND	0.5	ug/L	ND			NC	50	
Arsenic	3.40	1.0	ug/L	3.31			2.6	50	

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Barium	209	3.4	ug/L	212			1.1	50	
Beryllium	ND	0.5	ug/L	ND			NC	50	
Boron	26.6	10.0	ug/L	26.0			2.1	50	
Cadmium	ND	0.2	ug/L	ND			NC	50	
Chromium	28.0	1.0	ug/L	27.6			1.3	50	
Cobalt	7.54	0.5	ug/L	7.74			2.6	50	
Copper	26.5	0.5	ug/L	28.1			5.5	50	
Lead	7.98	0.2	ug/L	8.09			1.4	50	
Molybdenum	ND	0.5	ug/L	ND			NC	50	
Nickel	19.2	1.0	ug/L	20.1			4.6	50	
Selenium	ND	1.0	ug/L	ND			NC	50	
Silver	ND	0.2	ug/L	ND			NC	50	
Thallium	ND	0.5	ug/L	ND			NC	50	
Uranium	0.77	0.2	ug/L	0.82			6.0	50	
Vanadium	30.1	0.5	ug/L	30.0			0.3	50	
Zinc	48.0	5.0	ug/L	47.3			1.4	50	
Physical Characteristics									
% Solids	74.0	0.1	% by Wt.	76.2			2.9	25	
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	0.209	0.05	ug/g	0.220			5.2	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	1.00	0.05	ug/g	1.06			5.5	50	
o-Xylene	0.158	0.05	ug/g	0.161			1.4	50	
Surrogate: Toluene-d8	4.39		%		105	50-140			

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	195	7	ug/g	ND	113	85-115			
F2 PHCs (C10-C16)	84	4	ug/g	ND	105	80-120			
F3 PHCs (C16-C34)	176	8	ug/g	ND	89.7	80-120			
F4 PHCs (C34-C50)	128	6	ug/g	ND	104	80-120			
Metals									
Arsenic	57.2	1.0	ug/g	5.4	104	70-130			
Barium	96.9	1.0	ug/g	45.5	103	70-130			
Beryllium	53.9	0.5	ug/g	ND	107	70-130			
Boron	53.3	5.0	ug/g	ND	100	70-130			
Cadmium	47.6	0.5	ug/g	ND	94.7	70-130			
Chromium	62.8	5.0	ug/g	9.6	106	70-130			
Cobalt	54.0	1.0	ug/g	2.3	103	70-130			
Copper	59.5	5.0	ug/g	11.2	96.6	70-130			
Lead	121	1.0	ug/g	85.4	71.0	70-130			
Molybdenum	53.0	1.0	ug/g	ND	105	70-130			
Nickel	56.7	5.0	ug/g	6.3	101	70-130			
Selenium	50.5	1.0	ug/g	ND	100	70-130			
Silver	41.8	0.3	ug/g	ND	83.3	70-130			
Thallium	46.9	1.0	ug/g	ND	93.6	70-130			
Uranium	51.1	1.0	ug/g	ND	102	70-130			
Vanadium	67.2	10.0	ug/g	15.1	104	70-130			
Zinc	120	20.0	ug/g	74.5	91.6	70-130			
mSPLP Leachate Metals									
Antimony	36.9	0.5	ug/L	ND	73.0	60-130			
Arsenic	50.8	1.0	ug/L	3.31	95.1	70-130			
Barium	257	1.0	ug/L	212	91.2	70-130			
Beryllium	47.7	0.5	ug/L	ND	94.5	70-130			
Boron	68.0	10.0	ug/L	26.0	84.1	70-130			
Cadmium	47.6	0.2	ug/L	ND	95.0	70-130			
Chromium	76.3	1.0	ug/L	27.6	97.3	70-130			

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Cobalt	53.2	0.5	ug/L	7.74	91.0	70-130			
Copper	67.2	0.5	ug/L	28.1	78.2	70-130			
Lead	52.5	0.2	ug/L	8.09	88.8	70-130			
Molybdenum	47.7	0.5	ug/L	ND	95.0	70-130			
Nickel	62.4	1.0	ug/L	20.1	84.5	70-130			
Selenium	49.2	1.0	ug/L	ND	97.7	70-130			
Silver	44.0	0.2	ug/L	ND	88.0	70-130			
Thallium	43.8	0.5	ug/L	ND	87.6	70-130			
Uranium	51.9	0.2	ug/L	0.82	102	70-130			
Vanadium	81.3	0.5	ug/L	30.0	103	70-130			
Zinc	91.8	5.0	ug/L	47.3	88.9	70-130			
Volatiles									
Benzene	3.61	0.02	ug/g	ND	90.2	60-130			
Ethylbenzene	3.73	0.05	ug/g	ND	93.1	60-130			
Toluene	3.91	0.05	ug/g	ND	97.7	60-130			
m,p-Xylenes	7.52	0.05	ug/g	ND	93.9	60-130			
o-Xylene	3.61	0.05	ug/g	ND	90.3	60-130			
Surrogate: Toluene-d8	8.50		%		106	50-140			

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Qualifier Notes:**Sample Qualifiers :**

- 1: Some peak(s) in the GC-FID Chromatogram are not typical of petroleum hydrocarbon distillates. May be the result of high concentrations of non-mineral based compounds not completely removed by the method cleanup. Results may be biased high.
- 2: Moisture content >50%, sample air dried prior to extraction.
Applies to Samples: TP9 S2

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 11-Sep-2024

Client: CM3 Environmental Inc.

Order Date: 4-Sep-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Parcel ID: 2436277



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Parcel Order Number

(Lab Use Only)

2436277

Chain Of Custody

(Lab Use Only)

No 73632

Client Name: CM3 Environmental

Project Ref: 3853 Cambrian Road

Page 1 of 1

Contact Name: Ethan Risk

Quote #: OCDSB

Turnaround Time

Address: 5710 Atkins Road, Ottawa

PO #: ER1076

☐ 1 day

☐ 3 day

Telephone: 613-304-5410

E-mail: ethan@cm3environmental.com

☐ 2 day

☒ Regular

Date Required: _____

☒ REG 153/04 ☐ REG 406/19

Other Regulation

☐ Table 1 ☐ Res/Park ☐ Med/Fine

☐ REG 558

☐ PWQO

☐ Table 2 ☐ Ind/Comm ☐ Coarse

☐ CCME

☐ MISA

☐ Table 3 ☐ Agri/Other

☐ SU - Sani

☐ SU - Storm

☐ Table _____

Mun: _____

For RSC: ☐ Yes ☐ No

☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water)
SW (Surface Water) SS (Storm/Sanitary Sewer)
P (Paint) A (Air) O (Other)

Required Analysis

Sample ID/Location Name

Matrix

Air Volume

of Containers

Sample Taken

Date

Time

PHC FI-FY

BTEX

Metals ICP

SAR

EC

PH

MSLP Metals

1 TP1 S2

S

0

2

24/09/04

AM

X

X

X

X

X

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2 TP2 S1

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Comments:

Method of Delivery:

Relinquished By (Sign):

Received at Depot:

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Received at Lab:

JM SS

Verified By:

So

Relinquished By (Print): Ethan Risk

Date/Time:

Sep 4/24 4:38

Date/Time:

05-Sept-24 14:12

Date/Time:

Sep 5, 2024 2:54p

Date/Time: 24/09/04 2:10 PM

Temperature:

21.5 °C

Temperature:

8.6 °C

pH Verified: ☐

By:

Chain of Custody (Blank) xlsx

Revision 5.0

Certificate of Analysis

CM3 Environmental Inc.

5710 Akins Road
Ottawa, ON K2S 1B8
Attn: Ethan Risk

Client PO: 3853 Cambrian Road
Project: ER1076
Custody: 75485

Report Date: 8-Oct-2024

Order Date: 3-Oct-2024

Order #: 2440503

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2440503-01	241003-TP6

Approved By:



Mark Foto, M.Sc.

Lab Supervisor

Certificate of Analysis

Report Date: 08-Oct-2024

Client: CM3 Environmental Inc.

Order Date: 3-Oct-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	7-Oct-24	7-Oct-24
Solids, %	CWS Tier 1 - Gravimetric	4-Oct-24	7-Oct-24

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: 3853 Cambrian Road

Report Date: 08-Oct-2024

Order Date: 3-Oct-2024

Project Description: ER1076

Client ID:	241003-TP6	-	-	-	
Sample Date:	03-Oct-24 11:30	-	-	-	-
Sample ID:	2440503-01	-	-	-	
Matrix:	Soil	-	-	-	
MDL/Units					

Physical Characteristics

% Solids	0.1 % by Wt.	56.1	-	-	-	-
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Metals

Molybdenum	1 ug/g	9	-	-	-	-
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Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: 3853 Cambrian Road

Report Date: 08-Oct-2024
Order Date: 3-Oct-2024
Project Description: ER1076

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals								
Molybdenum	ND	1	ug/g					

Certificate of Analysis

Report Date: 08-Oct-2024

Client: CM3 Environmental Inc.

Order Date: 3-Oct-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Molybdenum	2.1	1	ug/g	2.2			5.9	30	
Physical Characteristics									
% Solids	36.6	0.1	% by Wt.	36.0			1.5	25	

Certificate of Analysis

Report Date: 08-Oct-2024

Client: CM3 Environmental Inc.

Order Date: 3-Oct-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Metals

Molybdenum	53.5	1	ug/g	ND	105	70-130			
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Certificate of Analysis

Report Date: 08-Oct-2024

Client: CM3 Environmental Inc.

Order Date: 3-Oct-2024

Client PO: 3853 Cambrian Road

Project Description: ER1076

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Parcel ID: 2440503



Parcel Order Number
(Lab Use Only)

2440503

Chain Of Custody
(Lab Use Only)

No 75485

Client Name: CM3 Environmental	Project Ref: 3853 Cambrian Road	Page 1 of 1
Contact Name: Ethan Risch	Quote #: OCDSB	Turnaround Time ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular Date Required: _____
Address: 5710 Angus Rd. Ottawa	PO #: ER1076	
Telephone: 613-304-5410	E-mail: ethan@cm3environmental.com marc	

☒ REG 153/04 ☐ REG 406/19 ☒ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table _____ For RSC: ☐ Yes ☒ No	Other Regulation ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm Mun: _____ ☐ Other: _____	Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)	Required Analysis Molybdenum 100																	
Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken															
					Date	Time														
1	241003-TP6	S	✓	1	24/10/03	11:30 AM	X													
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Comments:				Method of Delivery: Walk-In			
Relinquished By (Sign):	Received at Depot: 1057	Received at Lab: 50	Verified by: SS				
Relinquished By (Print): Ethan Risch	Date/Time: October 3rd	Date/Time: Oct 3, 2004	Date/Time: 3 Oct 24		1653		
Date/Time: 24/10/03 11:58 AM	Temperature: 22.7 °C	Temperature: 9.5 °C	pH Verified: ☐		By:		