
**ENVIRO-EXPERTS
ENVIRONMENTAL SITE ASSESSMENT PHASE II**

630, Montreal Road, Ottawa, On



Project 3260

Prepared for:

MB Groupe Inc.

M. Max Mahi

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Laval, QC., H7V 2T8

514.973.8384

NOTICE

The phase II environmental site assessment conducted at the location corresponding to 630, Montreal Road, Ottawa, ON, revealed no contamination in polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM) exceeding the acceptable concentrations with respect to Table 3 SCS of for properties with commercial purposes.

Enviro-Experts recommends no additional environmental investigation for the site under study.

January 17th, 2022

MB Groupe Inc.

M. Max Mahi

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Laval, QC., H7V 2T8

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Laval, January 17th, 2022 Project n°: 3260

Subject: Phase II Environmental Site Assessment for the property legally corresponding to **630, Montreal Road, Ottawa, ON.**

To whom it may concern,

In response to your request, we conducted a Phase II environmental site assessment for the property located at the address specified in the subject line. We are pleased to share with you the results in this report.

We thank you for giving us the opportunity to offer you this service. We are looking forward to collaborating with you on your next projects.

With best regards,

Dr. Rabih Saad, M.Sc., Ph.D.
Soils and Environment



Enviro-Experts
President
RS/vp

Abreviations list

MOECC	Ministry of Environment and Climate Change - Ontario
ESA	Environmental Site Assessment
PCA	Potential Contaminating Activity
APEC	Area of Potential Environmental Contamination
SCS	Site Condition Standards
RPI	Residential/Parkland/Institutional
ICC	Industrial/Commercial/Community
PAH	Polycyclic Aromatic Hydrocarbons
VOC	Volatile organic compounds (including BTEX and PHC F1)
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
PHC	Petroleum hydrocarbons (including PHC F2 - F4)
HM	Heavy Metals
F1- F4	Borehole 1 - Borehole 4
D	Duplicate

ASSESSMENT SUMMARY

Enviro-Experts has been mandated by M. Max Mahi in order to undertake an Environmental Site Assessment ESA phase II, at a property of commercial use, located at 630, Montreal Road, Ottawa, ON.

Due to the following potential contaminating activities (PCA), including: a historical onsite auto body garage, a historical onsite fire, and existing, as well as historical, offsite activities that took place in the surrounding area such as service-stations, auto body garages, and a machine shop, the need for a phase II ESA was identified in the phase I ESA conducted on this property in November 2020.

The following areas of potential environmental concern (APEC) were identified:

- A waste oil 900L above-ground storage tank (AST), historically present, onsite, to the east of the garage building.
- An aboveground hydraulic hoist, historically present, onsite, in the garage building. Reportedly removed before 2017
- An out-of-use oil/water separator still present in the southwest corner of the garage building.
- The northeast and northwest limit of the property due to offsite existing and/or historical activities that may present, or may have presented, an environmental risk to the site (existing and/or historical auto body garages were identified 55m northeast and 75m northwest).

The objective of the study was to verify the environmental quality of soils with respect to a potential contamination by polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM).

Enviro-Experts performed this characterization in accordance with the requirements of the Ontario Regulation (O. Reg. 153/04) and the CSA Z769-00 standard. The analytical criteria and the bases on which the conclusions and recommendations of this study are based are also derived from the policies of the MOECC and the Environmental Protection Act. The characterization involved the drilling of four (4) boreholes (F1 to F4) in order to cover the whole extent of the studied area as well as all APECs.

Chemical analyses (Appendix E) revealed that concentrations in polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM), were within acceptable limits with respect to Table 3 SCS for properties with residential purposes.

In view of these analytical results, Enviro-Experts considers that no additional environmental investigation is required for the site under study.

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1. INTRODUCTION

Enviro-Experts was mandated by M. Max Mahi in order to conduct an environmental site assessment ESA phase II, at the property located at 630, Montreal Road, Ottawa, ON.

The objective of this mandate is to confirm or rule out the presence of polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM) in the property's soil.

Enviro-Experts performed this characterization in accordance with the requirements of the Ontario Regulation (O. Reg. 153/04) and the CSA Z769-00 standard. The analytical criteria and the bases on which the conclusions and recommendations of this study are based are also derived from the policies of the MOECC and the Environmental Protection Act.

The following points were examined:

- Nature and characteristics of soils;
- Environmental conditions of soils, as determined by chemical analyses and interpretation of results, in accordance with the appropriate site condition standards (SCS) as required by the MOECC;
- Issue of recommendations and comments for the following points:
 - Presence or absence of contaminants, according to the performed chemical analysis program.
 - If contaminants are found, risks will be evaluated and corrective measures will be proposed.
 - If necessary, the need for an in-depth evaluation will be explained.

To achieve the goals of the present mandate, the following work was carried out:

- Drilling of four (4) boreholes for environmental purposes;
- Collection of soil samples in accordance with the requirements determined by the MOECC;
- Chemical analyses of soil samples;
- Interpretation of analysis results according to the appropriate site condition standards (SCS).

This report presents the entire work conducted onsite and in the laboratory; the results obtained are discussed and appropriate recommendations and comments on aforementioned topics are issued.

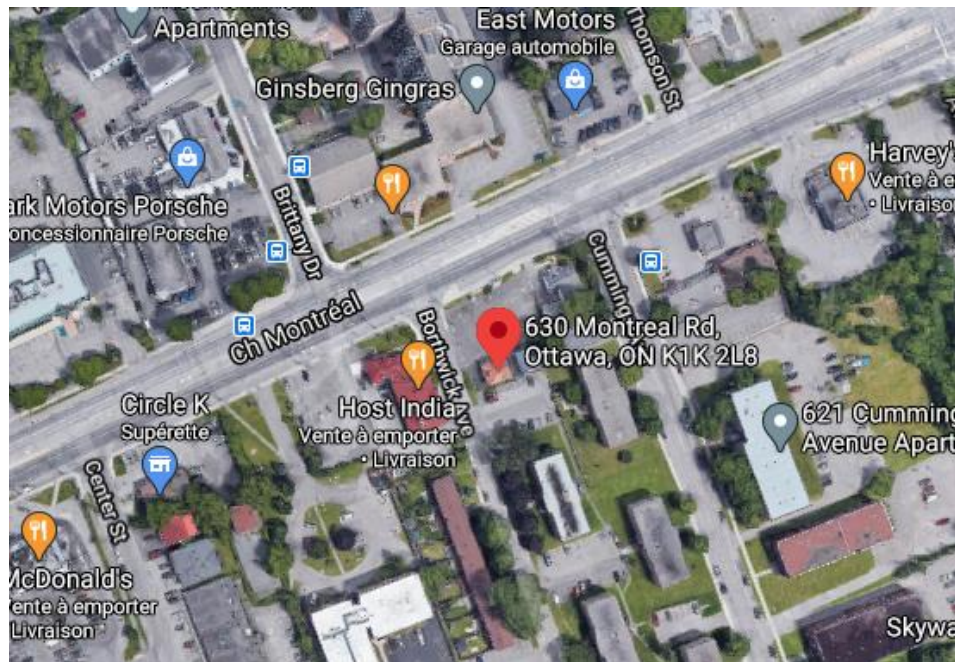
Some appendices were included in this report, such as an area plan (appendix A), the pictures of the site and of the boreholes (appendix B), a plan comprising the location of the boreholes and a summary of the chemical analyses (appendix C), as well as borehole logs (appendix D) and the certificates for chemical analyses (appendix E).

2. SITE DESCRIPTION

2.1. Property description

The property under study is located along Montreal Road and Borthwick Avenue, west of Cummings Avenue, in a mixed commercial and residential area of Ottawa.

The Site is improved with a two-storey (formerly residential) office building with a basement, and a slab-on-grade auto body garage building. The buildings occupy roughly 15% of the Site area. There is a small grassed area south of the office building, and the remainder of the Site is paved.



Location of work site with respect to its neighbouring surroundings
(Google Earth)

2.2. Activities on site

The office building is currently vacant, and the garage building is used for personal car washing, tire changes and detailing. The land use of the Site is currently commercial.

3. LEGISLATIVE FRAMEWORK

This report generally follows requirements as per Ontario Regulation (O. Reg. 153/04) and CSA Z769-00.

As outlined in Part IV, Sections 11 to 15 of O.Reg. 153/04, any “*change from a commercial use of the property to more than one type of property use including any or all of the following uses: institutional, parkland, residential, agricultural or other*”, a Record of Site Condition (RSC) is mandatorily required under O.Reg. 153/04. This study was not prepared in the context of changes as previously

mentioned, and the commercial use of the property has been considered, requiring no RSC.

The assessment criteria, Site Condition Standards (SCS), applicable to a given site in Ontario are established under subsection 168.4(1) of the Environmental Protection Act. Tabulated generic criteria are provided in “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” (“the SGWS Standards”), MOECC, April, 2011. These criteria are based on site sensitivity (sensitive or non-sensitive), groundwater use (potable or non-potable), property use (residential, parkland, institutional, commercial, industrial, community and agricultural/other), soil type (coarse or medium to fine textured) and restoration depth (full or stratified restoration). In addition, site specific criteria may be established on the basis of the findings of a Risk Assessment carried out in accordance with Part IX and Schedule C of Ontario Regulation 153/04 (O. Reg. 153/04).

Table 1. Site Condition Standards (SCS) established under subsection 168.4(1) of the Environmental Protection Act.

Site Condition Standards	
Table 1	Applicable to sites where background concentrations must be met (full depth) such as sensitive sites where site-specific criteria have not been derived
Table 2	Applicable to sites with potable groundwater and full depth restoration
Table 3	Applicable to sites with non-potable groundwater and full depth restoration
Table 4	Applicable to sites with potable groundwater and stratified restoration
Table 5	Applicable to sites with non-potable groundwater and stratified restoration
Table 6	Applicable to sites with potable groundwater and less than 2 m of overburden above bedrock
Table 7	Applicable to sites with non-potable groundwater and less than 2 m of overburden above bedrock
Table 8	Applicable to sites with potable groundwater and less than 30 m from a water body
Table 9	Applicable to sites with non-potable groundwater and less than 30 m from a water body

For assessment purposes, Enviro-Experts selected the **Table 3 SCS** for Industrial, Commercial and Community (ICC) property use in a non-potable groundwater situation and coarse textured soil.

The selection of this category is based on the following factors:

- The site is not considered a sensitive site and no “Ministry of Natural Resources Heritage Sites”, “Area of Natural and Scientific Research” sites,

“Oak Ridges Moraine”, and “Niagara Escarpment or Environmentally Sensitive” areas were identified within 250m of the Site.

- pH values are within the allowable range for Table 3 SCS (pH 5 to 9 for surface soil - less than 1.5 m below surface. pH 5 to 11 for subsurface soil - more than 1.5 m below surface).

Table 2. pH values for all samples.

	F1 (CF4)	F2 (CF2)	F3 (CF2)	F4 (CF2)
	1.83 m to 2.44 m	0.61 m to 1.22 m	0.61 m to 1.22 m	0.61 m to 1.22 m
pH	10.2	8.27	8.71	8.99

- The groundwater use is considered non-potable. All properties within 250 m of the site are serviced by the City of Ottawa. Based on the ESA phase I findings, no potable water wells were observed during the Site visit, nor were any wells listed for the Site in the MECP well records of the ERIS database in a 250 m radius;
- The property use of the site is commercial;
- The predominant soil type on the site is considered to be coarse textured (Appendix F);
- Stratified restoration is not expected on the site.

4. PREVIOUS STUDIES

A Phase I environmental site assessment was produced by our firm in November 2020 by outsourcing services of the consulting firm PGL Environmental Consultants. The phase I ESA recommended conducting a Phase II environmental site assessment in order to verify the property's soil quality as a result of the disclosure of the following potential contaminating activities (PCAs) and areas of potential environmental contamination (APCs), presented in table 3:

Table 3. Potential contaminating activities (PCAs) and areas of potential environmental contamination (APCs) according to the phase I ESA.

APEC	PCA	Potential contaminant
On - Site		
<p>APEC 1</p> <p>A waste oil 900L above-ground storage tank (AST), historically present, onsite, to the east of the garage building.</p>	<p>Historical onsite auto body garage</p>	<ul style="list-style-type: none"> • PAH • PHC • VOC • HM
<p>APEC 2</p> <p>An aboveground hydraulic hoist, historically present, onsite, in the garage building. Reportedly removed before 2017.</p>	<p>Historical onsite auto body garage</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 3</p> <p>An out-of-use oil/water separator still present in the southwest corner of the garage building.</p>	<p>Historical onsite auto body garage</p>	<ul style="list-style-type: none"> • PAH • PHC • VOC
<p><i>Location unknown</i></p>	<p>Historical onsite fire (1990s)</p>	<ul style="list-style-type: none"> • PHC • HM
Off - Site		
<p>APEC 4</p> <p>The northeast and northwest limit of the property due to offsite existing and/or historical activities that may present, or may have presented, an environmental risk to the site).</p>	<p>Existing and/or historical auto body garages were identified 55m northeast and 75m northwest</p> <p><i>Additional existing and/or historical service-stations, auto body garages, and a machine shop further out in the vicinity of the site.</i></p>	<ul style="list-style-type: none"> • PAH • PHC • VOC • HM

According to the 2020 phase I ESA two additional phase I environmental studies occurred on the property:

1. *LRL, 2012. Phase I Environmental Site Assessment, 630 Montreal Road/609 Borthwick Avenue, Ottawa, Ontario. LRL Associates (LRL), September 26, 2012;*
2. *LRL, 2017. Limited Phase I Environmental Site Assessment Update, 630 Montreal Road and 609 Borthwick Avenue, Ottawa, Ontario. LRL, July 18, 2017.*

These documents were consulted by PGL Environmental Consultants for the purpose of producing the recent ESA phase I and the information acquired from these documents was presented by PGL Environmental Consultants in the following manner:

- *A Phase 1 ESA in March 2005 by Trow Associates Inc. for T. Montana Auto Inc. This report did not identify environmental risks to the Site;*
- *A Subsurface Investigation for a Hydraulic Oil Release dated January 5, 2009, by WESA Inc. for Crawford and Company Canada. Following an onsite hydraulic oil release in September 2008, a borehole drilling program was completed onsite in December 2008. It consisted of two boreholes north of the office building where the hydraulic oil had pooled. There was no evidence of hydrocarbon impacts, and the soil samples submitted for petroleum hydrocarbons met the MECP 2011 Table 3 Site Condition Standards. PGL was not provided this data for review;*
- *A Phase 1 ESA dated July 29, 2009 by Levac Robichaud Leclerc (LRL) Associates Ltd., which stated no further investigation was recommended.*
- *The Site has two civic addresses: 630 Montreal Road and 609 Borthwick Avenue;*

- *The Site had operated as a car dealership since at least 1991, and renovations were conducted in the office building in 2011;*
- *Waste oil was generated onsite, stored in a 900L aboveground storage tank (AST) east of the garage, and removed annually. In both 2012 and 2017, the AST was reportedly in good condition and there was no evidence of spills. A floor drain and an aboveground hydraulic hoist were observed in the garage in 2012. By 2017, the AST was no longer in use and the hoist and oil/water separator were reportedly removed. In 2017, the Site was used for automotive sales and a detailing garage;*
- *Two offsite retail fuel underground storage tanks (USTs) were located between 75m to 225m from the Site, and five spills had occurred between 75m and 175m from the Site. These were not considered an environmental concern in 2012 due to distance from the Site;*
- *A previous report had indicated that a fire had occurred onsite within the previous 20 years (since roughly the mid- to late 1990s);*
- *The LRL 2012 Phase 1 ESA concluded that there were no potential environmental concerns with current and historical use of the Site, and no further environmental assessment was warranted;*
- *The LRL 2017 Phase 1 ESA update noted that a gasoline service station was present roughly 45m east of the Site since at least the late 1950s. Due to the distance and inferred upgradient location, the risk for environmental concern to the Site from this gasoline station was considered by LRL to be moderate; and*
- *LRL concluded in 2017 that the conditions of the Site and surrounding properties were similar to those in 2009 and 2012. They stated that without further intrusive investigation, the presence/absence of soil or groundwater contamination associated with the identified environmental concerns could not be confirmed.*

5. METHODOLOGY

5.1. Fieldwork

The fieldwork for the soil characterization was conducted on September 25th, 2020, under the constant supervision of a member of our technical staff. The mandate included the drilling of four (4) boreholes (F1 – F4) outside the building in order to cover the whole extent of the study site as well as all APECs. The interior of the buildings could not be accessed the day of fieldwork.

The sampling strategy consisted in systematic, random or targeted sampling. The positions of boreholes on the site were determined and localized by Enviro-Experts on the basis of this study's goals, i.e. the characterization of soils in high-risk sectors, while considering the presence of underground utilities and the physical boundaries of the site.

Locations of underground utilities including telephone, natural gas and electrical lines were marked out by local utility locating companies

Appendix C shows a plan of borehole locations.

5.2. Boreholes

A soil sampling and characterization plan was discussed and accepted by the client. This plan included the execution of four (4) boreholes, outside the building, identified as (F1 – F4). See appendix C (plan of borehole locations).

The drilling was done by the SFE Company using a *crawler drilling rig MRJ 100 equipped with a split spoon drilling system and solid stem augers* for all boreholes. No petroleum-based greases or solvents were used during drilling activities. Boreholes reached an average depth of 3.61 m.

5.3. Sampling

During boring operations, a total of twenty (20) soil samples were collected by our firm representative. A cleaning of the sampling equipment preceded each sample extraction. The sampled soils were placed into an appropriate container.

Eight (8) samples were sent for chemical analysis to an independent certified laboratory (Bureau Veritas). Soils were analyzed to detect if polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM) were present.

6. QUALITATIVE DESCRIPTION AND SOIL QUALITY

6.1. Qualitative description

During the boring operations, a qualitative description of the stratigraphy for unconsolidated deposits was made by our firm representative. Note that these information are only presented for general guidance purposes and should not be used for other purposes than those of the current mandate.

In general, the stratigraphy of the four (4) boreholes carried out consisted in a brown sand backfill with gravel, silty on the surface and presenting concrete debris in certain places.

6.2. Soil quality

Chemical analysis results for the soil parameters are presented in Table 4. Analytical results were compared with **Table 3 SCS** for Industrial, Commercial and Community (ICC) property use in a non-potable groundwater situation and coarse textured soil.

Table 4 : Results of chemical analyses for extracted samples according to Table 3 SCS

Sample	Extraction date	Depth (m)	Analyzed Parameters			
			PAH	VOC	PHC F2-F4	HAM
F1-CF2	2020-09-25	0.61-1.22	< RPI	< RPI	-	-
F1-CF4	2020-09-25	1.83-2.44	-	-	< RPI	-
F2-CF2	2020-09-25	0.61-1.22	< RPI	< RPI	-	-
F2-CF6	2020-09-25	3.05-3.66	-	-	< RPI	< RPI
F3-CF2	2020-09-25	0.61-1.22	< RPI	-	-	-
F3-CF4	2020-09-25	1.83-2.44	-	-	< RPI	< RPI
F4-CF1	2020-09-25	0.00-0.61	< RPI	-	< RPI	-
F4-CF2	2020-09-25	0.61-1.22	-	-	-	< RPI

Chemical analyses revealed polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM) in concentrations below the Table 3 SCS Residential/Parkland/Institutional (RPI) and/or Industrial/Commercial/Community (ICC) land use.

7. EXTRACTION AND MANAGEMENT OF SAMPLES

During the sampling operations, the Enviro-Experts representative took care of the sampling and handling of various samples. The soil sampling in boreholes was carried out using stainless steel split spoon samplers. The split spoon samplers were cleaned between sampling intervals by washing with a potable water/phosphate-free detergent solution followed by a rinse with distilled water to reduce the potential for cross-contamination.

A rigorous management procedure was used in all the assessment steps, including the extraction, identification, temporary storage and transport of samples, to ensure their conservation and integrity until they reached the analytical laboratory. All the collected soil samples were carefully placed, using nitrile gloves (i.e., one pair per sample), in new glass bottles with a plastic lid equipped with an aluminum foil, ensuring their hermetic closure. When filling the bottles, Enviro-Experts took care to minimize contact with the atmosphere in order to avoid loss of volatile organic compounds, when appropriate.

Each collected soil sample was clearly identified on a data sheet including the borehole and sample identification numbers, the depth where it was collected and the sampling date. At the site, samples were kept in coolers (temperature of about 4°C) and temporarily stored in a safe place. At the end of the workday, all the collected samples were brought to the Enviro-Experts laboratory where they were kept in cold storage (refrigerators), at approximately 4°C, until their transport to the laboratory for analysis (or they were directly brought to the analytical laboratory).

8. QUALITY INSURANCE PROGRAM

8.1. Field duplicate

According to Environment Canada and the U.S. Environmental Protection Agency, a minimum of 10% of the collected and analyzed samples must be in duplicate in order to assure appropriate interpretation and scientific validity of control results. Thus, if a total of 100 samples are collected but only 20 samples are sent for analysis during the first step, 2 duplicates are planned.

The deviation between the result of the extracted soil (or water) sample (PWR) and its duplicate (RD) is calculated as follows:

$$\text{Deviation \%} = \frac{|RD - PWR|}{(RD + PWR)/2} \times 100$$

The acceptability criterion for the deviation between the result of each sample and its corresponding duplicate is usually less than or equal to 30% for all contaminants, with the exception of C₁₀-C₅₀, where the deviation must be less than or equal to 40%.

For the purposes of this mandate, duplicates of samples F4-CF1 (D1) and of F1-CF4 (D2), were submitted for PHC analysis. The results of the quality control are shown in the table below (Table 5):

Table 5 : Quality Control

Sample	Analyzed Parameters	Analysis Results	Deviation %
F4-CF1	PHC F2	<10	--
D1		<10	
F4-CF2	PHC F2	<10	--
D2		<10	

According to these results, the percentage difference between the samples taken from the soil and their duplicate cannot be calculated since the values obtained are below the detection limit. However, the quality assurance and control objectives are considered to have been met.

8.2. Laboratory Analysis Duplicates

Our laboratory tests are performed at the Bureau Veritas laboratory, which applies internal quality control procedures with duplicate analyses for some samples.

9. CONCLUSIONS AND RECOMMENDATIONS

Enviro-Experts has been mandated by M. Max Mahi in order to undertake an Environmental Site Assessment ESA phase II, at a property of commercial use, located at 630, Montreal Road, Ottawa, ON.

Due to the following potential contaminating activities (PCA), including: a historical onsite auto body garage, a historical onsite fire, and existing, as well as historical, offsite activities that took place in the surrounding area such as service-stations, auto body garages, and a machine shop, the need for a phase II ESA was identified in the phase I ESA conducted on this property in November 2020. The following areas of potential environmental concern (APEC) were identified:

- A waste oil 900L above-ground storage tank (AST), historically present, onsite, to the east of the garage building.
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- The northeast and northwest limit of the property due to offsite existing and/or historical activities that may present, or may have presented, an environmental risk to the site (existing and/or historical auto body garages were identified 55m northeast and 75m northwest).

The objective of the study was to verify the environmental quality of soils with respect to a potential contamination by polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM).

Enviro-Experts performed this characterization in accordance with the requirements of the Ontario Regulation (O. Reg. 153/04) and the CSA Z769-00 standard. The analytical criteria and the bases on which the conclusions and recommendations of this study are based are also derived from the policies of the MOECC and the Environmental Protection Act. The characterization involved the drilling of four (4) boreholes (F1 to F4) in order to cover the whole extent of the studied area as well as all APECs.

Chemical analyses (Appendix E) revealed that concentrations in polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (including BTEX and PHC F1), petroleum hydrocarbons (PHCs F2-F4) and heavy metals (HM), were within acceptable limits with respect to Table 3 SCS for properties with residential purposes.

In view of these analytical results, Enviro-Experts considers that no additional environmental investigation is required for the site under study.

10. QUALIFICATIONS OF THE SIGNATORY

Dr. Rabih Saad holds a Doctorate and a Master's Degree in Soils and Environment from Laval University. He currently holds the position of Director of Enviro-Experts. Rabih Saad has 15 years of practical experience in environment, including 4 years (2007-2011) as project director at the National Research Council Canada. He was responsible for site assessments Phase II and III in various governmental departments. In view of implementing a treatment and a way of purification of water and soil contaminated by organic compounds and heavy metals, he also has developed new nanotechnologies based on nanosilicides and nanoparticles of iron as well as biotechnologies based on ligno-cellulosic polymers. He is the author of more than 30 scientific publications and communications in the field of the environment (Journal of Environmental Sciences, Journal of Environmental Quality, Chemosphere, Journal of Colloid and Interface Science, etc.). Over the past five years, he has conducted several hundreds of Phase I and II, III and IV environmental site assessment reports for various clients and financial institutions, and has overseen several residential, commercial and industrial soil rehabilitation projects. He has also collaborated with the Ministry of Environment to optimize nanotechnologies for the treatment of groundwater at a government site polluted with chlorides, fluorides and ammonia nitrogen.

He is the Principal Trainer at the « Ecole Polytechnique de Montréal » for the following courses:

- Environmental site assessment of Phase I, II, III and IV
- Nanotechnologies for the treatment of wastewater

Since 2015, he is a trainer approved by the « Organisme d'Autoréglementation de Courtage Immobilier du Québec » (OACIQ) for the course:

- Environmental aspects of a real estate and mortgage transaction.

11. LIMITATIONS

This report was prepared by Enviro-Experts and carried on exclusively for M. Max Mahi. Any use of this report by a third party, or any conclusion or decision based on this report without consulting Enviro-Experts and obtaining its permission are the third party's sole responsibility. Enviro-Experts does not accept any liability related to an unauthorized use of this report or for any damage to a third party arising from decisions or actions based on this report.

All decisions taken by Enviro-Experts in the context of its phase II environmental site assessment work under the present mandate and for the dates written on this report are based on the observation of the site's current state and on the analysis of available data. Any decision taken in the framework of this report was previously discussed with the owner before execution. Unless otherwise specified, the conclusions of this report cannot be extended to the anterior or posterior state of this site, to site parts that were not available or directly investigated, or to chemical parameters, material or analyses that were not carried on.

Chemicals other than those studied in the present report can be present in the property's soils. The chemical substances reported might also be found in locations that have not been investigated in this mandate. Contaminants' concentrations may vary by location, as described in this report. Physical and chemical soil and groundwater conditions may also vary from one borehole to another, depending on the season. Therefore, the conclusions of this report are valid for a very specific temporal and spatial framework.

This report is not intended to define soils from a geotechnical perspective; consequently, Enviro-Experts assumes no responsibility for the use of this report in design and/or construction works. This report does not represent a legal opinion.

Report prepared by:

Oscar AYED, B.Sc., Biologist, DESS
Soils and Environment.

Mohamad Mrad, Ing., Ph.D.
(OIQ, 6009601)

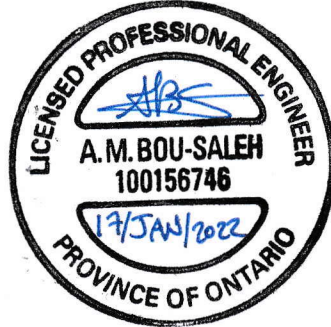
Project Director

Project manager



Approved by:

Ahmad BouSaleh, Ing., P.Eng.
(OIQ, 134647)
(PEO, 100156746)



APPENDIX A: Location plan



Date : 11-12-2020	Title : Site Plan
Client M. Max Mahi	Page 1/1

Appendix B: Granulometric analysis



1200, boul. St-Martin Ouest
Laval, H7S 2E4
Téléphone: (514) 281-5151

Essais sur sols, granulats et autres matériaux

Client : Enviro-Experts	Dossier : P-0022322-0-01
Projet : Services techniques; Essais de laboratoire (Enviro-Experts)	Réf. client
Endroit : .	Projet no. 3260
	Rapport n° : 83 Rév. 0
	Page 1 de 1

ÉCHANTILLONNAGE

Provenance : Matériau en place;
N° d'échantillon : 83 N° d'échantillon client : Échantillonné par : le client
Sondage n° : F-2, CF-7 Date d'échantillonnage : 2020-09-25
Profondeur : 3,66 - 4,27 m Date de réception : 2020-09-28
Localisation : 630 Montréal Ro, Ontario Densité relative des particules < 2 mm : 2.700(estimé)

Analyse granulométrique (NQ 2501-025)		Analyse sédimentométrique (NQ 2501-025)	
Tamises	Tamisé (%)	Diamètre équivalent	Tamisé (%)
112 mm		70,7 µm	17,6
80 mm		50,6 µm	14,0
56 mm		36,3 µm	9,4
40 mm		23,1 µm	7,6
31,5 mm		13,3 µm	7,4
20 mm		9,5 µm	6,5
14 mm		6,6 µm	5,4
10 mm		4,7 µm	4,5
5 mm	100	3,4 µm	3,6
2 mm	100	2,4 µm	2,9
1,25 mm	100	1,4 µm	2,0
0,630 mm	100		
0,315 mm	97		
0,160 mm	71		
0,080 mm	32,8		

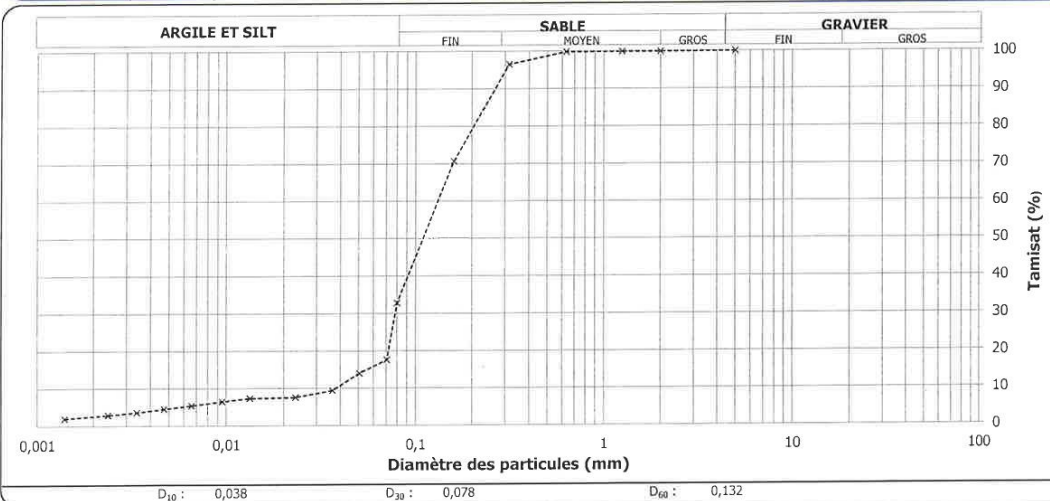
AUTRES ESSAIS

MESURÉ

REMARQUES

Le prélèvement et le transport de l'échantillon ont été effectués par un représentant du client.

Proportion selon analyse (%)	
Sable :	67,2
Cailloux :	0,0
Silt :	30,3
Gravier :	0,0
Argile :	2,5



Préparé par : Claire Pelletier, Chef d'équipe	Date : 2020-10-07	Approuvé par : <i>C. Pelletier</i> Claire Pelletier, Chef d'équipe	Date : 2020-10-07
---	-----------------------------	---	-----------------------------

EQ-09-IM-231 rév. 01 (19-04)

Le rapport d'essais ci-présent ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite d'un responsable autorisé de Englobe Corp. Les résultats des essais effectués ne sont valides que pour l'échantillon décrit dans le rapport.

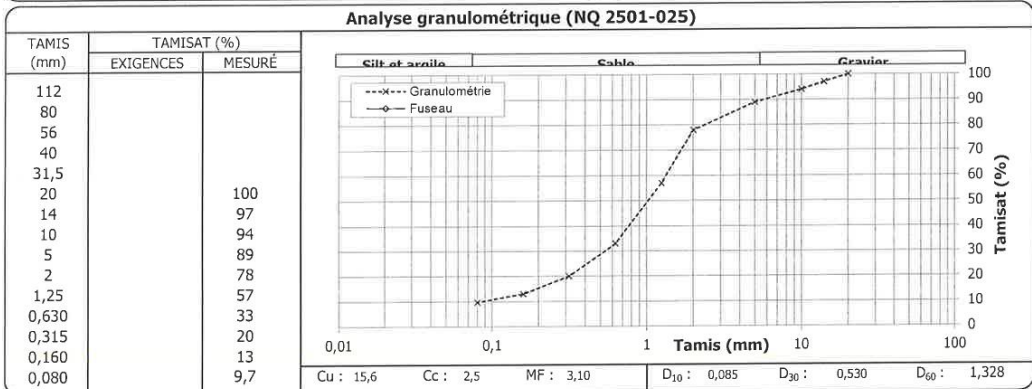


1200, boul. St-Martin Ouest
Laval, H7S 2E4
Téléphone: (514) 281-5151

Essais sur sols, granulats et autres matériaux

Client : Enviro-Experts	Dossier : P-0022322-0-01
Projet : Services techniques; Essais de laboratoire (Enviro-Experts)	Réf. client :
Endroit : .	Rapport n° : 84 Projet no. 3260
	Rév. 0
	Page 1 de 1

<p align="center">Échantillonnage</p> <p>N° d'échantillon : 84 N° d'échantillon client : Type de matériau : Source première; ville : Matériau en place; Endroit échantillonné : 630 Montréal Ro, Ontario; F-2, CF-10; 5,49 - 6,10</p>	<p align="center">Spécification n° 2</p> <p>Référence : Usage : Callbre : Classe : Prélevé le : 2020-09-25 Par : le client Reçu le : 2020-09-28</p>
---	---



Masse vol. sèche maximale kg/m ³	Humidité optimale %	Retenu 5 mm %	Proportions selon analyse granulométrique (%)	
			Cailloux : 0,0	Sable : 79,3
			Gravier : 11,0	Silt et argile : 9,7

Autres essais	Exigé	Mesuré

Remarques

Le prélèvement et le transport de l'échantillon ont été effectués par un représentant du client.

UN ASTERISQUE ACCOMPAGNE TOUT RESULTAT NON CONFORME A L'EXIGENCE SPECIFIEE.

Préparé par : Claire Pelletier, Chef d'équipe	Date : 2020-10-07	Approuvé par : <i>C. Pelletier</i> Claire Pelletier, Chef d'équipe	Date : 2020-10-07
---	-----------------------------	---	-----------------------------

EQ-09-IM-229 rév. 02 (19-04)

Le rapport d'essais ci-présent ne doit pas être reproduit, sinon en entier, sans autorisation écrite d'un responsable autorisé de Englobe Corp. Les résultats des essais effectués ne sont valides que pour l'échantillon décrit dans le présent rapport.

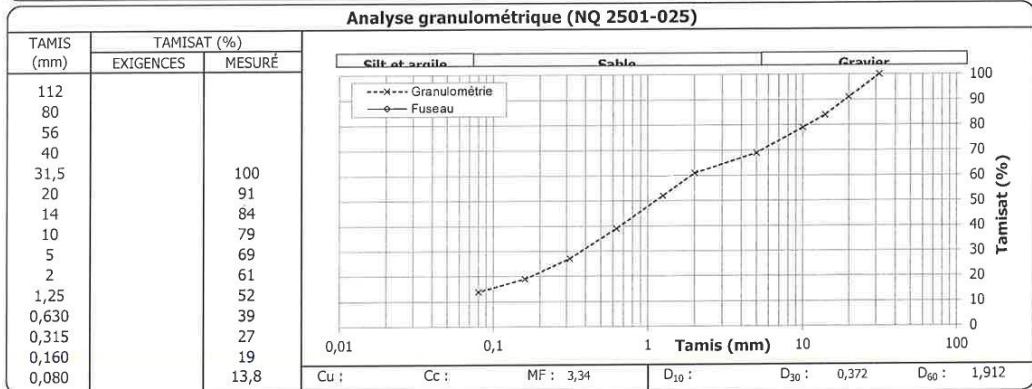


1200, boul. St-Martin Ouest
Laval, H7S 2E4
Téléphone: (514) 281-5151

**Essais sur sols, granulats
et autres matériaux**

Client : Enviro-Experts	Dossier : P-0022322-0-01
Projet : Services techniques; Essais de laboratoire (Enviro-Experts)	Réf. client :
Endroit :	Projet no. 3260
	Rapport n° : 85 Rév. 0
	Page 1 de 1

Échantillonnage		Spécification n° 2	
N° d'échantillon :	85	Référence :	
N° d'échantillon client :		Usage :	
Type de matériau :		Calibre :	
Source première; ville :	Matériau en place;	Classe :	
Endroit échantillonné :	630 Montréal Ro, Ontario; F-2, CF-13; 7,32 - 7,92 m	Prélevé le :	2020-09-25
		Par :	le client
		Reçu le :	2020-09-28



Masse vol. sèche maximale kg/m ³	Humidité optimale %	Retenu 5 mm %	Proportions selon analyse granulométrique (%)	
			Cailloux : 0,0	Sable : 55,5
			Gravier : 30,7	Silt et argile : 13,8

Autres essais	Exigé	Mesuré

Remarques

Le prélèvement et le transport de l'échantillon ont été effectués par un représentant du client.

UN ASTERISQUE ACCOMPAGNE TOUT RESULTAT NON CONFORME A L'EXIGENCE SPECIFIEE.

Préparé par : Claire Pelletier, Chef d'équipe	Date : 2020-10-07	Approuvé par : <i>C. Pelletier</i> Claire Pelletier, Chef d'équipe	Date : 2020-10-07
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EQ-09-IM-229 rév. 02 (19-04)

Le rapport d'essais ci-présent ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite d'un responsable autorisé de Englobe Corp. Les résultats des essais effectués ne sont valides que pour l'échantillon décrit dans le présent rapport.

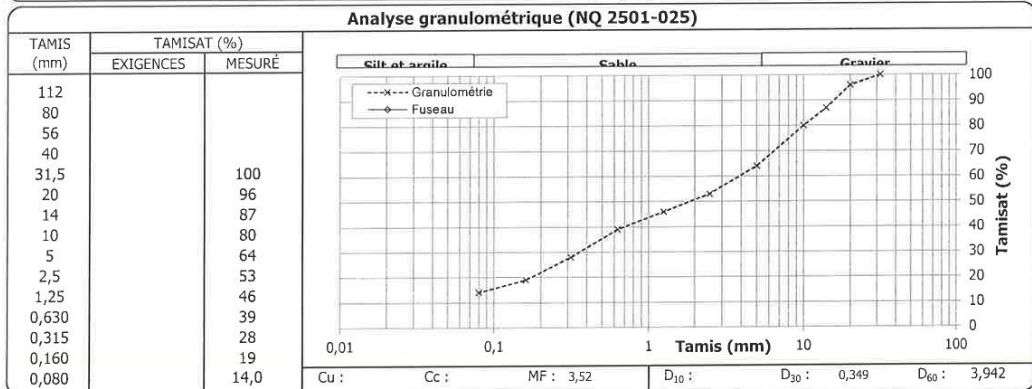


1200, boul. St-Martin Ouest
Laval, H7S 2E4
Téléphone: (514) 281-5151

**Essais sur sols, granulats
et autres matériaux**

Client : Enviro-Experts	Dossier : P-0022322-0-01
Projet : Services techniques; Essais de laboratoire (Enviro-Experts)	Réf. client :
Endroit :	Projet no. 3260
	Rapport n° : 87 Rév. 0
	Page 1 de 1

Échantillonnage		Spécification n° 1	
N° d'échantillon :	87	Référence :	Divers
N° d'échantillon client :		Usage :	
Type de matériau :		Calibre :	
Source première; ville :	matériau en place	Classe :	
Endroit échantillonné :	630 rue Montréal-Ottawa; F2, CF-4; 1,83 - 2,44 m	Prélevé le :	
		Par :	le client
		Reçu le :	2020-09-30



Masse vol. sèche maximale kg/m ³	Humidité optimale %	Retenu 5 mm %	Proportions selon analyse granulométrique (%)	
			Cailloux : 0,0	Sable : 49,5
			Gravier : 36,5	Silt et argile : 14,0

Autres essais	Exigé	Mesuré

Remarques

Le prélèvement et le transport de l'échantillon ont été effectués par un représentant du client.

UN ASTERISQUE ACCOMPAGNE TOUT RESULTAT NON CONFORME A L'EXIGENCE SPECIFIEE.

Préparé par : Claire Pelletier, Chef d'équipe	Date : 2020-10-07	Approuvé par : <i>C. Pelletier</i> Claire Pelletier, Chef d'équipe	Date : 2020-10-07
---	-----------------------------	---	-----------------------------

EQ-09-IM-229 rév. 02 (19-04)

Le rapport d'essais ci-présent ne doit pas être reproduit, sinon en entier, sans autorisation écrite d'un responsable autorisé de Englobe Corp. Les résultats des essais effectués ne sont valides que pour l'échantillon décrit dans le présent rapport.

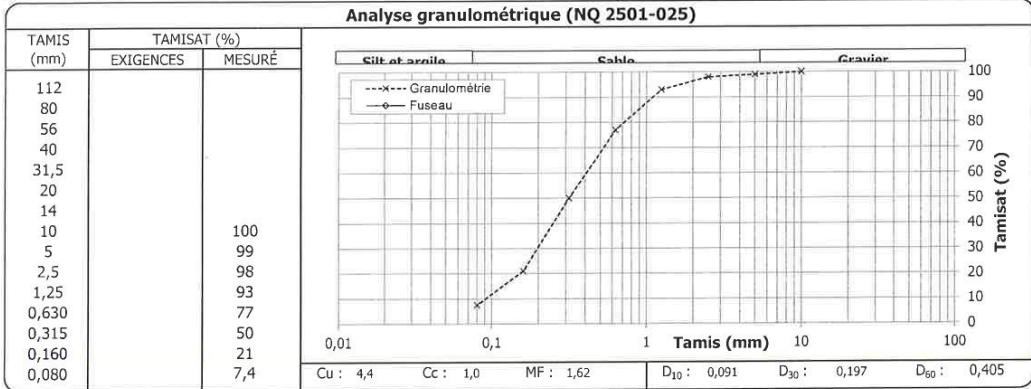


1200, boul. St-Martin Ouest
Laval, H7S 2E4
Téléphone: (514) 281-5151

**Essais sur sols, granulats
et autres matériaux**

Client : Enviro-Experts	Dossier : P-0022322-0-01
Projet : Services techniques; Essais de laboratoire (Enviro-Experts)	Réf. client :
Endroit :	Projet no. 3260
	Rapport n° : 88 Rév. 0
	Page 1 de 1

Échantillonnage		Spécification n° 1	
N° d'échantillon :	88	Référence :	Divers
N° d'échantillon client :		Usage :	
Type de matériau :		Calibre :	
Source première; ville :	matériau en place	Classe :	
Endroit échantillonné :	630 rue Montréal-Ottawa; F3, CF-1; 0,00 - 0,61 m	Prélevé le :	
		Par :	le client
		Reçu le :	2020-09-30



Masse vol. sèche maximale kg/m ³	Humidité optimale %	Retenu 5 mm %	Proportions selon analyse granulométrique (%)	
			Cailloux : 0,0	Sable : 91,3
			Gravier : 1,3	Silt et argile : 7,4

Autres essais	Exigé	Mesuré

Remarques

Le prélèvement et le transport de l'échantillon ont été effectués par un représentant du client.

UN ASTERISQUE ACCOMPAGNE TOUT RESULTAT NON CONFORME A L'EXIGENCE SPECIFIEE.

Préparé par : Claire Pelletier, Chef d'équipe	Date : 2020-10-07	Approuvé par : <i>C. Pelletier</i> Claire Pelletier, Chef d'équipe	Date : 2020-10-07
---	-----------------------------	---	-----------------------------

EQ-09-IM-229 rév. 02 (19-04)

Le rapport d'essais ci-présent ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite d'un responsable autorisé de Englobe Corp. Les résultats des essais effectués ne sont valides que pour l'échantillon décrit dans le présent rapport.

Appendix C: Location of boreholes

	F1-CF2 (0.61 - 1.22)	F1-CF4 (1.83 - 2.44)	F2-CF2 (0.61 - 1.22)	F2-CF6 (3.05 - 3.66)	F3-CF2 (0.61 - 1.22)	F3-CF4 (1.83 - 2.44)	F4-CF1 (0.00 - 0.61)	F4-CF2 (0.61 - 1.22)
PAH	■ <RPI	—	■ <RPI	—	■ <RPI	—	■ <RPI	—
VOC	■ <RPI	—	■ <RPI	—	—	—	—	—
PHC F2-F4	—	■ <RPI	—	■ <RPI	—	■ <RPI	■ <RPI	—
HAM	—	—	—	■ <RPI	—	■ <RPI	—	■ <RPI



ENVIRONMENTAL SITE ASSESSMENT - PHASE II
 ADDRESS:
 360 Montreal Road, Ottawa,
 Ontario

Legend

- Main building
- Existing Borehole
- Borehole
- Soil
 - < RPI
 - > RPI
 - > ICC
- Study Area

*RPI : Residential / Parkland / Institutional
 *ICC : Industrial / Commercial / Constitutional



2064 Boulevard Curé-Labelle
 Laval (Quebec) H7T 1V6
 Tel. (514) 313-0116
 Fax (514) 881-7997
 Courriel: info@enviro-experts.com

Client: M. Max Mahi
 Title: location plan : Boreholes

Contract No. : 3260

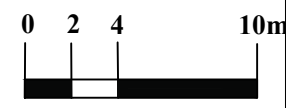
Drawn by : O.A | Date: 15/12/2020

Scale: SN | Plan N° : 1 | Page: 1/1




Ch Montréal

Borwick Ave




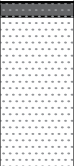

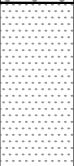


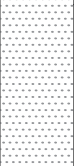



Appendix D : Borehole log

	BOREHOLE No. F01	BOREHOLE LOG SHEET 1 of 4	LEGEND: Particle sizes associated with different elements according to the unified classification (ASTM D 2487) ELEMENTS Clay < 0.005 mm Silt de 0.005 @ 0.08 mm Sand de 0.08 @ 5 mm Gravel de 5 @ 80 mm Pebbles de 80 @ 300 mm Blocks > 300 mm TERMINOLOGY "Traces of" < 10 % "A little bit of" 10 % @ 20 % Adjectif (ex. : sandy, silty) 20 % @ 35 % "and" (Ex. : sand et gravel) > 35 %
	STUDY: ENVIRONMENTAL SITE ASSESSMENT- PHASE II		
Project N° : 3260	GEO-COORDINATES		
CLIENT: M. Max Mahi	LAT: 45.442687	LONG: -75.641522	
ADRESS: 630 Montreal Road, Ottawa, Ontario			
CONTRACTOR : SFE		TYPE OF SURVEY: BOREHOLE	
MACHINE : Crawler drilling rig MRJ 100 equipped with a split spoon drilling system and solid stem augers			
DESCRIPTION BY: O.A		VERIFIED BY: R.SAAD	
DATE (start): December 2020		DATE (end): December 2020	

ELEVATION (M)	DEPTH (Ft)	DEPTH (M)	OBSERVATION WELLS	STRATIGRAPHY	SOIL DESCRIPTION	STATE	SAMPLE					OLFACTIVE OBSERVATIONS				LEVEL OF CONTAMINATION FOLLOWING THE MELCC CRITERIA		
							NUMBER	TYPE	RECUP.	N-INDEX	TEST	N = NO L = LOW M = MED. H = HIGH				<RPI	>RPI	
												N	L	M	H			
1				[Cross-hatched pattern]	Silty sand and gravel backfill.		F1-CF1	Soil										
2					Backfill of crushed stones and sand.		F1-CF2	Soil										
3	1					Silty sand and gravel backfill.		F1-CF3	Soil									
4						Brown sand backfill and concrete debris.		F1-CF4	Soil									
5						Coarse brown sand.		F1-CF5	Soil									
6						Coarse brown sand.		F1-CF6	Soil									
7	2			[Dotted pattern]	Interruption at 3.66 m													
8																		
9																		
10	3																	
11																		
12																		
13	4																	
14																		
15																		
16																		

Approved by : R. Saad

	BOREHOLE No. F03	BOREHOLE LOG SHEET 3 of 4	LEGEND: Particle sizes associated with different elements according to the unified classification (ASTM D 2487) ELEMENTS Clay < 0.005 mm Silt de 0.005 @ 0.08 mm Sand de 0.08 @ 5 mm Gravel de 5 @ 80 mm Pebbles de 80 @ 300 mm Blocks > 300 mm TERMINOLOGY "Traces of" < 10 % "A little bit of" 10 % @ 20 % Adjectif (ex. : sandy, silty) 20 % @ 35 % "and" (Ex. : sand et gravel) > 35 %
	STUDY: ENVIRONMENTAL SITE ASSESSMENT- PHASE II		
Project N° : 3260	GEO-COORDINATES		
CLIENT: M. Max Mahi	LAT: 45.442602	LONG: -75.641214	
ADRESS: 630 Montreal Road, Ottawa, Ontario			
CONTRACTOR : SFE		TYPE OF SURVEY: BOREHOLE	
MACHINE : Crawler drilling rig MRJ 100 equipped with a split spoon drilling system and solid stem augers			
DESCRIPTION BY: O.A		VERIFIED BY: R.SAAD	
DATE (start): December 2020		DATE (end): December 2020	

ELEVATION (M)	DEPTH (Ft)	DEPTH (M)	OBSERVATION WELLS	STRATIGRAPHY	SOIL DESCRIPTION	STATE	SAMPLE					OLFACTIVE OBSERVATIONS				LEVEL OF CONTAMINATION FOLLOWING THE MELCC CRITERIA		
							NUMBER	TYPE	RECUPI.	N-INDEX	TEST	N = NO L = LOW M = MED. H = HIGH				<RPI>	>RPI	
												N	L	M	H			
	1				Crushed stones and brown sand.		F3-CF1	Soil										
	2				Backfill of crushed stones and brown sand.		F3-CF2	Soil										
	3	1			Brown sand.		F3-CF3	Soil										
	4				Brown sand.		F3-CF4	Soil										
	5				Brown sand.		F3-CF5	Soil										
	6	2			Brown sand.		F3-CF6	Soil										
	7				Brown sand.													
	8				Brown sand.													
	9	3			Brown sand.													
	10				Interruption at 3.66 m													
	11																	
	12																	
	13	4																
	14																	
	15																	
	16																	
Approved by : R. Saad																		

Appendix E : Chemical analyses certificates

Votre # de commande: 3260
Votre # du projet: 3260
Votre # Bordereau: N-A

Attention: Info Enviro

Enviro-Experts
2064 boul Curé-Labelle
Suite 20.03
Laval, QC
CANADA H7T 1V6

Date du rapport: 2020/12/10
Rapport: R2626166
Version: 3 - Révisé

CERTIFICAT D'ANALYSE – RÉVISÉ

DE DOSSIER LAB BV: C049079

Reçu: 2020/10/09, 13:45

Matrice: Sol
Nombre d'échantillons reçus: 10

Analyses	Quantité	Date de l' extraction	Date Analyisé	Méthode de laboratoire	Méthode d'analyse
CCME F1/BTEX - MeOH sur le terrain (1)	2	N/A	2020/10/21	STL SOP-00131	CCME PHC-CWS m
Hydrocarbures pétroliers (F2-F4) (2)	6	2020/10/20	2020/10/21	STL SOP-00170	CCME PHC-CWS m
Métaux extractibles totaux par ICP	3	2020/10/20	2020/10/21	STL SOP-00069	MA.200–Mét. 1.2 R5 m
Hydrocarbures aromatiques polycycliques	4	2020/10/20	2020/10/21	STL SOP-00178	MA.400–HAP 1.1 R5 m
pH	4	2020/10/20	2020/10/20	STL SOP-00016	MA.100–pH 1.1 R3 m

Remarques:

Laboratoires Bureau Veritas sont certifiés ISO/IEC 17025 pour certains paramètres précis des portées d'accréditation. Sauf indication contraire, les méthodes d'analyses utilisées par Labs BV s'inspirent des méthodes de référence d'organismes provinciaux, fédéraux et américains, tels que le CCME, le MELCC, l'EPA et l'APHA.

Toutes les analyses présentées ont été réalisées conformément aux procédures et aux pratiques relatives à la méthodologie, à l'assurance qualité et au contrôle de la qualité généralement appliqués par les employés de Labs BV (sauf s'il en a été convenu autrement par écrit entre le client et Labs BV). Toutes les données de laboratoire rencontrent les contrôles statistiques et respectent tous les critères de CQ et les critères de performance des méthodes, sauf s'il en a été signalé autrement. Tous les blancs de méthode sont rapportés, toutefois, les données des échantillons correspondants ne sont pas corrigées pour la valeur du blanc, sauf indication contraire. Le cas échéant, sauf indication contraire, l'incertitude de mesure n'a pas été prise en considération lors de la déclaration de la conformité à la norme de référence.

Les responsabilités de Labs BV sont restreintes au coût réel de l'analyse, sauf s'il en a été convenu autrement par écrit. Il n'existe aucune autre garantie, explicite ou implicite. Le client a fait appel à Labs BV pour l'analyse de ses échantillons conformément aux méthodes de référence mentionnées dans ce rapport. L'interprétation et l'utilisation des résultats sont sous l'entière responsabilité du client et ne font pas partie des services offerts par Labs BV, sauf si convenu autrement par écrit. Labs BV ne peut pas garantir l'exactitude des résultats qui dépendent des renseignements fournis par le client ou son représentant.

Les résultats des échantillons solides, sauf les biotes, sont rapportés en fonction de la masse sèche, sauf indication contraire. Les analyses organiques ne sont pas corrigées en fonction de la récupération, sauf pour les méthodes de dilution isotopique.

Les résultats s'appliquent seulement aux échantillons analysés. Si l'échantillonnage n'est pas effectué par Labs BV, les résultats se rapportent aux échantillons fournis pour analyse.

Le présent rapport ne doit pas être reproduit, sinon dans son intégralité, sans le consentement écrit du laboratoire.

Lorsque la méthode de référence comprend un suffixe « m », cela signifie que la méthode d'analyse du laboratoire contient des modifications validées et appliquées afin d'améliorer la performance de la méthode de référence.

Notez: Les données brutes sont utilisées pour le calcul du RPD (% d'écart relatif). L'arrondissement des résultats finaux peut expliquer la variation apparente.

(1) Tous les résultats pour le CCME répondent aux critères exigés, sauf indication contraire dans le rapport. Les méthodes du SP-HCP utilisées par Lab BV respectent tous les



Votre # de commande: 3260
Votre # du projet: 3260
Votre # Bordereau: N-A

Attention: Info Enviro

Enviro-Experts
2064 boul Curé-Labelle
Suite 20.03
Laval, QC
CANADA H7T 1V6

Date du rapport: 2020/12/10
Rapport: R2626166
Version: 3 - Révisé

CERTIFICAT D'ANALYSE – RÉVISÉ

DE DOSSIER LAB BV: C049079

Reçu: 2020/10/09, 13:45

éléments imposés par la méthode de référence et les éléments se rapportant à la performance ont été validés. Toutes les modifications ont été validées et jugées équivalentes d'après l'Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods, September 2003. La documentation est fournie sur demande. Différence par rapport à la Méthode de référence pour le standard pancanadien relatif aux hydrocarbures pétroliers dans le sol – méthode du 1er volet : les résultats pour les fractions F2/F3/F4 sont rapportés à l'aide d'une extraction à froid par solvant au lieu d'une extraction avec un appareil Soxhlet.

Aucune date d'extraction n'est fournie pour les analyses de F1/BTEX et COV lorsque les sols sont conservés dans le méthanol sur le terrain. La date d'extraction correspond à la date d'échantillonnage à moins d'indication contraire.

(2) Tous les résultats pour le CCME répondent aux critères exigés, sauf indication contraire dans le rapport. Les méthodes du SP-HCP utilisées par Lab BV respectent tous les éléments imposés par la méthode de référence et les éléments se rapportant à la performance ont été validés. Toutes les modifications ont été validées et jugées équivalentes d'après l'Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods, September 2003. La documentation est fournie sur demande. Différence par rapport à la Méthode de référence pour le standard pancanadien relatif aux hydrocarbures pétroliers dans le sol – méthode du 1er volet : les résultats pour les fractions F2/F3/F4 sont rapportés à l'aide d'une extraction à froid par solvant au lieu d'une extraction avec un appareil Soxhlet.

Note : Les paramètres inclus dans le présent certificat sont accrédités par le MELCC, à moins d'indication contraire.

clé de cryptage

Karima Dlimi
Chargée de projets
10 Dec 2020 12:23:11

Veillez adresser toute question concernant ce certificat d'analyse à votre chargé(e) de projets

Karima Dlimi, B.Sc., chimiste, Chargée de projets

Courriel: Karima.DLIMI@bvlabs.com

Téléphone (514)448-9001 Ext:7066270

=====
Lab BV a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les «signataires» requis, conformément à l'ISO/CEI 17025. Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.

BUREAU
VERITAS

Dossier Lab BV: C049079

Date du rapport: 2020/12/10

Enviro-Experts

Votre # du projet: 3260

Votre # de commande: 3260

HYDROCARBURES PÉTROLIERS F1BTEX (SOL)

ID Lab BV				IK5422		IK5424		
Date d'échantillonnage				2020/09/25		2020/09/25		
# Bordereau				N-A		N-A		
	Unités	B	C	F1 CF2	LDR	F2 CF2	LDR	Lot CQ
% HUMIDITÉ	%	-	-	3.9	N/A	12	N/A	N/A
VOLATILS								
Benzène	mg/kg	0.21	0.32	<0.0050	0.0050	<0.010	0.010	2136085
Toluène	mg/kg	2.3	68	<0.050	0.050	<0.10	0.10	2136085
Éthylbenzène	mg/kg	2	9.5	<0.010	0.010	<0.020	0.020	2136085
p+m-Xylène	mg/kg	-	-	0.081	0.040	<0.080	0.080	2136085
o-Xylène	mg/kg	-	-	0.022	0.020	<0.040	0.040	2136085
Xylènes (o,m,p) †	mg/kg	3.1	26	0.10	0.040	<0.080	0.080	2136085
F1 (C6-C10) †	mg/kg	55	55	12	10	<20	20	2136085
F1 (C6-C10) - BTEX †	mg/kg	55	55	12	10	<20	20	2136085
Récupération des Surrogates (%)								
1,4-Difluorobenzène	%	-	-	103	N/A	105	N/A	2136085
4-Bromofluorobenzène	%	-	-	97	N/A	93	N/A	2136085
D10-Ethylbenzène	%	-	-	129	N/A	116	N/A	2136085
D4-1,2-Dichloroéthane	%	-	-	98	N/A	94	N/A	2136085
LDR = Limite de détection rapportée								
Lot CQ = Lot contrôle qualité								
N/A = Non Applicable								
† Accréditation non existante pour ce paramètre								

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HAP PAR GCMS (SOL)

ID Lab BV				IK5422	IK5424	IK5426	IK5428		
Date d'échantillonnage				2020/09/25	2020/09/25	2020/09/25	2020/09/25		
# Bordereau				N-A	N-A	N-A	N-A		
	Unités	B	C	F1 CF2	F2 CF2	F3 CF2	F4 CF1	LDR	Lot CQ
% HUMIDITÉ	%	-	-	3.9	12	4.1	5.4	N/A	N/A
HAP									
Acénaphène	mg/kg	7.9	96	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Acénaphthylène	mg/kg	0.15	0.15	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Anthracène	mg/kg	0.74	0.74	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(a)anthracène	mg/kg	0.5	0.96	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(a)pyrène	mg/kg	0.3	0.3	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(b)fluoranthène †	mg/kg	0.78	0.96	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(j)fluoranthène †	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(k)fluoranthène †	mg/kg	0.78	0.96	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(c)phénanthrène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Benzo(ghi)pérylène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Chrysène	mg/kg	7	9.6	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Dibenzo(a,h)anthracène	mg/kg	0.1	0.1	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Dibenzo(a,i)pyrène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Dibenzo(a,h)pyrène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Dibenzo(a,l)pyrène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
7,12-Diméthylbenzanthracène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Fluoranthène	mg/kg	0.69	9.6	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Fluorène	mg/kg	62	62	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Indéno(1,2,3-cd)pyrène	mg/kg	0.38	0.76	<0.10	<0.10	<0.10	<0.10	0.10	2135698
3-Méthylcholanthrène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Naphtalène	mg/kg	0.6	9.6	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Phénanthrène	mg/kg	6.2	12	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Pyrene	mg/kg	78	96	<0.10	<0.10	<0.10	<0.10	0.10	2135698
2-Méthylnaphtalène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
1-Méthylnaphtalène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
1,3-Diméthylnaphtalène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
2,3,5-Triméthylnaphtalène	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	0.10	2135698
Récupération des Surrogates (%)									
D10-Anthracène	%	-	-	96	94	96	98	N/A	2135698
D12-Benzo(a)pyrène	%	-	-	94	94	94	96	N/A	2135698
D14-Terphenyl	%	-	-	96	98	96	94	N/A	2135698
D8-Acenaphthylene	%	-	-	90	90	90	94	N/A	2135698
D8-Naphtalène	%	-	-	88	86	86	88	N/A	2135698
LDR = Limite de détection rapportée									
Lot CQ = Lot contrôle qualité									
N/A = Non Applicable									
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HYDROCARBURES PAR GCFID (SOL)

ID Lab BV				IK5423	IK5425	IK5427	IK5428	IK5430	IK5431		
Date d'échantillonnage				2020/09/25	2020/09/25	2020/09/25	2020/09/25	2020/09/25	2020/09/25		
# Bordereau				N-A	N-A	N-A	N-A	N-A	N-A		
	Unités	B	C	F1 CF4	F2 CF6	F3 CF4	F4 CF1	D1	D2	LDR	Lot CQ
% HUMIDITÉ	%	-	-	6.0	5.1	3.5	5.4	5.5	5.5	N/A	N/A
HYDROCARBURES PÉTROLIERS											
F2 (C10-C16) †	mg/kg	98	230	<10	<10	<10	<10	<10	<10	10	2135674
F3 (C16-C34) †	mg/kg	300	1700	72	<50	<50	<50	<50	89	50	2135674
F4 (C34-C50) †	mg/kg	2800	3300	100	<50	<50	<50	<50	140	50	2135674
Ligne de base atteinte à C50 †	mg/kg	-	-	OUI	OUI	OUI	OUI	OUI	OUI	N/A	2135674
Récupération des Surrogates (%)											
O-Terphenyl	%	-	-	94	111	110	109	115	117	N/A	2135674
LDR = Limite de détection rapportée											
Lot CQ = Lot contrôle qualité											
N/A = Non Applicable											
† Accréditation non existante pour ce paramètre											

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MÉTAUX EXTRACTIBLES TOTAUX (SOL)

ID Lab BV				IK5425	IK5425	IK5427	IK5429		
Date d'échantillonnage				2020/09/25	2020/09/25	2020/09/25	2020/09/25		
# Bordereau				N-A	N-A	N-A	N-A		
	Unités	B	C	F2 CF6	F2 CF6 Dup. de Lab.	F3 CF4	F4 CF2	LDR	Lot CQ
% HUMIDITÉ	%	-	-	5.1	5.1	3.5	5.2	N/A	N/A
MÉTAUX									
Argent (Ag)	mg/kg	20	40	<0.50	<0.50	<0.50	<0.50	0.50	2135778
Arsenic (As)	mg/kg	18	18	<5.0	<5.0	<5.0	<5.0	5.0	2135778
Baryum (Ba)	mg/kg	390	670	31	27	16	33	5.0	2135778
Cadmium (Cd)	mg/kg	1.2	1.9	<0.50	<0.50	<0.50	<0.50	0.50	2135778
Chrome (Cr)	mg/kg	160	160	12	8.1	4.7	12	2.0	2135778
Cobalt (Co)	mg/kg	22	80	5.0	4.4	2.2	4.6	2.0	2135778
Cuivre (Cu)	mg/kg	140	230	12	11	4.9	7.9	2.0	2135778
Etain (Sn)	mg/kg	-	-	<4.0	<4.0	<4.0	<4.0	4.0	2135778
Manganèse (Mn)	mg/kg	-	-	230	250	71	150	2.0	2135778
Molybdène (Mo)	mg/kg	6.9	40	<1.0	<1.0	<1.0	<1.0	1.0	2135778
Nickel (Ni)	mg/kg	100	270	11	9.1	4.4	9.4	1.0	2135778
Plomb (Pb)	mg/kg	120	120	5.8	<5.0	<5.0	<5.0	5.0	2135778
Sélénium (Se)	mg/kg	2.4	5.5	<1.0	<1.0	<1.0	<1.0	1.0	2135778
Zinc (Zn)	mg/kg	340	340	17	15	<10	12	10	2135778
LDR = Limite de détection rapportée									
Lot CQ = Lot contrôle qualité									
Duplicata de laboratoire									
N/A = Non Applicable									



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PARAMÈTRES CONVENTIONNELS (SOL)

ID Lab BV		IK5423	IK5424	IK5426	IK5429	
Date d'échantillonnage		2020/09/25	2020/09/25	2020/09/25	2020/09/25	
# Bordereau		N-A	N-A	N-A	N-A	
	Unités	F1 CF4	F2 CF2	F3 CF2	F4 CF2	Lot CQ
% HUMIDITÉ	%	6.0	12	4.1	5.2	N/A
CONVENTIONNELS						
pH	pH	10.2	8.27	8.71	8.99	2135860
Lot CQ = Lot contrôle qualité N/A = Non Applicable						



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REMARQUES GÉNÉRALES

Hydrocarbures aromatiques polycycliques: Délai maximum de conservation dépassé sur réception.: IK5422

Hydrocarbures pétroliers (F2-F4): Délai maximum de conservation dépassé sur réception.: IK5423

Hydrocarbures aromatiques polycycliques: Délai maximum de conservation dépassé sur réception.: IK5424

Hydrocarbures pétroliers (F2-F4): Délai maximum de conservation dépassé sur réception.: IK5425

Hydrocarbures aromatiques polycycliques: Délai maximum de conservation dépassé sur réception.: IK5426

Hydrocarbures pétroliers (F2-F4): Délai maximum de conservation dépassé sur réception.: IK5427, IK5428

Hydrocarbures aromatiques polycycliques: Délai maximum de conservation dépassé sur réception.: IK5428

Hydrocarbures pétroliers (F2-F4): Délai maximum de conservation dépassé sur réception.: IK5430, IK5431

Rév2 : Ajout de critères

B,C: Ces critères proviennent du " Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 1, 2011, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition" et s'appliquent à un sol de texture grossière.

RES = Residential/Parkland/Institutional Property Use

IND = Industrial/Commercial/Community Property Use

- = Ce composé ne fait pas partie de la réglementation.

HYDROCARBURES PÉTROLIERS F1BTX (SOL)

Dû à la faible quantité d'échantillon, les limites de détection sont ajustées pour l'échantillon IK5424.

Veuillez noter que les résultats ci-dessus ont été corrigés pour le blanc d'instrument.

Les résultats bruts non-arrondis sont utilisés dans le calcul du total des Xylènes (o,m,p). Ces résultats totaux sont alors arrondis à deux chiffres significatifs.

Délai d'analyse non respecté: IK5422 et IK5424

PARAMÈTRES CONVENTIONNELS (SOL)

Veuillez noter que la valeur de l'échantillon IK5423 est en dehors de la courbe de calibration, mais à l'intérieur des limites de linéarité.

Les résultats ne se rapportent qu'aux échantillons soumis pour analyse

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RAPPORT ASSURANCE QUALITÉ

Lot AQ/CQ	Init	Type CQ	Groupe	Date Analysé	Valeur	Réc	Unités
2135674	CG2	Blanc fortifié	O-Terphenyl	2020/10/21		102	%
			F2 (C10-C16)	2020/10/21		105	%
			F3 (C16-C34)	2020/10/21		105	%
			F4 (C34-C50)	2020/10/21		105	%
2135674	CG2	Blanc de méthode	O-Terphenyl	2020/10/21		113	%
			F2 (C10-C16)	2020/10/21	<10		mg/kg
			F3 (C16-C34)	2020/10/21	<50		mg/kg
			F4 (C34-C50)	2020/10/21	<50		mg/kg
2135698	JRM	Blanc fortifié	D10-Anthracène	2020/10/21		98	%
			D12-Benzo(a)pyrène	2020/10/21		98	%
			D14-Terphenyl	2020/10/21		96	%
			D8-Acenaphthylene	2020/10/21		92	%
			D8-Naphtalène	2020/10/21		88	%
			Acénaphène	2020/10/21		85	%
			Acénaphtylène	2020/10/21		92	%
			Anthracène	2020/10/21		94	%
			Benzo(a)anthracène	2020/10/21		91	%
			Benzo(a)pyrène	2020/10/21		87	%
			Benzo(b)fluoranthène	2020/10/21		96	%
			Benzo(j)fluoranthène	2020/10/21		91	%
			Benzo(k)fluoranthène	2020/10/21		92	%
			Benzo(c)phénanthrène	2020/10/21		96	%
			Benzo(ghi)pérylène	2020/10/21		87	%
			Chrysène	2020/10/21		95	%
			Dibenzo(a,h)anthracène	2020/10/21		89	%
			Dibenzo(a,i)pyrène	2020/10/21		65	%
			Dibenzo(a,h)pyrène	2020/10/21		67	%
			Dibenzo(a,l)pyrène	2020/10/21		94	%
			7,12-Diméthylbenzanthracène	2020/10/21		72	%
			Fluoranthène	2020/10/21		90	%
			Fluorène	2020/10/21		90	%
			Indéno(1,2,3-cd)pyrène	2020/10/21		91	%
			3-Méthylcholanthrène	2020/10/21		72	%
			Naphtalène	2020/10/21		85	%
Phénanthrène	2020/10/21		87	%			
Pyrène	2020/10/21		91	%			
2-Méthylnaphtalène	2020/10/21		83	%			
1-Méthylnaphtalène	2020/10/21		83	%			
1,3-Diméthylnaphtalène	2020/10/21		83	%			
2,3,5-Triméthylnaphtalène	2020/10/21		94	%			
2135698	JRM	Blanc de méthode	D10-Anthracène	2020/10/21		102	%
			D12-Benzo(a)pyrène	2020/10/21		102	%
			D14-Terphenyl	2020/10/21		96	%
			D8-Acenaphthylene	2020/10/21		94	%
			D8-Naphtalène	2020/10/21		92	%
			Acénaphène	2020/10/21	<0.10		mg/kg
			Acénaphtylène	2020/10/21	<0.10		mg/kg
			Anthracène	2020/10/21	<0.10		mg/kg
			Benzo(a)anthracène	2020/10/21	<0.10		mg/kg
			Benzo(a)pyrène	2020/10/21	<0.10		mg/kg
Benzo(b)fluoranthène	2020/10/21	<0.10		mg/kg			
Benzo(j)fluoranthène	2020/10/21	<0.10		mg/kg			

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Lot AQ/CQ	Init	Type CQ	Groupe	Date Analysé	Valeur	Réc	Unités
			Benzo(k)fluoranthène	2020/10/21	<0.10		mg/kg
			Benzo(c)phénanthrène	2020/10/21	<0.10		mg/kg
			Benzo(ghi)pérylène	2020/10/21	<0.10		mg/kg
			Chrysène	2020/10/21	<0.10		mg/kg
			Dibenzo(a,h)anthracène	2020/10/21	<0.10		mg/kg
			Dibenzo(a,i)pyrène	2020/10/21	<0.10		mg/kg
			Dibenzo(a,h)pyrène	2020/10/21	<0.10		mg/kg
			Dibenzo(a,l)pyrène	2020/10/21	<0.10		mg/kg
			7,12-Diméthylbenzanthracène	2020/10/21	<0.10		mg/kg
			Fluoranthène	2020/10/21	<0.10		mg/kg
			Fluorène	2020/10/21	<0.10		mg/kg
			Indéno(1,2,3-cd)pyrène	2020/10/21	<0.10		mg/kg
			3-Méthylcholanthrène	2020/10/21	<0.10		mg/kg
			Naphtalène	2020/10/21	<0.10		mg/kg
			Phénanthrène	2020/10/21	<0.10		mg/kg
			Pyrène	2020/10/21	<0.10		mg/kg
			2-Méthylnaphtalène	2020/10/21	<0.10		mg/kg
			1-Méthylnaphtalène	2020/10/21	<0.10		mg/kg
			1,3-Diméthylnaphtalène	2020/10/21	<0.10		mg/kg
			2,3,5-Triméthylnaphtalène	2020/10/21	<0.10		mg/kg
2135778	NET	Blanc fortifié	Argent (Ag)	2020/10/21		97	%
			Arsenic (As)	2020/10/21		102	%
			Baryum (Ba)	2020/10/21		99	%
			Cadmium (Cd)	2020/10/21		99	%
			Chrome (Cr)	2020/10/21		101	%
			Cobalt (Co)	2020/10/21		100	%
			Cuivre (Cu)	2020/10/21		101	%
			Etain (Sn)	2020/10/21		106	%
			Manganèse (Mn)	2020/10/21		105	%
			Molybdène (Mo)	2020/10/21		99	%
			Nickel (Ni)	2020/10/21		101	%
			Plomb (Pb)	2020/10/21		108	%
			Sélénium (Se)	2020/10/21		101	%
			Zinc (Zn)	2020/10/21		94	%
2135778	NET	Blanc de méthode	Argent (Ag)	2020/10/21	<0.50		mg/kg
			Arsenic (As)	2020/10/21	<5.0		mg/kg
			Baryum (Ba)	2020/10/21	<5.0		mg/kg
			Cadmium (Cd)	2020/10/21	<0.50		mg/kg
			Chrome (Cr)	2020/10/21	<2.0		mg/kg
			Cobalt (Co)	2020/10/21	<2.0		mg/kg
			Cuivre (Cu)	2020/10/21	<2.0		mg/kg
			Etain (Sn)	2020/10/21	<4.0		mg/kg
			Manganèse (Mn)	2020/10/21	<2.0		mg/kg
			Molybdène (Mo)	2020/10/21	<1.0		mg/kg
			Nickel (Ni)	2020/10/21	<1.0		mg/kg
			Plomb (Pb)	2020/10/21	<5.0		mg/kg
			Sélénium (Se)	2020/10/21	<1.0		mg/kg
			Zinc (Zn)	2020/10/21	<10		mg/kg
2135860	DY3	MRC	pH	2020/10/20		100	%
2135860	DY3	Blanc fortifié	pH	2020/10/20		103	%
2136085	ABE	Blanc fortifié	1,4-Difluorobenzène	2020/10/21		102	%
			4-Bromofluorobenzène	2020/10/21		98	%



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Lot AQ/CQ	Init	Type CQ	Groupe	Date Analysé	Valeur	Réc	Unités
2136085	ABE	Blanc de méthode	D10-Ethylbenzène	2020/10/21		111	%
			D4-1,2-Dichloroéthane	2020/10/21		101	%
			Benzène	2020/10/21		73	%
			Toluène	2020/10/21		112	%
			Éthylbenzène	2020/10/21		109	%
			p+m-Xylène	2020/10/21		106	%
			o-Xylène	2020/10/21		98	%
			Xylènes (o,m,p)	2020/10/21		102	%
			F1 (C6-C10)	2020/10/21		90	%
			1,4-Difluorobenzène	2020/10/21		101	%
			4-Bromofluorobenzène	2020/10/21		98	%
			D10-Ethylbenzène	2020/10/21		111	%
			D4-1,2-Dichloroéthane	2020/10/21		101	%
			Benzène	2020/10/21	<0.0050		mg/kg
			Toluène	2020/10/21	<0.050		mg/kg
			Éthylbenzène	2020/10/21	<0.010		mg/kg
			p+m-Xylène	2020/10/21	<0.040		mg/kg
			o-Xylène	2020/10/21	<0.020		mg/kg
			Xylènes (o,m,p)	2020/10/21	<0.040		mg/kg
			F1 (C6-C10)	2020/10/21	<10		mg/kg
F1 (C6-C10) - BTEX	2020/10/21	<10		mg/kg			

MRC: Un échantillon de concentration connue préparé dans des conditions rigoureuses par un organisme externe. Utilisé pour vérifier la justesse de la méthode.

Blanc fortifié: Un blanc, d'une matrice exempte de contaminants, auquel a été ajouté une quantité connue d'analyte provenant généralement d'une deuxième source. Utilisé pour évaluer la précision de la méthode.

Blanc de méthode: Une partie aliquote de matrice pure soumise au même processus analytique que les échantillons, du prétraitement au dosage. Sert à évaluer toutes contaminations du laboratoire.

Surrogate: Composé se comportant de façon similaire aux composés analysés et ajouté à l'échantillon avant l'analyse. Sert à évaluer la qualité de l'extraction.

Réc = Récupération



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VERITAS

Dossier Lab BV: C049079

Date du rapport: 2020/12/10


Enviro-Experts

Votre # du projet: 3260



Votre # de commande: 3260

PAGE DES SIGNATURES DE VALIDATION

Les résultats analytiques ainsi que les données de contrôle-qualité contenus dans ce rapport furent vérifiés et validés par les personnes suivantes:




Corina Tue, B.Sc. Chimiste, Montréal


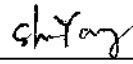
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