Phase Two
Environmental Site Assessment Update

1280 Trim Road
Ottawa, Ontario

Prepared for:

Trim Works Developments Ltd.
110 Place d'Orleans Drive
Ottawa, Ontario
K1C 2L9

LRL File No.: 230202

January 12, 2024

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EXECUTIVE SUMMARY

Trim Works Developments Ltd. retained LRL Engineering (LRL) to complete a Phase Two Environmental Site Assessment (ESA) for the property located 1280 Trim Road, Ottawa, Ontario (herein referred to as the Site). The Site location is presented in **Figure 1**. The legal description of the Site is Part 30, Concession 10S, Part 3 to 6, Cumberland, Ottawa, and the property PIN is 50R6444.

In 2020, a Phase II ESA was completed on the Site as due diligence in the context of a potential property transaction. The Phase II ESA report was completed following the Canadian Standards Association Z769-00. As this report is intended to the support an application with the City of Ottawa for the re-development of the Site by Trim Works Development Ltd, the assessment is required to confirm with Ontario Regulation 153/04, as amended, Phase Two ESA standards and reporting requirements. According to O. Reg. 153/04 as amended, a Phase Two Environmental Site Assessment is considered reliable for a period of 24 months. The previously prepared report was finalized in July 2020, which exceeds 24-month period. This Phase Two ESA has been prepared as an update to the previous report, in addition to further confirming the soil and groundwater conditions across the Site with respect to identified areas of potential environmental concern as outlined in the Phase One Environmental Site Assessment completed to support this re-development opportunity (Phase One ESA, January 2024).

Given that the proposed redevelopment of the Site will be from commercial to commercial, completion of the Phase Two ESA to meet O. Reg 153/04 (as amended) for the purposes of an Ontario Ministry of the Environment, Parks and Conservations (MECP) Record of Site Condition (RSC) is not required. But rather, as discussed above, to satisfy the requirements set forth by the City of Ottawa.

The following is the executive summary of the Phase Two Environmental Site Assessment done by LRL Engineering:

Executive Summary	
Phase Two Property (the Site)	The Site is rectangular shape with a total area of approximately 6,430 m2 (1.59 acres) with the PIN # 50R6444. The Site is located at the municipal address of 128 Trim Road, in Ottawa, Ontario. The property is currently in commercial land use as a storage facility for a commercial general contractor in addition to a 'chip-truck' operating at the southeastern portion of the Site. Commercial/Industrial operations have occupied the Site since at least the mid-1970's (1976) based on the available information collected in the corresponding Phase One ESA (January 2024). It is anticipated that the Site is to be redeveloped for multi-tenant commercial use.
Phase Two Investigations	Ontario Regulation (O. Reg.) 153/04 (as amended).
Geologic Conditions	The entire Phase Two Property was situated in an area of marine offshore deposits including clay, silty clay and silt, commonly calcareous and fossiliferous; local overlain by thin sand. Based on available geological resources, bedrock in the vicinity of the Site is inferred to be at depths ranging between 23 - 37 m below grade. Bedrock is part of Ottawa Formation, consisting mainly of grey limestone, some dolomite, shale and sandstone in the lower part.

Hydrogeological Conditions	Subsurface soil conditions in the area investigated on the Site generally consist of a granular crushed stone over sand fill material to depths between 0.2 and 0.7 m below grade, followed by silty clay to depth between 1.8 and 4.8 m below grade. The water table is located between 0.72 and 1.34 meters below ground surface (bgs). The groundwater flows towards the north direction.
Applicable Site Condition Standard	Ministry of the Environment, Conservation and Parks (MECP) "Table 2: Full Depth Generic Site Condition Standards in a Potable Groundwater Condition" (Table 2 Standards) for coarse-grained soils in an Industrial/Commercial/Community (ICC) property use. As this report is not intended for an RSC submission, a formal letter to the City of Ottawa requesting permission to use the MECP Table 2 ICC Standards, in accordance to O. Reg 153/04 as amended, is not required.
Soil and Groundwater Quality Data	Select soil samples submitted for analysis exceeded the appliable site condition standards for vanadium. These samples included TP3-SS2; BH20-2-9; BH20-4-20; BH20-5-26; BH20-6-31; BH20-9-42; and BH20-11-50. No additional soil exceedances were encountered, however PHC parameters were detected in select underlying soils with notable olfactory evidence of PHC impacts. These locations included the borehole advanced within the building on Site. The groundwater at the Phase Two Property was sampled at MW20-2; MW20-3; and MW20-5 in January 2020; and MW20-2; MW20-3; MW20-5; MW20-10 and MW23-3 in December 2023. Groundwater samples collected were generally analyzed for PHCs Fractions F1 through F4; VOCs, PAHs, PCBs, OC Pesticides, Metals and Inorganics. A single metal exceedance was reported in the groundwater samples collected. Vanadium exceeded the Table 2 site condition standards in MW20-3. Various PAH parameters were also reported above the Table 2 site condition standards in the groundwater collected from MW20-2; MW20-3; MW20-5 and MW23-3.

Conclusions	The soil and groundwater on parts of the Phase Two Property did not meet the MECP Table 2 Standards ICC in potable groundwater condition. Vanadium was reported in select samples with concentrations above the Table 2 site condition standards. According to the Canadian Council of Ministers of the Environment (CCME) fact sheet, vanadium present in soils can be related to industrial activities but could also be related naturally geological formations with the highest concentrations found in shale and clays. During the intrusive investigation, a stratum of clay being at least 0.6 – 4.2 m thick was encountered across the Site. The CCME fact sheet also indicates that concentrations of naturally occurring vanadium across Canada typically increases in depth. The values encountered at the Site ranged between 80.1 and 109 µg/g, within the representative clay samples, generally within the range that could be a result of naturally occurring deposits. The groundwater exceedance for vanadium encountered may also be contributed to naturally occurring deposits found in the underlying clay. The levels encountered in this assessment are below those of CCME and are not likely a result of the fill material on the Site, or current/former Site and neighboring land activities, but rather naturally occurring in the subsurface deposits. No additional soil exceedances were encountered. The PAH exceedances in the groundwater monitoring wells across the Site are likely the result of the former Site activities including the parking of heavy equipment and vehicles in the early 1990's or associated with the fill encountered across the Site. These PEC identified are assumed to contribute to the elevated PAH concentrations based on the location to which they were encountered, and the groundwater flow direction. It would be anticipated that if the PAH concentrations were associated with the gasoline service station to the north, the AST in the building on-Site; or the former commercial printing operations, the highest concentrations would be anticipated to be found along the northern property extents in MW20-3 and MW20-5. However, the highest PAH concentrations were noted in MW20-2, located in the parking & circulation area to the south of the building, and in MW23-3, located at the southwestern portion of the building.
Recommendations	It is recommended that if any soil is to be excavated as part of the proposed Site re-development, and the material is to be disposed of off-Site, that additional laboratory analysis be carried out on that material for vanadium to confirm if it is suitable for disposal as "clean-fill". Otherwise, the material should be disposed of at a licensed landfill facility or soil accepting facility (assuming it meets the site-specific applicable requirements). However, the soil may be used for onsite soil management. However, as mentioned with respect to the Vanadium concentrations, soils across the Site may not be acceptable for re-use as "clean-fill" at an off-Site locations, and should be confirmed against the receiving properties applicable site conditions standard prior to re-development activities commencing. PHC parameters were detected in select underlying soils with notable olfactory evidence of PHC impacts at the time of the 2020 borehole advancement within the building on Site. Although no exceedances were encountered in the corresponding soil samples,

	nor were detections encountered in the groundwater samples collected. The source of the PAH impacted groundwater is inferred to be from the previous Site activities. Groundwater encountered during re-development should be considered 'contaminated' and handled accordingly during construction and dewatering. The risk to future occupants of the Site is considered low as it is understood that municipal water supply sources will service the Site, limiting the risk to expose of PAH in the overburden groundwater.
Limitations	Results of this Phase Two ESA should not be considered a warranty that the subject property is free from any and all contaminants from former and current practices, other than those noted in this report, nor that all compliance issues have been addressed.

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1 INTRODUCTION

Trim Works Developments Ltd. retained LRL Engineering (LRL) to complete a Phase Two Environmental Site Assessment (ESA) for the property located 1280 Trim Road, Ottawa, Ontario (herein referred to as the Site). The Site location is presented in **Figure 1.** The legal description of the Site is Part 30, Concession 10S, Part 3 to 6, Cumberland, Ottawa, and the property PIN is 50R6444.

In 2020, a Phase II ESA was completed on the Site as due diligence in the context of a potential property transaction. The Phase II ESA report was completed following the Canadian Standards Association Z769-00. As this report is intended to the support an application with the City of Ottawa for the re-development of the Site by Trim Works Development Ltd, the assessment is required to confirm with Ontario Regulation 153/04, as amended, Phase Two ESA standards and reporting requirements. According to O. Reg. 153/04 as amended, a Phase Two Environmental Site Assessment is considered reliable for a period of 24 months. The previously prepared report was finalized in July 2020, which exceeds 24-month period. This Phase Two ESA has been prepared as an update to the previous report, in addition to further confirming the soil and groundwater conditions across the Site with respect to identified areas of potential environmental concern as outlined in the Phase One Environmental Site Assessment completed to support this re-development opportunity (Phase One ESA, January 2024).

Given that the proposed redevelopment of the Site will be from commercial to commercial, completion of the Phase Two ESA to meet O. Reg 153/04 (as amended) for the purposes of an Ontario Ministry of the Environment, Parks and Conservations (MECP) Record of Site Condition (RSC) is not required. But rather, as discussed above, to satisfy the requirements set forth by the City of Ottawa.

1.1 Site Description

The Site is located at the municipal address of 1280 Trim Road, Ottawa, Ontario. The property is situated in a commercial/light industrial area along Trim Road. The Site was developed since at least the mid 1920's (1926) with agricultural lands. These activities continued until approximately the mid to late 1950's (at least 1955). The Site has been developed with the existing features since at least the mid-1970's (1976). The property is bounded by Trim Road to the east followed by agricultural fields, a retail gasoline service station to the north, children's recreational facility and cosmetic clinic to the south, a Place of Worship with recreational grassed area followed by industrial warehouse to the west. The Site Plan is presented in **Figure 2.**

A summary of the Site description is provided in Table 1 – Section 1.1

Table 1 – Section 1.1: Summary of Site Description

Parameters	Information
Location/ Address	1280 Trim Road, in Ottawa, Ontario **Figure 1**: Site Location Plan
Property Identification Numbers (PINs)	PIN#: 50R6444
Legal Description	Part 30, Concession 10S, Part 3 to 6, Cumberland, Ottawa.
Shape	Rectangular shape and is between approximately 64 m wide (fronting Trim Road) by approximately 100 m deep, for a total area of approximately 6,430 m^2 (1.59 acres).
Access to the Phase Two Property	The Phase Two Property can be accessed from Trim Road along the eastern perimeter of the Site.
Occupancy	Commercial use: The property is currently in commercial land use as a storage facility for a commercial general contractor in addition to a 'chip-truck' operating at the southeastern portion of the Site.
Current Land Use	Commercial use. Commercial/Industrial operations have occupied the Site since at least the mid-1970's (1976) based on the available information collected in the corresponding Phase One ESA[1] (January 2024).
Proposed Future Land Use	Multi-tenant commercial (retail)

1.2 Property Ownership

The Qualified Person from LRL was retained by the Client to carry out this Phase Two ESA. The Site ownership information is presented in **Table 2 – Section 1.2.**

Table 2 – Section 1.2: Phase Two Property Owner Contact Information

Company	Contact
Phase Two Property Owner	Trim Works Developments Limited
Phase Two Property Contact	Brent Harden brent@hardenrealties.com

[1] Phase One Environmental Site Assessment, 1280 Trim Road, Ottawa, Ontario, prepared for Trim Works Developments Ltd., by LRL Engineering, January 2024.

1.3 Current and Proposed Land Uses

Current and recent (2020) property use of the Site is commercial/light industrial. The building located across the northern portion of the Site is presently used as a supplies and equipment storage facility for a general contractor, and a chip truck occupies the southeastern extent of the property. At the time of the 2020 initial Phase II ESA investigation, the Site included a martial arts recreational fitness facility (Elite Martial Arts), and the southwestern portion of the Site was occupied by a landscape / snow removal contractor. It is understood that current set zoning requirements (IL H) permit for light industrial use.

It is understood that Trim Works Developments Limited is proposing to re-develop to include three (3) single-storey structures, with space for multi-tenant commercial businesses and restaurants. The existing building is proposed to be removed to support the re-development.

1.4 Applicable Site Condition Standard

The results of the soil and groundwater chemical analysis were evaluated using the Standards prescribed in the Ministry of the Environment, Conservation and Parks (MECP) Table 2 Industrial/Commercial/Community (ICC) Standards for course-grained soils in a potable groundwater condition.

The Site is currently occupied and used for commercial purposes, and the anticipated use will remain commercial.

The Site was assessed using the standards contained in MECP Table 2 of the above referenced standards. The use of the Table 2 Standards is considered suitable by LRL based on the considerations listed in the following **Table 3 – Section 1.4**. As this report is not intended for an RSC submission, a formal letter to the City of Ottawa requesting permission to use the MECP Table 2 ICC Standards, in accordance to O. Reg 153/04 as amended, is not required.

Table 3 – Section 1.4: Phase Two Property Conditions

Parameters	Information
Proposed Land Use	Commercial – multi-tenant
Potable or Non-Potable Ground Water	Potable Groundwater
Proximity to Surface Water	Based on available mapping resources, the nearest water body is approximately 680 m east of the Site (Cardinal Creek).
Areas of Natural Significance	There are no Areas of Natural Scientific Interest (ANSI) in the study area, nor environmentally sensitive areas that encroach within 30 m of the Phase Two Property.
Nature and Depth of Bedrock Strata	Based on available geological resources, bedrock in the vicinity of the Site is inferred to be at depths ranging between 23 - 37 m below grade. Bedrock is part of Ottawa Formation, consisting mainly of grey limestone, some dolomite, shale and sandstone in the lower part.
Direction of Groundwater Flow	According to *The Atlas of Canada – Toporama*, the overall regional groundwater flow direction is inferred to follow local topography to the north-northwest towards the Ottawa River, although it is found that the nearest water body is approximately 680 m east of the Site (Cardinal Creek). For the purposes of this report, the groundwater flow direction across the Site will be inferred as north, following the topography of the area.
Grain Size Analysis	Although the underlying soils uncovered across this Site are generally clayey which is a fine-textured material, with respect to provincial guidelines and corresponding site condition standards, the coarse textured soil will be applied for the purpose of this report as a stringent approach since no grain-size analysis were completed as part of this assessment.
PH of Soil	Soil pH was between 6.5 and 8.0, based on analytical results outlined in greater detail in further sections of this report.

Based on the Site conditions described in **Table 3 – Section 1.4**, the applicable criteria to be used in this Phase Two ESA is Ontario Regulation 153/04 "Table 2: Full Depth Generic Site Condition Standards in a non-potable Ground Water Condition" for Residential Parkland Institutional (Table 2 ICC Standards) as per the MECP document titled *"Soil, Ground Water and Sediment Standards for Use under Part XV. 1 of the Environmental Protection Act",* dated April 15, 2011, as amended.

2 BACKGROUND INFORMATION

2.1 Physical Setting

The topography of the Site and neighbouring lands is generally flat. The subject Site and the neighbouring lands have a common topographic elevation of approximately 60 m above mean sea level (amsl) according to The Atlas of Canada - Toporama. More specifically, the Site has a slight slope to the north, towards the Ottawa River.

A review of topographic maps from Natural Resource Canada indicates that topography of the area slopes north. The Ottawa River is identified to be approximately 1.1 km north of the Site.

Surficial geology consists of marine offshore deposits including clay, silty clay and silt, commonly calcareous and fossiliferous; local overlain by thin sand. Bedrock is part of Ottawa Formation, consisting mainly of grey limestone, some dolomite, shale and sandstone in the lower part.

According to the Radon Potential Map of Ontario obtained from the website of Canada Radon, the Phase Two Study Area is in the Relative Radon Hazard Zone 3 – Guarded.

There are no areas of natural significance encroaching within 30 m of the Site.

2.2 Past Investigations

2.2.1 Phase One Environmental Site Assessment, January 2024

A Phase One Site Assessment was completed by LRL Engineering, in January 2024, in support of the proposed redevelopment of the Site. This report should be read in conjunction with the corresponding Phase One Environmental Site Assessment[2].

Trim Works Developments Ltd. has retained LRL Engineering (LRL) to complete a Phase One Environmental Site Assessment on the property located at 1280 Trim Road in Ottawa, Ontario. The assessment was conducted to identify potential environmental concerns or liabilities related to the past and present operations conducted on the property and the adjacent lands. A historical records review of the Site was conducted, as well as contact with relevant regulatory agencies, a walk-through Site inspection of the property and interviews with those knowledgeable of the Site. The assessment was conducted in the context of property development, in support of a Site Plan Application package to the City of Ottawa for the development of an industrial warehouse facility. The assessment was completed as per Canadian Standards Association (CSA) Standards. Should a Record of Site Condition (RSC) be required, the due diligence report will need to be revised to meet the Requirements of O. Reg. 153/04 as amended.

The Site is located within a generally commercial/light industrial area of Ottawa, approximately 165 m north of the Trim Road and Old Montreal Road intersection. The property is currently in commercial land use as a storage facility for a commercial general contractor in addition to a ‘chip-truck’ operating at the southeastern portion of the Site. Based on available geological resources, bedrock in the vicinity of the Site is inferred to be at depths ranging between 23 - 37 m below grade. According to The Atlas of Canada – Toporama, the overall regional groundwater flow direction is inferred to follow local topography to the north-northwest towards the Ottawa River (1.1 km north of the Site), however, the nearest water body is approximately 680 m east of the Site (Cardinal Creek). Based on the results of the Phase Two ESA, completed in conjunction with this assessment, the groundwater flow direction across the Site, based on groundwater elevations measured in the monitoring wells, is found to be

[2] Phase One Environmental Site Assessment, 1280 Trim Road, Ottawa, Ontario, prepared for Trim Works Developments Ltd., by LRL Engineering, dated January 2024.

towards the north. For the purposes of this report, the groundwater flow direction across the Site will be inferred as north, following the topography of the area.

The property has a rectangular shape and is between approximately 64 m wide (fronting Trim Road) by approximately 100 m deep, for a total area of approximately 6,430 m2 (1.59 acres). The general topography of the Site is flat, however the general topography of the area slopes north. For the purpose of this report, Trim Road will be inferred as being orientated in a north-south direction.

Based on available geological data reviewed as part of this assessment, and the confirmed potable groundwater conditions, the area can be considered to be Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition.

The Site was developed since at least the mid 1920's (1926) with agricultural lands. These activities continued until approximately the mid to late 1950's (at least 1955). The Site has been developed with the existing features since at least the mid-1970's (1976). Parking and/or storage of suspected automobiles and equipment was observed in the early 1990's on the Site.

Based on the results of the Phase One Environmental Site Assessment the following areas of potential environmental concern were identified:

O. Reg 153/04 Schedule D PCA	Location of PCA	Description and Source Information	Contribution to an APEC
PCA 30: Importation of Fill Materials of Unknown Quality	On-Site	In the 2002 aerial image, and observed at the time of this Site reconnaissance, a mound of soil is present at the approximate central portion of the western extent of the Site. The source of the material is un-known. Based on the findings of the previous Phase Two ESA, completed on the Site (January 2024), the subsurface soil conditions in the area investigated generally consisted of a granular crushed stone over sand fill material to depths between 0.2 and 0.7 m below grade.	The PCA is located on the Site and is therefore automatically considered to contribute to an on-site APEC.
PCA 28: Gasoline and Associated Products Storage in Fixed Tanks	On-Site	A heating oil AST was encountered in the building. More specifically on the ground floor of the building, along the southcentral extent.	The PCA is located on the Site and is therefore automatically considered to contribute to an on-Site APEC.
PCA 31: Ink Manufacturing, Processing and Bulk Storage	On-Site	From at least 2006/07 through to 2012, the Site included a Commercial Printing operation (Imprimerie Orleans Printers).	The PCA is located on the Site and is therefore automatically considered to contribute to an on-Site APEC.
PCA Other: Known Impacted Soil Conditions	On-Site	In 2020, a Phase II ESA was completed on the Site (updated January 2024) which revealed the presence of possible PHC impacts, in excess of the applicable provincial standards, under the slab of the building on Site and soil impacted with vanadium, although it is possible that vanadium encountered is naturally occurring.	The PCA is located on the Site and is therefore automatically considered to contribute to an on-Site APEC.
PCA 40: Pesticides (including Herbicides, Fungicides and Anti-	On-Site	At the time of the 2020 Phase II ESA intrusive investigation activities, the southwestern portion of the Site	The PCA is located on the Site and is therefore automatically considered to contribute to an

O. Reg 153/04 Schedule D PCA	Location of PCA	Description and Source Information	Contribution to an APEC
Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications		operated as a landscaping/snow removal company, which is suspected to have been a handler of pesticides.	on-Site APEC, and more specifically the southwestern portion of the property.
PCA 28: Gasoline and Associated Products Storage in Fixed Tanks	Adjacent Land to the North of the Site – 1270 Trim Road (down-gradient)	The adjacent property to the north of the Site is operated as a gasoline service station, with records of existing and historical underground petroleum storage tanks.	Although the property is considered down-gradient to the Site with respect to the groundwater flow direction, based on the vicinity of the property, it is considered a PCA, with the APEC is anticipated to be across the northern portion of the Site.
PCA 34: Metal Fabrication	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Patrician Diamonds Inc. (established in 1994); Diamond Intl Exploration Inc., (established in 1994); and Galahad Metals Inc. (established in 2000) were reported to have operated at this property. These facilities are listed as an Other Support Activities for Mining, and Diamond Mining facility and are likely involved the handling or production of metal and metal products, it is suspected that potential contaminates of concern related to these operations may include metals, and petroleum-based products.	The PCA is located up-gradient from the Site with respect to the groundwater flow direction, therefore represents an APEC across the Site.
PCA 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Seven (7) records within the Pesticides Registry were retrieved for Servicemaster Lawncare Ottawa., located at 3791 St-Joseph Boulevard.	The PCA is located south of the Site, up-gradient with respect to the groundwater flow direction, therefore represents an APEC across the Site.
PCA 31: Ink Manufacturing, Processing and Bulk Storage	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Graphic Centre Caspari was found to be in operation since at least 2000, and was registered as a generator of photo processing wastes from 1994 to 2001.	The PCA is located south of the Site, up-gradient with respect to the groundwater flow direction, therefore represents an APEC across the Site.
PCA 28: Gasoline and Associated Products Storage in Fixed Tanks	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Records of various construction companies were reported on this property, with operation from between at least 2001 through 2012. Construction companies may store, or handle petroleum-based oils or lubricants associated with equipment they use.	The PCA is located south of the Site, up-gradient with respect to the groundwater flow direction, therefore represents an APEC across the Site.
PCA 52: Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	Kars Graphics, is listed as an Industrial Machinery, Equipment and Supplies, Wholesale facility, in operation from at least 2001 through 2005.	The PCA is located south of the Site, up-gradient with respect to the groundwater flow direction, therefore represents an APEC across the Site.

O. Reg 153/04 Schedule D PCA	Location of PCA	Description and Source Information	Contribution to an APEC
PCA Other: Hardware Wholesale Distributors	Approximately 155 m south of the Site – 3809 St-Joseph Boulevard (up-gradient)	A wholesale trade agents and brokers, hardware wholesale-distributors, all other wholesaler-distributors, Other Home Furnishings Wholesaler-Distributors, and Service Establishment Machinery, Equipment and Supplies Wholesaler-Distributors.	The PCA is located south of the Site, up-gradient with respect to the groundwater flow direction, therefore represents an APEC across the Site.
PCA 28: Gasoline and Associated Products Storage in Fixed Tanks	Approximately 155 m south of the Site – 3809 St-Joseph Boulevard (up-gradient)	Records of various construction companies were reported on this property, with operation from between at least 2001 through 2012. Construction companies may store, or handle petroleum-based oils or lubricants associated with equipment they use.	The PCA is located south of the Site, up-gradient with respect to the groundwater flow direction, therefore represents an APEC across the Site.

Based on the findings of the Phase One ESA, it is recommended that a Phase Two ESA be conducted on the Site to confirm the presence/absence of impacts in the areas of potential environmental concern identified.

3 SCOPE OF INVESTIGATION

3.1 Overview of Site Investigation

In 2020, a Phase II ESA was completed on the Site as due diligence in the context of a potential property transaction. The Phase II ESA report was completed following the Canadian Standards Association Z769-00. As this report is intended to the support an application with the City of Ottawa for the re-development of the Site by Trim Works Development Ltd, the assessment is required to confirm with Ontario Regulation 153/04, as amended, Phase Two ESA standards and reporting requirements. According to O. Reg. 153/04 as amended, a Phase Two Environmental Site Assessment is considered reliable for a period of 24 months. The previously prepared report was finalized in July 2020, which exceeds 24-month period. This Phase Two ESA has been prepared as an update to the previous report, in addition to further confirming the soil and groundwater conditions across the Site with respect to identified areas of potential environmental concern as outlined in the Phase One Environmental Site Assessment completed to support this re-development opportunity (Phase One ESA, January 2024).

As discussed above in Section 2.2, based on details retrieved through the Phase One ESA (January 2024), it was revealed that Areas of Potential Environmental Concern (APECs), not previously addressed at the time of the 2020 Phase II ESA, were encountered.

LRL's Phase Two ESA Update, as discussed herein, included the analysis of field investigations carried out between December 18th and 20th, 2023 in addition to a summary of the previous works completed in January 2020. The investigation was initiated to assess the quality of the soil and groundwater of the Phase Two Property in relation to the APECs identified by the Phase One Conceptual Site Model, represented in this report as **Figure 3**.

The scope of the investigation included:

- Preparation of a Health and Safety Plan.
- Advancement of a total of three (3) test pits to a maximum depth of 3.0 m bgs.
- Install one (1) temporary monitoring piezometer in a single test pit to intercept the water table.

- Collect groundwater elevation measurements using an interphase probe for the potential measurements of free phase product either floating on the water table or the base of any water column.
- Collect samples from four (4) existing groundwater monitoring wells located at various representative locations across the Site, and the newly installed temporary piezometer.
- Sample collection was carried out in accordance with the detailed sampling and analysis plan.
- Field observations were made in accordance with LRL's Standard of Operation (SOP).
- Samples collected were submitted and analyzed by Paracel Laboratories Ltd. (Ottawa, Ontario) testing laboratory companies to the MECP Table 2 ICC Standards for fine-textured soil.

3.2 Media Investigation

The Phase Two ESA was designed to investigate the potential for impact to soil and groundwater media on, in and beneath the Phase Two Property. It was intended to be an update to the previously prepared Phase II ESA, dated July 2020 and that involved on-Site intrusive investigation activities completed in January 2020. The sampling of sediment was not performed, as there were no surface bodies of water on the Site during the Phase Two investigation.

3.2.1 Soil Investigation

The field work associated with the Phase Two ESA was completed between January 6th and 9th, 2020, and December 18th and 20th, 2023. The APECs identified and investigated as part this Phase Two ESA include the following:

- APEC A: Presence of Fill Materials of Unknown Quality across the Site. There is a high risk of environmental impacts across the Site. Contaminants of Concern include PAHs, VOCs, PHCs and Metals.
- APEC B: Impacts of Gasoline and Associated Products Storage in Fixed Tanks on Site. There is a high risk of environmental impacts across the general northern portion of the Site, in the vicinity of the existing heating oil AST, which is located on the ground floor of the building, along the southcentral extent. Contaminants of Concern include VOCs and PHCs.
- APEC C: Impacts Associated with former Ink Manufacturing, Processing and Bulk Storage which operated on Site. There is a high risk of environmental impacts to the Site as a result of the former commercial printing facility which operated from between 2006/07 through 2012 on the subject property. Contaminants of Concern include PHCs and Metals.
- APEC D: Known PHC and Metal Impacted Soil across the Site. In 2020, a Phase II ESA was completed on the Site (updated January 2024) which revealed the presence of possible PHC impacts, in excess of the applicable provincial standards, under the slab of the building on Site and soil impacted with vanadium, although it is possible that vanadium encountered is naturally occurring. Contaminants of Concern include PHCs and Metals.
- APEC E: Impacts related to Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications on the Site. Due to the past operations o the Site, which included a lanscaping company, there is a high risk of environmental impacts across the southwestern portion of the Site for pesticides impacts. Contaminants of Concern include OP pesticides.
- APEC F: Impacts from parking and/or storage of suspected automobiles and equipment across the Site in at least the early 1990's presents a high risk of environmental impacts across the Site. Contaminants of Concern include VOCs, PHCs and Metals.

- APEC G: Impact from Gasoline and Associated Products Storage in Fixed Tanks. There is a medium to high risk of environmental impacts across the northern portion of the Site as a result of the existing retail fuel dispensing operations on the property located immediately north of the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- APEC H: Impact from Metal Fabrication. There is a low to medium risk of environmental impacts to the Site from the former Other Support Activities for Mining, and Diamond Mining facility located to the south of the Site. Contaminants of Concern include VOCs, PHCs, and Metals.
- APEC I: Impacts from Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications. There is a low to medium risk of environmental impacts across the Site as a result of the previously operated Service Lawncare Ottawa facility to the south of the Site. Contaminants of Concern include OP pesticides.
- APEC J: Impacts from Ink Manufacturing, Processing and Bulk Storage. There is a low to medium risk of environmental impacts across the Site as a result of the previously operated Graphic Centre Caspari facility to the south of the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- APEC K: Impacts from Gasoline and Associated Products Storage in Fixed Tanks. There is a low to medium risk of environmental impacts across the Site as a result of the various construction companies which operated to the south of the Site. Contaminants of Concern include PAHs, VOCs and PHCs.
- APEC L: Impacts from the Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems. Kars Graphics operated as an Industrial Machinery, Equipment and Supplies, Wholesale facility to the south of the Site, which presents a low to medium risk of environmental impacts across the Site.
- APEC M: Impacts from Hardware Wholesale Distributors activities. There is a low to medium risk of environmental impacts across the Site as a result of the previously operated A wholesale trade agents and brokers, hardware wholesale-distributors, all other wholesaler-distributors, Other Home Furnishings Wholesaler-Distributors, and Service Establishment Machinery, Equipment and Supplies Wholesaler-Distributors facility to the south of the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- APEC N: Impacts from Gasoline and Associated Products Storage in Fixed Tanks. There is a low to medium risk of environmental impacts across the Site as a result of the various construction companies which operated to the to the south of the Site. Contaminants of Concern include VOCs, PHCs and Metals.

The intrusive investigation activities associated with the Phase Two ESA included the following:

- Review all available information provided concerning the Site. Conduct a Site visit to determine existing conditions;
- Advance thirteen (13) boreholes at strategic locations based on potential areas of environmental concern, to allow for soil sampling;
- Advance three (3) test pits along the southwestern portion of the Site, in the area of the former lawn care contractor storage yard;
- Complete four (4) of the boreholes as monitoring wells, and install one (1) temporary piezometer in a test pit, to assess hydrogeological conditions and facilitate groundwater sampling;
- Submit representative soil (if applicable) and groundwater samples to an accredited laboratory for analysis of suspected parameters of concern; and

- Interpret results in relation to current provincial guidelines to determine subsurface soil and groundwater quality.

Nine (9) of the thirteen boreholes were advanced to depths between 1.8 and 4.8 m below ground surface (bgs) using a CME 55 truck-mounted drill rig, equipped with 203 mm diameter hollow stem augers. The drilling contractor was George Downing Estate Drilling Ltd. (Hawkesbury, Ontario) and worked under LRL field staff supervision. Soil samples were collected at 0.60 m intervals using a split spoon sampler of 0.60 m in length.

Four (4) of the boreholes, including each of the three (3) within the existing building, and one (1) at the northwestern portion of the Site, was advanced using manual techniques to depths of approximately 1.8 m below grade, or the floor slab. The manual drilling contractor was George Downing Estate Drilling Ltd. (Hawkesbury, Ontario) and the equipment used was a "jack-hammer" equipped with a 51 mm diameter split spoon sampler, 0.6 m in length. Soil samples were collected at 0.60 m intervals.

Between each spoon, the sampling equipment was thoroughly cleaned. Soil cuttings were stored in a secure and appropriate drum at various locations across the Site awaiting off-Site disposal at an approved facility by a licenced contractor, which is to be coordinated by the client.

At the time of the initial investigation activities in January 2020, the southwestern extent of the property was un-accessible and locked gate limiting access. This portion of the property was occupied by a landscaping/snow removal contractor. LRL returned to the Site on December 18th, 2023, to investigate this portion of the Site, as the previous limitations have been since removed. Test pits were advanced across the southwestern extent of the Site, to investigate the APEC associated with the previous landscape contractor activities at this portion of the Site. The test pits were advanced using a backhoe, operated by a contractor (Guy Courchesne Excavation Ltd.) retained by LRL, on December 18th, 2023, to a depth of 3.0 m below grade. Samples were collected in 0.6 m intervals using grab sample techniques from the backhoe bucket.

Parameters of concern included Volatile Organic Compounds (VOC), Petroleum Hydrocarbon Compounds (PHC) Fraction 1 (F1, C6 – C10), Fraction 2 (F2, >C11 – C16), Fraction 3 (F3, >C16 – C34), Fraction 4 (F4, >C34), Organophosphates (OP) Pesticides, General Inorganics, PCBs and O. Reg. 153/04 Metals.

Representative soil samples from each split sampler, or grab samples directly from the backhoe bucket, were collected and transferred immediately into sealed laboratory supplied glass jars and polyethylene freezer bags. Samples were examined for soil type, colour, staining/discolouration and odours. Samples were logged, labelled and stored onsite in a cooler chilled with ice to prevent evaporation of potential combustible soil vapours (CSV). Soil samples stored in bags were screened for CSV presence using a Mini Rae .000 Photoionization Detector (PID).

3.2.2 Groundwater Investigation

Four (4) boreholes, advanced in January 2020, were completed as monitoring wells: BH20-2 through BH20-5 (herein referred to as MW20-2 through MW20-5). Monitoring wells were constructed within 203 mm diameter boreholes with a 32 mm slotted PVC piezometer placed bisecting the groundwater table. The top of the screen was extended to the ground surface using a solid riser pipe. Annular space around the slotted portion of the piezometer was backfilled with pre-washed and graded silica sand up to 300 mm above the top of the screen. A bentonite seal of at least 0.3 m was placed above the sand pack. Remaining back fill in boreholes consisted of soil cuttings and/or additional sand. Monitoring wells were finished at the surface with a flush-mount aluminum casing/stick-up steel casing.

Furthermore, an additional monitoring well (identified as MW20-10 based on its proximity to the previously advanced BH20-10) was observed within the building, in the generally vicinity of the furnace room and corresponding AST. The details relating to the well construction are not known, however the

well was measured to extent to a depth of 2.9 m below the top of slap. This monitoring well was included in the assessment outlined herein based on its location with respect to identified APECs.

A temporary piezometer was installed within the open test pit (TP3) advanced. The installation included a 51 mm slotted PVC piezometer, being 1.5 m in length, placed at the bottom of the excavation. The top of the screen was extended to the ground surface using a solid riser pipe. Annular space around the slotted portion of the piezometer was backfilled with soil cuttings up to 300 mm above the top of the screen. A Sono-tube was then placed over the riser, from the extent of the cutting placed over the screen to approximately ground surface. The Sono-tube was 203 mm in diameter, and the annular space was filled with bentonite chips to form a bentonite seal of at least 1.2 m. the remainder of the test pit was backfilled with the soil removed during test pitting. The riser extended above groundsurface with another extension of solid PVC piping. A lockable J-plug was added to the top of the riser. As this is a temporary installation, and its location is in an area of the site restricted from vehicle traffic, no protective casing was applied around the piezometer.

The groundwater investigation was designed to intercept the groundwater table located approximately between 0.7 – 1.3 m below grade.

- Development of each well, prior to sampling by the removal (purge) of at least three (3) times the volume of water contained in each well;
- Determination of the presence of non-aqueous phase liquid-free product and the static groundwater elevation at each well;
- A Sampling of groundwater using a foot valve, waterra tubing and eco-bailer;
- One (1) duplicate sample was collected for QA/QC analysis; at least one (1) for each ten (10) parameters measured in the field;
- Groundwater samples were placed in laboratory-prepared and pre-labelled jars and placed in ice-filled cooler boxes for storage and transportation to the analytical laboratory, along with a Chain of Custody Form;
- Retention of a copy of the Chain of Custody Form once samples were submitted for analysis;
- Ensured the temperature of the samples submitted was below 10°C; and
- Chemical analysis of the groundwater samples for contaminants of concern associated with specific APEC(s) identified by the Phase One ESA. Specifically, groundwater samples were submitted for analysis of PHCs, VOCs, PAHs, PCBs, OC pesticides, metals, and metal forming hydrides and PCBs.

3.3 Phase One Site Conceptual Model

The PCAs on the Phase One Property and within Phase One Study Area identified through records review, interview, and Site reconnaissance are summarized in **Table 4 – Section 3.3** and incudes the actual groundwater flow direction as measured on-Site during the investigation, as presented in **Figure 4.**

Table 4 – Section 3.3: Phase One CSM – PCAS

No.	O. Reg 153/04 Schedule D PCA	Appr. Direction from Phase One Property	Source Information	Remarks	APEC	Rationale
1	**PCA 30:** Importation of Fill Materials of Unknown Quality	On-Site	Previous Site intrusive investigation, Aerial Imagery, Site Reconnaissance	a mound of soil is present at the approximate central portion of the western extent of the Site. Based on the findings of the previous Phase II ESA, subsurface soil conditions in the area investigated generally consisted of a granular crushed stone over sand fill material to depths between 0.2 and 0.7 m below grade.	Across entirety of the Site	Potential impact to soil and groundwater
2	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Site Reconnaissance	A heating oil AST was encountered in the building. More specifically on the ground floor of the building, along the southcentral extent.	South-central extent of the interior main floor of building	Potential impact on soil and groundwater
3	**PCA 31:** Ink Manufacturing, Processing and Bulk Storage	On-Site	City Directories, Ecolog ERIS Report	From at least 2006/07 through to 2012, the Site included a Commercial Printing operation (Imprimerie Orleans Printers).	Across entirety of Site.	Potential impact on soil and groundwater
4	**PCA Other:** Parking and/or storage of suspected automobiles and equipment	On-Site	Aerial Imagery	Identified across the Site in the early 1990's.	Across entirety of Site.	Potential impact on soil and groundwater
5	**PCA Other:** Known Impacted Soil Conditions	On-Site	January 2020 intrusive investigation associated with the Phase II ESA	The presence of possible PHC impacts, in excess of the applicable provincial standards, under the slab of the building on Site and soil impacted with vanadium, although it is possible that vanadium encountered is naturally occurring.	North-central portion of the Site	Potential impact on soil and groundwater

No.	O. Reg 153/04 Schedule D PCA	Appr. Direction from Phase One Property	Source Information	Remarks	APEC	Rationale
8	**PCA 40:** Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	On-Site	January 2020 Phase II ESA intrusive investigation activities	At the time of the 2020 Phase II ESA intrusive investigation activities, the southwestern portion of the Site operated as a landscaping/snow removal company, which is suspected to have been a handler of pesticides.	South-western portion of the Site	Potential impact on soil and groundwater
9	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks	Adjacent Land to the North of the Site – 1270 Trim Road (down-gradient)	City Directories, Aerial Imagery, Ecolog ERIS Report and Site Reconnaissance	The adjacent property to the north of the Site is operated as a gasoline service station, with records of existing and historical underground petroleum storage tanks.	North portion of the Site	Considered down-gradient to the Site, however based on the vicinity of the property, represents a PEC. Potential impact on soil and groundwater
10	**PCA 34:** Metal Fabrication	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Ecolog ERIS Report	Patrician Diamonds Inc. (established in 1994); Diamond Intl Exploration Inc., (established in 1994); and Galahad Metals Inc. (established in 2000) were reported to have operated at this property.	Entirety of the Site.	Up-gradient of Site. Potential impact on soil and groundwater .
11	**PCA 40:** Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Ecolog ERIS	Seven (7) records within the Pesticides Registry were retrieved for Servicemaster Lawncare Ottawa at this address.	Entirety of the Site	Up-gradient of Site. Potential impact on soil and groundwater
12	**PCA 31:** Ink Manufacturing, Processing and Bulk Storage	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Ecolog ERIS	Graphic Centre Caspari was found to be in operation since at least 2000, and was registered as a generator of photo processing wastes from 1994 to 2001.	Entirety of the Site	Up-gradient of Site. Potential impact on soil and groundwater
13	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard (up-gradient)	Ecolog ERIS	Records of various construction companies were reported on this property. Construction companies may store, or handle petroleum-based oils or lubricants	Entirety of the Site	Up-gradient of Site. Potential impact on soil and groundwater

No.	O. Reg 153/04 Schedule D PCA	Appr. Direction from Phase One Property	Source Information	Remarks	APEC	Rationale
				associated with equipment they use.		
14	**PCA 52:** Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	Ecolog ERIS	Kars Graphics, is listed as an Industrial Machinery, Equipment and Supplies, Wholesale facility, in operation from at least 2001 through 2005.	Entirety of the Site	Up-gradient of Site. Potential impact on soil and groundwater
15	**PCA Other:** Hardware Wholesale Distributors	Approximately 155 m south of the Site – 3809 St-Joseph Boulevard (up-gradient	Ecolog ERIS	A wholesale trade agents and brokers, hardware wholesale-distributors, all other wholesaler-distributors, Other Home Furnishings Wholesaler-Distributors, and Service Establishment Machinery, Equipment and Supplies Wholesaler-Distributors.	Entirety of the Site	Up-gradient of Site. Potential impact on soil and groundwater
16	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks	Approximately 155 m south of the Site – 3809 St-Joseph Boulevard (up-gradient)	Ecolog ERIS	Records of various construction companies were reported on this property. Construction companies may store, or handle petroleum-based oils or lubricants associated with equipment they use.	Entirety of the Site	Up-gradient of Site. Potential impact on soil and groundwater

The potentially contaminating activities identified above have been evaluated by a qualified person to determine whether an area of potential environmental concern will transpose on the Phase One Property as a result of their presence within the Phase One Property or Phase One Study Area. The rationale for the exclusion of one or more PCAs may be the result of, but not limited to, the direction of site location in conjunction with proposed groundwater flow direction, distance from the site, results from previous environmental reports, etc.

The Areas of Potential Environmental Concern (APEC) identified in the Phase One ESA are summarized in **Table 5 – Section 3.3** as follows:

APEC	Location	Comments	Contaminants of Potential Concern	Media Potentially Impacted
APEC A Presence of Fill Materials of Unknown Quality	On-Site	In the 2002 aerial image, and observed at the time of this Site reconnaissance, a mound of soil is present at the approximate central portion of the western extent of the Site. The source of the material is un-known. Based on the findings of the previous Phase Two ESA, completed on the Site (January 2024), the subsurface soil conditions in the area investigated generally consisted of a granular crushed stone over sand fill material to depths between 0.2 and 0.7 m below grade.	PAHs, VOCs, PHCs, Metals, General Inorganics	Soil and groundwater
APEC B Impacts of Gasoline and Associated Products Storage in Fixed Tanks	On-Site	A heating oil AST was encountered in the building. More specifically on the ground floor of the building, along the southcentral extent.	VOCs, PHCs	Soil and Groundwater
APEC C Impacts Associated with former Ink Manufacturing, Processing and Bulk Storage	On-Site	From at least 2006/07 through to 2012, the Site included a Commercial Printing operation (Imprimerie Orleans Printers).	VOCs, PHCs	Soil and Groundwater
APEC D Known Impacted Soil Conditions	On-Site	In 2020, a Phase II ESA was completed on the Site (updated January 2024) which revealed the presence of possible PHC impacts, in excess of the applicable provincial standards, under the slab of the building on Site and soil impacted with vanadium, although it is possible that vanadium encountered is naturally occurring.	PHCs, Metals	Soil and Groundwater
APEC E Impacts from former PCA 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	On-Site	At the time of the 2020 Phase II ESA intrusive investigation activities, the southwestern portion of the Site operated as a landscaping/snow removal company, which is suspected to have been a handler of pesticides.	OP Pesticides	Soil and Groundwater
APEC F Impacts from parking and/or storage of suspected	On-Site	Identified across the Site in the early 1990's, based on aerial imagery reviewed	VOCs, PHCs, Metals	Soil and Groundwater

automobiles and equipment				
APEC G Impacts of Gasoline and Associated Products Storage in Fixed Tanks	Northern portion of the Site	The adjacent property to the north of the Site, 1270 Trim Road, is operated as a gasoline service station, with records of existing and historical underground petroleum storage tanks.	VOCs, PHCs, Metals	Soil and Groundwater
APEC H Impact from Metal Fabrication	Across the entirety of the Site	Patrician Diamonds Inc. (established in 1994); Diamond Intl Exploration Inc., (established in 1994); and Galahad Metals Inc. (established in 2000), at 3791 St-Joseph Boulevard, were reported to have operated at this property. These facilities are listed as an Other Support Activities for Mining, and Diamond Mining facility and are likely involved the handling or production of metal and metal products, it is suspected that potential contaminates of concern related to these operations may include metals, and petroleum-based products.	VOCs, PHCs, Metals	Soil and Groundwater
APEC I Impacts from Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications.	Across the entirety of the Site	Service Lawncare Ottawa, located at 3791 St-Joseph Boulevard, was listed in the Pesticides Registry.	OP Pesticides	Soil and Groundwater
APEC J Impacts from Ink Manufacturing, Processing and Bulk Storage	Across the entirety of the Site	Graphic Centre Caspari, at 3791 St-Joseph Boulevard, was found to be in operation since at least 2000, and was registered as a generator of photo processing wastes from 1994 to 2001.	VOCs, PHCs, Metals	Soil and Groundwater
APEC K Impacts from Gasoline and Associated Products Storage in Fixed Tanks	Across the entirety of the Site	Records of various construction companies were reported at 3791 St-Joseph Boulevard, with operation from between at least 2001 through 2012. Construction companies may store, or handle petroleum-based oils or lubricants associated with equipment they use.	PAHs, VOCs, PHCs, PCBs	Soil and Groundwater
APEC L Impacts from the Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Across the entirety of the Site	Kars Graphics, is listed as an Industrial Machinery, Equipment and Supplies, Wholesale facility, at 3791 St-Joseph Boulevard, in operation from at least 2001 through 2005	VOCs, PHCs, PAHs	Soil and Groundwater

APEC M Impacts from Hardware Wholesale Distributors activities	Across the entirety of the Site	A wholesale trade agents and brokers, hardware wholesale-distributors, all other wholesaler-distributors, Other Home Furnishings Wholesaler-Distributors, and Service Establishment Machinery, Equipment and Supplies Wholesaler-Distributors at 3809 St-Joseph Boulevard	Metals, VOCs, PHCs, PCBs	Soil and Groundwater
APEC N Impacts from Gasoline and Associated Products Storage in Fixed Tanks.	Across the entirety of the Site	Records of various construction companies were reported at 3809 St-Joseph Boulevard, with operation from between at least 2001 through 2012. Construction companies may store, or handle petroleum-based oils or lubricants associated with equipment they use.	VOCs, PHCs, Metals	Soil and Groundwater

Notes: PEC – Potential Environmental Concern
PHC – Petroleum Hydrocarbons
PAH – Polycyclic Aromatic Hydrocarbons
VOC – Volatile Organic Compounds

1 - Area of Potential Environmental Concern (APEC) means the area on, in, or under a Phase One Property where one or more contaminants are potentially present, as determined through the Phase One ESA, including through:

(a) Identification of past or present uses on, in, or under the Phase One Property, and

(b) Identification of potentially contaminating activity.

2 - Potentially Contaminating Activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a Phase One Study Area

3 - When completing this column, identify all contaminants of potential concern using the Method Groups as identified in the "Protocol for in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011,

4 - When submitting a record of site condition for filing, a copy of this table must be attached.

3.3.1 Physical Settings

The topography of the Site and neighbouring lands is generally flat. The subject Site and the neighbouring lands have a common topographic elevation of approximately 60 m above mean sea level (amsl) according to The Atlas of Canada - Toporama. More specifically, the Site has a slight slope to the north, towards the Ottawa River.

A review of topographic maps from Natural Resource Canada indicates that topography of the area slopes north. The Ottawa River is identified to be approximately 1.1 km north of the Site.

Surficial geology consists of marine offshore deposits including clay, silty clay and silt, commonly calcareous and fossiliferous; local overlain by thin sand. Bedrock is part of Ottawa Formation, consisting mainly of grey limestone, some dolomite, shale and sandstone in the lower part

According to the Radon Potential Map of Ontario obtained from the website of Canada Radon, the Phase Two Study Area is located in the Relative Radon Hazard Zone 3 – Guarded.

3.3.2 Water Bodies and Areas of Natural Significance

There are no Areas of Natural Significance within the Phase Two Study Area. No water body is identified within 30 m of the Site.

3.4 Deviations from Sampling and Analysis Plan

LRL did not deviate from the SOPs and forms outlined above with one (1) exception. The previously installed monitoring well MW20-4, located at the southeastern portion of the Site, was concealed by the existing chip-truck operations. MW20-4 could not be located and is sought to be set beneath the existing chip stuck structure; therefore, it could not be sampled as part of this Phase Two ESA Update in December 2023.

The location of the boreholes and monitoring wells in relation to the PCAs and APECs are presented in **Figure 3** and **Figure 4**. Available monitoring wells were used to assess the groundwater flow direction and the groundwater quality at each screened interval.

The collection of groundwater samples was performed within 24 hours of purging as is required under the Ontario Regulation (O. Reg.) 153/04 (as amended).

No deviations occurred from the initial Sampling and Analysis Plan, with the exception of the exclusion of MW20-4 as previously discussed.

3.5 Impediments

MW20-4, located at the southeastern portion of the Site was concealed by the existing on-Site chip truck and corresponding storage trailer. LRL made a reasonable effort to retrieve the well, however according to the instrumentation used, and measurements from known reference points, it was found that the structures conceal the well, therefore it could not be sampled as part of this Phase Two ESA update.

4 INVESTIGATION METHOD

4.1 General

The Phase Two ESA Update involved various field activities to investigate the quality of the soil and groundwater and was comprised of the following components.

- Retaining public and private utility locator companies;
- Retaining a contractor for the advancement of the test pits;
- Supervision and documentation of test pit advancement and temporary piezometer installation field activities;
- Soil characterization and logging;
- Soil sample collection for chemical analysis;
- Well development;
- Determining the presence of any non-aqueous phase free product and water elevation monitoring; and
- Groundwater sample collection for chemical analysis.

Prior to conducting subsurface activities on the Site, LRL contacted various private utility marking contractors in the Ottawa region, who were retained to obtain both private and public locates on behalf of LRL.

Nine (9) of the thirteen boreholes were advanced to depths between 1.8 and 4.8 m bgs on January 6th and 7th, 2020, using a CME 55 truck-mounted drill rig, equipped with 203 mm diameter hollow stem augers. The drilling contractor was George Downing Estate Drilling Ltd. (Hawkesbury, Ontario) and worked under LRL field staff supervision. Soil samples were collected at 0.60 m intervals using a split spoon sampler of 0.60 m in length.

Four (4) of the boreholes, including each of the three (3) within the existing building, and one (1) at the northwestern portion of the Site, was advanced using manual techniques to depths of approximately 1.8 m below grade, or the floor slab. The manual drilling contractor was George Downing Estate Drilling Ltd. (Hawkesbury, Ontario) and the equipment used was a "jack-hammer" equipped with a 51 mm diameter split spoon sampler, 0.6 m in length. Soil samples were collected at 0.60 m intervals.

Between each spoon, the sampling equipment was thoroughly cleaned. Soil cuttings were stored in a secure and appropriate drum at various locations across the Site awaiting off-Site disposal at an approved facility by a licenced contractor, which is to be coordinated by the client.

At the time of the initial investigation activities in January 2020, the southwestern extent of the property was un-accessible and locked gate limiting access. This portion of the property was occupied by a landscaping/snow removal contractor. LRL returned to the Site on December 18th, 2023, to investigate this portion of the Site, as the previous limitations have been since removed. Three (3) test pits were advanced across the southwestern extent of the Site, to investigate the APEC associated with the previous landscape contractor activities at this portion of the Site. The test pits were advanced using a backhoe, operated by a contractor (Guy Courchesne Excavation Ltd.) retained by LRL, on December 18th, 2023, to a depth of 3.0 m below grade. Samples were collected in 0.6 m intervals using grab sample techniques from the backhoe bucket.

These borehole and test locations are those presented in **Figure 5** across the Site.

4.1.1 Name of the Contractor

George Downing Estate Drilling (Hawkesbury, Ontario) are licensed environmental drillers and were commissioned to drill 13 boreholes and install the four (4) monitoring wells. These included those in the building, and those which were advanced using manual techniques.

The three (3) test pits were advanced by a local and competent excavation contractor, Guy Courchesne Excavation Ltd. (Cumberland, Ontario).

4.1.2 Description of the Equipment Used

4.1.2.1 Boreholes

Nine (9) of the 13 boreholes were advanced using a CME 55 truck-mounted drill rig, equipped with 203 mm diameter hollow stem augers. Four (4) of the boreholes, including each of the three (3) within the existing building, and one (1) at the northwestern portion of the Site, was advanced using manual techniques including a "jack-hammer" equipped with a 51 mm diameter split spoon sampler.

Four (4) boreholes were completed as monitoring wells: BH20-2 through BH20-5 (herein referred to as MW20-2 through MW20-5). Monitoring wells were constructed within 203 mm diameter boreholes with a 32 mm slotted PVC piezometer placed bisecting the groundwater table. The top of the screen was extended to the ground surface using a solid riser pipe. Annular space around the slotted portion of the piezometer was backfilled with pre-washed and graded silica sand up to 300 mm above the top of the screen. A bentonite seal of at least 0.3 m was placed above the sand pack. Remaining back fill in boreholes consisted of soil cuttings and/or additional sand. Monitoring wells were finished at the surface with a flush-mount aluminum casing/stick-up steel casing.

4.1.2.2 Test Pits

Three (3) test pits were advanced across the southwestern extent of the Site using a backhoe, operated by a contractor (Guy Courchesne Excavation Ltd.).

4.1.3 Description of Measures taken to Minimize Cross-Contamination

Sampling tools used to retrieve soil samples from the split spoon sampler were cleaned immediately following the collection of a sample. The dedicated gloves were changed after each sample to prevent cross-contamination. The used gloves were placed in garbage bags and removed from the Site at the end of the drilling program.

4.1.4 The Frequency of Sample Collection

Sampling intervals for the boreholes were continuously taken with a 0.6 m in length split spoon sampler from the ground surface to at most 4.8 m bgs. Samples were collected from the backhoes advanced also in 0.6 m intervals using grab sample techniques from the backhoe bucket.

4.2 Soil Sampling

4.2.1 Description of Equipment Used for Soil Collection

The soil is removed from the split spoon/or grabbed from the backhoe bucket, and placed pre-labelled, laboratory prepared jars and methanol-filled vials and in clear plastic bags marked as BH20-XX-Y/TP23-XX-SS1 from 0.0 m to 0.6 m, or from each visually distinct material encountered; and so forth for each sample interval, or soil conditions encountered.

Following field screening with a photo ionization detector, samples were placed in appropriate laboratory-supplied, pre-labelled bottles and methanol-filled vials (for VOCs and PHC F1 analysis) and placed directly into ice-filled coolers for storage and transportation to Paracel Laboratories.

4.2.2 Geological Descriptions of Soil Samples

Exploratory Location BH/MW	Type	Geological Description	Depth Range (m bgs)	Soil Sample
BH20-1	Fill	Silty sand with clay and gravel, brown, loose.	0.0 - 0.61	1 / 2
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist to saturated at 1.2 m bgs, stiff.	0.61 – 1.83	3 / 4 / 5
BH20-2	Fill	Sand and gravel underlain by sand, brown, moist, loose.	0.0 – 0.61	6 / 7
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Very stiff to very soft with depth. Thin black seams running vertically between 0.6 and 1.2 m bgs.	0.61 – 4.88	8 / 9 / 10 / 11 / 12 / 13 / 14
BH20-3	Unspecified in Drilling Log		0.0 – 0.61	
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist to saturated at 1.8 m bgs. Stiff to soft with depth. Some seams of oxidation visible between 1.8 and 2.4 m bgs, and dark grey seam at 0.7 m bgs.	1.8 - 4.9	SS4, SS5, SS6, SS7, SS8
BH20-4	Fill	Sand and gravel, brown, loose	0.0 – 0.61	19

	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist, saturated at 1.8 m bgs. Stiff becoming firm to soft with depth. Oxidation visible between 1.3 m bgs.	0.61 – 3.05	20 / 21 / 22 / 23
BH20-5	Topsoil	Loam, presence of organic material (i.e. vegetation, roots), brown, dry, loose.	0.0 – 0.1	24 / 25
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish-brown. Moist to saturated at 1.8 m bgs. Stiff to soft with depth.	0.1 – 3.05	26 / 27 / 28 / 29
BH20-6	Topsoil	Loam, presence of organic material (i.e. vegetation, roots), brown, dry, loose.	0.0 - 0.61	30
	Unspecified in Drilling Logs		0.61 – 1.22	
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist, stiff.	1.22 – 2.44	31 / 32
BH20-7	Topsoil	Loam, presence of organic material, brown, dry, loose	0.0 – 0.61	33
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist, stiff.	0.61 – 1.83	34 / 35
BH20-8	Fill	Silty sand with gravel, brown, loose	0.0 - 0.61	36
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist, stiff.	0.61 – 2.44	37 / 38 / 39
BH20-9	Fill	Silty sand with clay and gravel, brown, loose	0.0 – 0.61	40
	Clay	Silty, becoming less silty with depth. Colour altering between grey, grey-brown and reddish brown. Moist to saturated at 1.8 m, stiff to soft in depth.	0.61 – 3.05	41 / 42 / 43 / 44
BH20-10	Concrete Slab		0.0 – 0.01	
	Fill	Crushed stone underlain by sand, brown, moist, loose	0.01 – 0.76	45 / 46
	Clay	Silty, colour altering between grey, grey-brown and reddish-brown, moist, firm.	0.76 – 1.83	47 / 48
BH20-11	Concrete Slab		0.0 – 0.01	

	Fill	Crushed stone underlain by sand, brown, moist, loose. Presence of black organic material.	0.01 – 0.61	49
	Clay	Silty, grey, moist, stiff.	0.61 – 1.83	50 / 51
BH20-12	Concrete Slab		0.0 – 0.01	
	Fill	Crushed stone underlain by sand, brown, moist, loose. Presence of black organic material.	0.01 – 0.64	49
	Clay	Silty, colour altering between grey, grey-brown and reddish-brown, moist, firm. PHC odour detected throughout.	0.64 – 1.83	50 / 51
BH20-13	Fill	Medium-grained sand, brown, moist, loose.	0.0 – 1.22	55 / 56
	Clay	Silty, grey-brown, moist, stiff.	1.22 – 1.40	57
	Loam	Dark brown, soft, moist. Presence of organic material (i.e. vegetation, roots).	1.40 – 1.50	58
	Clay	Silty, dark grey, moist, stiff.	1.50 – 1.83	59
TP23-1	Clay	Grey, moist becoming saturated at 0.6 m bgs.	0.0 – 3.0	SS1 / SS2 / SS3 / SS4 / SS5
TP23-2	Sand	Traces of organic material (plant roots), brown, dry to moist at 0.6 m bgs.	0.0 1.2	SS1 / SS2
	Clay	Grey, traces of organics (plant roots) between 0.6 and 1.2 m bgs.	1.2 – 3.0	SS3 / SS4 / SS5
TP23-3	Sand	Traces of organic material (plant roots), brown, dry to moist at 0.6 m bgs.	0.0 – 1.2	SS1 / SS2
	Clay	Grey, saturated.	1.2 – 3.0	SS3 / SS4 / SS5

4.3 Field Screening Measurements

Field screening of the soil involved the use of a PID to measure headspace concentrations of VOCs (as Isobutylene) in conjunction with visual and olfactory observations. This combination of field screening tools was used to determine the “worst-case” sample of the site and the selection of the samples for submission of VOC and PHC analysis.

4.3.1 PID Screening

Soil samples collected were screened for vapours using the MiniRae 3000 PID. The MiniRae 3000 PID was calibrated prior to use. Screening of VOC headspace concentrations were performed in accordance with LRL’s SOP for Field Measurement of Soil Screening Parameters.

VOC measurements were taken by collecting soil samples into dedicated plastic sampling bags and inserting into the bag while maintaining a tight seal around the probe. The measurements that represent the highest value detected within the first 30 seconds of the field screening and measurements were documented into the field notes. Soil samples with the highest combustible vapours detected were then submitted for laboratory analysis, as discussed below.

4.3.2 Chemicals Detected and Associated Detection Limits

The monitoring program was performed using the MiniRae 3000 PID gas meter equipped with a low range PID sensor and configured to detect VOCs calibrated to isobutylene (IBL). The MiniRae 3000 PID provides detection limit ranges between 0.1 – 10000 ppm for VOCs.

4.3.3 Precision of the Measurements

Throughout the sampling event, the MiniRae 3000 gas meter was calibrated to zero in the fresh air to ensure the precision of the CSV measurements.

4.3.4 Procedure for Checking Calibration of Equipment

The MiniRae 3000 PID was calibrated by LRL staff with isobutylene calibration gas prior to use.

The calibration of the MiniRae 3000 PID is verified by operating the unit in a fresh air environment and ensuring zero readings for all parameters measured.

4.4 Groundwater: Monitoring Well Installation

Four (4) boreholes, advanced in January 2020, were completed as monitoring wells: BH20-2 through BH20-5 (herein referred to as MW20-2 through MW20-5). Monitoring wells were constructed within 203 mm diameter boreholes with a 32 mm slotted PVC piezometer placed bisecting the groundwater table. The top of the screen was extended to the ground surface using a solid riser pipe. Annular space around the slotted portion of the piezometer was backfilled with pre-washed and graded silica sand up to 300 mm above the top of the screen. A bentonite seal of at least 0.3 m was placed above the sand pack. Remaining backfill in boreholes consisted of soil cuttings and/or additional sand. Monitoring wells were finished at the surface with a flush-mount aluminum casing/stick-up steel casing.

Furthermore, an additional monitoring well (identified as MW20-10 based on its proximity to the previously advanced BH20-10) was observed within the building, in the generally vicinity of the furnace room and corresponding AST. The details relating to the well construction are not known, however the well was measured to extent to a depth of 2.9 m below the top of slap. This monitoring well was included in the assessment outlined herein based on its location with respect to identified APECs.

A temporary piezometer was installed within the open test pit (TP3) advanced. The installation included a 51 mm slotted PVC piezometer, being 1.5 m in length, placed at the bottom of the excavation. The top of the screen was extended to the ground surface using a solid riser pipe. Annular space around the slotted portion of the piezometer was backfilled with soil cuttings up to 300 mm above the top of the screen. A Sono-tube was then placed over the riser, from the extent of the cutting placed over the screen to approximately ground surface. The Sono-tube was 203 mm in diameter, and the annular space was filled with bentonite chips to form a bentonite seal of at least 1.2 m. the remainder of the test pit was backfilled with the soil removed during test pitting. The riser extended above groundsurface with another extension of solid PVC piping. A lockable J-plug was added to the top of the riser. As this is a temporary installation, and it's location is in an area of the site restricted from vehicle traffic, no protective casing was applied around the piezometer.

The locations of the monitoring wells are presented in **Figure 5**.

4.4.1 Name of the Contractor

George Downing Estate Drilling Ltd. was commissioned to drill the 13 boreholes and install the four (4) groundwater monitoring wells.

The details related o the installation of the uncovered monitoring well within the building is unknown, including the contractor which constructed it.

LRL retained the services of Guy Courchesne Excavation Ltd. to advance the test pits along the southwestern portion of the Site. LRL installed the temporary piezometer, as mentioned above.

4.4.2 Description of the Equipment

Nine (9) of the 13 boreholes were advanced using a CME 55 truck-mounted drill rig, equipped with 203 mm diameter hollow stem augers. Four (4) of the boreholes, including each of the three (3) within the existing building, and one (1) at the northwestern portion of the Site, was advanced using manual techniques including a “jack-hammer” equipped with a 51 mm diameter split spoon sampler.

The monitoring wells were constructed using the following materials:

- Dedicated polyvinyl chloride (PVC) individually wrapped riser pipes and screens;
- 32 mm (1.25 inches) diameter Schedule 40 PVC pipe capped at the top;
- 32 mm (1.25 inches) diameter Schedule 40 No. 10-slot PVC screen with a screen length of 1.5 m and capped at the base with a PVC slip cap;
- Sand pack to approximately 0.3 m above the top of the well screen;
- Bentonite seal to at least 0.3 m above the sand pack;
- A J-Plug was added to the top of each solid stem riser; and,
- Flush mounts were installed to cover the monitoring wells installed.

Three (3) test pits were advanced across the southwestern extent of the Site using a backhoe, operated by a contractor (Guy Courchesne Excavation Ltd.). The temporary piezometer was installed within the open test pit (TP3) advanced and included the following materials:

- Dedicated polyvinyl chloride (PVC) individually wrapped riser pipes and screens;
- 51 mm (2 inches) diameter Schedule 40 PVC pipe capped at the top;
- 51 mm (2 inches) diameter Schedule 40 No. 10-slot PVC screen with a screen length of 1.5 m and capped at the base with a PVC slip cap;
- Annular space around the slotted portion of the piezometer was backfilled with soil cuttings up to 0.3 m above the top of the screen;
- A 0.2 m diameter sono-tube placed over the riser, from the extent of the cutting placed over the screen to approximately ground surface;
- The sono-tube annular space was filled with bentonite chips to form a bentonite seal of at least 1.2 m bgs;
- A lockable J-plug was added to the top of the riser; and
- As this is a temporary installation, and it’s location is in an area of the site restricted from vehicle traffic, no protective casing was applied around the piezometer.

4.4.3 Measures to Minimize Potential Cross-Contamination

There are dedicated Schedule 40 PVC pipes and screens encased in a plastic sleeve that is removed prior to installation. Once the monitoring wells were installed. Sterile dedicated tubing was placed in each monitoring for well development.

A dedicated sampling device consisting of a sampling tube and pump attached was used to collect groundwater samples. The groundwater was placed directly in the pre-labelled laboratory-supplied sample jars and vials and was tightly sealed and placed directly into a cooler for delivery to the laboratory. Sterile butyl nitrile gloves were changed for each well to ensure no cross-contamination during the sampling program.

Groundwater samples were placed directly into pre-labelled, laboratory-prepared sample containers and placed directly into a cooler.

4.4.4 Frequency of Sample Collection during Drilling

Groundwater samples were not collected during borehole drilling or monitoring well/piezometer installation, but rather at least 24 hours following construction.

4.4.5 Monitoring Well Development

Prior to well development, the groundwater elevation at each monitoring well was established using a Solinst Oil/Water interface probe. The interface probe was used to assess the monitoring well for the presence of Light Non-Aqueous Phase Liquids (LNAPLs) and Dense Non-Aqueous Phase Liquids (DNAPLs). If a free product were present, the thickness of the free product would be measured and recorded, and the actual groundwater surface was corrected accordingly. The interface probe was thoroughly washed with de-ionized water and dried with a clean cloth prior to use at a subsequent well.

Subsequent to the groundwater elevation survey, each well was developed by the removal of at least three (3) times the volume of water (if possible) using a dedicated foot valve and waterra tubing. The purged groundwater removed was collected in dedicated five (5) gallon pails (23 litres) to inspect the removed water for visible identifiers or sheen. The amount of water removed from each well was recorded and is summarized in **Table 7 – Section 4.5.5** as follows.

Table 7 – Section 4.5.5: Monitoring Well Development

Monitoring Well	Groundwater Level (m bgs)	Depth of water column (m)	Required Purge Volume (L)	Date of Development/Purging	The volume of Fluid Removed from Well (L)
MW20-2	3.04	1.53	10.0	January 9th, 2020	14
	0.77	4.14	12.5	December 18th, 2023	13
MW20-3	2.15	0.70	5.0	January 9th, 2020	8
	1.34	1.74	10.4	December 18th, 2023	11
MW20-4	Dry (January 9th, 2020				
	Could not retrieve (December 18th, 2023)				
MW20-5	1.00	1.99	12.0	January 9th, 2020	17
	1.21	1.68	10.1	December 18th, 2023	11
MW20-10	0.59	2.34	3.6	December 18th, 2023	4
MW23-3	0.72	2.92	17.5	December 18th, 2023	18

4.5 Groundwater: Field Measurements of Water Quality Parameters

During both the January 2020 and December 2023 groundwater sampling, the wells were purged/developed using dedicated foot valves and waterra tubing. Samples for VOCs were collected using a dedicated Eco-bailer, and the remaining containers for the additional analysis were filled using the waterra tubing with foot valve.

During the initial development of the monitoring wells installed by LRL in January 2020, field parameters, including conductivity, temperature, pH, and total dissolved solids (TDS) were collected to confirm the steady-state water quality. Generally, after each well volume removed, or once the well was recorded as 'dry', field measurements were collected from a dedicated volume (approximately 250 mL) of the well water, and using a Hanna Instruments HI98129 pH/EC/TDS pen.

Table 8 – Section 4.6 below summarizes select steady-state water quality parameters measured at each well, prior to the collection of groundwater samples.

Table 8 – Section 4.6: Instrument Readings at Steady-State Conditions

Date	Location	Temp. °C	TDS (ppm)	Electrical Conductivity (mS/cm)	pH
January 9, 2020	MW20-2	4.5	1163	2318	8.35
January 9, 2020	MW20-3	6.9	759	1509	7.57
January 9, 2020	MW20-5	3.9	707	1409	7.73

Following each use and prior to the commencement of the subsequent groundwater sample, the Hanna Instrument probe was flushed with de-ionized water and dried thoroughly.

4.6 Groundwater: Sampling

Groundwater samples were collected on January 9th, 2020, following the field measurements of the water quality parameters, in addition to on December 20th, 2023, in accordance with LRL's SOP for Groundwater Sampling.

Groundwater samples were collected from the well as soon as there was sufficient groundwater in the well for sample collection.

The jars and vials were prepared in advance by the laboratory. The pre-labelled jars were filled in the field sealed when full, packaged in bubble wrap and placed into an ice-filled cool box to maintain temperatures below 10 °C for storage and transportation. The chain of custody form was completed in the field, placed in a protective wrap, and placed into the cooler box for delivery to the laboratory. A copy of the Chain of Custody was retained and is attached to the report in **Appendix B**.

MW20-4, located at the southeastern portion of the Site, was intended to be included in the sampling program. However, due to the chip-truck structure being set over the well location at the time of the December 18th through 20th, 2023 sampling event, the existing monitoring well could not be located at the time this assessment was completed. This well was reported as dry at the time of the initial sampling event on January 9th, 2020.

4.7 Sediment: Sampling

The Phase Two Property did not contain a body of water as defined under Ontario Regulation 153/04 (as amended); therefore, sediment was not present in the investigation area and no sediment sampling was conducted.

4.8 Analytical Testing

The soil and groundwater samples were submitted to Paracel Laboratories Ltd. (Ottawa, Ontario), analytical laboratories accredited by the Canadian Association for Laboratory Accreditation (CALA). The analyses were performed in compliance with the MECP Laboratory Services Branch, "Protocol for Analytical Methods Used in the Assessment of Properties under Past XV.1 of the Environmental Protection Act of the Environmental Protection Act, July 1, 2011".

One (1) field duplicate sample was collected for every ten (10) groundwater samples, for QA/QC purposes. The duplicate(s) were labelled generally as those of the actual parent sample location and noted in the field documentations. The location and identity were not provided to the laboratory.

The required RDLs for all parameters were met and there are no RDLs that exceed the applicable site condition standard.

4.9 Residue Management Procedures

4.9.1 Soil Cuttings – Drilling

Soil cuttings from the January 2020 drilling event were stored in a secure and appropriate drum at various locations across the Site awaiting off-Site disposal at an approved facility by a licenced contractor, which is to be coordinated by the client.

4.9.2 Water from Well Development and Purging

Water generated from the well development and the purging of the wells was collected and stored on-Site for future disposal. The groundwater encountered at the Site did not exhibit any visual or olfactory evidence of chemical impact, sheen, or NAPLs.

4.10 Elevation Surveying

An elevation survey was carried out using a Spectra Precision, LL300 N Self-Leveling Laser Level. The results of the elevation survey are summarized on the borehole /test pit logs included in **Appendix A**, in addition to **Table 1** included as an attachment to this report, in the subsequent **Tables Appendix**.

4.11 Quality Assurance and Quality Control Measures

For Quality Assurance and Quality Control Measures (QA/QC), one (1) groundwater sample was collected as a duplicate sample for every ten (10) sample parameters collected in the field.

The analysis of QA/QC for groundwater were within appropriate range of analytical results with the duplicates taken in the field.

The relative percent difference (RPD) values were calculated and determined that all the parameters measured against their respective duplicate versus the actual samples were met, with one (1) marginal variance. Zinc values between the parent sample and the duplicate sample varied by 22%. The acceptable range is 20%. This variance is considered marginal, and all remaining metals parameters are within the RPD range. Therefore, the results are considered reliable.

4.11.1 Laboratory Supplied Sample Containers and Shipment Procedures

Table 9 – Section 4.12.1 below provides a detailed description of the sample containers, preservation, labelling, handling, and custody for the samples submitted.

Table 9 – Section.12.1: Sampling Parameters and Containers

Parameter	Sample Container	Preservative	Handling & Custody Samples
Soil Samples			
Metals, PHCs (F2-F4), PAHs, PCB, General Inorganics.	Amber glass Teflon lined lids	None	Soil samples were collected from the split-spoon sampler by hand; using grab sample techniques or with the use of a clean steel trowel and transferred to a zip lock bag for field screening. Samples taken for laboratory analysis were placed in pre-prepared and labelled laboratory-supplied sample containers, observing the laboratory requirements for specific sample volumes according to the testing required. The soil samples collected for laboratory analysis were immediately placed into ice-filled cool boxes for storage and transportation to the laboratory. On arrival, all samples were removed from the ice-filled cool box and immediately refrigerated pending final chemical analysis sample selection. Selected samples for laboratory analysis were placed in ice-filled cool boxes and dispatched to the accredited chemical laboratory under Chain of Custody procedures.
VOCs, PHC (F1)	Vial	Methanol	
Groundwater Samples			
PHCs (F2-F4).	Amber Glass Bottle	Hydrochloric Acid (HCL)	Groundwater samples were collected using dedicated HDPE waterra tubing fitted with a foot valve, and eco-bailer. Groundwater samples and dispensed directly into the appropriate pre-labelled, laboratory-supplied groundwater sample containers. The collected groundwater samples were immediately placed into ice-filled cool boxes for storage and transportation to the laboratory. On arrival at the laboratory, all samples were removed from the ice-filled cool box and immediately refrigerated pending final chemical analysis sample selection. Selected samples for laboratory analyses were placed in ice-filled cool boxes and dispatched to the accredited chemical laboratory under Chain of Custody procedures.
Cyanide, ICP Metals	High-Density Polyethylene (HDPE)	Nitric Acid (HNO3)	
Cyanide	HDPE	Sodium Hydroxide (NaOH)	
Mercury	Amber Glass Bottle	HNO3	
CrVi	Amber Glass Bottle	HNO3	
VOCs, PHC (F1)	Vials	NaHSO4	
PCB/Pesticides-(OCP) surrogate, PCBs, semi-volatiles	Amber Glass Bottle	None	

Soil samples were collected using dedicated prepared 250 ml jars, syringes, and vials provided by Paracel Laboratories Ltd. Soil samples that required VOC analysis involved placing approximately 5 g of soil into dedicated methanol- filled vials. This method was used to ensure no loss of VOCs during transportation. The vials were placed in the cooler containing the trip blank for VOC analysis. The cooler was placed in ice to ensure the temperature of the samples.

4.12.1 Description of Equipment Cleaning Procedures

The majority of the boreholes were drilled utilizing solid stem augers due to the presence of rocky till and boulders that were not penetrable with hollow stem augers.

Split spoon core samples of soil were obtained during the drilling was collected via a 0.60 m in length split- spoon sampler. The split-spoon samplers were washed and scrubbed with Alconox mixed in water and rinsed between each use to prevent cross-contamination on re-use. The rinse water was placed into the drums for later offsite disposal. Samples collected from the test pits advanced were collected directly from the backhoe bucket.

Soil samples were collected from the split-spoon sampler or from the backhoe bucket, by hand (using dedicated nitrile gloves that were disposed of after each sample), to mitigate cross-contamination. If necessary, soil samples contained in the split-spoon sampler were removed with the aid of a stainless-steel trowel. Subsequent to soil sample collection, each split-spoon sampler and any other hand-tool used for sample collection were immediately cleaned in accordance with LRL's SOP, as follows:

- Scrubbed with a wire brush in an Alconox solution (a powdered precision cleaner, that is biodegradable and has interfering-residue free and corrosion-inhibiting properties);
- Rinsed with distilled or de-ionized water;
- Horiba instrument was flushed clean with de-ionized water; and,
- All fluids captured for offsite disposal in 205 L drums.

The soil samples were placed directly into pre-labelled jars specific to the chemical analysis desired. The location of each sampling point is recorded, and the pre-labelled jars were placed in coolers and packed with ice. The remaining sample after classification were placed in a large zip lock bag for further field screening by means of PID for vapour headspace measurements.

4.11.2 Description of Field Quality Control Measures

Soil samples including duplicates were placed into laboratory-provided bottles and vials that were clearly labelled with the sample location, date, and chemical analysis to be conducted on each sample jar. The same labelling was applied to the chain of custody forms. Dedicated nitrile gloves were used for each sample collected in the field and disposed of immediately after use.

VOC samples were collected in methanol vials filled by the laboratory and an exact amount of VOC impacted soil was added to the vials by means of a syringe that captures 5 ml of soil to be added to the vials. The vial caps are tightly sealed and placed directly in a bubble cap package and placed upright into a cooler packed with ice. Sample screening by means of a PID, olfactory clues, discoloration, soil characteristics, and texture were used to determine which samples were to be submitted for further analysis.

Samples for analysis of metals parameters were placed into amber-coloured jars prepared by the laboratory sealed with a Teflon-lined cap. The jars were filled to the brim and capped tightly to minimize the vapour headspace in the jar. These jars were placed in bubble wrap containers and placed into a cooler packed with ice. The selection of the samples for analysis was based on the field screening method outlined in LRL's SOPs.

Groundwater samples, including duplicates, were placed into laboratory prepared (with appropriate preservatives) and supplied bottles and vials. The vials and jars were filled to the brim to minimize VOC loss.

The following packaging and transportation procedures were followed:

- Correctly labelled samples were packed in ice-filled cool boxes to maintain temperatures below 10°C during sample collection and transportation from the Phase Two Property to the laboratory and the chemical testing to Paracel Laboratories Inc.; and
- A copy of the chain of custody form was maintained.

4.11.3 Deviations from the Quality Assurance and Quality Control Program

There were no deviations from the Quality Assurance and Quality Control Program.

5 REVIEW AND EVALUATION

5.1 Geology

Surficial geology consists of marine offshore deposits including clay, silty clay and silt, commonly calcareous and fossiliferous; local overlain by thin sand.

Bedrock is part of Ottawa Formation, consisting mainly of grey limestone, some dolomite, shale and sandstone in the lower part.

Based on available geological resources, bedrock in the vicinity of the Site is inferred to be at depths ranging between 23 - 37 m below grade.

5.1.1 Geological Conditions Encountered

13 boreholes and three (3) test pits were advanced across the Site. The soils encountered consisted mainly of granular crushed stone and sand fill over clay.

No sheen or evidence of Light Non-Aqueous (LNAPL) and Dense Non Aqueous Phase Liquid (DNAPL) as free product was observed in any of the monitoring wells or temporary piezometers. Olfactory evidence of hydrocarbon odours were detected select soils encountered in BH20-12, advanced within the building in the vicinity of the existing heating oil storage tank. Olfactory evidence, indicative of petroleum hydrocarbon impacts, were encountered in BH20-12 from depths between 0.6 and 1.8 m below grade. No free phase petroleum hydrocarbons, or dark staining were encountered in any remaining soil samples collected.

The groundwater monitoring wells were positioned to identify potential groundwater impacts associated with the PCAs and APECs identified on the Site. Groundwater contours and inferred groundwater flow direction are presented in **Figure 6.** Based on the elevation encountered, the groundwater flow direction in the overburden across the Site is towards the north.

5.1.2 Elevations Geodetic Benchmark

A laser level was used to determine the arbitrary elevations for each borehole and monitoring well. Should these elevations, including groundwater levels, be used in support of development planning, a formal geodetic survey should be completed, and these values be incorporated accordingly.

5.1.3 Aquifer & Aquitard Properties

The soil stratigraphy indicated that the overburden was primarily comprised of fine-grained clay. The monitoring wells were installed to a depth between 3.0 m and 4.5 m bgs and exhibited a static water level of 1.01 m bgs on average.

5.1.4 Rationale for the Choice of Aquifer

There is only one (1) aquifer onsite and only one (1) aquifer was investigated as it lies directly below the Site. Since none of the COC were encountered based on the onsite PCAs and APECs in the aquifer that was above the SCS, further vertical delineation of the aquifer was not warranted. If any of the COC had been encountered above the SCS, then deeper monitoring wells would have been required. The following exceedances were encountered at the Site.

5.1.5 Confirmatory Soil and Groundwater Monitoring Well Design and Rationale

Table 10 – Section 5.1.5: Confirmatory Soil and Groundwater Monitoring Well Design and Rationale

Monitoring Well/ Borehole	Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase Two Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or sediment)
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC A	On-Site	**PCA 30:** Presence of Fill Materials of Unknown Quality	On Site	PAHs, VOCs, PHCs, Metals, General Inorganics	Soil
MW20-2; BH20-10; BH20-11; BH20-12; MW20-10	APEC B	On-Site, ground floor of the building, along the southcentral extent	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks.	On-Site	VOCs, PHCs, PAHs	Soil and Groundwater
MW20-2; MW20-3; MW20-5; BH20-10; BH20-11; BH20-12; MW20-10	APEC C	On-Site, within building located across the northern portion of the Site.	**PCA 31:** Ink Manufacturing, Processing and Bulk Storage	On-Site	VOCs, PHCs	Soil and Groundwater
MW20-10 TP23-1; TP23-2; TP23-3	APEC D	On-Site, northern extent in the vicinity of the heating oil tank and furnace room	**PCA Other:** Known Impacted Soil Conditions	On-Site	PHCs	Soil and Groundwater
TP23-1; TP23-2; TP23-3; MW23-3; MW20-2; MW20-3; MW20-5	APEC E	On-Site, southwestern portion of the Site	**PCA 40:** Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	On-Site	OP Pesticides	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC F	On-Site	**PCA Other:** Parking and/or storage of suspected automobiles and equipment	On-Site	VOCs, PHCs, Metals	Soil and Groundwater
MW20-3; MW20-5; BH20-10	APEC G	On-Site, along the northern extent of the Phase Two property.	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks.	Adjacent property to the north - 1270 Trim Road	PHCs, VOCs, Metals	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and	APEC H	On-Site, across entirety of the Phase Two Property	**PCA 34**: Metal Fabrication	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	PHCs, VOCs, Metals.	Soil and Groundwater

TP23-3						
TP23-1; TP23-2; TP23-3; MW23-3; MW20-2; MW20-3; and MW20-5	APEC I	On-Site, across entirety of the Phase Two Property	**PCA 40:** Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	OP Pesticides	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC J	On-Site, across entirety of the Phase Two Property	**PCA 31:** Ink Manufacturing, Processing and Bulk Storage	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	VOCs, PHCs, Metals	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC K	On-Site, across entirety of the Phase Two Property	**PCA 28**: Gasoline and Associated Products Storage in Fixed Tanks	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	PAHs, VOCs, PHCs, PCBs	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC L	On-Site, across entirety of the Phase Two Property	**PCA 52:** Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Approximately 75 m south of the Site – 3791 St-Joseph Boulevard	VOCs, PHCs, PAHs	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC M	On-Site, across entirety of the Phase Two Property	**PCA Other:** Hardware Wholesale Distributors activities	Approximately 155 m south of the Site – 3809 St-Joseph Boulevard	Metals, VOCs, PHCs, PCBs	Soil and Groundwater
BH20-1; MW20-2; MW20-3; MW20-4; MW20-5; BH20-6, BH20-7; BH20-8; BH20-9; TP23-1; TP23-2; and TP23-3	APEC N	On-Site, across entirety of the Phase Two Property	**PCA 28:** Gasoline and Associated Products Storage in Fixed Tanks.	Approximately 155 m south of the Site – 3809 St-Joseph Boulevard	VOCs, PHCs, Metals	Soil and Groundwater

5.2 Groundwater Elevations

The direction of groundwater flow has been determined to be mainly in a northerly direction. **Figure 6** shows the groundwater flow direction based on the most recent (December 2023) data collected at the time of this assessment.

5.2.1 Discussion and Rationale for Location and Screen Intervals

The wells were placed generally so that the triangulation of the groundwater elevations could be conducted to determine the groundwater flow direction. The between 1.5 and 3.0 m screen was used to straddle the groundwater table for the interception of LNAPLs and the potential of free phase and dissolved fractions of DNAPLs, as well as providing sufficient area for placement of a proper bentonite seal.

5.2.2 Interphase Probe

No LNAPLs or DNAPLs were detected with the interphase Probe during the measuring of water levels before and after well development. All monitoring wells were purged/developed via waterra tube and foot valve.

5.2.3 Product Thickness

No free product was encountered.

5.3 Groundwater: Hydraulic Gradient

5.3.1 Horizontal Hydraulic Gradient

Hydraulic gradients were as follows:

Table 11 – Section 5.3.1: Hydraulic Gradient

Parameter	Hydraulic Gradient (m/m)	Remarks
Maximum	0.62	Between MW20-3 and MW23-3
Minimum	0.05	Between MW20-2 and MW23-3
Average	0.335	

5.3.2 Vertical Hydraulic Gradient

The vertical hydraulic gradient was not established for the subject Site at the time of this assessment.

If the shallow aquifer or Aquitard is found to be contaminated, then deeper wells will be required to delineate the groundwater at deeper depth in case there is more than one (1) aquifer or aquitard onsite. Vertical delineation is mandatory under O. Reg 153/04 if the shallow aquifer is found to be contaminated. Hence a vertical gradient must be determined when deeper monitoring wells are installed onsite.

5.4 Fine-Medium Soil Texture

Under Ontario Regulation 153/04 (as amended). “coarse-textured soil” is soil that contains more than 50 percent by pass of particles that are 75 micrometers (um) or larger in mean diameter. The more stringent coarse-grained soil analysis was applied to this Site.

5.4.1 Rationale for the Use of Fine – Medium Soil Texture

Not applicable.

5.4.2 Results of the Grain Size Analysis for Fine – Medium Soil Texture

Not applicable

5.4.3 Rationale for the Number of Samples Collected and Analysed for Grain Size Analysis

Not applicable

5.5 Soil: Field Screening

The samples were examined in the field for lithology as well as for aesthetic evidence of impacts (i.e., debris, staining, and odours). In addition, headspace readings were recorded using a photo-ionization detector (PID) calibrated to hexane (HEX) and isobutylene (IBL). This combination of field screening tools was used to determine the “worst-case” sample(s) collected from the subject Site.

5.6 Soil Quality

The Phase One ESA Conceptual Site Model identified the following Contaminants of Concern in the soil in relation to the PCAs and 14 APECs that may affect the Phase Two Property.

- Polycyclic Aromatic Hydrocarbons (PAHs);
- Metals;
- General Inorganics;
- Polychlorinated Biphenyl (PCB);
- OC Pesticides
- Volatile Organic Compounds (VOC); and
- Petroleum Hydrocarbons – F1 through F4.

Between January 6th, 2020, and December 18th, 2023, a total of twenty-four (24) samples including four (4) duplicate samples, were submitted to evaluate the level of potential chemical impact on the soils beneath the Site. All soil samples met the MECP Table 2 Standards ICC for coarse-grained soils in potable groundwater conditions.

5.6.1 Location, Depth of Sampling

The following table describes the location and depth of the specific samples submitted for chemical laboratory analysis, and the results of the analyses in comparison to MECP Table 2 ICC.

Table 12 – Section 5.6.1: Soil Chemical Laboratory Analysis

Borehole ID	Sample ID	Depth (m bgs)	Date Sampled	Chemical Analysis							Standard Exceedance (Table 2 ICC for coarse soils)
				PHC F2 – F4	VOCs/F1	PAHs	PCBs	General Inorganic	Metals	Pesticides	
TP1	SS1	0.0 – 0.6	December 18th, 2023	✓	✓	✓					No Exceedances
	SS2	0.6 – 1.2	December 18th, 2023					✓	✓	✓	No Exceedances
	SS4	1.8 – 2.4	December 18th, 2023				✓				No Exceedances
TP2	SS1	0.0 – 0.6	December 18th, 2023					✓	✓		No Exceedances
	SS2	0.6 – 1.2	December 18th, 2023							✓	No Exceedances
	SS5	2.4 – 3.0	December 18th, 2023	✓	✓	✓					No Exceedances
TP3	SS1	0.0 – 0.6	December 18th, 2023							✓	No Exceedances
	SS2	0.6 – 1.2	December 18th, 2023				✓	✓	✓		**Metals**
	SS3	1.2 – 1.8	December 18th, 2023	✓	✓	✓					No Exceedances
BH20-1	1	0.0 – 0.6	January 6th, 2020	✓	✓				✓		No Exceedances
BH20-2	9	1.2 – 1.8	January 6th, 2020	✓	✓				✓		**Metals**
BH20-3	15	0.6 – 1.2	January 6th, 2020	✓	✓				✓		No Exceedances
BH20-4	20	0.6 – 1.2	January 6th, 2020	✓	✓				✓		**Metals**
BH20-5	26	0.6 – 1.2	January 6th, 2020	✓	✓				✓		**Metals**
BH20-6	31	1.2 – 1.8	January 6th, 2020	✓	✓				✓		**Metals**
BH20-7	33	0.0 – 0.6	January 6th, 2020	✓	✓				✓		
BH20-8	36	0.0 – 0.6	January 6th, 2020	✓	✓				✓		No Exceedances
BH20-9	42	1.2 – 1.8	January 7th, 2020	✓	✓				✓		**Metals**
BH20-10	46	0.6 – 0.8	January 7th, 2020	✓	✓				✓		No Exceedances
BH20-11	50	0.6 – 1.2	January 7th, 2020	✓	✓				✓		**Metals**
BH20-12	53	0.6 – 1.2	January 7th, 2020	✓	✓				✓		No Exceedances
BH20-13	55	0.0 – 0.6	January 7th, 2020	✓	✓				✓		No Exceedances

Notes

XXX Exceedances to the applicable Table 2 site condition standards

The Laboratory Certificates of Analysis are presented in **Appendix B** and the soil analytical results are presented in **Table 2** through **Table 5**, included at the end of this report in the Appendices.

Based on the analysis, select parameters were observed to exceed the appliable site condition standards. These exceedances, although summarized above in the **Table 16**, are further discussed herein:

- Samples **TP3-SS2**, collected from depths of between 0.6 and 1.2 m bgs; **BH20-2-9**, collected from depths of between 1.2 and 1.8 m bgs; **BH20-4-20**, collected from depths of between 0.6 and 1.2 bgs; **BH20-5-26**, collected from depths of between 0.6 and 1.2 m bgs; **BH20-6-31**, collected from depths of between 1.2 and 1.8 m bgs; **BH20-9-42**, collected from depths of between 1.2 and 1.8 m bgs; and **BH20-11-50**, collected from depths of between 0.6 and 1.2 m bgs encountered elevated concentrations of **Vanadium**, a metal-based parameter, with concentrations above the Table 2 site condition standard. According to the Canadian Council of Ministers of the Environment (CCME) fact sheet, vanadium present in soils can be related to industrial activities but could also be related naturally geological formations with the highest concentrations found in shale and clays. During the intrusive investigation, a stratum of clay being at least 0.6 – 4.2 m thick was encountered across the Site. The CCME fact sheet also indicates that concentrations of naturally occurring vanadium across Canada typically increases in depth. The values encountered at the Site ranged between 80.1 and 109 µg/g, within the representative clay samples, generally within the range that could be a result of naturally occurring deposits.

It should be noted that although additional exceedances to the applicable Table 2 site condition standard were not encountered in the soils, at the time of the borehole advancement within the building (January 7th, 2020), olfactory evidence indicative of PHC impacts were detected in the soils beneath the southeast portion of the building slab, at depths between 0.6 and 1.2 m bgs. Although the samples submitted for laboratory analysis were found to meet the Table 2 SCS for VOC and PHC parameters.

5.6.2 Analytical Results to SCS

The environmental quality of the soil at the Site was compared to the MECP Table 2 ICC Standard. The Laboratory Certificate of Analysis is presented in **Appendix B**.

5.6.3 Contaminants of Concern (COC)

The contaminants of concern identified in the soil on the property are as follows:

- Metals, including Vanadium.

5.6.4 Chemical and Biological Transformations

No chemical or biological transformations were noted on, in or under the Phase Two Property.

5.6.5 Source of Contaminant Mass Contributing to the Groundwater

Olfactory evidence indicative of PHC impacts were detected in the soils beneath the southeast portion of the building slab, at depths between 0.6 and 1.2 m bgs. Although the samples submitted for laboratory analysis were found to meet the Table 2 SCS for VOC and PHC parameters, the olfactory evidence encountered suggests further potential impacts not intercepted by the borehole advancement program.

Vanadium exceeded the Table 2 SCS in seven (7) samples from locations across the Site. According to the Canadian Council of Ministers of the Environment (CCME) fact sheet, vanadium present in soils can be related to industrial activities but could also be related naturally geological formations with the highest concentrations found in shale and clays. During the intrusive investigation, a stratum of clay being at least 0.6 – 4.2 m thick was encountered across the Site. The CCME fact sheet also indicates that concentrations of naturally occurring vanadium across Canada typically increases in depth. The values encountered at the Site ranged between 80.1 and 109 µg/g, within the representative clay samples, generally within the range that could be a result of naturally occurring deposits. The levels encountered in this assessment are below

those of CCME and are not likely a result of the fill material on the Site, or current/former Site and neighbouring land activities, but rather naturally occurring in the subsurface deposits.

Based on these observations, groundwater impacted is possible for this Phase Two ESA Investigation.

5.7 Ground Water Quality

The Phase One ESA Conceptual Site Model identified the following Contaminants of Concern in relations to PCAs and APECs that may affect the Phase Two Property.

On January 9th, 2020 and December 20th, 2023, a total of nine (9) groundwater samples including one (1) field duplicate groundwater sample for all sample parameters was analyzed as follows, to appropriately evaluate the level of chemical impact to the groundwater beneath the Phase Two Property in the areas of the various APECs:

- Nine (9) samples for VOCs;
- Nine (9) samples for PHC fractions F1 to F4;
- Nine (9) samples for PCBs;
- Five (5) samples for PAHs;
- Five (5) samples for OC Pesticides; and
- Nine (9) samples for metals (including mercury and CrVi).

5.7.1 Location and Sample Depth

Table 17 – Section 5.7.1 below described the location and depth of the specific groundwater samples submitted for chemical laboratory analysis, and the results of the analyses in comparison to Table 2 site condition standards for coarse-grained soils.

Table 13 – Section 5.7.1: Groundwater Chemical Laboratory Analysis

Well ID	Sample ID	Depth (m asl)	Date Sampled	Chemical Analysis						Standard Exceedance (Table 2 ICC for coarse-soils)
				PHCs F2 – F4	VOCs/F1	PAHs	PCBs	Metals	OC Pesticides	
MW20-2	MW20-2	94.82	January 9th, 2020	✓	✓			✓		No Exceedances
MW20-2 Duplicate	MWX		January 9th, 2020	✓	✓			✓		No Exceedances
MW20-2	MW20-2		December 20th, 2023	✓	✓	✓	✓	✓	✓	**PAH**
MW20-3	MW20-3	96.13	January 9th, 2020	✓	✓			✓		**Vanadium**
	MW20-3		December 20th, 2023	✓	✓	✓	✓	✓	✓	**PAH**
MW20-5	MW20-5	95.78	January 9th, 2020	✓	✓			✓		No Exceedances
	MW20-5		December 20th, 2023	✓	✓	✓	✓	✓	✓	**PAH**
MW20-10	MW20-10	96.23	December 20th, 2023	✓	✓	✓	✓	✓	✓	No Exceedances
MW23-3	MW23-3	97.16	December 20th, 2023	✓	✓	✓	✓	✓	✓	**PAH**

Notes

XXX	Duplicate sample collected and submitted for laboratory analysis
XXX	Exceedances to the applicable Table 2 site condition standards

The Laboratory Certificates of Analysis are presented in Appendix B and detailed assessments of the groundwater analytical results are presented in **Table 6** through **Table 9**, included at the end of this report in the Appendices.

The environmental quality of the groundwater at the Phase Two Property was compared to the MECP Table 2 Standards for potable groundwater. As presented above in **Table 17 – Section 5.7.1,** various parameters were found to exceed the appliable Tabe 2 site condition standard. These exceedances are summarized as follows:

- PAH parameters, including **Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene** and **Indeno [1,2,3-cd] pyrene** exceeded the site condition standards in the December 20th, 2023 groundwater sample collected from monitoring well **MW20-2**.
- **Vanadium** concentrations exceeded the site condition standards in the December 20th, 2023 groundwater sample collected from monitoring well **MW20-3**;
- **Benzo[a]pyrene**, a PAH parameter, also exceeded the Table 2 site condition standard in **MW20-3**;
- **Benzo[a]pyrene**, a PAH parameter, also exceeded the Table 2 site condition standard in **MW20-3**; and
- PAH parameters, including **Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene** and **Fluoranthene** exceeded the site condition standards in the December 20th, 2023 groundwater sample collected from monitoring well **MW23-3**.

It is inferred that the vanadium exceedance encountered may be contributed to naturally occurring deposits found in the underlying clay. Regionally, the Champlain Sea deposits are known to have naturally occurring

elevated concentration of vanadium. The PAH exceedances are likely the result of the former Site activities including the parking of heavy equipment and vehicles in the early 1990's or associated with the fill encountered across the Site. These PEC identified are assumed to contribute to the elevated PAH concentrations based on the location to which they were encountered, and the groundwater flow direction. It would be anticipated that if the PAH concentrations were associated with the gasoline service station to the north, the AST in the building on-Site; or the former commercial printing operations, the highest concentrations would be anticipated to be found along the northern property extents in MW20-3 and MW20-5. However, the highest PAH concentrations were noted in MW20-2, located in the parking & circulation area to the south of the building, and in MW23-3, located at the southwestern portion of the building.

Groundwater impacts with respect to the vanadium parameters has been delineated horizontally to the west and south, however vertical delineation has not been established at this time. As mentioned, this exceedance is likely attributed to the naturally occurring vanadium concentration common in the Champlain Sea deposits (clay) across the Site, therefore, it would be inferred that bedrock groundwater would likely have lesser concentrations. Based on available geological resources, bedrock in the vicinity of the Site is inferred to be at depths ranging between 23 - 37 m below grade, therefore, it is assumed that the vanadium exceedances in the groundwater is limited to depths of between 23 – 37 m below grade.

The previously identified APEC A and APEC F are anticipated to be encountered in the groundwater that exceeded the SCS for PAH parameters across on the Phase Two Property.

5.7.2 Documentation of Field Filtering

Field Filtering was conducted for metals only. The Certificates of Analysis show no lab filtering for the samples submitted for this Site.

5.7.3 Analytical Results to SCS

The environmental quality of the groundwater at the Phase Two Property was compared to the MECP Table 2 ICC Standard.

The Laboratory Certificate of Analysis is presented in **Appendix B.**

5.7.4 Contaminants of Concern (COC)

The contaminants of concern identified in the groundwater on the property are as follows:

- Benzo[a]pyrene;
- Benzo[b]fluoranthene;
- Benzo[g,h,i]perylene;
- Benzo[k]fluoranthene;
- Chrysene;
- Indeno [1,2,3-cd] pyrene;
- Fluoranthene; and
- Vanadium.

5.7.5 Chemical and Biological Transformation

There are no chemical or biological transformations noted in the groundwater for the COC.

5.7.6 Soil Serves as Source of Contamination to Groundwater

The upper fill stratum, generally from between 0.2 and 1.2 m below grade, is permeable and may contribute to the quality of the groundwater.

5.7.7 Presence of LNAPLs or DNAPLs

No free phase products were encountered in the groundwater.

5.8 Sediment Quality

The Phase Two Property did not include a surface water body as defined under O. Reg. 153/04 (as amended); therefore, sediment was not sampled in this Phase Two ESA investigation.

5.9 Quality Assurance and Quality Control Results

A duplicate groundwater samples was collected and submitted for chemical laboratory analyses for QA/QC purposes. The sample collected in the field was placed in the cooler and subsequently submitted for analysis.

5.10 Phase Two Conceptual Site Model

Table 14 – Section 5.10 below describes the duplicate sample collected and tested during groundwater sampling as part of the field investigation of the Phase Two ESA.

Parameter	Groundwater		
	No. of Samples Tested	No. of Duplicates	No. of Trip Blank
PHC (F1-F4)	8	1	-
VOC	8	1	-
PAH	5	-	-
PCB	5	-	-
Metals	8	-	-
OC Pesticides	5	-	

Section 3. (3).5 of Schedule E of O. Reg. 153/04 (as amended) requires at least one (1) field duplicate be collected and analyzed for every ten (10) sample parameters submitted for laboratory analysis.

Samples were transported in ice-filled coolers to ensure temperatures were maintained below 10°C, along with a Chain of Custody to Paracel Laboratories. Paracel performed the chemical analysis in compliance with the MECP “Laboratory Services Branch, Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act”, as amended. No discrepancies were noted as samples were properly handled with regards to the following:

- Holding Time;
- Preservation Method;
- Storage requirement; and
- Container Type.

The Laboratory Certificates of Analysis for each samples were received and are presented in **Appendix B**. All certificates of analysis received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47 (3) of O. Reg. 153/04 as amended.

The Qualified Person concluded that the data met the quality objective, and the decision-making was not affected. The Qualified Person has also concluded that the overall objectives of the investigation and assessment were met.

Duplicate samples were taken for Groundwater. The following formula was used to assess the various duplicates against their respective soil or groundwater samples.

Duplicate RPD = {([sample] – [sample duplicate])/([sample] + [sample duplicate])/2} x 100. The values calculated must fall in the Following Ranges shown on **Table 19 – Section 5.9.**

Most of the parameters met their respective RPD values with some exceptions. The soil is not homogenous and values greater than the listed RPD values were expected. Re-sampling was not conducted because the exceedances for the RPD values were small relative to the number of samples analyzed.

Table 15 – Section 5.10: Duplicate RPD Values in Less Than ≤

Parameter	Groundwater RPD Limit	Groundwater Duplicate
VOC	≤30%	≤0%
PHC	≤30%	≤0%
Metals	≤20%	≤22%

5.11 Phase Two Conceptual Site Model

The Phase Two Property is located at 1280 Trim Road, Ottawa, Ontario. The legal description of the Phase Two Property is Part 30, Concession 10S, Part 3 to 6, Cumberland, Ottawa, and the property PIN is 50R6444. The Phase Two Property has a rectangular shape and is between approximately 64 m wide (fronting Trim Road) by approximately 100 m deep, for a total area of approximately 6,430 m^2 (1.59 acres). The size and location of the property are shown in **Figure 2**.

The property is situated in a commercial/light industrial area along Trim Road. The Phase Two Property is currently in commercial land use as a storage facility for a commercial general contractor in addition to a 'chip-truck' operating at the southeastern portion of the Site.

Surficial geology consists of marine offshore deposits including clay, silty clay and silt, commonly calcareous and fossiliferous; local overlain by thin sand. Bedrock is part of Ottawa Formation, consisting mainly of grey limestone, some dolomite, shale and sandstone in the lower part. The topography of the Phase Two Property and neighbouring lands is generally flat. The Phase Two Property and the neighbouring lands have a common topographic elevation of approximately 60 m above mean sea level (amsl) according to *The Atlas of Canada - Toporama*. More specifically, the Site has a slight slope to the north, towards the Ottawa River.

According to *The Atlas of Canada – Toporama*, the overall regional groundwater flow direction is inferred to follow local topography to the north-northwest towards the Ottawa River, however, the nearest water body is approximately 680 m east of the Site (Cardinal Creek). Based on the results of the Phase Two ESA, completed in conjunction with this assessment, the groundwater flow direction across the Site, based on groundwater elevations measured in the monitoring wells, is found to be towards the north. For the purposes of this report, the groundwater flow direction across the Site will be inferred as north, following the topography of the area.

The Conceptual Site Model shows 34 PCAs on and surrounding the property of which relative to the groundwater flow direction, only 14 may have an impact on the Phase Two Property. **Figure 3** represents the PCAs on and surrounding the Phase Two Property. The PCAs that affect the Phase Two Property include six (6) on-Site PCAs including **PCA 28** for Gasoline and Associated Products Storage in Fixed Tanks**, PCA 30** for Importation of Fill Material of Unknown Quality**, PCA 31** for Ink Manufacturing, Processing and Bulk Storage, **PCA Other** for Known Impacted Soil Conditions, **PCA Other** for Parking and/or storage of suspected automobiles and equipment and **PCA 40** for Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications .The 14 PCAs generated 14 on-Site Areas of Potential Environmental Concern (APECs). The APECs are summarized as follows:

- **APEC A**: Presence of Fill Materials of Unknown Quality across the Site. There is a high risk of environmental impacts across the Site. Contaminants of Concern include PAHs, VOCs, PHCs and Metals.
- **APEC B**: Impacts of Gasoline and Associated Products Storage in Fixed Tanks on Site. There is a high risk of environmental impacts across the general northern portion of the Site, in the vicinity of the existing heating oil AST, which is located on the ground floor of the building, along the southcentral extent. Contaminants of Concern include VOCs and PHCs.
- **APEC C**: Impacts Associated with former Ink Manufacturing, Processing and Bulk Storage which operated on Site. There is a high risk of environmental impacts to the Site as a result of the former commercial printing facility which operated from between 2006/07 through 2012 on the subject property. Contaminants of Concern include PHCs and Metals.
- **APEC D**: Known PHC and Metal Impacted Soil across the Site. In 2020, a Phase II ESA was completed on the Site (updated January 2024) which revealed the presence of possible PHC impacts, in excess of the applicable provincial standards, under the slab of the building on Site and soil impacted with vanadium, although it is possible that vanadium encountered is naturally occurring. Contaminants of Concern include PHCs and Metals.
- **APEC E**: Impacts related to Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications on the Site. Due to the past operations o the Site, which included a lanscaping company, there is a high risk of environmental impacts across the southwestern portion of the Site for pesticides impacts. Contaminants of Concern include OP pesticides.
- **APEC F**: Impacts from parking and/or storage of suspected automobiles and equipment across the Site in at least the early 1990's presents a high risk of environmental impacts across the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- **APEC G**: Impact from Gasoline and Associated Products Storage in Fixed Tanks. There is a medium to high risk of environmental impacts across the northern portion of the Site as a result of the existing retail fuel dispensing operations on the property located immediately north of the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- **APEC H**: Impact from Metal Fabrication. There is a low to medium risk of environmental impacts to the Site from the former Other Support Activities for Mining, and Diamond Mining facility located to the south of the Site. Contaminants of Concern include VOCs, PHCs, and Metals.
- **APEC I**: Impacts from Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications. There is a low to medium risk of environmental impacts across the Site as a result of the previously operated Service Lawncare Ottawa facility to the south of the Site. Contaminants of Concern include OP pesticides.
- **APEC J**: Impacts from Ink Manufacturing, Processing and Bulk Storage. There is a low to medium risk of environmental impacts across the Site as a result of the previously operated Graphic Centre Caspari facility to the south of the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- **APEC K**: Impacts from Gasoline and Associated Products Storage in Fixed Tanks. There is a low to medium risk of environmental impacts across the Site as a result of the various construction companies which operated to the south of the Site. Contaminants of Concern include PAHs, VOCs and PHCs.
- **APEC L**: Impacts from the Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems. Kars Graphics operated as an Industrial Machinery, Equipment and Supplies, Wholesale facility to the south of the Site, which presents a low to medium risk of environmental impacts across the Site.

- **APEC M**: Impacts from Hardware Wholesale Distributors activities. There is a low to medium risk of environmental impacts across the Site as a result of the previously operated A wholesale trade agents and brokers, hardware wholesale-distributors, all other wholesaler-distributors, Other Home Furnishings Wholesaler-Distributors, and Service Establishment Machinery, Equipment and Supplies Wholesaler-Distributors facility to the south of the Site. Contaminants of Concern include VOCs, PHCs and Metals.
- **APEC N**: Impacts from Gasoline and Associated Products Storage in Fixed Tanks. There is a low to medium risk of environmental impacts across the Site as a result of the various construction companies which operated to the to the south of the Site. Contaminants of Concern include VOCs, PHCs and Metals.

The location of these APECs is shown in **Figure 4**.

The Ministry of the Environment, Conservation, and Parks (MECP) “Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition” (Table 2 Standards) for Industrial/Commercial/Community property use was considered the applicable Site Condition Standard (SCS) for the Phase Two Property and have been used to assess the chemical quality of the soil and groundwater samples obtained from the Phase Two Property. The soil and groundwater were analyzed for PHCs F1 to F4 Fractions, VOCs, PAHs, Metals, OP Pesticides, PCBs and Inorganics.

The parameters selected were to address the Contaminants of Potential Concern (COPC) from the Potentially Contaminating Activities (PCA) and the Areas of Potential Environmental Concern (APECs) identified in the Phase One ESA.

The CSM is based on the soil and groundwater results from 13 boreholes, three (3) test pits, five (5) monitoring wells and one (1) temporary piezometer. The approximate locations of each borehole and monitoring well are defined in **Figure 5**.

6 CONCLUSIONS

The Phase Two ESA for the RSC property has been conducted in accordance with the regulation by and under the supervision of a QP which includes the evaluation of information gathered from planning and conducting a site investigation to write the report and any updates as required by the regulation.

Select soil samples submitted for analysis exceeded the appliable site condition standards for vanadium. These samples included TP3-SS2; BH20-2-9; BH20-4-20; BH20-5-26; BH20-6-31; BH20-9-42; and BH20-11-50.

According to the Canadian Council of Ministers of the Environment (CCME) fact sheet, vanadium present in soils can be related to industrial activities but could also be related naturally geological formations with the highest concentrations found in shale and clays. During the intrusive investigation, a stratum of clay being at least 0.6 – 4.2 m thick was encountered across the Site. The CCME fact sheet also indicates that concentrations of naturally occurring vanadium across Canada typically increases in depth. The values encountered at the Site ranged between 80.1 and 109 µg/g, within the representative clay samples, generally within the range that could be a result of naturally occurring deposits.

The levels encountered in this assessment are below those of CCME and are not likely a result of the fill material on the Site, or current/former Site and neighbouring land activities, but rather naturally occurring in the subsurface deposits. It is recommended that if any soil is to be excavated as part of the proposed Site re-development, and the material is to be disposed of off-Site, that additional laboratory analysis be carried out on that material for vanadium to confirm if it is suitable for disposal as “clean-fill”. Otherwise, the material should be disposed of at a licensed landfill facility or soil accepting facility (assuming it meets the site-specific applicable requirements). However, the soil may be used for onsite soil management.

No additional soil exceedances were encountered, however, as mentioned with respect to the Vanadium concentrations, soils across the Site may not be acceptable for re-use as “clean-fill” at an off-Site locations, and should be confirmed against the receiving properties applicable site conditions standard prior to re-development activities commencing. PHC parameters were detected in select underlying soils with notable olfactory evidence of PHC impacts at the time of the 2020 borehole advancement within the building on Site, however the concentration detected were in accordance with appliable Table 2 site condition standards.

The groundwater at the Phase Two Property was sampled at MW20-2; MW20-3; and MW20-5 in January 2020; and MW20-2; MW20-3; MW20-5; MW20-10 and MW23-3 in December 2023. Groundwater samples collected were generally analyzed for PHCs Fractions F1 through F4; VOCs, PAHs, PCBs, OP Pesticides, Metals and Inorganics.

A single metal exceedance was reported in the groundwater samples collected. Vanadium exceeded the Table 2 site condition standards in MW20-3. Various PAH parameters were also reported above the Table 2 site condition standards in the groundwater collected from MW20-2; MW20-3; MW20-5 and MW23-3. PAH parameters that exceeded the Table 2 site condition standards included Benzo[a]pyrene; Benzo[b]fluoranthene; Benzo[g,h,i]perylene;

Benzo[k]fluoranthene; Chrysene; Fluoranthene and Indeno [1,2,3-cd] pyrene. PCB and OP Presides concentrations were generally reported as less than the applicable laboratory detection limits, with select parameters being encountered with concentrations less than the Table 2 site condition standards.

It is inferred that the vanadium exceedance encountered may be contributed to naturally occurring deposits found in the underlying clay. Regionally, the Champlain Sea deposits are known to have naturally occurring elevated concentration of vanadium. The PAH exceedances are likely the result of the former Site activities including the parking of heavy equipment and vehicles in the early 1990's or associated with the fill encountered across the Site. These PEC identified are assumed to contribute to the elevated PAH concentrations based on the location to which they were encountered, and the groundwater flow direction. It would be anticipated that if the PAH concentrations were associated with the gasoline service station to the north, the AST in the building on-Site; or the former commercial printing operations, the highest concentrations would be anticipated to be found along the northern property extents in MW20-3 and MW20-5. However, the highest PAH concentrations were noted in MW20-2, located in the parking & circulation area to the south of the building, and in MW23-3, located at the southwestern portion of the building.

Groundwater impacts with respect to the vanadium parameters has been delineated horizontally to the west and south, however vertical delineation has not been established at this time. As mentioned, this exceedance is likely attributed to the naturally occurring vanadium concentration common in the Champlain Sea deposits (clay) across the Site, therefore, it would be inferred that bedrock groundwater would likely have lesser concentrations. Based on available geological resources, bedrock in the vicinity of the Site is inferred to be at depths ranging between 23 - 37 m below grade, therefore, it is assumed that the vanadium exceedances in the groundwater is limited to depths of between 23 – 37 m below grade.

The previously identified APEC A and APEC F are anticipated to be encountered in the groundwater that exceeded the SCS for PAH parameters across on the Phase Two Property. The source of the PAH impacted groundwater is inferred to be from the previous Site activities. Groundwater encountered during re-development should be considered 'contaminated' and handled accordingly during construction and dewatering. The risk to future occupants of the Site is considered low as it is understood that municipal water supply sources will service the Site, limiting the risk to expose of PAH in the overburden groundwater.

We trust you will find this report to be complete within our terms of reference. Should you have any questions regarding the information contained in the report, or require further assistance please contact the LRL Engineering office.

7 LIMITATIONS AND USE OF REPORT

Results of this Phase Two ESA should not be considered a warranty that the subject property is free from any and all contaminants from former and current practices, other than those noted in this report, nor that all compliance issues have been addressed.

Findings contained in this report are based on data and information collected during the Phase Two ESA of the subject property conducted by LRL Associates Ltd. Conclusions and recommendations are based solely on-site conditions encountered at the time of our site visit and fieldwork between January 6th, 2020 and December 20th, 2023, supplemented by historical information and data obtained as described in this report. No assurance is made regarding changes in conditions subsequent to the time of this investigation. If additional information is discovered or obtained, LRL Engineering should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

In evaluating the subject property, LRL Engineering has relied in good faith on information provided by individuals as noted in this report. We assume that the information provided is factual and accurate. We accept no responsibility for any deficiencies, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons contacted.

This report is intended for the sole use of Trim Works Developments Ltd. and their authorized agents. LRL Engineering will not be responsible for any use of the information contained within this report by any third party.

In addition, LRL Engineering will not be responsible for the real or perceived decrease in the property value, its saleability or ability to gain financing, through the reporting of factual information.

Yours truly,
LRL Engineering

Jessica Arthurs
Environmental Engineering Manager

Gianni Lametti, P. Eng.

I have reviewed the report and confirm that the Phase Two ESA including finds and conclusions, has been carried out in accordance with the requirements of O. Reg 153/04 as amened, in effect as of the date of this report.

W:\FILES 2023\230202\04 Environmental\02 PhaseIIESA\05 Reports\2023.01.12.LRL230202.REPORT PhaseTwoUpdateESA.1280TrimRoadOttawa.TrimWorks.R0.docx

8 REFERENCES

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FIGURES

LRJ
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PROJECT

PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE

SITE LOCATION
(NOT TO SCALE)
SOURCE: GEOOTTAWA

CLIENT	DATE	PROJECT
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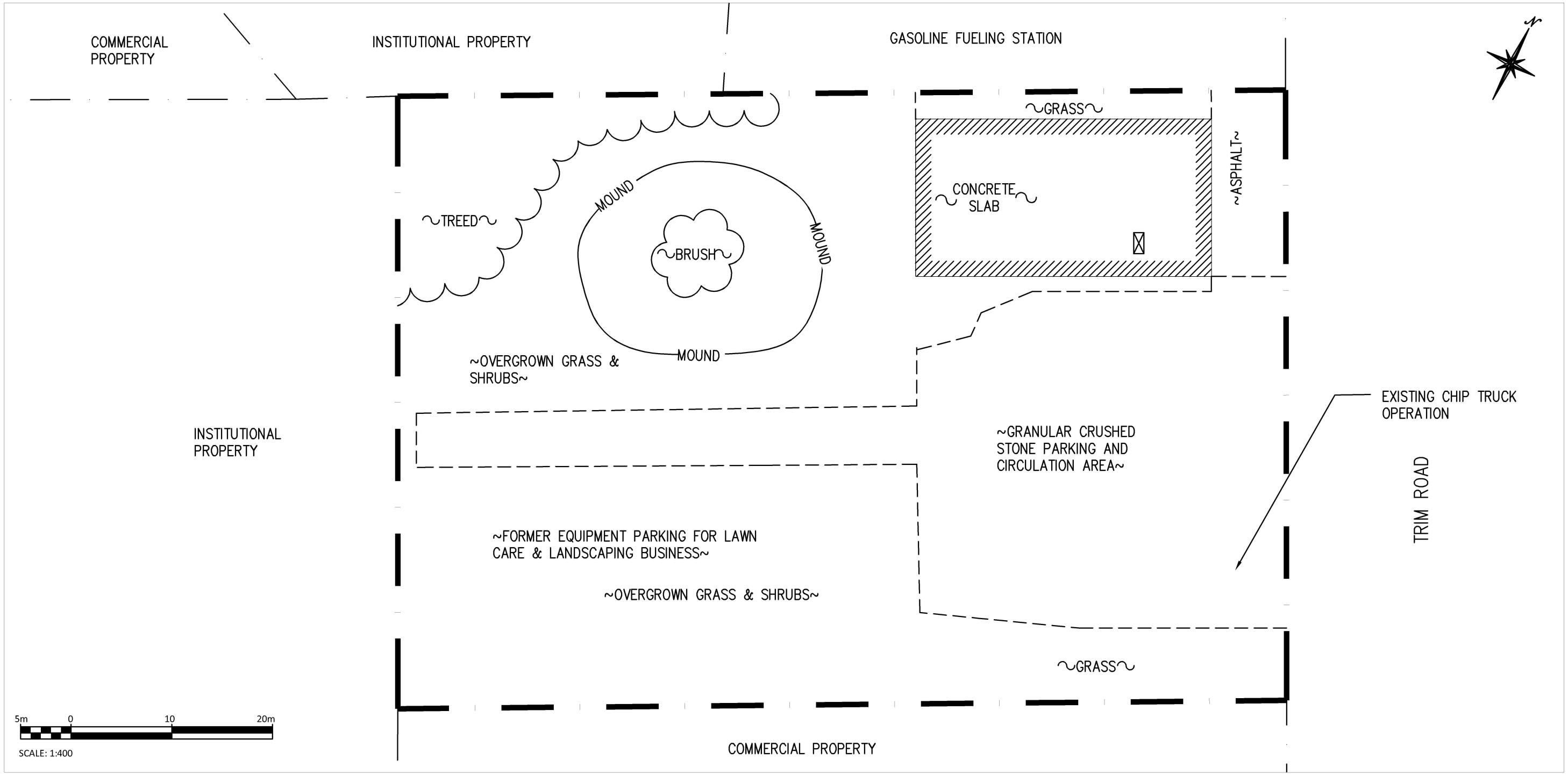
FIGURE 1



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK

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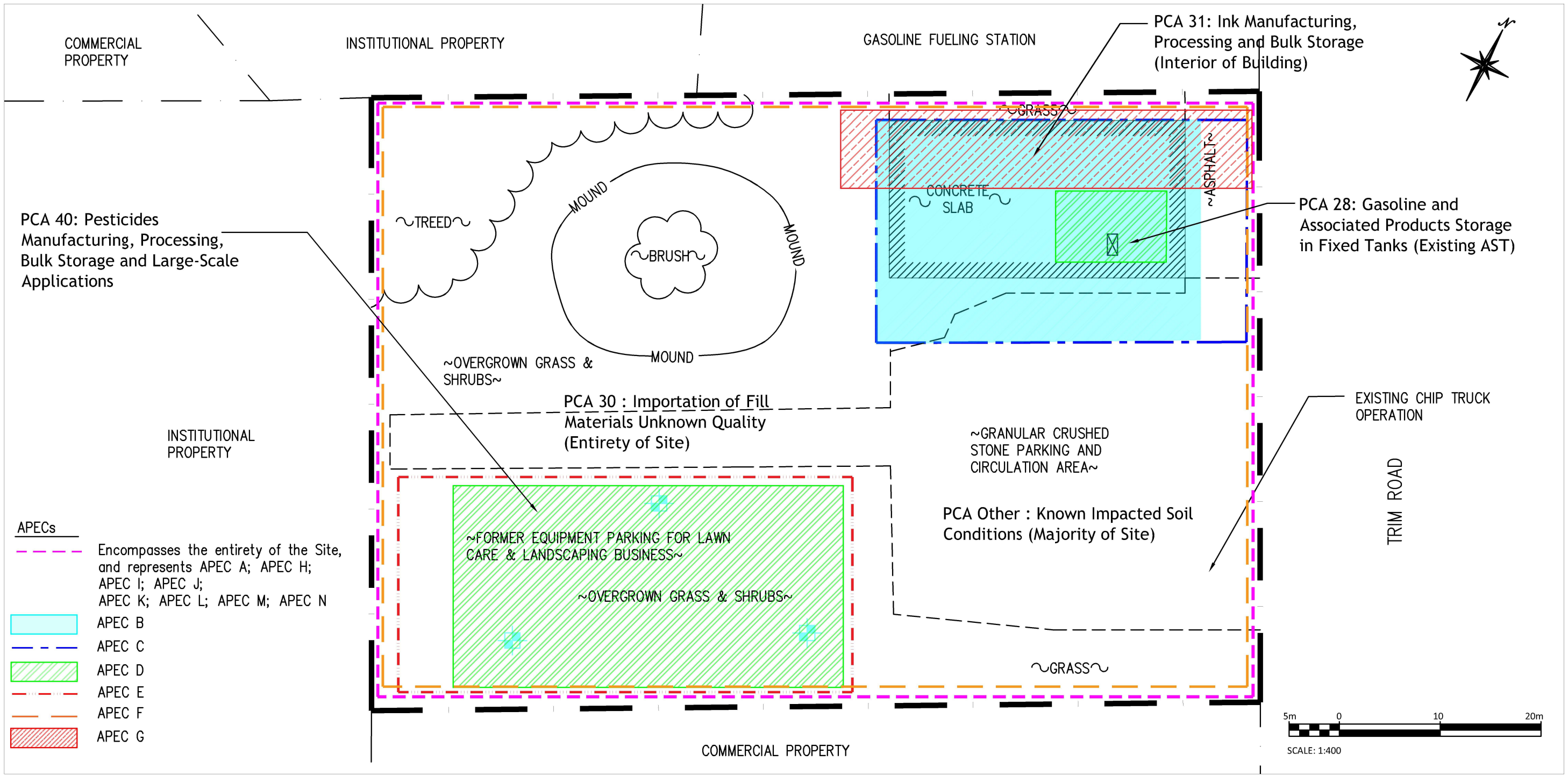
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
SITE PLAN

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE 2



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK

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ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
LOCATIONS OF PHASE TWO PROPERTY
PCAs & APECs

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE3

LEGEND

PHASE ONE PROPERTY EXTENTS

PCA XX — PCA – NOT A POTENTIAL RISK FOR APEC ON THE SITE

PCA XX — PCA – A POTENTIAL RISK FOR APEC ON THE SITE

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1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PCA WITHIN 250 M OF THE SITE
(NOT TO SCALE)

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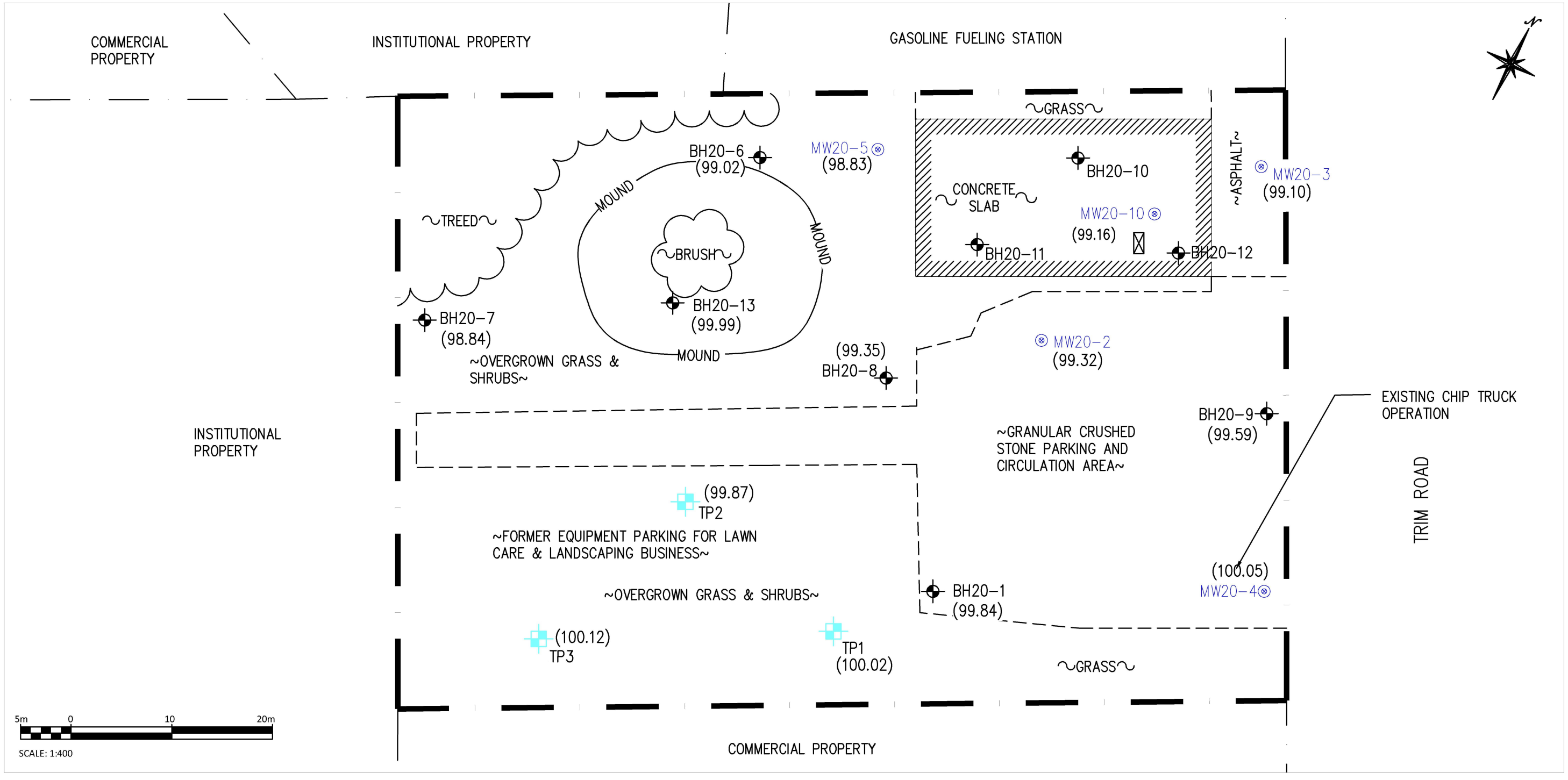
FIGURE 4



LEGEND

	PROPERTY LINE	(99.99)	GROUNDSURFACE ELEVATION
	DIVISION BETWEEN SURFICIAL MATERIALS		
	EXISTING BUILDING		
	HEATING OIL TANK		
MW20-X	GROUNDWATER MONITORING WELL		
BH20-X	BOREHOLE		
TPXX	TEST PIT		

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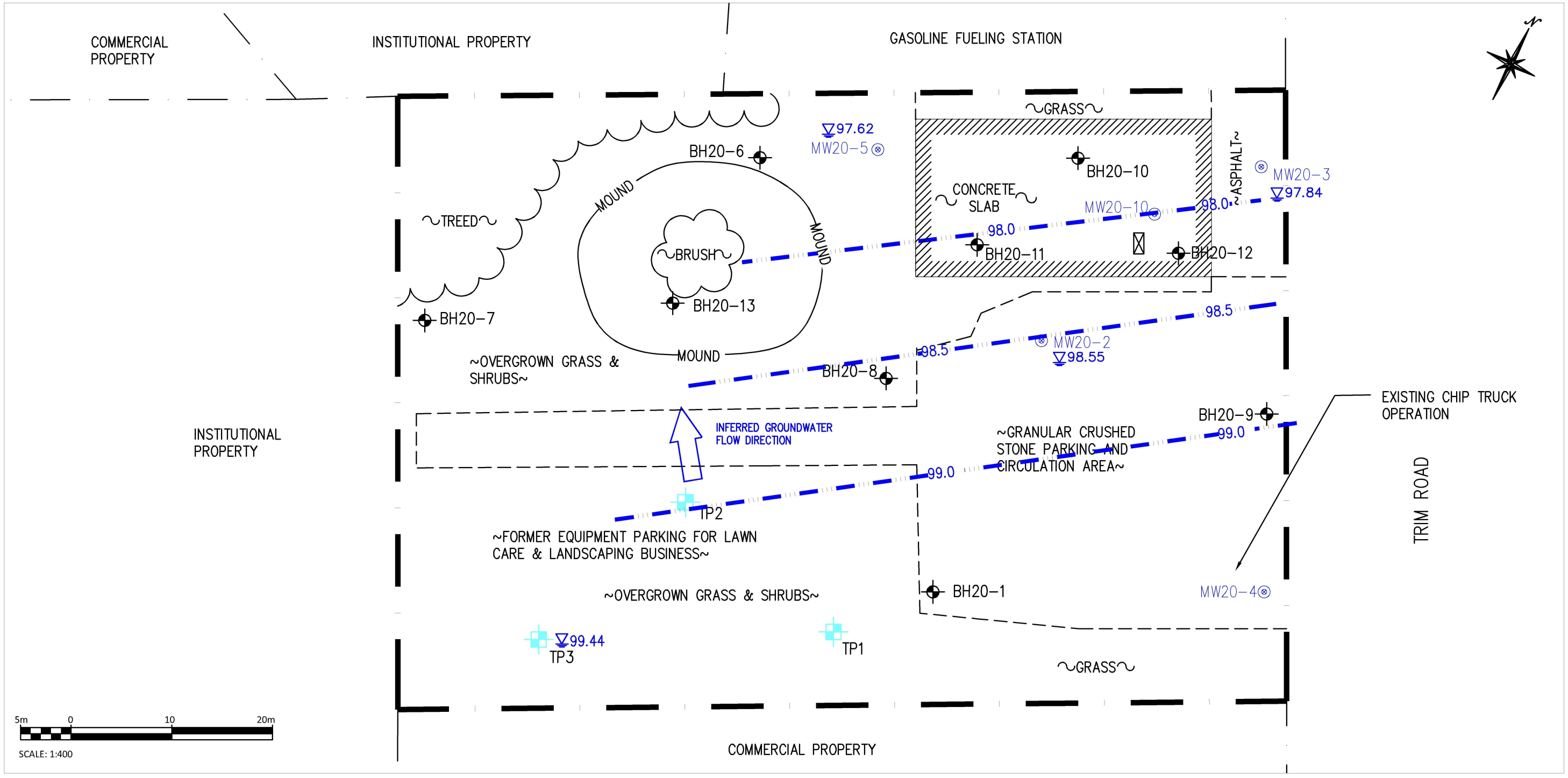
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
BOREHOLE, TEST PIT AND MONITORING WELL LOCATIONS

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE 5



LEGEND

PROPERTY LINE	GROUNDWATER CONTOUR
DIVISION BETWEEN SURFICIAL MATERIALS	INFERRED DIRECTION OF GROUNDWATER FLOW
EXISTING BUILDING	99.99 GROUNDWATER ELEVATION (m)
HEATING OIL TANK	
MW20-X GROUNDWATER MONITORING WELL	
BH20-X BOREHOLE	
TPXX TEST PIT	

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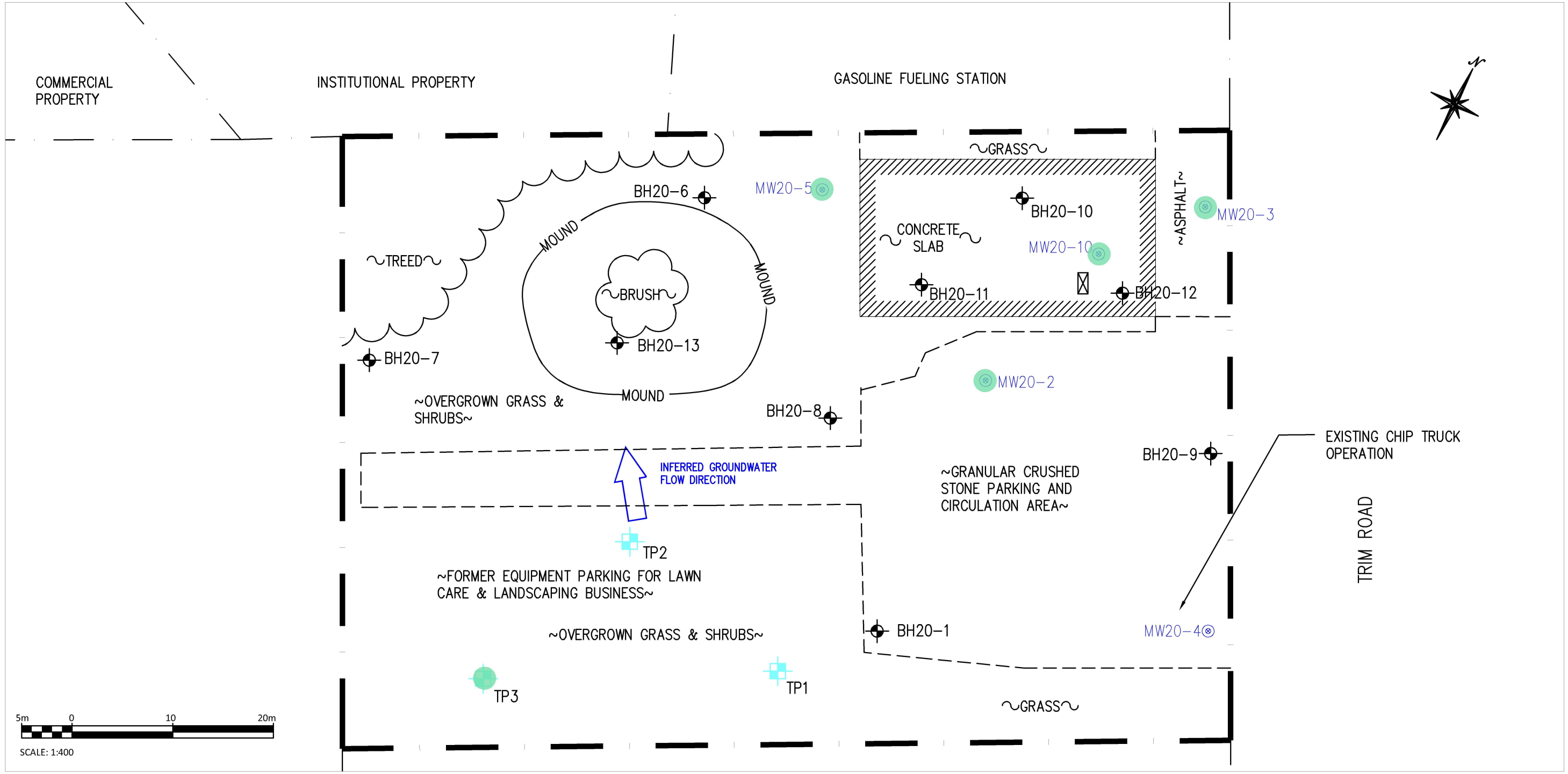
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
GROUNDWATER ELEVATIONS & GROUNDWATER CONTOURS

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE 6



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- EXCEEDANCES TO TABLE 2 SCS
- FULL EXTENT OF EXCEEDANCES NOT CONFIRMED
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

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PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PHC & VOC EXCEEDANCES IN GROUNDWATER

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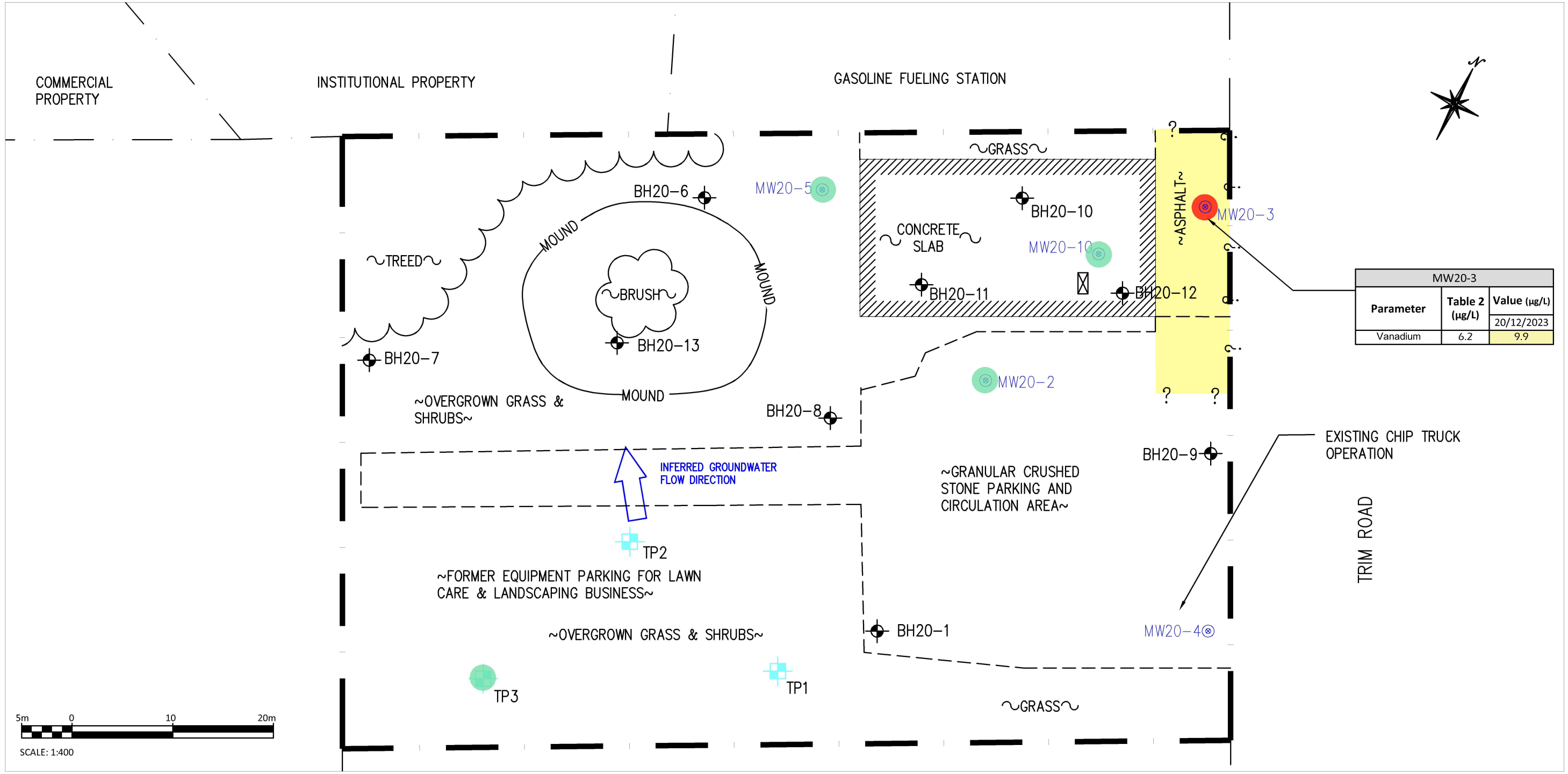
230202

DATE
JANUARY 2024

FIGURE7



MW20-3		
Parameter	Table 2 (µg/L)	Value (µg/L)
		20/12/2023
Vanadium	6.2	9.9

LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X — GROUNDWATER MONITORING WELL
- BH20-X — BOREHOLE
- TPXX — TEST PIT
- EXCEEDANCES TO TABLE 2 SCS
- FULL EXTENT OF EXCEEDANCES NOT CONFIRMED
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

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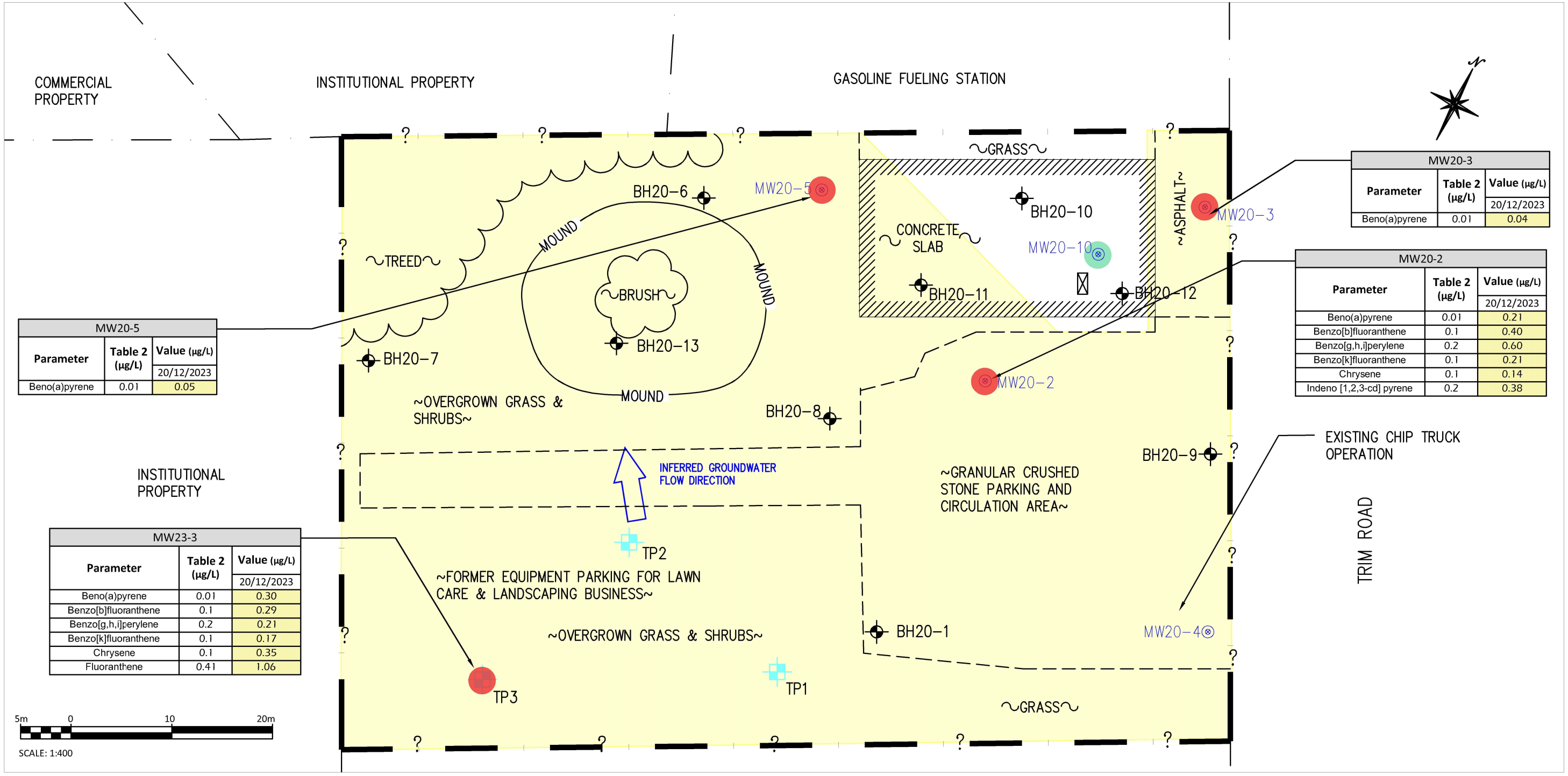
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
METALS EXCEEDANCES IN GROUNDWATER

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE8



MW20-5		
Parameter	Table 2 (µg/L)	Value (µg/L)
		20/12/2023
Beno(a)pyrene	0.01	0.05

MW20-3		
Parameter	Table 2 (µg/L)	Value (µg/L)
		20/12/2023
Beno(a)pyrene	0.01	0.04

MW20-2		
Parameter	Table 2 (µg/L)	Value (µg/L)
		20/12/2023
Beno(a)pyrene	0.01	0.21
Benzo[b]fluoranthene	0.1	0.40
Benzo[g,h,i]perylene	0.2	0.60
Benzo[k]fluoranthene	0.1	0.21
Chrysene	0.1	0.14
Indeno [1,2,3-cd] pyrene	0.2	0.38

MW23-3		
Parameter	Table 2 (µg/L)	Value (µg/L)
		20/12/2023
Beno(a)pyrene	0.01	0.30
Benzo[b]fluoranthene	0.1	0.29
Benzo[g,h,i]perylene	0.2	0.21
Benzo[k]fluoranthene	0.1	0.17
Chrysene	0.1	0.35
Fluoranthene	0.41	1.06

LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- EXCEEDANCES TO TABLE 2 SCS
- ? ? FULL EXTENT OF EXCEEDANCES NOT CONFIRMED
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

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1280 TRIM ROAD
OTTAWA, ONTARIO

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PAH EXCEEDANCES IN GROUNDWATER

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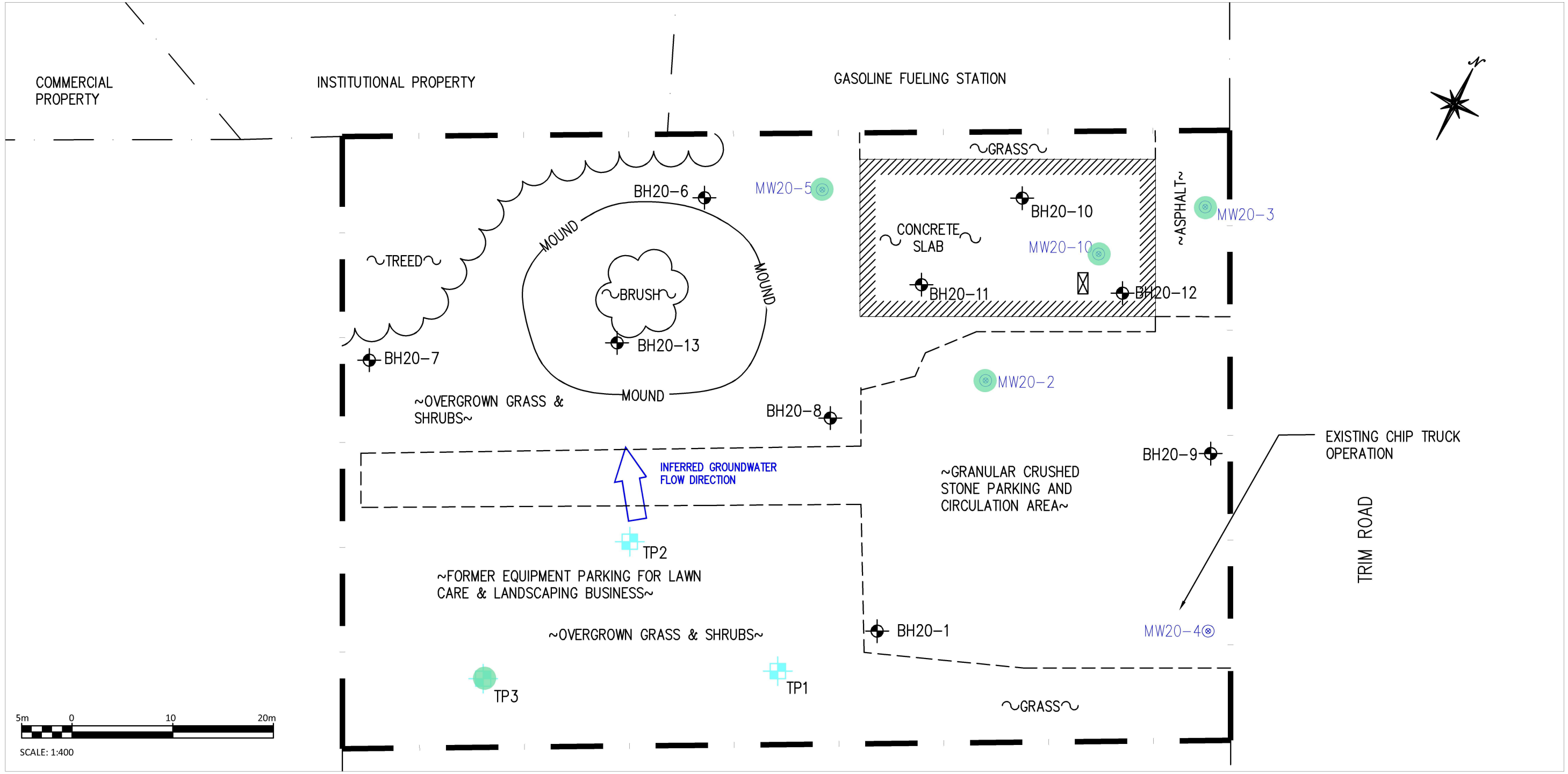
FIGURE9



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- EXCEEDANCES TO TABLE 2 SCS
- ? ? FULL EXTENT OF EXCEEDANCES NOT CONFIRMED
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

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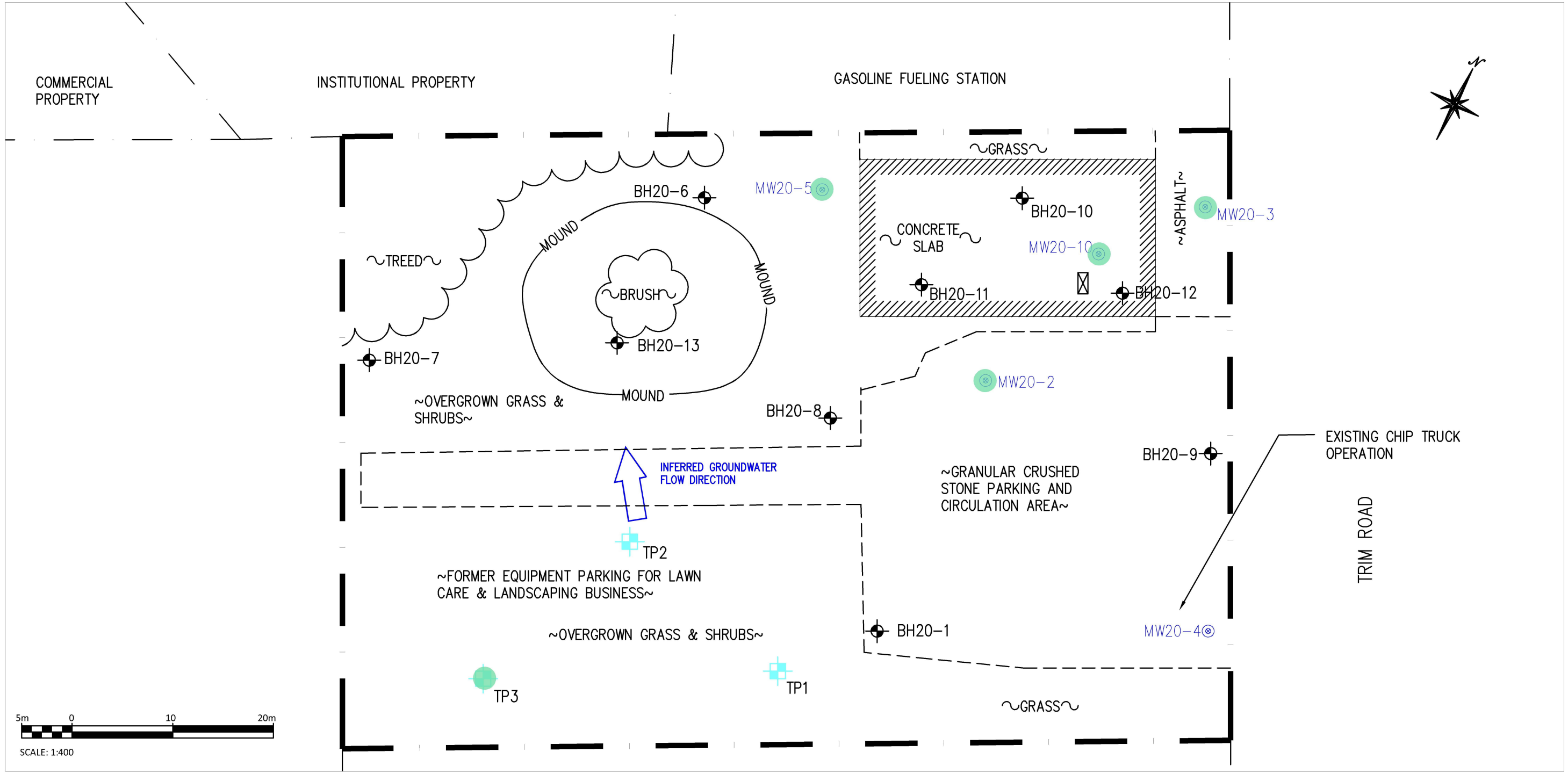
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PESTICIDES EXCEEDANCES IN GROUNDWATER

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE10



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- EXCEEDANCES TO TABLE 2 SCS
- FULL EXTENT OF EXCEEDANCES NOT CONFIRMED
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

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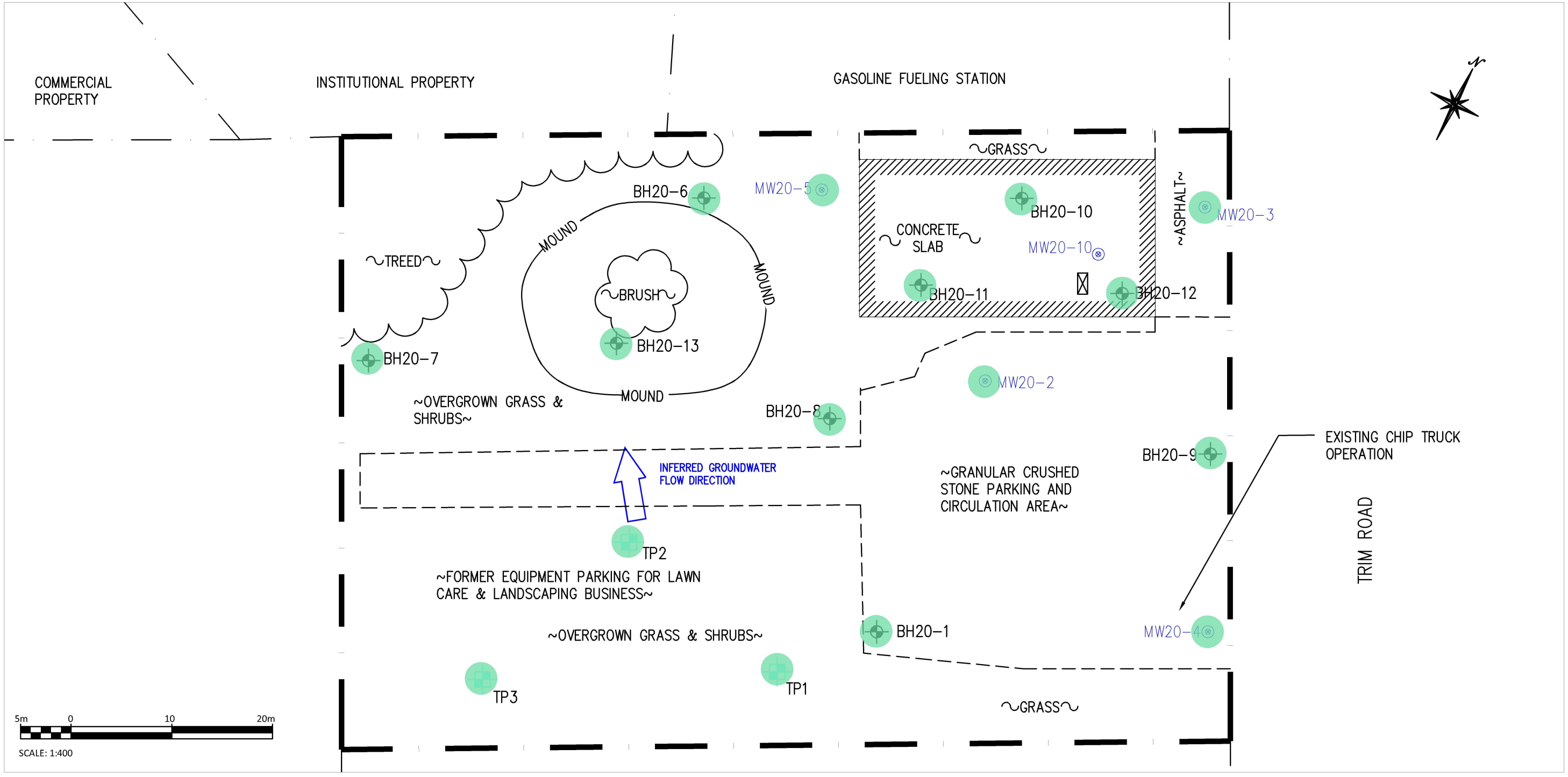
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PCBs EXCEEDANCES IN GROUNDWATER

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE11



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- FULL EXTENT OF CONTAMINATION NOT CONFIRMED
- EST. EXTENT OF TABLE 2 SCS EXCEEDANCE PLUME
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

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ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

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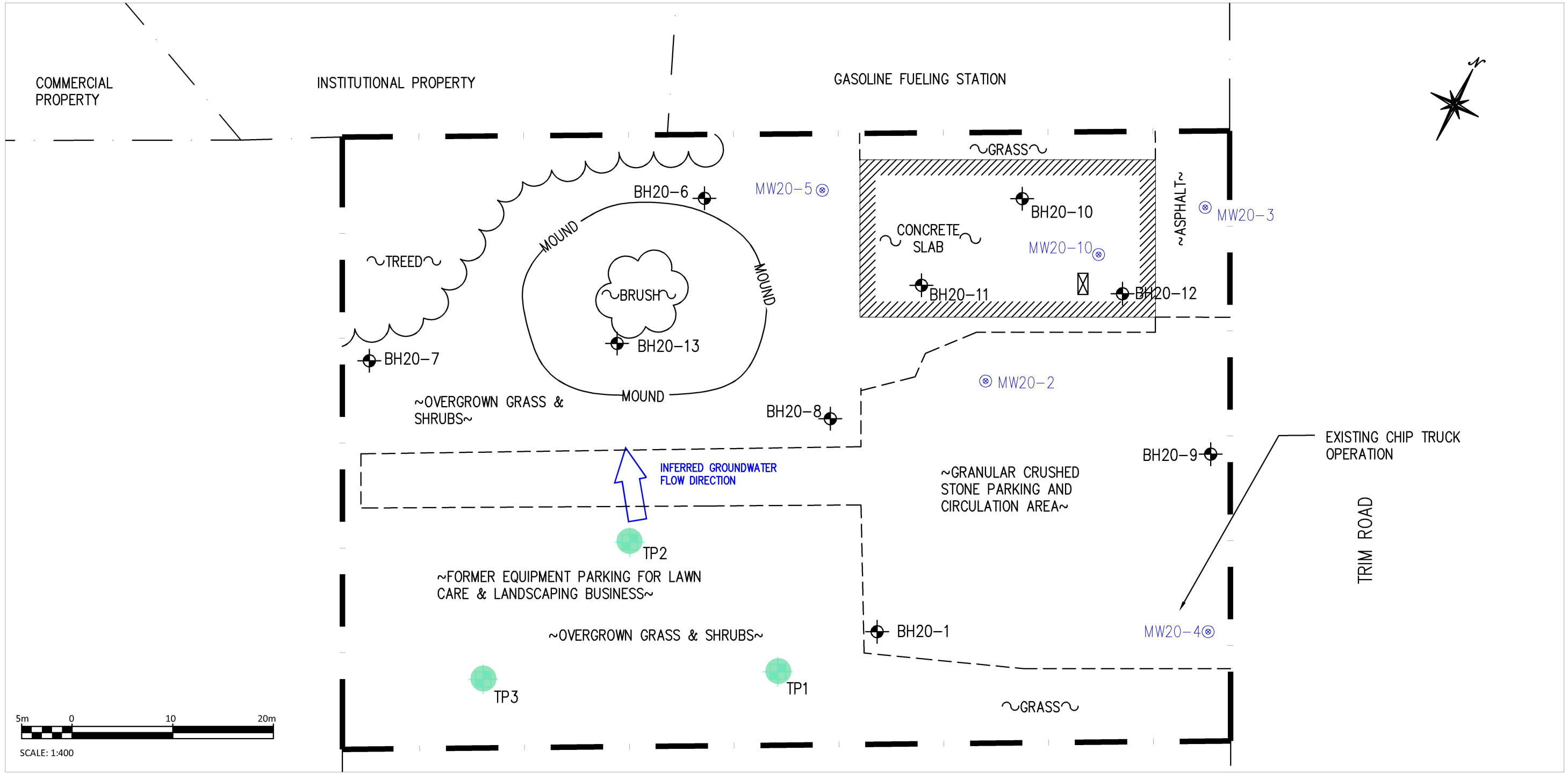
PHC & VOC EXCEEDANCES IN SOIL

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE12



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- FULL EXTENT OF CONTAMINATION NOT CONFIRMED
- EST. EXTENT OF TABLE 2 SCS EXCEEDANCE PLUME
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
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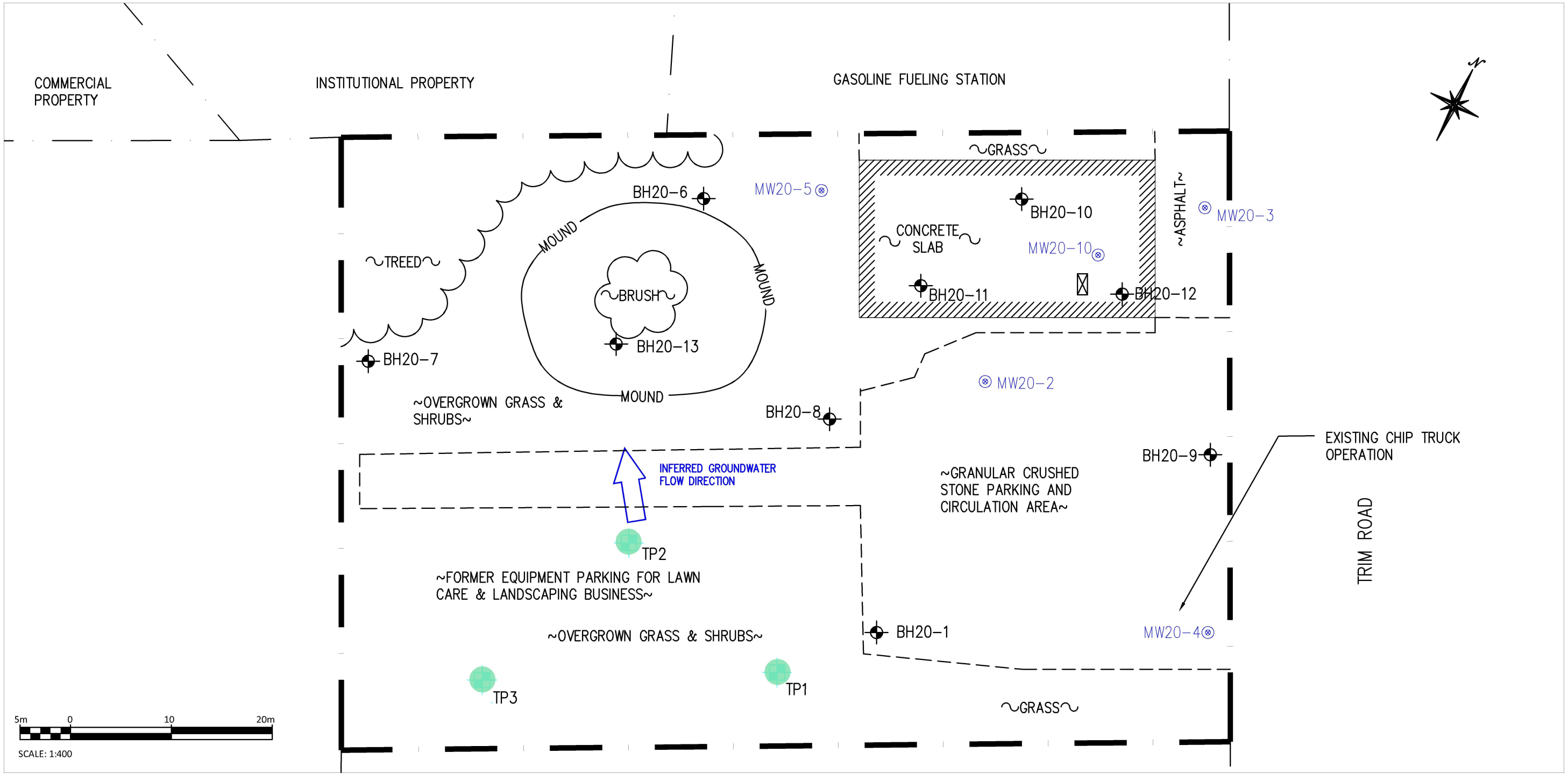
DESIGNED BY:	DRAWN BY:	APPROVED BY:
J.A.	J.A.	J.L.

PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
INORGANICS
EXCEEDANCES IN SOIL

PROJECT NO. 230202
DATE JANUARY 2024

FIGURE13



LEGEND

- PROPERTY LINE
- DIVISION BETWEEN SURFICIAL MATERIALS
- EXISTING BUILDING
- HEATING OIL TANK
- MW20-X GROUNDWATER MONITORING WELL
- BH20-X BOREHOLE
- TPXX TEST PIT
- FULL EXTENT OF CONTAMINATION NOT CONFIRMED
- EST. EXTENT OF TABLE 2 SCS EXCEEDANCE PLUME
- SAMPLE LOCATION WITH MEETS TABLE 2 SCS
- SAMPLE LOCATION WITH EXCEEDS TABLE 2 SCS

No.	REVISIONS	BY	DATE
01	FINAL	J.A.	03/01/24

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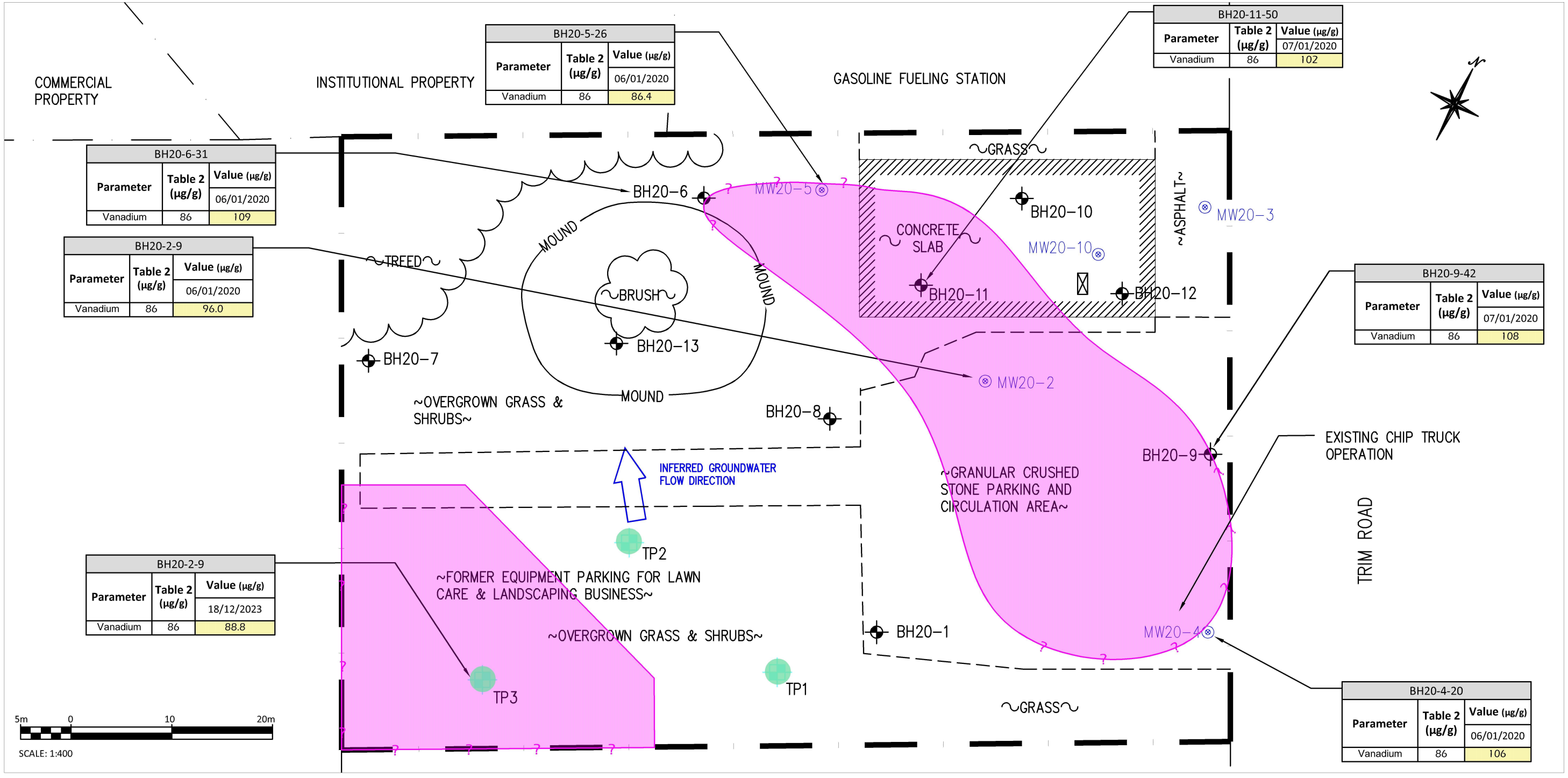
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PAH EXCEEDANCES IN SOIL

PROJECT NO.
230202

DATE
JANUARY 2024

FIGURE14



LEGEND

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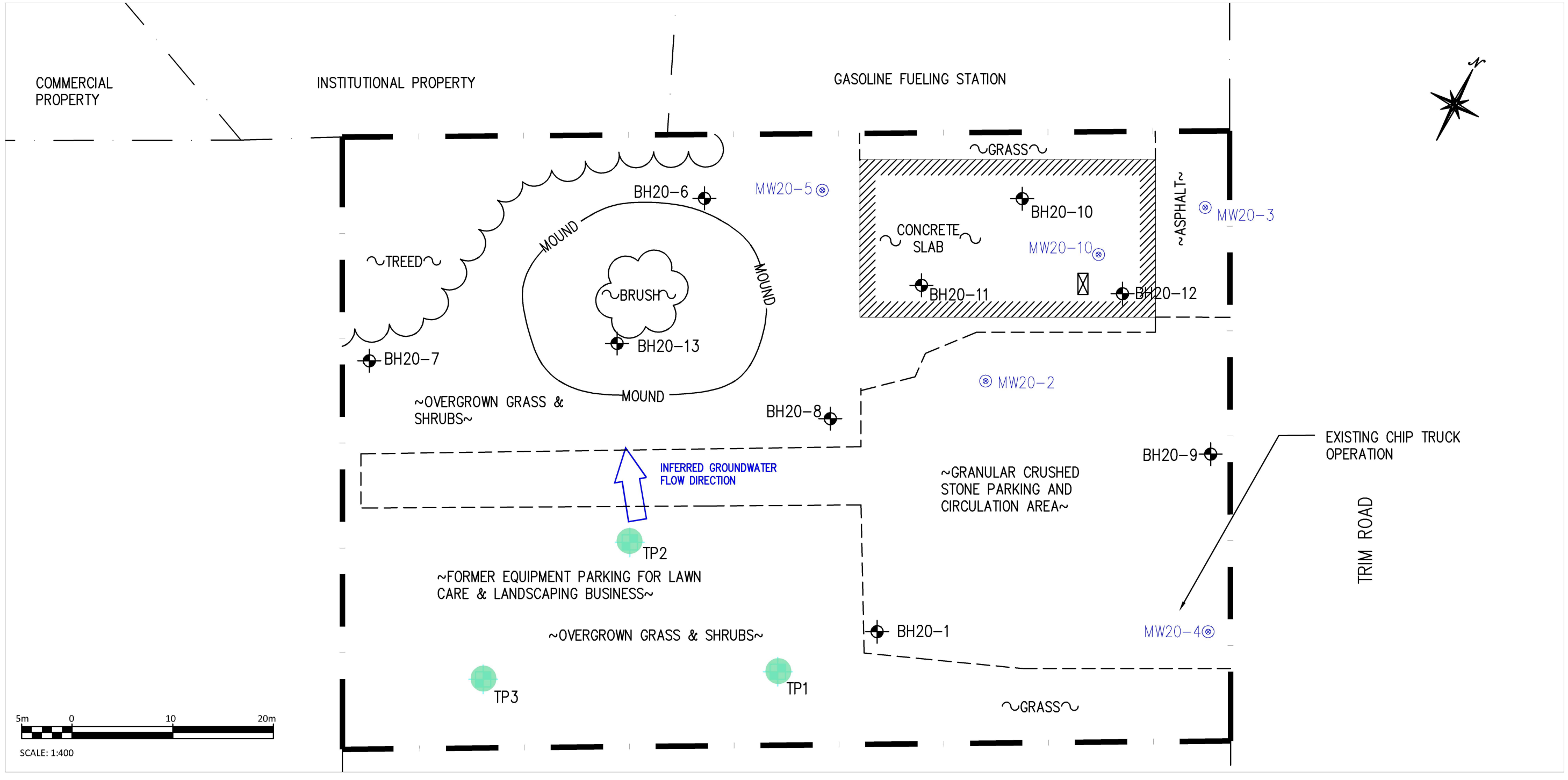
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
METALS EXCEEDANCES IN SOIL

PROJECT NO. 230202
DATE JANUARY 2024

FIGURE15



LEGEND

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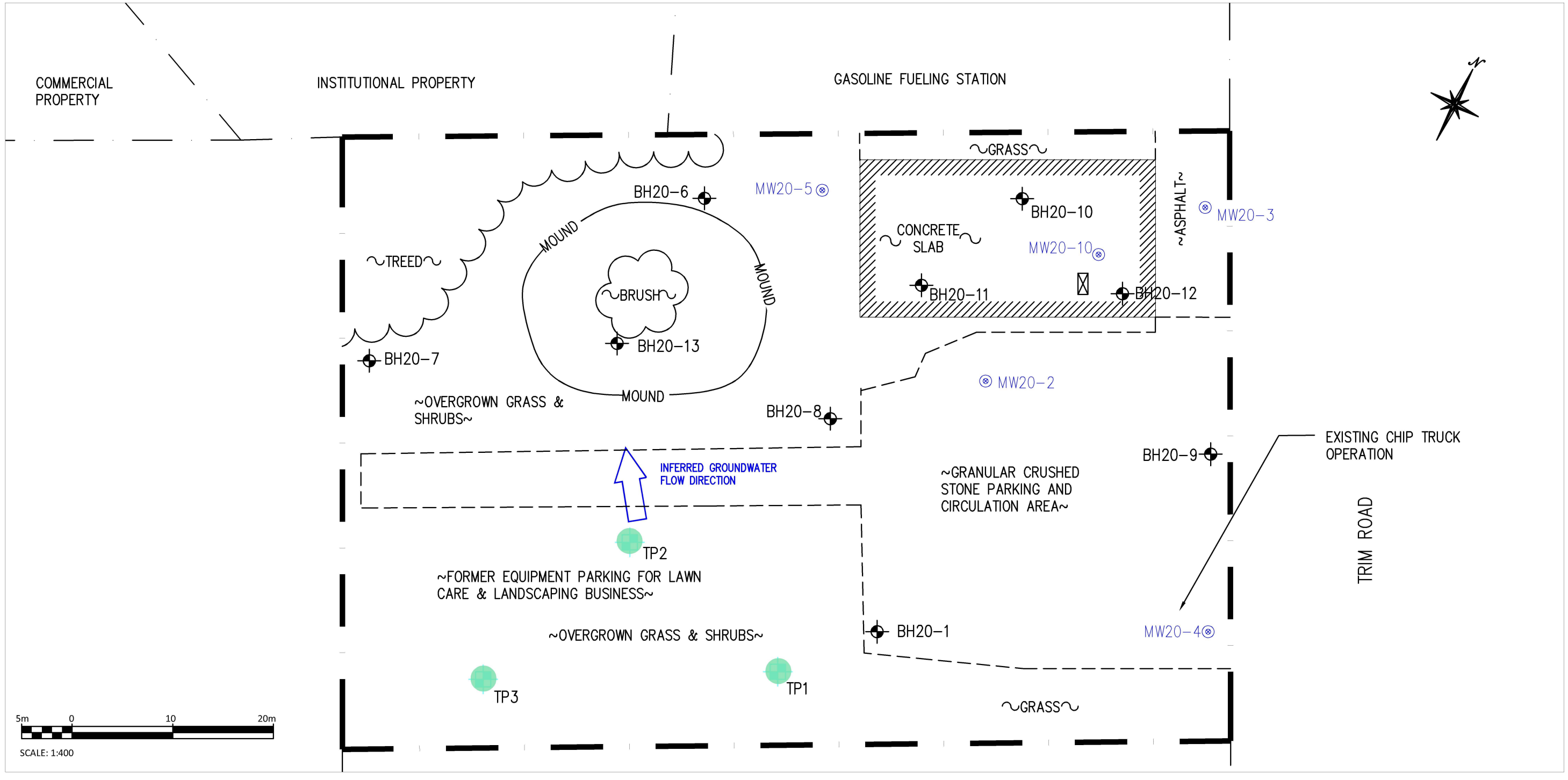
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PESTICIDES
EXCEEDANCES IN SOIL

PROJECT NO. 230202
DATE JANUARY 2024

FIGURE16



LEGEND

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PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1280 TRIM ROAD
OTTAWA, ONTARIO

DRAWING TITLE
PCB EXCEEDANCES IN SOIL

PROJECT NO. 230202
DATE JANUARY 2024

FIGURE17

TABLES

Table 1
Summary of Groundsurface and Groundwater Elevations (December 18, 2023)
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Monitoring Well	Ground Surface Elevation[1] (m)	Reference Elevation[2] (m)	Depth To Water Table (m)		Groundwater Elevation (m)
			Reference Point	Ground Surface	
MW20-2	99.32	99.20	0.65	0.77	98.55
MW20-3	99.18	99.10	1.26	1.34	97.84
MW20-5	98.83	98.77	1.15	1.21	97.62
MW20-10	99.16	--	0.59	--	--
MW23-3	100.16	101.15	1.71	0.72	99.44

NOTES:

[1] Elevations measured from temporary benchmark established at the top-centre of the City of Ottawa storm sewer service cover, along Trim Road, immediately east of the Site (100.00 m).

[2] Reference elevation is top of PVC riser.

-- No Value/Not Measured

Table 2
Summary of Soil VOC and PHC Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample																	
				TP1-SS1	TP1-SS2	TP2-SS1	TP2-SS5	TP3-SS2	TP3-SS3	BH20-1-1	BH20-2-9	BH20-3-15	BH20-4-20	BH20-5-26	BH20-6-31	BH20-7-33	BH20-8-36	BH20-9-42	BH20-10-46	BH20-11-50	BH20-12-53	BH20-13-55
Sample Date (d/m/y)			--	2023-12-18	2023-12-18	2023-12-18	2023-12-18	2023-12-18	2023-12-18	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-07	2020-01-07	2020-01-07	2020-01-07	2020-01-07
Depth	m		--	0.0 - 0.6	0.6 - 1.2	0.0 - 0.6	2.4 - 3.0	0.6 - 1.2	1.2 - 1.8	0.0 - 0.6	1.2 - 1.8	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	1.2 - 1.8	0.0 - 0.6	0.0 - 0.6	1.2 - 1.8	0.6 - 0.8	0.6 - 1.2	0.6 - 1.2	0.0 - 0.6
CSV Readings[3]	ppm	5	--	2.4	0.8	0.2	1.0	2.1	2.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2.7	0.1	0.1	0.2	4.6	0.1
Physical Characteristics																						
% Solids	% by wt.	0.1		74.2	73.6	74.9	70.1	71.8	70.3	77.5	80.7	87.0	78.5	83.2	73.5	60.3	97.3	77.9	93.4	76.3	80.5	99.2
General Inorganics																						
SAR	N/A	0.01	12	--	1.50	2.25	--	2.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity	uS/cm	5	1400	--	363	713	--	634	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, free	ug/g dry	0.03	0.051	--	<0.03	<0.03	--	<0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH	pH Units	0.05		--	7.19	6.86	--	6.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatiles																						
Acetone	ug/g dry	0.50	16	<0.50	--	--	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g dry	0.02	0.32	<0.02	--	--	<0.02	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	ug/g dry	0.05	18	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g dry	0.05	0.61	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	ug/g dry	0.05	0.05	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g dry	0.05	0.21	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	ug/g dry	0.05	2.4	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	ug/g dry	0.05	0.47	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g dry	0.05	13	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	ug/g dry	0.05	16	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g dry	0.05	6.8	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g dry	0.05	9.6	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g dry	0.05	0.2	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g dry	0.05	17	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	ug/g dry	0.05	0.05	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	ug/g dry	0.05	0.064	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	ug/g dry	0.05	55	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	ug/g dry	0.05	1.3	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	ug/g dry	0.05	0.16	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,3-Dichloropropylene	ug/g dry	0.05	--	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropylene	ug/g dry	0.05	--	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	ug/g dry	0.05	0.18	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g dry	0.05	9.5	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene dibromide (dibromoethane, 1,2-)	ug/g dry	0.05	0.05	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexane	ug/g dry	0.05	46	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.50	70	<0.50	--	--	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g dry	0.50	31	<0.50	--	--	<0.50	--	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether	ug/g dry	0.05	11	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g dry	0.05	1.6	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g dry	0.05	34	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	0.087	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	0.05	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	ug/g dry	0.05	4.5	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	ug/g dry	0.05	68	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	ug/g dry	0.05	6.1	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	ug/g dry	0.05	0.05	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	ug/g dry	0.05	0.91	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g dry	0.05	4	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g dry	0.02	0.032	<0.02	--	--	<0.02	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
m/p-Xylene	ug/g dry	0.05	--	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g dry	0.05	--	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes, total	ug/g dry	0.05	26	<0.05	--	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hydrocarbons																						
F1 PHCs (C6-C10)	ug/g dry	7	55	<7	--	--	<7	--	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	16	<7
F2 PHCs (C10-C16)	ug/g dry	4	230	<4	--	--	<4	--	<4	<4	<4	<4	<4	<4	9	<4	<4	<4	<4	107	<4	
F3 PHCs (C16-C34)	ug/g dry	8	1700	<8	--	--	<8	--	<8	<8	<8	<8	<8	<8	13	<8	<8	109	<8	79	<8	
F4 PHCs (C34-C50)	ug/g dry	6	3300	<6	--	--	<6	--	<6	<6	<6	<6	<6	<6	<6	<6	<6	87	<6	<6	<6	

NOTES:
[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*
[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.
[3] Combustible soil vapour concentrations measured with a MiniRAE 3000 PID
MDL Method Detection Limit
-- No Value/Not Analysed
PHC Petroleum Hydrocarbon

Table 3
Summary of Soil Semi Volatile Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample TP1-SS1	Sample TP2-SS5	Sample TP3-SS3
Sample Date (d/m/y)			--	2023-12-18	2023-12-18	2023-12-18
Depth	m		--	0.0 - 0.6	2.4 - 3.0	1.2 - 1.8
CSV Readings[3]	ppm	5	--	2.4	1.0	2.2
Physical Characteristics						
% Solids	% by wt.	0.1	--	74.2	70.1	70.3
Semi-Volatiles						
Acenaphthene	ug/g dry	0.02	21	<0.02	<0.02	<0.02
Acenaphthylene	ug/g dry	0.02	0.15	<0.02	<0.02	<0.02
Anthracene	ug/g dry	0.02	0.67	<0.02	<0.02	<0.02
Benzo[a]anthracene	ug/g dry	0.02	0.96	0.03	<0.02	<0.02
Benzo[a]pyrene	ug/g dry	0.02	0.3	0.02	<0.02	<0.02
Benzo[b]fluoranthene	ug/g dry	0.02	0.96	0.03	<0.02	<0.02
Benzo[g,h,i]perylene	ug/g dry	0.02	9.6	0.02	<0.02	<0.02
Benzo[k]fluoranthene	ug/g dry	0.02	0.96	<0.02	<0.02	<0.02
Chrysene	ug/g dry	0.02	9.6	0.03	<0.02	<0.02
Dibenzo[a,h]anthracene	ug/g dry	0.02	0.1	<0.02	<0.02	<0.02
Fluoranthene	ug/g dry	0.02	9.6	0.07	<0.02	<0.02
Fluorene	ug/g dry	0.02	62	<0.02	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	ug/g dry	0.02	0.76	<0.02	<0.02	<0.02
1-Methylnaphthalene	ug/g dry	0.02	30	<0.02	<0.02	<0.02
2-Methylnaphthalene	ug/g dry	0.02	30	<0.02	<0.02	<0.02
Methylnaphthalene (1&2)	ug/g dry	0.04	30	<0.04	<0.04	<0.04
Naphthalene	ug/g dry	0.01	9.6	<0.01	<0.01	<0.01
Phenanthrene	ug/g dry	0.02	12	0.04	<0.02	<0.02
Pyrene	ug/g dry	0.02	96	0.06	<0.02	<0.02

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*

[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.

[3] Combustible soil vapour concentrations measured with a MiniRAE 3000 PID

MDL Method Detection Limit

-- No Value/Not Analysed

Table 4
Summary of Soil Metals Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample														
				TP1-SS2	TP2-SS1	TP3-SS2	BH20-1-1	BH20-2-9	BH20-3-15	BH20-4-20	BH20-5-26	BH20-6-31	BH20-7-33	BH20-8-36	BH20-9-42	BH20-10-46	BH20-11-50	BH20-12-53	BH20-13-55
Sample Date (d/m/y)			--	2023-12-18	2023-12-18	2023-12-18	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-06	2020-01-07	2020-01-07	2020-01-07	2020-01-07	2020-01-07
Depth	m		--	0.6 - 1.2	0.0 - 0.6	0.6 - 1.2	0 - 0.6	1.2 - 1.8	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	1.2 - 1.8	0 - 0.6	0 - 0.6	1.2 - 1.8	0.6 - 0.8	0.6 - 1.2	0.6 - 1.2	0 - 0.6
Physical Characteristics			--															
% Solids	% by wt.	0.1	--	73.6	74.9	71.8	77.5	80.7	87.0	78.5	83.2	73.5	60.3	97.3	77.9	93.4	76.3	80.5	99.2
Metals																			
Antimony	ug/g dry	1.0	40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	ug/g dry	1.0	18	3.0	3.9	3.9	3.2	4.4	3	5.3	3.6	4.3	2.6	1.5	4.6	1.2	4.1	2.9	<1.0
Barium	ug/g dry	1.0	670	190	147	209	166	251	186	301	212	278	69.3	253	312	28.2	291	214	25
Beryllium	ug/g dry	0.5	8	0.8	0.8	0.8	0.6	0.9	0.6	0.9	0.8	1	<0.5	<0.5	1.0	<0.5	1.0	0.9	<0.5
Boron, available	ug/g dry	0.5	2	<0.5	1.0	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	ug/g dry	5.0	120	8.4	6.5	7.9	7.9	10.1	<5.0	7.3	6.7	9.2	9.5	9	9.9	<5.0	8.2	5.9	<5.0
Cadmium	ug/g dry	0.5	1.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (VI)	ug/g dry	0.2	8	0.8	<0.2	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/g dry	5.0	160	131	81.1	122	70.8	111	89.1	133	109	149	22	10	148	10	141	117	7.6
Cobalt	ug/g dry	1.0	80	22.3	17.3	23.2	14.6	24.3	14.7	28.1	17.5	27.6	7.7	2.4	28.1	3.6	23.0	20.2	3.4
Copper	ug/g dry	5.0	230	50.2	26.1	47.6	26	51.9	26.1	47.1	40	45.8	19.2	<5.0	55.8	<5.0	47.2	33.3	<5.0
Lead	ug/g dry	1.0	120	9.8	12.5	10.1	30.5	8.9	5.6	9.6	8.1	10.6	9.1	3.9	10.8	1.6	10.8	7.9	<1.0
Mercury	ug/g dry	0.1	3.9	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/g dry	1.0	40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	ug/g dry	5.0	270	70.6	39.0	64.5	37.6	63.2	43.7	70.4	56.7	78.4	17.1	7.6	80.7	8.5	72.7	56.1	8.1
Selenium	ug/g dry	1.0	5.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/g dry	0.3	40	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	ug/g dry	1.0	3.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	ug/g dry	1.0	33	<1.0	2.2	1.1	<1.0	1.1	<1.0	1.3	1.4	1.6	<1.0	<1.0	1.4	<1.0	2.2	1.8	<1.0
Vanadium	ug/g dry	10.0	86	84.3	69.3	**88.8**	56.5	**96.0**	80.1	**106**	**86.4**	**109**	24.2	<10.0	**108**	14.4	**102**	85.7	10.4
Zinc	ug/g dry	20.0	340	105	99.8	103	90.2	92.2	69.1	111.0	81.3	96.9	60.8	<20.0	104.0	21.5	101	99.2	<20.0

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*
[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.
MDL Method Detection Limit
-- No Value/Not Analysed
BOLD Above the Table 2 SCS

Table 5
Summary of Soil Pesticides and PCB Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample TP1-SS2	TP1-SS4	TP2-SS2	TP3-SS1	TP3-SS2
Sample Date (d/m/y)			--	2023-12-18	2023-12-18	2023-12-18	2023-12-18	2023-12-18
Depth	m		--	0.6 - 1.2	1.8 - 2.4	0.6 - 1.2	0.0 - 0.6	0.6 - 1.2
Physical Characteristics			--					
% Solids	% by wt.	0.1	--	73.6	61.3	76.8	91.8	71.8
Pesticides, OC								
Aldrin	ug/g dry	0.01	0.088	<0.01	--	<0.01	<0.01	--
gamma-BHC (Lindane)	ug/g dry	0.01	0.056	<0.01	--	<0.01	<0.01	--
alpha-Chlordane	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
gamma-Chlordane	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
Chlordane	ug/g dry	0.01	0.05	<0.01	--	<0.01	<0.01	--
o,p-DDD	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
p,p-DDD	ug/g dry	0.02		<0.02	--	<0.02	<0.02	--
DDD	ug/g dry	0.02	4.6	<0.02	--	<0.02	<0.02	--
o,p-DDE	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
p,p-DDE	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
DDE	ug/g dry	0.01	0.52	<0.01	--	<0.01	<0.01	--
o,p-DDT	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
p,p-DDT	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
DDT	ug/g dry	0.01	1.4	<0.01	--	<0.01	<0.01	--
Dieldrin	ug/g dry	0.02	0.088	<0.02	--	<0.02	<0.02	--
Endrin	ug/g dry	0.02	0.04	<0.02	--	<0.02	<0.02	--
Endosulfan I	ug/g dry	0.01		<0.01	--	<0.01	<0.01	--
Endosulfan II	ug/g dry	0.02		<0.02	--	<0.02	<0.02	--
Endosulfan I/II	ug/g dry	0.02	0.3	<0.02	--	<0.02	<0.02	--
Heptachlor	ug/g dry	0.01	0.19	<0.01	--	<0.01	<0.01	--
Heptachlor Epoxide	ug/g dry	0.01	0.05	<0.01	--	<0.01	<0.01	--
Hexachlorobenzene	ug/g dry	0.01	0.66	<0.01	--	<0.01	<0.01	--
Hexachlorobutadiene	ug/g dry	0.01	0.031	<0.01	--	<0.01	<0.01	--
Hexachloroethane	ug/g dry	0.01	0.21	<0.01	--	<0.01	<0.01	--
Methoxychlor	ug/g dry	0.01	1.6	<0.01	--	<0.01	<0.01	--
PCBs								
PCBs, total	ug/g dry	0.05	1.1	--	<0.05	<0.05	--	<0.05

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*

[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.

MDL Method Detection Limit

-- No Value/Not Analysed

Table 6
Summary of Groundwater PHC and VOC Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample									
				MW20-2			MW20-3		MW20-4	MW20-5		MW20-10	MW23-3 (Test Pit)
Sample Date (d/m/y)				2020-01-09		2023-12-18	2020-01-09	2023-12-18	2020-01-09	2020-01-09	2023-12-18	2023-12-18	2023-12-18
Headspace VOC Readings[3]	ppm	0.1		0.7		0.4	1.8	<0.1	5.3	0.2	<0.1	2.2	<0.1
Evidence of free product?	--	--	[4]	No		No	No	No	Dry	No	No	No	No
Volatiles													
Acetone	ug/L	5.0	2700	<5.0	*<5.0*	<5.0	<5.0	<5.0	--	<5.0	<5.0	<5.0	67.4
Benzene	ug/L	0.5	5	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ug/L	0.5	16	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	0.5	25	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Bromomethane	ug/L	0.5	0.89	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	0.2	0.79	<0.2	*<0.2*	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	ug/L	0.5	30	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	0.5	2.4	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	0.5	25	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	ug/L	1.0	590	<1.0	*<1.0*	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	0.5	3	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	ug/L	0.5	59	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ug/L	0.5	1	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	ug/L	0.5	5	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	ug/L	0.5	1.6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	ug/L	0.5	1.6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	ug/L	0.5	1.6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	ug/L	0.5	1.6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	0.5	5	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	ug/L	0.5		<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	ug/L	0.5		<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	ug/L	0.5	0.5	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	0.5	2.4	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	0.2	<0.2	*<0.2*	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2
Hexane	ug/L	1.0	51	<1.0	*<1.0*	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	1800	<5.0	*<5.0*	<5.0	<5.0	<5.0	--	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	ug/L	5.0	640	<5.0	*<5.0*	<5.0	<5.0	<5.0	--	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	ug/L	2.0	15	<2.0	*<2.0*	<2.0	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	ug/L	5.0	50	<5.0	*<5.0*	<5.0	<5.0	<5.0	--	<5.0	<5.0	<5.0	<5.0
Styrene	ug/L	0.5	5.4	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	ug/L	0.5	1.1	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	ug/L	0.5	1	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	ug/L	0.5	1.6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	0.5	24	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	ug/L	0.5	200	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L	0.5	4.7	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	ug/L	0.5	1.6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	1.0	150	<1.0	*<1.0*	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ug/L	0.5	0.5	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
m/p-Xylene	ug/L	0.5		<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
o-Xylene	ug/L	0.5		<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Xylenes, total	ug/L	0.5	300	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Hydrocarbons													
F1 PHCs (C6-C10)	ug/L	25	750	<25	*<25*	<25	<25	<25	--	<25	<25	<25	<25
F2 PHCs (C10-C16)	ug/L	100	150	<100	*<100*	<100	<100	<100	--	<100	<100	<100	<100
F3 PHCs (C16-C34)	ug/L	100	500	<100	*<100*	<100	<100	<100	--	<100	<100	<100	<100
F4 PHCs (C34-C50)	ug/L	100	500	<100	*<100*	<100	<100	<100	--	<100	<100	<100	<100

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*
[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.
[3] Headspace values were measured with a MiniRAE 3000 PID.
[4] To meet the standard there must be no evidence of free product including film or sheen.
MDL Method Detection Limit
-- No Value/Not Analysed
PHC Petroleum Hydrocarbon
Italics Duplicate Sample Collected

Table 7
Summary of Groundwater Metals Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse-Textured Soil	Sample									
				MW20-2			MW20-3		MW20-4	MW20-5		MW20-10	MW23-3 (Test Pit)
Sample Date (d/m/y)			--	2020-01-09		2023-12-20	2020-01-09	2023-12-20	2020-01-09	2020-01-09	2023-12-20	2023-12-20	2023-12-20
Metals													
Antimony	µg/L	0.5	6	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/L	1	25	2	*2*	2	<1	<1	--	<1	3	<1	<1
Barium	µg/L	1	1000	135	*133*	30	83	17	--	58	26	29	62
Beryllium	µg/L	0.5	4	<0.5	*<0.5*	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5
Boron	µg/L	10	5000	243	*236*	190	116	87	--	114	64	73	93
Cadmium	µg/L	0.1	2.7	<0.1	*<0.1*	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	1	50	<1	*<1*	<1	<1	<1	--	<1	<1	<1	<1
Chromium (VI)	µg/L	10	25	--	--	<10	--	<10		--	<10	<10	<10
Cobalt	µg/L	0.5	3.8	0.7	*0.8*	<0.5	0.9	<0.5	--	<0.5	0.7	<0.5	0.9
Copper	µg/L	0.5	87	6.3	*3.1*	0.9	4	1.3	--	3.3	0.6	2.4	1.7
Lead	µg/L	0.1	10	0.4	*<0.1*	<0.1	0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1
Mercury	µg/L	0.1	0.29	--	--	<0.1	--	<0.1	--	--	<0.1	<0.1	<0.1
Molybdenum	µg/L	0.5	70	6.1	*6*	3.7	2.7	2.2	--	1.5	1.8	2.3	1.4
Nickel	µg/L	1	100	2	*2*	<1	3	2	--	6	3	3	2
Selenium	µg/L	1	10	<1	*<1*	<1	<1	<1	--	<1	<1	<1	<1
Silver	µg/L	0.1	1.5	<0.1	*<0.1*	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1
Sodium	µg/L	200	490000	399000	*403000*	342000	162000	162000	--	155000	78600	195000	191000
Thallium	µg/L	0.1	2	<0.1	*<0.1*	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	0.1	20	8.8	*8.7*	4.8	5.2	4.8	--	6.2	3.6	4.9	11.8
Vanadium	µg/L	0.5	6.2	2.4	*2.4*	1.0	1.1	**9.9**	--	1.9	1.5	1.7	2.1
Zinc	µg/L	5	1100	6	*16*	<5	5	<5	--	6	<5	<5	<5

NOTES:
[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*.
[2] Table 2: Generic Site Condition Standards for Use in a Potable Groundwater Condition, commercial property use.
MDL Method Detection Limit.
-- No Value/Not Analysed.
BOLD Above Table 2 Site Condition Standard.
Italics Duplicate Sample Collected

Table 8
Summary of Groundwater PAH Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample								
				MW20-2		MW20-3		MW20-4	MW20-5		MW20-10	MW23-3 (Test Pit)
Sample Date (d/m/y)				2020-01-09	2023-12-20	2020-01-09	2023-12-20	2020-01-09	2020-01-09	2023-12-20	2023-12-20	2023-12-20
Headspace VOC Readings[3]	ppm	0.1		0.7	0.4	1.8	<0.1	5.3	0.2	<0.1	2.2	<0.1
Evidence of free product?	--	--	[4]	No	No	No	No	Dry	No	No	No	No
Semi-Volatiles												
Acenaphthene	ug/L	0.05	4.1	--	<0.05	--	<0.05	--	--	<0.05	<0.05	<0.05
Acenaphthylene	ug/L	0.05	1	--	<0.05	--	<0.05	--	--	<0.05	<0.05	0.20
Anthracene	ug/L	0.01	2.4	--	0.04	--	0.03	--	--	0.04	0.02	0.23
Benzo[a]anthracene	ug/L	0.01	1	--	0.10	--	0.02	--	--	0.06	0.03	0.36
Benzo[a]pyrene	ug/L	0.01	0.01	--	**0.21**	--	**0.04**	--	--	**0.05**	<0.01	**0.30**
Benzo[b]fluoranthene	ug/L	0.05	0.1	--	**0.40**	--	0.05	--	--	0.06	<0.05	**0.29**
Benzo[g,h,i]perylene	ug/L	0.05	0.2	--	**0.60**	--	0.18	--	--	0.15	<0.05	**0.21**
Benzo[k]fluoranthene	ug/L	0.05	0.1	--	**0.21**	--	<0.05	--	--	<0.05	<0.05	**0.17**
Chrysene	ug/L	0.05	0.1	--	**0.14**	--	<0.05	--	--	0.06	<0.05	**0.35**
Dibenzo[a,h]anthracene	ug/L	0.05	0.2	--	0.05	--	<0.05	--	--	<0.05	<0.05	<0.05
Fluoranthene	ug/L	0.01	0.41	--	0.06	--	0.01	--	--	0.16	0.04	**1.06**
Fluorene	ug/L	0.05	120	--	<0.05	--	<0.05	--	--	<0.05	<0.05	<0.05
Indeno [1,2,3-cd] pyrene	ug/L	0.05	0.2	--	**0.38**	--	0.12	--	--	0.09	<0.05	0.17
1-Methylnaphthalene	ug/L	0.05	3.2	--	<0.05	--	<0.05	--	--	<0.05	<0.05	<0.05
2-Methylnaphthalene	ug/L	0.05	3.2	--	<0.05	--	<0.05	--	--	<0.05	<0.05	<0.05
Methylnaphthalene (1&2)	ug/L	0.10	3.2	--	<0.10	--	<0.10	--	--	<0.10	<0.10	<0.10
Naphthalene	ug/L	0.05	11	--	<0.05	--	0.11	--	--	0.05	0.19	0.14
Phenanthrene	ug/L	0.05	1	--	<0.05	--	<0.05	--	--	0.09	0.06	0.51
Pyrene	ug/L	0.01	4.1	--	0.41	--	0.07	--	--	0.18	0.04	0.88

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*
[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.
[3] Headspace values were measured with a MiniRAE 3000 PID.
[4] To meet the standard there must be no evidence of free product including film or sheen.
MDL Method Detection Limit
-- No Value/Not Analysed
BOLD Above the Table 2 SCS

Table 9
Summary of Groundwater Pesticides & PCBs Analysis
Phase Two Environmental Site Assessment
1280 Trim Road, Ottawa, Ontario
LRL File: 230202

Parameter	Units	MDL	O. Reg. 153/04[1] Table 2[2] Commercial Property Use Coarse textured soil	Sample								
				MW20-2		MW20-3		MW20-4	MW20-5		MW20-10	MW23-3 (Test Pit)
Sample Date (d/m/y)				2020-01-09	2023-12-20	2020-01-09	2023-12-20	2020-01-09	2020-01-09	2023-12-20	2023-12-18	2023-12-20
Pesticides, OC												
Aldrin	ug/L	0.01	0.35	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
gamma-BHC (Lindane)	ug/L	0.01	1.2	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
alpha-Chlordane	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
gamma-Chlordane	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Chlordane	ug/L	0.01	7	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
o,p-DDD	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
p,p-DDD	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
DDD	ug/L	0.01	10	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
o,p-DDE	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
p,p-DDE	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
DDE	ug/L	0.01	10	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
o,p-DDT	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	0.02
p,p-DDT	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
DDT	ug/L	0.01	2.8	--	<0.01	--	<0.01	--	--	<0.01	<0.01	0.02
Dieldrin	ug/L	0.01	0.35	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Endrin	ug/L	0.01	0.48	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Endosulfan I	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Endosulfan II	ug/L	0.01		--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Endosulfan I/II	ug/L	0.01	1.5	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Heptachlor	ug/L	0.01	1.5	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Heptachlor Epoxide	ug/L	0.01	0.048	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Hexachlorobenzene	ug/L	0.01	1	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L	0.01	0.44	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Hexachloroethane	ug/L	0.01	2.1	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
Methoxychlor	ug/L	0.01	6.5	--	<0.01	--	<0.01	--	--	<0.01	<0.01	<0.01
PCBs	ug/L			--		--		--	--			
PCBs, total	ug/L	0.05	3	--	<0.05	--	<0.05	--	--	<0.05	<0.05	<0.05

NOTES:

[1] MECP's *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*

[2] Table 2: Full depth generic site condition standards in a potable groundwater condition.

MDL Method Detection Limit

-- No Value/Not Analysed

APPENDIX A

Borehole Logs / Test Pit Logs

Borehole Log: BH20-1

Project No.: 190766 | **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. | **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 6, 2020 | **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. | **Drilling Equipment:** CME55 Truck-Mount | **Drilling Method:** Hollow Stem Auger

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Monitoring Well Details
		Ground Surface	99.84								
0.0	0.0	**FILL** Silty sand with clay and gravel, brown, loose.	0.00			1	24	100	PHC, VOC, Metals	0.2	
1.0						2				<0.1	
2.0			99.23								
		CLAY Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist, to saturated at 1.2 m bgs. Stiff.	0.61			3	9	69		<0.1	
3.0	1.0					4				<0.1	
4.0											
5.0						5	12	67		<0.1	
6.0			98.01								
	2.0	End of Borehole	1.83								
7.0											
8.0											
9.0											
10.0	3.0										
11.0											
12.0											
13.0	4.0										
14.0											
15.0											
16.0											

Easting: 0462524 | **Northing:** 5037518

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.84 m | **Top of Riser Elev.:** --

Hole Diameter: 203 mm | **Monitoring Well Diameter:** --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-7

Project No.: 190766
Project: Phase II Environmental Site Assessment
Client: Halo Car Wash Inc.
Location: 1280 Trim Road, Ottawa, Ontario
Date: January 6, 2020
Field Personnel: VW
Driller: George Downing Estate Drilling Ltd.
Drilling Equipment: CME55 Truck-Mount
Drilling Method: Hollow Stem Auger

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Monitoring Well Details
		Ground Surface	98.84								
0.0	0.0	**TOPSOIL** Loam, presence of organic material (i.e. vegetation, roots), brown, dry, loose.	0.00								
1.0						33	15	21	PHC, VOC, Metals	0.1	
2.0			98.23								
3.0	1.0	**CLAY** Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist, stiff.	0.61			34	9	35		<0.1	
4.0											
5.0						35	9	77		<0.1	
6.0			97.01								
	2.0	End of Borehole	1.83								
7.0											
8.0											
9.0											
10.0	3.0										
11.0											
12.0											
13.0	4.0										
14.0											
15.0											
16.0											

Easting: 0462464
Northing: 5037523
Site Datum: Center of sanitary sewer manhole cover (100.00 m)
Groundsurface Elevation: 98.84 m
Top of Riser Elev.: --
Hole Diameter: 203 mm
Monitoring Well Diameter: --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-8

Project No.: 190766
Project: Phase II Environmental Site Assessment
Client: Halo Car Wash Inc.
Location: 1280 Trim Road, Ottawa, Ontario
Date: January 6, 2020
Field Personnel: VW
Driller: George Downing Estate Drilling Ltd.
Drilling Equipment: CME55 Truck-Mount
Drilling Method: Hollow Stem Auger

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Monitoring Well Details
		Ground Surface	99.35								
0.0	0.0	**FILL** Silty sand with gravel, brown, loose.	0.00			36	78	69	PHC, VOC, Metals	2.7	
			98.74								
		CLAY Silty, becoming less silty with depth. Colour alternating between grey, blue-grey and grey-brown. Moist to saturated at 1.8 m bgs. Stiff.	0.61			37	9	33		<0.1	
	1.0					38	11	42		<0.1	
	2.0					39	6	100		0.2	
		End of Borehole	96.91								
	2.44										
	3.0										
	4.0										

Easting: 0462506
Northing: 5037538
Site Datum: Center of sanitary sewer manhole cover (100.00 m)
Groundsurface Elevation: 99.35 m
Top of Riser Elev.: --
Hole Diameter: 203 mm
Monitoring Well Diameter: --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-10

Project No.: 190766 **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 7, 2020 **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. **Drilling Equipment:** Split-Spoon and Jack-Hammer **Drilling Method:** Manual

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Monitoring Well Details
		CONCRETE SLAB Ground Surface	99.16								
0.0	0.0	**FILL** Crushed stone underlain by sand, brown, moist, loose.	0.00			45	--	60		0.1	
2.0			98.40			46	--	50	PHC, VOC, Metals	0.1	
3.0	1.0	**CLAY** Silty, colour alternating between grey, grey-brown and reddish-brown. Moist, firm.	0.76			47				<0.1	
5.0						48	--	71		<0.1	
6.0			97.33								
	2.0	End of Borehole	1.83								
10.0	3.0										
13.0	4.0										
15.0											

Easting: 0462531 **Northing:** 5037565

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.16 m **Top of Riser Elev.:** --

Hole Diameter: 51 mm **Monitoring Well Diameter:** --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-11

Project No.: 190766 | **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. | **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 7, 2020 | **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. | **Drilling Equipment:** Split-Spoon and Jack-Hammer | **Drilling Method:** Manual

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)	Monitoring Well Details
0.0	0.0	**CONCRETE SLAB** Ground Surface	99.16								
0.0	0.0	**FILL** Crushed stone underlain by sand, brown, moist, loose. Presence of black organic material.	0.00			49	--	71		0.1	
2.0		**CLAY** Silty, grey, moist, stiff.	98.55 0.61			50	--	33	PHC, VOC, Metals	0.2	
5.0	1.0					51	--	100		<0.1	
6.0		End of Borehole	97.33 1.83								
10.0	2.0										
13.0	3.0										
15.0	4.0										

Easting: 0462520 | **Northing:** 5037562

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.16 m | **Top of Riser Elev.:** --

Hole Diameter: 51 mm | **Monitoring Well Diameter:** --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-12

Project No.: 190766 | **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. | **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 7, 2020 | **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. | **Drilling Equipment:** Split-Spoon and Jack-Hammer | **Drilling Method:** Manual

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)	Monitoring Well Details
0.0	0.0	**CONCRETE SLAB** Ground Surface	99.16								
0.0	0.0	**FILL** Crushed stone underlain by sand, brown, moist, loose. Presence of black organic material.	0.00			49	--	71		0.1	
2.0		**CLAY** Silty, colour alternating between grey, grey-brown and reddish-brown, moist, stiff. **PHC odour detected throughout.**	98.52 0.64			50	--	33	PHC, VOC, Metals	4.6	
5.0	1.0					51	--	100		0.6	
6.0		End of Borehole	97.33 1.83								
7.0	2.0										
10.0	3.0										
13.0	4.0										
15.0											

Easting: 0462522 | **Northing:** 5037555

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.16 m | **Top of Riser Elev.:** --

Hole Diameter: 51 mm | **Monitoring Well Diameter:** --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-13

Project No.: 190766 **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 7, 2020 **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. **Drilling Equipment:** Split-Spoon and Jack-Hammer **Drilling Method:** Manual

SUBSURFACE PROFILE		SAMPLE DATA								
Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm: 20 40 60 80; % LEL: 10 20 30 40 50 60 70 80 90)	Monitoring Well Details
0.0 / 0.0	Ground Surface	99.99								
0.0	**FILL** Medium-grained sand, brown, moist, loose.	0.00			55	--	83	PHC, VOC, Metals	0.1	
3.0 / 1.0					56	--	44		<0.1	
4.0	**CLAY** Silty, grey-brown, moist, stiff.	98.77 1.22			57				0.1	
	LOAM Dark brown, soft, moist. Presence of organic material (i.e. vegetation, roots).	98.59 1.40			58	--	67		<0.1	
6.0 / 2.0	**CLAY** Silty, dark grey, moist, stiff.	98.16 1.83			5				<0.1	
7.0	End of Borehole									
10.0 / 3.0										
13.0 / 4.0										
16.0										

Easting: 0462485 **Northing:** 5037536

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.99 m **Top of Riser Elev.:** --

Hole Diameter: 51 mm **Monitoring Well Diameter:** --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-6

Project No.: 190766
Project: Phase II Environmental Site Assessment
Client: Halo Car Wash Inc.
Location: 1280 Trim Road, Ottawa, Ontario
Date: January 6, 2020
Field Personnel: VW
Driller: George Downing Estate Drilling Ltd.
Drilling Equipment: CME55 Truck-Mount
Drilling Method: Hollow Stem Auger

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Monitoring Well Details
		Ground Surface	99.02								
0.0	0.0	**TOPSOIL** Loam, presence of organic material (i.e. vegetation, roots), brown, dry, loose.	0.00			30	28	42		<0.1	
			98.41 0.61			--	10	0		--	
		CLAY Silty, becoming less silty with depth. Colour alternating between grey, brown and reddish-brown. Moist to saturated at 1.8 m bgs. Stiff to very stiff with depth.	97.80 1.22			31	10	63	PHC, VOC, Metals	<0.1	
						32	27	100		<0.1	
		End of Borehole	96.58 2.44								

Easting: 0462486
Northing: 5037551
Site Datum: Center of sanitary sewer manhole cover (100.00 m)
Groundsurface Elevation: 99.02 m
Top of Riser Elev.: --
Hole Diameter: 203 mm
Monitoring Well Diameter: --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH20-9

Project No.: 190766 | **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. | **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 7, 2020 | **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. | **Drilling Equipment:** CME55 Truck-Mount | **Drilling Method:** Hollow Stem Auger

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)	Monitoring Well Details
0.0 / 0.0	Ground Surface	99.59								
0.0 – 3.3	**FILL** Silty sand with clay and gravel, brown, loose.	0.00 – 98.98			40	50 for 2"	10		0.1	
3.3 – 10.0	**CLAY** Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist to saturated at 1.8 m bgs. Stiff to soft with depth.	0.61 – 96.54			41	11	23		<0.1	
					42	11	63	PHC, VOC, Metals	0.1	
					43	7	83		<0.1	
					44	6	100		0.1	
10.0 / 3.0	End of Borehole	3.05								

Easting: 0462544 | **Northing:** 5037551

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.59 m | **Top of Riser Elev.:** --

Hole Diameter: 203 mm | **Monitoring Well Diameter:** --

NOTES

BGS - Below Ground Surface
PHC - Petroleum Hydrocarbons
VOC - Volatile Organic Compounds

Borehole Log: BH/MW20-2

Project No.: 190766 **Project:** Phase II Environmental Site Assessment

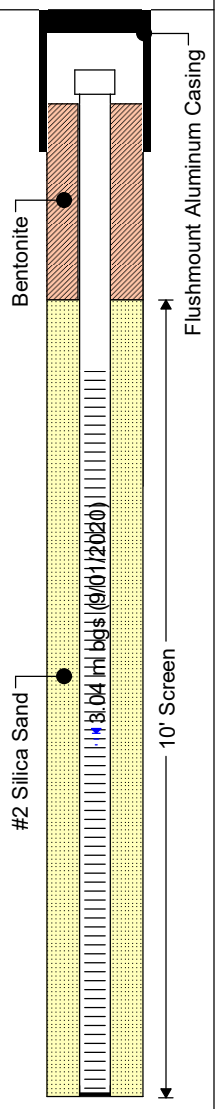
Client: Halo Car Wash Inc. **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 6, 2020 **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. **Drilling Equipment:** CME55 Truck-Mount **Drilling Method:** Hollow Stem Auger

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)
0.0 / 0.0	Ground Surface	99.32							
0.0 – 1.0	**FILL** Sand and gravel underlain by sand, brown, moist, loose.	99.32 / 0.00			6, 7	88	83		0.2; <0.1
1.0 – 3.0	**CLAY** Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist to saturated at 1.8 m bgs. Very stiff to very soft with depth. Thin black seams running vertically between 0.6 m and 1.2 m bgs.	98.71 / 0.61			8	22	100		<0.1
3.0 – 4.0					9	9	69	PHC, VOC, Metals	<0.1
4.0 – 6.0					10	5	100		<0.1
6.0 – 8.0					11	3	100		<0.1
8.0 – 10.0					12	0	100		<0.1
10.0 – 12.0					13	0	100		0.1
12.0 – 14.0					14	0	100		<0.1
14.0 – 16.0	End of Borehole	94.44 / 4.88							

Monitoring Well Details



Easting: 0462528 **Northing:** 5037541

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.32 m **Top of Riser Elev.:** 99.20 m

Hole Diameter: 203 mm **Monitoring Well Diameter:** 32 mm

NOTES

Groundwater sample collected January 9, 2020, and submitted for the analysis of Petroleum Hydrocarbon Compounds (PHC), Volatile Organic Compounds (VOC) and Metals.

BGS - Below Ground Surface

Borehole Log: BH/MW20-3

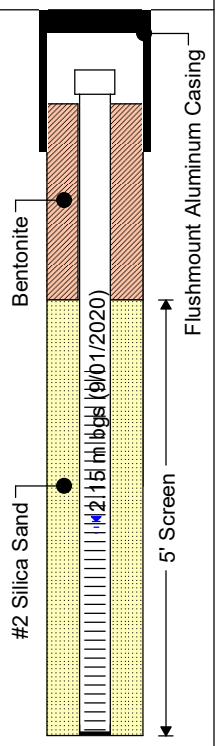
Project No.: 190766 **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 6, 2020 **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. **Drilling Equipment:** CME55 Truck-Mount **Drilling Method:** Hollow Stem Auger

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)	Monitoring Well Details
0.0 / 0.0	Ground Surface	99.18 / 0.00								
1.0					--	50 for 4"	0			
2.0	**CLAY** Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist to saturated at 1.8 m bgs. Stiff to soft with depth. Some seams of oxidation visible between 1.8 m and 2.4 m bgs. Dark grey seam at 0.7 m bgs.	98.57 / 0.61								
3.0 / 1.0					15	12	58	PHC, VOC, Metals	<0.1	
4.0										
5.0					16	10	83		0.1	
6.0										
7.0 / 2.0					17	5	100		<0.1	
8.0										
9.0					18	4	100		<0.1	
10.0 / 3.0		96.13 / 3.05								
	End of Borehole									
11.0										
12.0										
13.0 / 4.0										
14.0										
15.0										
16.0										



Easting: 0462536 **Northing:** 5037568

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 99.18 m **Top of Riser Elev.:** 99.10 m

Hole Diameter: 203 mm **Monitoring Well Diameter:** 32 mm

NOTES

Groundwater sample collected January 9, 2020, and submitted for the analysis of Petroleum Hydrocarbon Compounds (PHC), Volatile Organic Compounds (VOC) and Metals.

BGS - Below Ground Surface

Borehole Log: BH/MW20-5

Project No.: 190766 | **Project:** Phase II Environmental Site Assessment

Client: Halo Car Wash Inc. | **Location:** 1280 Trim Road, Ottawa, Ontario

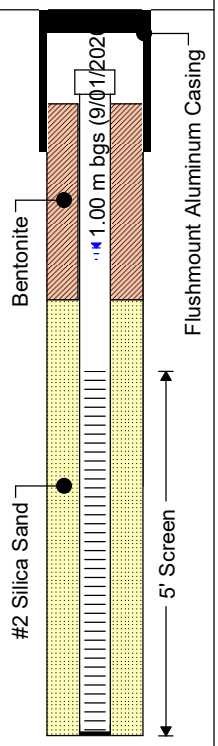
Date: January 6, 2020 | **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. | **Drilling Equipment:** CME55 Truck-Mount | **Drilling Method:** Hollow Stem Auger

SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm)	Combustible Soil Vapours (% LEL)
		Ground Surface	98.83								
0.0	0.0	**TOPSOIL** Loam, presence of organic material (i.e. vegetation, roots), brown, dry, loose.	0.00			24				<0.1	
1.0		**CLAY** Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist to saturated at 1.8 m bgs. Stiff to soft with depth.				25	5	60		<0.1	
2.0						26	14	69	PHC, VOC, Metals	<0.1	
3.0	1.0										
4.0						27	8	83		<0.1	
5.0											
6.0	2.0					28	4	100		<0.1	
7.0											
8.0						29	3	88		<0.1	
9.0											
10.0	3.0	End of Borehole	95.78 3.05								
11.0											
12.0											
13.0	4.0										
14.0											
15.0											
16.0											

Monitoring Well Details



Easting: 0462502 | **Northing:** 5037554

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 98.83 m | **Top of Riser Elev.:** 98.77 m

Hole Diameter: 203 mm | **Monitoring Well Diameter:** 32 mm

NOTES

Groundwater sample collected January 9, 2020, and submitted for the analysis of Petroleum Hydrocarbon Compounds (PHC), Volatile Organic Compounds (VOC) and Metals.

BGS - Below Ground Surface

Borehole Log: BH/MW20-4

Project No.: 190766 | **Project:** Phase II Environmental Site Assessment

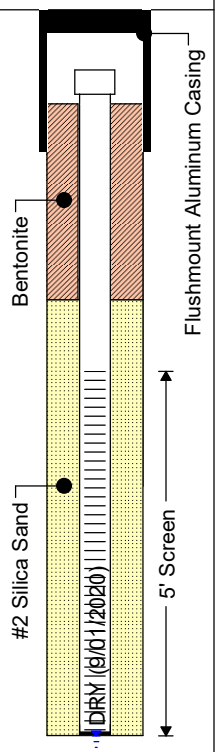
Client: Halo Car Wash Inc. | **Location:** 1280 Trim Road, Ottawa, Ontario

Date: January 6, 2020 | **Field Personnel:** VW

Driller: George Downing Estate Drilling Ltd. | **Drilling Equipment:** CME55 Truck-Mount | **Drilling Method:** Hollow Stem Auger

Depth (ft / m)	Soil Description	Elev./Depth (m)	Lithology	Type	Sample Number	N or RQD (%)	Recovery (%)	Lab Analysis	Combustible Soil Vapours (ppm / % LEL)
0.0 / 0.0	Ground Surface	100.05							
0.0 – 3.3 / 0.0 – 1.0	**FILL** Sand and gravel, brown, loose.	0.00 – 99.44			19	50 for 4"	4		0.4
3.3 – 10.0 / 1.0 – 3.0	**CLAY** Silty, becoming less silty with depth. Colour alternating between grey, grey-brown and reddish-brown. Moist, saturated at 1.8 m bgs. Stiff, becoming firm to soft with depth. Oxidation visible between at 1.3 m bgs.	0.61 – 97.00			20	13	75	PHC, VOC, Metals	<0.1
					21	10	100		<0.1
					22	5	100		<0.1
					23	3	50		<0.1
10.0 / 3.0	End of Borehole	3.05							

Monitoring Well Details



Easting: 0462536 | **Northing:** 5037539

Site Datum: Center of sanitary sewer manhole cover (100.00 m)

Groundsurface Elevation: 100.05 m | **Top of Riser Elev.:** 99.93 m

Hole Diameter: 203 mm | **Monitoring Well Diameter:** 32 mm

NOTES

Groundwater sample collected January 9, 2020, and submitted for the analysis of Petroleum Hydrocarbon Compounds (PHC), Volatile Organic Compounds (VOC) and Metals.

BGS - Below Ground Surface

TEST PIT LOG: TP1

LRJ ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrj.ca | (613) 842-3434

PROJECT NO.: 230202
PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
CLIENT: TRIM WORKS DEVELOPMENTS LTD.
LOCATION: 1280 TRIM ROAD, OTTAWA, ONTARIO
DATE: DECEMBER 18, 2023
FIELD PERSONNEL: R. KALADAF
DIGGING CONTRACTOR: COURCHESNE EXCAVATION
DIGGING EQUIPMENT: BACKHOE

DEPTH (FT / M)	SOIL DESCRIPTION	ELEV./DEPTH (m)	LITHOLOGY	TYPE	SAMPLE NUMBER	RECOVERY (%)	LABORATORY ANALYSIS	Combustible Soil Vapours (ppm) / ISOBUTYLENE (ppm)	MONITORING WELL DETAILS
0.0 / 0.0		100.02							
0.0 – 3.0 / 0.0 – 1.0	**CLAY:** Moist becoming saturated at 0.6 m below grade, grey.	0.00		GR	SS1	100	PHC, VOC, PAH	2.4	
				GR	SS2	100	METALS, INORANICS, OCP	0.8	
				GR	SS3	100		<0.1	
6.0 / 2.0				GR	SS4	100	PCB	2.2	
9.0 / 3.0		97.02		GR	SS5	100		0.8	
10.0 / 3.0	**End of Test Pit**	3.00							
13.0 / 4.0									
16.0 / 5.0									
19.0 / 6.0									

EASTING: 462526
NORTHING: 5037512
SITE DATUM: Top of Riser of Existing Monitoring Well MW20-2 (99.20 m)
MONITORING WELL DIAMETER: N/A
GROUNDSURFACE ELEVATION: 100.02 m
TOP OF RISER ELEVATION: --
TEST PIT DIMENSIONS: **LENGTH:** 3.5 m **WIDTH:** 1.0 m

NOTES:
OCP: OC Pesticides
VOC: Volatile Organic Compounds
PHC: Petroleum Hydrocarbons
PAH: Polycyclic Aromatic Hydrocarbons
PCB: Polychlorinated Biphenyls
N/A: Not applicable

TEST PIT LOG: TP2

LRJ
ENGINEERING | INGÉNIERIE
5430 Canotek Road, Ottawa, ON, K1J 9G2
www.lrj.ca | (613) 842-3434

PROJECT NO.: 230202
PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
CLIENT: TRIM WORKS DEVELOPMENTS LTD.
LOCATION: 1280 TRIM ROAD, OTTAWA, ONTARIO
DATE: DECEMBER 18, 2023
FIELD PERSONNEL: R. KALADAF
DIGGING CONTRACTOR: COURCHESNE EXCAVATION
DIGGING EQUIPMENT: BACKHOE

DEPTH (FT / M)	SOIL DESCRIPTION	ELEV./DEPTH (m)	LITHOLOGY	TYPE	SAMPLE NUMBER	RECOVERY (%)	LABORATORY ANALYSIS	Combustible Soil Vapours (ppm) / ISOBUTYLENE (ppm)	MONITORING WELL DETAILS
0.0 / 0.0		99.87							
0.0 – 1.0	**FILL:** Medium to fine-grained sand, dry becoming moist at 0.6 m below grade, brown, presence of vegetation roots between 0.0 and 0.3 m below grade.	0.00		GR	SS1	100	METALS, INORANICS	0.2	
1.0 – 3.0	**CLAY:** Saturated, grey, traces of vegetation roots from between 1.2 and 1.8 m below grade.			GR	SS2	100	OCP, PCB	<0.1	
3.0 – 5.0				GR	SS3	100		<0.1	
5.0 – 7.0				GR	SS4	100		0.1	
7.0 – 9.0				GR	SS5	100	PHC, VOC, PAH	1.0	
9.0 – 10.0		96.87							
10.0	**End of Test Pit**	3.00							

Combustible Soil Vapours (ppm): 10, 30, 50, 70, 90
ISOBUTYLENE (ppm): 200, 600, 1000, 1400, 1800

EASTING: 462502
NORTHING: 5037514
SITE DATUM: Top of Riser of Existing Monitoring Well MW20-2 (99.20 m)
MONITORING WELL DIAMETER: N/A
GROUNDSURFACE ELEVATION: 99.87 m
TOP OF RISER ELEVATION: --
TEST PIT DIMENSIONS: **LENGTH:** 3.5 m
WIDTH: 1.0 m

NOTES:
OCP: OC Pesticides
VOC: Volatile Organic Compounds
PHC: Petroleum Hydrocarbons
PAH: Polycyclic Aromatic Hydrocarbons
PCB: Polychlorinated Biphenyls
N/A: Not applicable

TEST PIT LOG: TP3

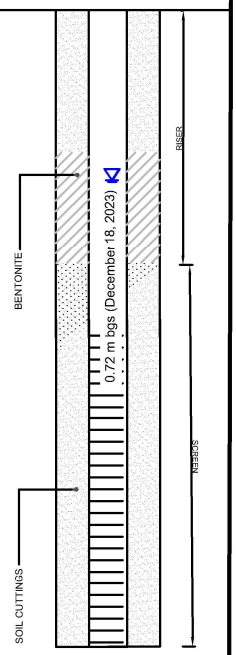
LRJ ENGINEERING | INGENIERIE
5430 Canotek Road| Ottawa, ON, K1J 9G2
www.lrl.ca| (613) 842-3434

PROJECT NO.: 230202
PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
CLIENT: TRIM WORKS DEVELOPMENTS LTD.
LOCATION: 1280 TRIM ROAD, OTTAWA, ONTARIO
DATE: DECEMBER 18, 2023
FIELD PERSONNEL: R. KALADAF
DIGGING CONTRACTOR: COURCHESNE EXCAVATION
DIGGING EQUIPMENT: BACKHOE

DEPTH (FT / M)	SOIL DESCRIPTION	ELEV./DEPTH (m)	LITHOLOGY	TYPE	SAMPLE NUMBER	RECOVERY (%)	LABORATORY ANALYSIS	Combustible Soil Vapours (ppm) / ISOBUTYLENE (ppm)
0.0 / 0.0		100.12						
	FILL: Medium to fine-grained sand, dry becoming moist at 0.6 m below grade, brown, presence of vegetation roots between 0.0 and 0.3 m below grade.	0.00		GR	SS1	100	OCP	0.3
				GR	SS2	100	METALS, INORGANIC PCB	2.1
	CLAY: Saturated, grey.	1.20		GR	SS3	100	PHC, VOC, PAH	2.2
				GR	SS4	100		1.6
				GR	SS5	100		1.1
		97.12						
10.0 / 3.0	**End of Test Pit**	3.00						

Combustible Soil Vapours (ppm): 10, 30, 50, 70, 90
ISOBUTYLENE (ppm): 200, 600, 1000, 1400, 1800

MONITORING WELL DETAILS



Groundwater samples collected December 20, 2023 were submitted for laboratory analysis of VOC, PHC, PAH, Metals, General Inorganics, OC Pesticides, PCB.

EASTING: 462492
NORTHING: 5037495
SITE DATUM: Top of Riser of Existing Monitoring Well MW20-2 (99.20 m)
MONITORING WELL DIAMETER: N/A
GROUNDSURFACE ELEVATION: 100.12 m
TOP OF RISER ELEVATION: --
TEST PIT DIMENSIONS: **LENGTH:** 3.5 m
WIDTH: 1.0 m

NOTES:
OCP: OC Pesticides
VOC: Volatile Organic Compounds
PHC: Petroleum Hydrocarbons
PAH: Polycyclic Aromatic Hydrocarbons
PCB: Polychlorinated Biphenyls
N/A: Not applicable

APPENDIX B

Certificates of Laboratory Analysis

PARACEL LABORATORIES LTD.

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RESPONSIVE.
RELIABLE.

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Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Valerie Weisflock

Client PO:
Project: 190766
Custody: 124815

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020

Order #: 2002311

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

Paracel ID	Client ID
2002311-01	BH20-1-1
2002311-02	BH/MW20-2-9
2002311-03	BH/MW20-3-15
2002311-04	BH/MW20-4-20
2002311-05	BH/MW20-5-26
2002311-06	BH20-6-31
2002311-07	BH20-7-33
2002311-08	BH20-8-36
2002311-09	BH20-9-42
2002311-10	BH20-10-46
2002311-11	BH20-11-50
2002311-12	BH20-12-53
2002311-13	BH20-13-55

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	10-Jan-20	10-Jan-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	10-Jan-20	12-Jan-20
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	10-Jan-20	10-Jan-20
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	10-Jan-20	10-Jan-20
Solids, %	Gravimetric, calculation	10-Jan-20	11-Jan-20

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-1-1	BH/MW20-2-9	BH/MW20-3-15	BH/MW20-4-20
	Sample Date:	06-Jan-20 09:00	06-Jan-20 09:00	06-Jan-20 09:00	06-Jan-20 12:00
	Sample ID:	2002311-01	2002311-02	2002311-03	2002311-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	77.5	80.7	87.0	78.5
Metals					
Antimony	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Arsenic	1.0 ug/g dry	3.2	4.4	3.0	5.3
Barium	1.0 ug/g dry	166	251	186	301
Beryllium	0.5 ug/g dry	0.6	0.9	0.6	0.9
Boron	5.0 ug/g dry	7.9	10.1	<5.0	7.3
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	70.8	111	89.1	133
Cobalt	1.0 ug/g dry	14.6	24.3	14.7	28.1
Copper	5.0 ug/g dry	26.0	51.9	26.1	47.1
Lead	1.0 ug/g dry	30.5	8.9	5.6	9.6
Molybdenum	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Nickel	5.0 ug/g dry	37.6	63.2	43.7	70.4
Selenium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	<1.0	1.1	<1.0	1.3
Vanadium	10.0 ug/g dry	56.5	96.0	80.1	106
Zinc	20.0 ug/g dry	90.2	92.2	69.1	111
Volatiles					
Acetone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromoform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chloroform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-1-1	BH/MW20-2-9	BH/MW20-3-15	BH/MW20-4-20
	Sample Date:	06-Jan-20 09:00	06-Jan-20 09:00	06-Jan-20 09:00	06-Jan-20 12:00
	Sample ID:	2002311-01	2002311-02	2002311-03	2002311-04
	MDL/Units	Soil	Soil	Soil	Soil
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylene dibromide (dibromoethan	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Hexane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Styrene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
4-Bromofluorobenzene	Surrogate	108%	106%	105%	108%
Dibromofluoromethane	Surrogate	62.2%	67.6%	66.0%	63.1%
Toluene-d8	Surrogate	121%	113%	122%	122%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	<8
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH/MW20-5-26	BH20-6-31	BH20-7-33	BH20-8-36
	Sample Date:	06-Jan-20 12:00	06-Jan-20 12:00	06-Jan-20 12:00	06-Jan-20 12:00
	Sample ID:	2002311-05	2002311-06	2002311-07	2002311-08
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	83.2	75.5	60.3	97.3
Metals					
Antimony	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Arsenic	1.0 ug/g dry	3.6	4.3	2.6	1.5
Barium	1.0 ug/g dry	212	278	69.3	253
Beryllium	0.5 ug/g dry	0.8	1.0	<0.5	<0.5
Boron	5.0 ug/g dry	6.7	9.2	9.5	9.0
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	109	149	22.0	10.0
Cobalt	1.0 ug/g dry	17.5	27.6	7.7	2.4
Copper	5.0 ug/g dry	40.0	45.8	19.2	<5.0
Lead	1.0 ug/g dry	8.1	10.6	9.1	3.9
Molybdenum	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Nickel	5.0 ug/g dry	56.7	78.4	17.1	7.6
Selenium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	1.4	1.6	<1.0	<1.0
Vanadium	10.0 ug/g dry	86.4	109	24.2	<10.0
Zinc	20.0 ug/g dry	81.3	96.9	60.8	<20.0
Volatiles					
Acetone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromoform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chloroform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH/MW20-5-26	BH20-6-31	BH20-7-33	BH20-8-36
	Sample Date:	06-Jan-20 12:00	06-Jan-20 12:00	06-Jan-20 12:00	06-Jan-20 12:00
	Sample ID:	2002311-05	2002311-06	2002311-07	2002311-08
	MDL/Units	Soil	Soil	Soil	Soil
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylene dibromide (dibromoethar	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Hexane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Styrene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
4-Bromofluorobenzene	Surrogate	109%	114%	108%	106%
Dibromofluoromethane	Surrogate	70.1%	74.4%	75.8%	77.1%
Toluene-d8	Surrogate	123%	124%	123%	115%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	9	<4
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	13	<8

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH/MW20-5-26	BH20-6-31	BH20-7-33	BH20-8-36
	Sample Date:	06-Jan-20 12:00	06-Jan-20 12:00	06-Jan-20 12:00	06-Jan-20 12:00
	Sample ID:	2002311-05	2002311-06	2002311-07	2002311-08
	MDL/Units	Soil	Soil	Soil	Soil
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-9-42	BH20-10-46	BH20-11-50	BH20-12-53
	Sample Date:	07-Jan-20 09:00	07-Jan-20 09:00	07-Jan-20 09:00	07-Jan-20 12:00
	Sample ID:	2002311-09	2002311-10	2002311-11	2002311-12
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	77.9	93.4	76.3	80.5
Metals					
Antimony	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Arsenic	1.0 ug/g dry	4.6	1.2	4.1	2.9
Barium	1.0 ug/g dry	312	28.2	291	214
Beryllium	0.5 ug/g dry	1.0	<0.5	1.0	0.9
Boron	5.0 ug/g dry	9.9	<5.0	8.2	5.9
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	148	10.0	141	117
Cobalt	1.0 ug/g dry	28.1	3.6	23.0	20.2
Copper	5.0 ug/g dry	55.8	<5.0	47.2	33.3
Lead	1.0 ug/g dry	10.8	1.6	10.8	7.9
Molybdenum	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Nickel	5.0 ug/g dry	80.7	8.5	72.7	56.1
Selenium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	1.4	<1.0	2.2	1.8
Vanadium	10.0 ug/g dry	108	14.4	102	85.7
Zinc	20.0 ug/g dry	104	21.5	101	99.2
Volatiles					
Acetone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromoform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chloroform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-9-42	BH20-10-46	BH20-11-50	BH20-12-53
	Sample Date:	07-Jan-20 09:00	07-Jan-20 09:00	07-Jan-20 09:00	07-Jan-20 12:00
	Sample ID:	2002311-09	2002311-10	2002311-11	2002311-12
	MDL/Units	Soil	Soil	Soil	Soil
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylene dibromide (dibromoethar	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Hexane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Styrene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
4-Bromofluorobenzene	Surrogate	111%	107%	118%	86.7%
Dibromofluoromethane	Surrogate	76.6%	79.3%	80.2%	80.5%
Toluene-d8	Surrogate	111%	127%	125%	125%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	16
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	107
F3 PHCs (C16-C34)	8 ug/g dry	<8	109	<8	79

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-9-42	BH20-10-46	BH20-11-50	BH20-12-53
	Sample Date:	07-Jan-20 09:00	07-Jan-20 09:00	07-Jan-20 09:00	07-Jan-20 12:00
	Sample ID:	2002311-09	2002311-10	2002311-11	2002311-12
	MDL/Units	Soil	Soil	Soil	Soil
F4 PHCs (C34-C50)	6 ug/g dry	<6	87	<6	<6

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-13-55	-	-	-
	Sample Date:	07-Jan-20 12:00	-	-	-
	Sample ID:	2002311-13	-	-	-
	MDL/Units	Soil	-	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	99.2	-	-	-
Metals					
Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	<1.0	-	-	-
Barium	1.0 ug/g dry	25.0	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	<5.0	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	7.6	-	-	-
Cobalt	1.0 ug/g dry	3.4	-	-	-
Copper	5.0 ug/g dry	<5.0	-	-	-
Lead	1.0 ug/g dry	<1.0	-	-	-
Molybdenum	1.0 ug/g dry	<1.0	-	-	-
Nickel	5.0 ug/g dry	8.1	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	10.4	-	-	-
Zinc	20.0 ug/g dry	<20.0	-	-	-
Volatiles					
Acetone	0.50 ug/g dry	<0.50	-	-	-
Benzene	0.02 ug/g dry	<0.02	-	-	-
Bromodichloromethane	0.05 ug/g dry	<0.05	-	-	-
Bromoform	0.05 ug/g dry	<0.05	-	-	-
Bromomethane	0.05 ug/g dry	<0.05	-	-	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	-	-	-
Chlorobenzene	0.05 ug/g dry	<0.05	-	-	-
Chloroform	0.05 ug/g dry	<0.05	-	-	-
Dibromochloromethane	0.05 ug/g dry	<0.05	-	-	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	-	-	-

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-13-55	-	-	-
	Sample Date:	07-Jan-20 12:00	-	-	-
	Sample ID:	2002311-13	-	-	-
	MDL/Units	Soil	-	-	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	-	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	-	-
Ethylene dibromide (dibromoethar	0.05 ug/g dry	<0.05	-	-	-
Hexane	0.05 ug/g dry	<0.05	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	-	-	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	-	-	-
Methylene Chloride	0.05 ug/g dry	<0.05	-	-	-
Styrene	0.05 ug/g dry	<0.05	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	-	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	-	-	-
Toluene	0.05 ug/g dry	<0.05	-	-	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	-	-	-
Trichloroethylene	0.05 ug/g dry	<0.05	-	-	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	-	-	-
Vinyl chloride	0.02 ug/g dry	<0.02	-	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	-	-	-
o-Xylene	0.05 ug/g dry	<0.05	-	-	-
Xylenes, total	0.05 ug/g dry	<0.05	-	-	-
4-Bromofluorobenzene	Surrogate	95.0%	-	-	-
Dibromofluoromethane	Surrogate	69.4%	-	-	-
Toluene-d8	Surrogate	122%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	<8	-	-	-

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

	Client ID:	BH20-13-55	-	-	-
	Sample Date:	07-Jan-20 12:00	-	-	-
	Sample ID:	2002311-13	-	-	-
	MDL/Units	Soil	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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						
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*3.61*		*ug/g*		*113*	*50-140*			
Surrogate: Dibromofluoromethane	*3.16*		*ug/g*		*98.6*	*50-140*			
Surrogate: Toluene-d8	*3.37*		*ug/g*		*105*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	763	7	ug/g dry	774			1.4	40	
F2 PHCs (C10-C16)	3870	4	ug/g dry	3760			2.9	30	
F3 PHCs (C16-C34)	1950	8	ug/g dry	1890			3.1	30	
F4 PHCs (C34-C50)	221	6	ug/g dry	235			6.4	30	
Metals									
Antimony	ND	1.0	ug/g dry	ND			0.0	30	
Arsenic	4.4	1.0	ug/g dry	4.2			6.4	30	
Barium	96.1	1.0	ug/g dry	91.1			5.4	30	
Beryllium	0.7	0.5	ug/g dry	0.7			2.7	30	
Boron	12.5	5.0	ug/g dry	12.8			2.7	30	
Cadmium	ND	0.5	ug/g dry	ND			0.0	30	
Chromium	28.1	5.0	ug/g dry	27.8			1.1	30	
Cobalt	10.9	1.0	ug/g dry	10.8			1.4	30	
Copper	24.2	5.0	ug/g dry	24.2			0.2	30	
Lead	11.7	1.0	ug/g dry	11.5			1.6	30	
Molybdenum	ND	1.0	ug/g dry	ND			0.0	30	
Nickel	24.5	5.0	ug/g dry	23.9			2.7	30	
Selenium	ND	1.0	ug/g dry	ND			0.0	30	
Silver	ND	0.3	ug/g dry	ND			0.0	30	
Thallium	ND	1.0	ug/g dry	ND			0.0	30	
Uranium	ND	1.0	ug/g dry	ND			0.0	30	
Vanadium	34.5	10.0	ug/g dry	35.1			1.8	30	
Zinc	49.5	20.0	ug/g dry	55.5			11.6	30	
Physical Characteristics									
% Solids	81.0	0.1	% by Wt.	82.9			2.4	25	
Volatiles									
Acetone	ND	0.50	ug/g dry	ND				50	
Benzene	0.133	0.02	ug/g dry	0.140			5.2	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND				50	
Bromoform	ND	0.05	ug/g dry	ND				50	
Bromomethane	ND	0.05	ug/g dry	ND				50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND				50	
Chlorobenzene	ND	0.05	ug/g dry	ND				50	
Chloroform	ND	0.05	ug/g dry	ND				50	
Dibromochloromethane	ND	0.05	ug/g dry	ND				50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND				50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
Ethylbenzene	7.59	0.05	ug/g dry	8.12			6.8	50	
Ethylene dibromide (dibromoethane	ND	0.05	ug/g dry	ND				50	
Hexane	0.241	0.05	ug/g dry	0.189			24.2	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND				50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND				50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND				50	
Methylene Chloride	ND	0.05	ug/g dry	ND				50	
Styrene	ND	0.05	ug/g dry	ND				50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND				50	
Toluene	7.80	0.05	ug/g dry	7.84			0.5	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND				50	
Trichloroethylene	ND	0.05	ug/g dry	ND				50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND				50	
Vinyl chloride	ND	0.02	ug/g dry	ND				50	
m,p-Xylenes	34.7	0.05	ug/g dry	37.6			8.1	50	
o-Xylene	15.7	0.05	ug/g dry	17.4			10.6	50	
Surrogate: 4-Bromofluorobenzene	*3.61*		*ug/g dry*		*101*	*50-140*			
Surrogate: Dibromofluoromethane	*2.53*		*ug/g dry*		*71.0*	*50-140*			
Surrogate: Toluene-d8	*4.00*		*ug/g dry*		*112*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	179	7	ug/g		89.4	80-120			
F2 PHCs (C10-C16)	92	4	ug/g		115	80-120			
F3 PHCs (C16-C34)	234	8	ug/g		119	80-120			
F4 PHCs (C34-C50)	376	6	ug/g	235	102	60-140			
Metals									
Antimony	44.6		ug/L	ND	88.8	70-130			
Arsenic	56.5		ug/L	1.7	110	70-130			
Barium	88.0		ug/L	36.4	103	70-130			
Beryllium	50.8		ug/L	ND	101	70-130			
Boron	52.4		ug/L	5.1	94.6	70-130			
Cadmium	51.2		ug/L	ND	102	70-130			
Chromium	67.3		ug/L	11.1	112	70-130			
Cobalt	51.2		ug/L	4.3	93.8	70-130			
Copper	63.5		ug/L	9.7	108	70-130			
Lead	51.5		ug/L	4.6	93.8	70-130			
Molybdenum	53.3		ug/L	ND	106	70-130			
Nickel	62.8		ug/L	9.6	107	70-130			
Selenium	52.4		ug/L	ND	104	70-130			
Silver	43.8		ug/L	ND	87.5	70-130			
Thallium	45.9		ug/L	ND	91.7	70-130			
Uranium	49.3		ug/L	ND	98.0	70-130			
Vanadium	69.9		ug/L	14.0	112	70-130			
Zinc	59.3		ug/L	22.2	74.3	70-130			
Volatiles									
Acetone	7.31	0.50	ug/g		73.1	50-140			
Benzene	2.96	0.02	ug/g		74.0	60-130			
Bromodichloromethane	3.15	0.05	ug/g		78.7	60-130			
Bromoform	4.80	0.05	ug/g		120	60-130			
Bromomethane	2.45	0.05	ug/g		61.3	50-140			
Carbon Tetrachloride	3.98	0.05	ug/g		99.5	60-130			
Chlorobenzene	3.95	0.05	ug/g		98.7	60-130			
Chloroform	3.15	0.05	ug/g		78.7	60-130			
Dibromochloromethane	4.52	0.05	ug/g		113	60-130			
Dichlorodifluoromethane	2.54	0.05	ug/g		63.4	50-140			
1,2-Dichlorobenzene	3.54	0.05	ug/g		88.6	60-130			
1,3-Dichlorobenzene	3.47	0.05	ug/g		86.8	60-130			
1,4-Dichlorobenzene	3.43	0.05	ug/g		85.8	60-130			
1,1-Dichloroethane	2.76	0.05	ug/g		69.0	60-130			
1,2-Dichloroethane	3.42	0.05	ug/g		85.6	60-130			
1,1-Dichloroethylene	3.32	0.05	ug/g		82.9	60-130			
cis-1,2-Dichloroethylene	2.73	0.05	ug/g		68.3	60-130			
trans-1,2-Dichloroethylene	2.53	0.05	ug/g		63.3	60-130			
1,2-Dichloropropane	2.87	0.05	ug/g		71.7	60-130			
cis-1,3-Dichloropropylene	3.45	0.05	ug/g		86.3	60-130			
trans-1,3-Dichloropropylene	3.45	0.05	ug/g		86.3	60-130			
Ethylbenzene	4.15	0.05	ug/g		104	60-130			
Ethylene dibromide (dibromoethane	4.03	0.05	ug/g		101	60-130			
Hexane	2.77	0.05	ug/g		69.2	60-130			
Methyl Ethyl Ketone (2-Butanone)	6.08	0.50	ug/g		60.8	50-140			
Methyl Isobutyl Ketone	7.46	0.50	ug/g		74.6	50-140			

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl tert-butyl ether	6.50	0.05	ug/g		65.0	50-140			
Methylene Chloride	3.08	0.05	ug/g		77.1	60-130			
Styrene	4.08	0.05	ug/g		102	60-130			
1,1,1,2-Tetrachloroethane	4.45	0.05	ug/g		111	60-130			
1,1,2,2-Tetrachloroethane	3.86	0.05	ug/g		96.4	60-130			
Tetrachloroethylene	3.84	0.05	ug/g		96.0	60-130			
Toluene	3.82	0.05	ug/g		95.5	60-130			
1,1,1-Trichloroethane	3.42	0.05	ug/g		85.5	60-130			
1,1,2-Trichloroethane	3.22	0.05	ug/g		80.4	60-130			
Trichloroethylene	3.24	0.05	ug/g		80.9	60-130			
Trichlorofluoromethane	3.60	0.05	ug/g		90.1	50-140			
Vinyl chloride	2.45	0.02	ug/g		61.2	50-140			
m,p-Xylenes	8.51	0.05	ug/g		106	60-130			
o-Xylene	4.45	0.05	ug/g		111	60-130			
Surrogate: 4-Bromofluorobenzene	*2.66*		*ug/g*		*83.2*	*50-140*			

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 14-Jan-2020
Order Date: 9-Jan-2020
Project Description: 190766

Qualifier Notes:

Login Qualifiers :

Container(s) - Bottle and COC sample ID don't match -
Applies to samples: BH20-6-31, BH20-7-33

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.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
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.

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Paracel ID: 2002311

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paracellabs.com
llabs.com

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2002311	Nº 124815

Client Name: LRL Associates Ltd.	Project Ref: 190766	Page 1 of 2
Contact Name: Valerie Weisflock	Quote #:	Turnaround Time
Address: 5430 Canotek Rd. Ottawa, ON K1S 9G2	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 613-842-3434	E-mail: VWeisflock@lrl.ca	Date Required:

Regulation 153/04	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)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	
1	BH20-1-1	S		2	8 Jan 6/20	AM	X	X		X				
2	BH/MW20-2-9	↓		↓	↓	↓	↓	↓		↓				
3	BH/MW20-3-15					↓								
4	BH/MW20-4-20					PM								
5	BH/MW20-5-26													MeOH vial reads BH/MW
6	BH20-6-31													MeOH vial reads BH/MW
7	BH20-7-33													↓ Expired conc.
8	BH20-8-36				↓	↓								
9	BH20-9-42				Jan 7/20	AM								
10	BH20-10-46	↓		↓	↓	↓	↓	↓		↓				

Comments: Labels may be difficult to read. Please call if you have any problems

Method of Delivery: Paracel

Relinquished By (Sign): Valerie Weisflock	Received By Driver/Depot: A. Jeouse	Received at Lab: Dawn	Verified By:
Relinquished By (Print): Valerie Weisflock	Date/Time: 09/01/20 12:10	Date/Time: 9 Jan 2020 1350	Date/Time: 01-09-20
Date/Time: Jan. 8, 2020 @ 3:00 pm	Temperature: °C PH.	Temperature: -2.8 °C	pH Verified: ☐ By:

PARAC LABORATORIE

Paracel ID: 2002311

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2002311	Nº 124814

Page 2 of 2

Client Name: LRL Associates Ltd.	Project Ref: 190766
Contact Name: Valerie Weisflock	Quote #:
Address: 5430 Canotek Rd. Ottawa, ON K1J 9G2	PO #:
Telephone: 613 842 3434	E-mail: VWeisflock@lrl.ca

Turnaround Time

☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required: _____

Regulation 153/04	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	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)
1	BH20-11-50	S		2	Jan 7/20	AM	X	X		X			
2	BH20-12-53	↓		↓	↓	PM	↓	↓		↓			
3	BH20-13-55	↓		↓	↓	↓	↓	↓		↓			
4													
5													
6													
7													
8													
9													
10													

Comments:

Method of Delivery: Paracel

Relinquished By (Sign): Valerie Weisflock	Received By Driver/Depot: T. DeLouise	Received at Lab: [illegible]	Verified By: [illegible]
Relinquished By (Print): Valerie Weisflock	Date/Time: 09/01/20 12:10	Date/Time: 9 Jan 2020 13:45	Date/Time: 09-09-20 14:37
Date/Time: Jan. 8, 2020 @ 3:00 pm	Temperature: °C PM	Temperature: 2.8 °C	pH Verified: ☐ By:

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Valerie Weisflock

Client PO:
Project: 190766
Custody: 124806

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020

Order #: 2002440

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

Paracel ID	Client ID
2002440-01	MW20-2
2002440-02	MW20-3
2002440-03	MW20-5
2002440-04	MWX

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020
Project Description: 190766

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 200.8 - ICP-MS	10-Jan-20	10-Jan-20
PHC F1	CWS Tier 1 - P&T GC-FID	10-Jan-20	11-Jan-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	15-Jan-20	15-Jan-20
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	10-Jan-20	11-Jan-20

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020
Project Description: 190766

	Client ID:	MW20-2	MW20-3	MW20-5	MWX
	Sample Date:	09-Jan-20 12:00	09-Jan-20 12:00	09-Jan-20 12:00	09-Jan-20 12:00
	Sample ID:	2002440-01	2002440-02	2002440-03	2002440-04
	MDL/Units	Water	Water	Water	Water
Metals					
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Arsenic	1 ug/L	2	<1	<1	2
Barium	1 ug/L	135	83	58	133
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Boron	10 ug/L	243	116	114	236
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Chromium	1 ug/L	<1	<1	<1	<1
Cobalt	0.5 ug/L	0.7	0.9	<0.5	0.8
Copper	0.5 ug/L	6.3	4.0	3.3	3.1
Lead	0.1 ug/L	0.4	0.1	<0.1	<0.1
Molybdenum	0.5 ug/L	6.1	2.7	1.5	6.0
Nickel	1 ug/L	2	3	6	2
Selenium	1 ug/L	<1	<1	<1	<1
Silver	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Sodium	200 ug/L	399000	162000	155000	403000
Thallium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Uranium	0.1 ug/L	8.8	5.2	6.2	8.7
Vanadium	0.5 ug/L	2.4	1.1	1.9	2.4
Zinc	5 ug/L	6	5	6	16
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020
Project Description: 190766

	Client ID:	MW20-2	MW20-3	MW20-5	MWX
	Sample Date:	09-Jan-20 12:00	09-Jan-20 12:00	09-Jan-20 12:00	09-Jan-20 12:00
	Sample ID:	2002440-01	2002440-02	2002440-03	2002440-04
	MDL/Units	Water	Water	Water	Water
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethan	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	113%	111%	112%	112%
Dibromofluoromethane	Surrogate	106%	108%	107%	105%
Toluene-d8	Surrogate	90.0%	89.6%	90.5%	89.1%
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020
Project Description: 190766

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*93.5*		*ug/L*		*117*	*50-140*			
Surrogate: Dibromofluoromethane	*77.5*		*ug/L*		*96.9*	*50-140*			
Surrogate: Toluene-d8	*74.2*		*ug/L*		*92.8*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
Metals									
Antimony	0.50	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	23.6	1	ug/L	23.9			1.3	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	23	10	ug/L	22			3.2	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	0.92	0.5	ug/L	0.90			1.4	20	
Lead	ND	0.1	ug/L	ND			0.0	20	
Molybdenum	1.30	0.5	ug/L	1.15			12.5	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	14500	200	ug/L	15300			5.5	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	ND	0.1	ug/L	ND			0.0	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	9	5	ug/L	9			1.2	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	3.55	0.5	ug/L	2.60			30.9	30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	4.78	0.5	ug/L	3.67			26.3	30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020
Project Description: 190766

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*93.4*		*ug/L*		*117*	*50-140*			
Surrogate: Dibromofluoromethane	*82.4*		*ug/L*		*103*	*50-140*			
Surrogate: Toluene-d8	*72.1*		*ug/L*		*90.2*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1820	25	ug/L		90.9	68-117			
F2 PHCs (C10-C16)	1090	100	ug/L		68.2	60-140			
F3 PHCs (C16-C34)	2630	100	ug/L		67.2	60-140			
F4 PHCs (C34-C50)	1510	100	ug/L		60.7	60-140			
Metals									
Antimony	49.0		ug/L	ND	97.7	80-120			
Arsenic	55.8		ug/L	ND	111	80-120			
Barium	72.7		ug/L	23.9	97.6	80-120			
Beryllium	52.5		ug/L	ND	105	80-120			
Boron	66		ug/L	22	86.8	80-120			
Cadmium	51.3		ug/L	ND	103	80-120			
Chromium	54.9		ug/L	ND	109	80-120			
Cobalt	46.2		ug/L	ND	92.4	80-120			
Copper	53.5		ug/L	0.90	105	80-120			
Lead	42.3		ug/L	ND	84.5	80-120			
Molybdenum	50.2		ug/L	1.15	98.1	80-120			
Nickel	52.6		ug/L	ND	104	80-120			
Selenium	47.9		ug/L	ND	95.4	80-120			
Silver	43.5		ug/L	ND	87.0	80-120			
Sodium	8660		ug/L	229	84.3	80-120			
Thallium	44.9		ug/L	ND	89.9	80-120			
Uranium	44.0		ug/L	ND	88.0	80-120			
Vanadium	54.9		ug/L	ND	109	80-120			
Zinc	60		ug/L	9	102	80-120			
Volatiles									
Acetone	62.0	5.0	ug/L		62.0	50-140			
Benzene	28.0	0.5	ug/L		70.0	60-130			
Bromodichloromethane	29.6	0.5	ug/L		74.1	60-130			
Bromoform	33.5	0.5	ug/L		83.8	60-130			
Bromomethane	48.8	0.5	ug/L		122	50-140			
Carbon Tetrachloride	34.6	0.2	ug/L		86.6	60-130			
Chlorobenzene	29.4	0.5	ug/L		73.5	60-130			
Chloroform	30.9	0.5	ug/L		77.4	60-130			
Dibromochloromethane	28.7	0.5	ug/L		71.8	60-130			
Dichlorodifluoromethane	26.7	1.0	ug/L		66.8	50-140			
1,2-Dichlorobenzene	29.0	0.5	ug/L		72.6	60-130			
1,3-Dichlorobenzene	28.8	0.5	ug/L		71.9	60-130			
1,4-Dichlorobenzene	29.7	0.5	ug/L		74.2	60-130			
1,1-Dichloroethane	27.6	0.5	ug/L		69.1	60-130			
1,2-Dichloroethane	27.2	0.5	ug/L		68.1	60-130			
1,1-Dichloroethylene	28.6	0.5	ug/L		71.4	60-130			
cis-1,2-Dichloroethylene	28.2	0.5	ug/L		70.4	60-130			
trans-1,2-Dichloroethylene	27.4	0.5	ug/L		68.4	60-130			
1,2-Dichloropropane	30.4	0.5	ug/L		75.9	60-130			
cis-1,3-Dichloropropylene	26.4	0.5	ug/L		66.0	60-130			
trans-1,3-Dichloropropylene	29.8	0.5	ug/L		74.6	60-130			
Ethylbenzene	27.0	0.5	ug/L		67.6	60-130			
Ethylene dibromide (dibromoethane	26.5	0.2	ug/L		66.2	60-130			
Hexane	27.7	1.0	ug/L		69.2	60-130			
Methyl Ethyl Ketone (2-Butanone)	68.6	5.0	ug/L		68.6	50-140			

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 16-Jan-2020
Order Date: 10-Jan-2020
Project Description: 190766

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl Isobutyl Ketone	61.1	5.0	ug/L		61.1	50-140			
Methyl tert-butyl ether	65.5	2.0	ug/L		65.5	50-140			
Methylene Chloride	29.0	5.0	ug/L		72.4	60-130			
Styrene	27.9	0.5	ug/L		69.7	60-130			
1,1,1,2-Tetrachloroethane	29.0	0.5	ug/L		72.6	60-130			
1,1,2,2-Tetrachloroethane	27.3	0.5	ug/L		68.2	60-130			
Tetrachloroethylene	32.6	0.5	ug/L		81.4	60-130			
Toluene	27.4	0.5	ug/L		68.4	60-130			
1,1,1-Trichloroethane	30.3	0.5	ug/L		75.8	60-130			
1,1,2-Trichloroethane	29.3	0.5	ug/L		73.2	60-130			
Trichloroethylene	29.8	0.5	ug/L		74.5	60-130			
Trichlorofluoromethane	33.1	1.0	ug/L		82.8	60-130			
Vinyl chloride	27.2	0.5	ug/L		68.1	50-140			
m,p-Xylenes	60.8	0.5	ug/L		76.1	60-130			
o-Xylene	29.1	0.5	ug/L		72.7	60-130			
Surrogate: 4-Bromofluorobenzene	*85.6*		*ug/L*		*107*	*50-140*			

Qualifier Notes:

None

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.

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.

PARA LABORATO

Paracel ID: 2002440

ffice
19 St. Laurent Blvd.
, Ontario K1G 4J8
0-749-1947
cel@paracellabs.com
aracellabs.com

Paracel Order Number (Lab Use Only): 2002440

Chain Of Custody (Lab Use Only) Nº 124806

Page 1 of 1

Client Name: LRL Associates Ltd.
Contact Name: Valerie Weisflock
Address: 5430 Canotek Rd. Ottawa K1J 9G2
Telephone: 613 842 3434

Project Ref: 190766
Quote #:
PO #:
E-mail: vweisflock@lrl.ca

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

Regulation 153/04
☐ 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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)
1	MW20-2	GW		4	Jan. 9/20	PM	X	X		X			
2	MW20-3	↓		↓	↓	↓	↓	↓		↓			
3	MW20-5	↓		↓	↓	↓	↓	↓		↓			
4	MWX	↓		↓	↓	↓	↓	↓		↓			
5													
6													
7													
8													
9													
10													

Comments: All metals samples are field-filtered.

Method of Delivery: Walk-in

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Valerie Weisflock	Date/Time:	Date/Time: Jan 10/2020 2:08pm	Date/Time: 01-10-20 14:45
Date/Time: Jan. 10, 2020 @ 9:00am	Temperature: °C	Temperature: 7.0 °C	pH Verified: ☒ By: MP

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Certificate of Analysis

LRL Associates Ltd.
5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Raed Kandalaft

Client PO:
Project: 230202
Custody: 129604

Report Date: 27-Dec-2023
Order Date: 19-Dec-2023

Order #: 2351184

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

Paracel ID	Client ID
2351184-01	TP1-SS1
2351184-02	TP1-SS2
2351184-03	TP1-SS4
2351184-04	TP2-SS1
2351184-05	TP2-SS2
2351184-06	TP2-SS5
2351184-07	TP3-SS1
2351184-08	TP3-SS2
2351184-09	TP3-SS3

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	21-Dec-23	21-Dec-23
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	20-Dec-23	22-Dec-23
Conductivity	MOE E3138 - probe @25 °C, water ext	21-Dec-23	21-Dec-23
Cyanide, free	MOE E3015 - Auto Colour, water extraction	21-Dec-23	21-Dec-23
Mercury by CVAA	EPA 7471B - CVAA, digestion	21-Dec-23	21-Dec-23
PCBs, total	SW846 8082A - GC-ECD	20-Dec-23	21-Dec-23
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	21-Dec-23	21-Dec-23
PHC F1	CWS Tier 1 - P&T GC-FID	20-Dec-23	21-Dec-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	20-Dec-23	21-Dec-23
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	21-Dec-23	21-Dec-23
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	20-Dec-23	21-Dec-23
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	20-Dec-23	21-Dec-23
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	20-Dec-23	21-Dec-23
SAR	Calculated	21-Dec-23	21-Dec-23
Solids, %	CWS Tier 1 - Gravimetric	20-Dec-23	21-Dec-23

PARACEL LABORATORIES LTD.

Order #: 2351184

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP1-SS1	TP1-SS2	TP1-SS4	TP2-SS1	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-01	2351184-02	2351184-03	2351184-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	74.2	73.6	61.3	74.9	-	-
General Inorganics							
SAR	0.01 N/A	-	1.50	-	2.25	-	-
Conductivity	5 uS/cm	-	363	-	713	-	-
Cyanide, free	0.03 ug/g	-	<0.03	-	<0.03	-	-
pH	0.05 pH Units	-	7.19	-	6.86	-	-
Metals							
Antimony	1.0 ug/g	-	<1.0	-	<1.0	-	-
Arsenic	1.0 ug/g	-	3.0	-	3.9	-	-
Barium	1.0 ug/g	-	190	-	147	-	-
Beryllium	0.5 ug/g	-	0.8	-	0.8	-	-
Boron	5.0 ug/g	-	8.4	-	6.5	-	-
Boron, available	0.5 ug/g	-	<0.5	-	1.0	-	-
Cadmium	0.5 ug/g	-	<0.5	-	<0.5	-	-
Chromium	5.0 ug/g	-	131	-	81.1	-	-
Chromium (VI)	0.2 ug/g	-	0.8	-	<0.2	-	-
Cobalt	1.0 ug/g	-	22.3	-	17.3	-	-
Copper	5.0 ug/g	-	50.2	-	26.1	-	-
Lead	1.0 ug/g	-	9.8	-	12.5	-	-
Mercury	0.1 ug/g	-	<0.1	-	<0.1	-	-
Molybdenum	1.0 ug/g	-	<1.0	-	<1.0	-	-
Nickel	5.0 ug/g	-	70.6	-	39.0	-	-
Selenium	1.0 ug/g	-	<1.0	-	<1.0	-	-
Silver	0.3 ug/g	-	<0.3	-	<0.3	-	-
Thallium	1.0 ug/g	-	<1.0	-	<1.0	-	-

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP1-SS1	TP1-SS2	TP1-SS4	TP2-SS1	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-01	2351184-02	2351184-03	2351184-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	-	<1.0	-	2.2	-	-
Vanadium	10.0 ug/g	-	84.3	-	69.3	-	-
Zinc	20.0 ug/g	-	105	-	99.8	-	-
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	-	-
Benzene	0.02 ug/g	<0.02	-	-	-	-	-
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	-	-
Bromoform	0.05 ug/g	<0.05	-	-	-	-	-
Bromomethane	0.05 ug/g	<0.05	-	-	-	-	-
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	-	-
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
Chloroform	0.05 ug/g	<0.05	-	-	-	-	-
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	-	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	-	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-

	Client ID:	TP1-SS1	TP1-SS2	TP1-SS4	TP2-SS1	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-01	2351184-02	2351184-03	2351184-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	-	-
Hexane	0.05 ug/g	<0.05	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	-	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	-	-
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	-	-
Styrene	0.05 ug/g	<0.05	-	-	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	-	-
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
Toluene	0.05 ug/g	<0.05	-	-	-	-	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	-	-
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	-	-
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	83.4%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	99.9%	-	-	-	-	-
Dibromofluoromethane	Surrogate	103%	-	-	-	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP1-SS1	TP1-SS2	TP1-SS4	TP2-SS1	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-01	2351184-02	2351184-03	2351184-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	-	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	-	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	-	-
Anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	0.03	-	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	0.02	-	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.03	-	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.02	-	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Chrysene	0.02 ug/g	0.03	-	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Fluoranthene	0.02 ug/g	0.07	-	-	-	-	-
Fluorene	0.02 ug/g	<0.02	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	-	-
Phenanthrene	0.02 ug/g	0.04	-	-	-	-	-
Pyrene	0.02 ug/g	0.06	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	66.5%	-	-	-	-	-

	Client ID:	TP1-SS1	TP1-SS2	TP1-SS4	TP2-SS1	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-01	2351184-02	2351184-03	2351184-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Terphenyl-d14	Surrogate	78.9%	-	-	-	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	-	<0.01	-	-	-	-
gamma-BHC (Lindane)	0.01 ug/g	-	<0.01	-	-	-	-
alpha-Chlordane	0.01 ug/g	-	<0.01	-	-	-	-
gamma-Chlordane	0.01 ug/g	-	<0.01	-	-	-	-
Chlordane	0.01 ug/g	-	<0.01	-	-	-	-
o,p'-DDD	0.01 ug/g	-	<0.01	-	-	-	-
p,p'-DDD	0.02 ug/g	-	<0.02	-	-	-	-
DDD	0.02 ug/g	-	<0.02	-	-	-	-
o,p'-DDE	0.01 ug/g	-	<0.01	-	-	-	-
p,p'-DDE	0.01 ug/g	-	<0.01	-	-	-	-
DDE	0.01 ug/g	-	<0.01	-	-	-	-
o,p'-DDT	0.01 ug/g	-	<0.01	-	-	-	-
p,p'-DDT	0.01 ug/g	-	<0.01	-	-	-	-
DDT	0.01 ug/g	-	<0.01	-	-	-	-
Dieldrin	0.02 ug/g	-	<0.02	-	-	-	-
Endrin	0.02 ug/g	-	<0.02	-	-	-	-
Endosulfan I	0.01 ug/g	-	<0.01	-	-	-	-
Endosulfan II	0.02 ug/g	-	<0.02	-	-	-	-
Endosulfan I/II	0.02 ug/g	-	<0.02	-	-	-	-
Heptachlor	0.01 ug/g	-	<0.01	-	-	-	-
Heptachlor epoxide	0.01 ug/g	-	<0.01	-	-	-	-
Hexachlorobenzene	0.01 ug/g	-	<0.01	-	-	-	-
Hexachlorobutadiene	0.01 ug/g	-	<0.01	-	-	-	-

	Client ID:	TP1-SS1	TP1-SS2	TP1-SS4	TP2-SS1	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-01	2351184-02	2351184-03	2351184-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
Hexachloroethane	0.01 ug/g	-	<0.01	-	-	-	-
Methoxychlor	0.01 ug/g	-	<0.01	-	-	-	-
Decachlorobiphenyl	Surrogate	-	67.8%	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	-	-	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	-	-	101%	-	-	-

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP2-SS2	TP2-SS5	TP3-SS1	TP3-SS2	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-05	2351184-06	2351184-07	2351184-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	76.8	70.1	91.8	71.8	-	-
General Inorganics							
SAR	0.01 N/A	-	-	-	2.30	-	-
Conductivity	5 uS/cm	-	-	-	634	-	-
Cyanide, free	0.03 ug/g	-	-	-	<0.03	-	-
pH	0.05 pH Units	-	-	-	6.80	-	-
Metals							
Antimony	1.0 ug/g	-	-	-	<1.0	-	-
Arsenic	1.0 ug/g	-	-	-	3.9	-	-
Barium	1.0 ug/g	-	-	-	209	-	-
Beryllium	0.5 ug/g	-	-	-	0.8	-	-
Boron	5.0 ug/g	-	-	-	7.9	-	-
Boron, available	0.5 ug/g	-	-	-	<0.5	-	-
Cadmium	0.5 ug/g	-	-	-	<0.5	-	-
Chromium	5.0 ug/g	-	-	-	122	-	-
Chromium (VI)	0.2 ug/g	-	-	-	1.0	-	-
Cobalt	1.0 ug/g	-	-	-	23.2	-	-
Copper	5.0 ug/g	-	-	-	47.6	-	-
Lead	1.0 ug/g	-	-	-	10.1	-	-
Mercury	0.1 ug/g	-	-	-	<0.1	-	-
Molybdenum	1.0 ug/g	-	-	-	<1.0	-	-
Nickel	5.0 ug/g	-	-	-	64.5	-	-
Selenium	1.0 ug/g	-	-	-	<1.0	-	-
Silver	0.3 ug/g	-	-	-	<0.3	-	-
Thallium	1.0 ug/g	-	-	-	<1.0	-	-

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 27-Dec-2023

Order Date: 19-Dec-2023

Project Description: 230202

	Client ID:	TP2-SS2	TP2-SS5	TP3-SS1	TP3-SS2	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-05	2351184-06	2351184-07	2351184-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	-	-	-	1.1	-	-
Vanadium	10.0 ug/g	-	-	-	88.8	-	-
Zinc	20.0 ug/g	-	-	-	103	-	-
Volatiles							
Acetone	0.50 ug/g	-	<0.50	-	-	-	-
Benzene	0.02 ug/g	-	<0.02	-	-	-	-
Bromodichloromethane	0.05 ug/g	-	<0.05	-	-	-	-
Bromoform	0.05 ug/g	-	<0.05	-	-	-	-
Bromomethane	0.05 ug/g	-	<0.05	-	-	-	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	-	-	-
Chlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
Chloroform	0.05 ug/g	-	<0.05	-	-	-	-
Dibromochloromethane	0.05 ug/g	-	<0.05	-	-	-	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	-	-

Certificate of Analysis

Report Date: 27-Dec-2023

Client: LRL Associates Ltd.

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP2-SS2	TP2-SS5	TP3-SS1	TP3-SS2	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-05	2351184-06	2351184-07	2351184-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	-	-	-
Ethylbenzene	0.05 ug/g	-	<0.05	-	-	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	-	-	-	-
Hexane	0.05 ug/g	-	<0.05	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	-	-	-
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	-	-	-
Methylene Chloride	0.05 ug/g	-	<0.05	-	-	-	-
Styrene	0.05 ug/g	-	<0.05	-	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	-	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
Toluene	0.05 ug/g	-	<0.05	-	-	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
Trichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	-	-	-
Vinyl chloride	0.02 ug/g	-	<0.02	-	-	-	-
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	-	-	-	-
Dibromofluoromethane	Surrogate	-	114%	-	-	-	-
Toluene-d8	Surrogate	-	86.3%	-	-	-	-
4-Bromofluorobenzene	Surrogate	-	95.6%	-	-	-	-
Hydrocarbons							

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP2-SS2	TP2-SS5	TP3-SS1	TP3-SS2	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-05	2351184-06	2351184-07	2351184-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	-	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	-	<8	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	-	<6	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	-	<0.02	-	-	-	-
Acenaphthylene	0.02 ug/g	-	<0.02	-	-	-	-
Anthracene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	-	-	-	-
Chrysene	0.02 ug/g	-	<0.02	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	-	-	-	-
Fluoranthene	0.02 ug/g	-	<0.02	-	-	-	-
Fluorene	0.02 ug/g	-	<0.02	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	<0.02	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	-	<0.02	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	-	<0.02	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	-	<0.04	-	-	-	-
Naphthalene	0.01 ug/g	-	<0.01	-	-	-	-
Phenanthrene	0.02 ug/g	-	<0.02	-	-	-	-
Pyrene	0.02 ug/g	-	<0.02	-	-	-	-
2-Fluorobiphenyl	Surrogate	-	56.6%	-	-	-	-

Certificate of Analysis

Report Date: 27-Dec-2023

Client: LRL Associates Ltd.

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP2-SS2	TP2-SS5	TP3-SS1	TP3-SS2	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-05	2351184-06	2351184-07	2351184-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Terphenyl-d14	Surrogate	-	58.8%	-	-	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	-	<0.01	-	-	-
gamma-BHC (Lindane)	0.01 ug/g	<0.01	-	<0.01	-	-	-
alpha-Chlordane	0.01 ug/g	<0.01	-	<0.01	-	-	-
gamma-Chlordane	0.01 ug/g	<0.01	-	<0.01	-	-	-
Chlordane	0.01 ug/g	<0.01	-	<0.01	-	-	-
o,p'-DDD	0.01 ug/g	<0.01	-	<0.01	-	-	-
p,p'-DDD	0.02 ug/g	<0.02	-	<0.02	-	-	-
DDD	0.02 ug/g	<0.02	-	<0.02	-	-	-
o,p'-DDE	0.01 ug/g	<0.01	-	<0.01	-	-	-
p,p'-DDE	0.01 ug/g	<0.01	-	<0.01	-	-	-
DDE	0.01 ug/g	<0.01	-	<0.01	-	-	-
o,p'-DDT	0.01 ug/g	<0.01	-	<0.01	-	-	-
p,p'-DDT	0.01 ug/g	<0.01	-	<0.01	-	-	-
DDT	0.01 ug/g	<0.01	-	<0.01	-	-	-
Dieldrin	0.02 ug/g	<0.02	-	<0.02	-	-	-
Endrin	0.02 ug/g	<0.02	-	<0.02	-	-	-
Endosulfan I	0.01 ug/g	<0.01	-	<0.01	-	-	-
Endosulfan II	0.02 ug/g	<0.02	-	<0.02	-	-	-
Endosulfan I/II	0.02 ug/g	<0.02	-	<0.02	-	-	-
Heptachlor	0.01 ug/g	<0.01	-	<0.01	-	-	-
Heptachlor epoxide	0.01 ug/g	<0.01	-	<0.01	-	-	-
Hexachlorobenzene	0.01 ug/g	<0.01	-	<0.01	-	-	-
Hexachlorobutadiene	0.01 ug/g	<0.01	-	<0.01	-	-	-

	Client ID:	TP2-SS2	TP2-SS5	TP3-SS1	TP3-SS2	-	-
	Sample Date:	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00	18-Dec-23 09:00		
	Sample ID:	2351184-05	2351184-06	2351184-07	2351184-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
Hexachloroethane	0.01 ug/g	<0.01	-	<0.01	-	-	-
Methoxychlor	0.01 ug/g	<0.01	-	<0.01	-	-	-
Decachlorobiphenyl	Surrogate	80.1%	-	68.1%	-	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	-	<0.05	-	-
Decachlorobiphenyl	Surrogate	101%	-	-	106%	-	-

Certificate of Analysis

Report Date: 27-Dec-2023

Client: **LRL Associates Ltd.**

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	TP3-SS3				-	-
	Sample Date:	18-Dec-23 09:00					
	Sample ID:	2351184-09					
	Matrix:	Soil					
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	70.3	-	-	-	-	-
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	-	-
Benzene	0.02 ug/g	<0.02	-	-	-	-	-
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	-	-
Bromoform	0.05 ug/g	<0.05	-	-	-	-	-
Bromomethane	0.05 ug/g	<0.05	-	-	-	-	-
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	-	-
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
Chloroform	0.05 ug/g	<0.05	-	-	-	-	-
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	-	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	-	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	-	-
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	-	-

Certificate of Analysis

Report Date: 27-Dec-2023

Client: LRL Associates Ltd.

Order Date: 19-Dec-2023

Client PO:

Project Description: 230202

	MDL/Units						
Client ID:		TP3-SS3				-	-
Sample Date:		18-Dec-23 09:00					
Sample ID:		2351184-09					
Matrix:		Soil					
Volatiles							
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	-	-
Hexane	0.05 ug/g	<0.05	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	-	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	-	-
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	-	-
Styrene	0.05 ug/g	<0.05	-	-	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	-	-
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
Toluene	0.05 ug/g	<0.05	-	-	-	-	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	-	-
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	-	-
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	-	-
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	-	-
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	-	-	-	-	-
Dibromofluoromethane	Surrogate	103%	-	-	-	-	-
Toluene-d8	Surrogate	85.8%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	99.1%	-	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	-	-	-	-	-

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 27-Dec-2023

Order Date: 19-Dec-2023

Project Description: 230202

	Client ID:	TP3-SS3				-	-
	Sample Date:	18-Dec-23 09:00					
	Sample ID:	2351184-09					
	Matrix:	Soil					
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	8 ug/g	<8	-	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	-	-
Anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Chrysene	0.02 ug/g	<0.02	-	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Fluorene	0.02 ug/g	<0.02	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	-	-
Phenanthrene	0.02 ug/g	<0.02	-	-	-	-	-
Pyrene	0.02 ug/g	<0.02	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	58.5%	-	-	-	-	-
Terphenyl-d14	Surrogate	67.6%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
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, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	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					
Mercury	ND	0.1	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					
PCBs								
PCBs, total	ND	0.05	ug/g					
Surrogate: Decachlorobiphenyl	*0.107*		*%*	*107*	*60-140*			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Pesticides, OC								
Aldrin	ND	0.01	ug/g					
gamma-BHC (Lindane)	ND	0.01	ug/g					
alpha-Chlordane	ND	0.01	ug/g					
gamma-Chlordane	ND	0.01	ug/g					
Chlordane	ND	0.01	ug/g					
o,p'-DDD	ND	0.01	ug/g					
p,p'-DDD	ND	0.02	ug/g					
DDD	ND	0.02	ug/g					
o,p'-DDE	ND	0.01	ug/g					
p,p'-DDE	ND	0.01	ug/g					
DDE	ND	0.01	ug/g					
o,p'-DDT	ND	0.01	ug/g					
p,p'-DDT	ND	0.01	ug/g					
DDT	ND	0.01	ug/g					
Dieldrin	ND	0.02	ug/g					
Endrin	ND	0.02	ug/g					
Endosulfan I	ND	0.01	ug/g					
Endosulfan II	ND	0.02	ug/g					
Endosulfan I/II	ND	0.02	ug/g					
Heptachlor	ND	0.01	ug/g					
Heptachlor epoxide	ND	0.01	ug/g					
Hexachlorobenzene	ND	0.01	ug/g					
Hexachlorobutadiene	ND	0.01	ug/g					
Hexachloroethane	ND	0.01	ug/g					
Methoxychlor	ND	0.01	ug/g					
Surrogate: Decachlorobiphenyl	*0.0917*		*%*	*91.7*	*50-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.797*		*%*	*59.7*	*50-140*			
Surrogate: Terphenyl-d14	*0.895*		*%*	*67.1*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*2.92*		*%*	*91.3*	*50-140*			
Surrogate: Dibromofluoromethane	*3.18*		*%*	*99.4*	*50-140*			
Surrogate: Toluene-d8	*2.45*		*%*	*76.5*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	2.40	0.01	N/A	2.76			14.0	30	
Conductivity	433	5	uS/cm	446			2.8	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.25	0.05	pH Units	7.19			0.8	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	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	4.0	1.0	ug/g	ND			NC	30	
Arsenic	8.2	1.0	ug/g	7.3			11.2	30	
Barium	68.0	1.0	ug/g	66.0			2.9	30	
Beryllium	1.1	0.5	ug/g	0.7			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	11.8	5.0	ug/g	11.5			2.1	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	22.4	5.0	ug/g	20.6			8.5	30	
Cobalt	9.8	1.0	ug/g	9.0			8.0	30	
Copper	18.3	5.0	ug/g	16.2			11.8	30	
Lead	10.8	1.0	ug/g	10.2			6.2	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	4.3	1.0	ug/g	3.6			16.2	30	
Nickel	26.7	5.0	ug/g	24.7			7.7	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.7	1.0	ug/g	1.5			12.2	30	
Vanadium	35.0	10.0	ug/g	33.1			5.8	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Zinc	56.9	20.0	ug/g	53.3			6.5	30	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.168*		*%*		*103*	*60-140*			
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	ND			NC	40	
p,p'-DDD	ND	0.02	ug/g	ND			NC	40	
o,p'-DDE	ND	0.01	ug/g	ND			NC	40	
p,p'-DDE	ND	0.01	ug/g	ND			NC	40	
o,p'-DDT	ND	0.01	ug/g	ND			NC	40	
p,p'-DDT	ND	0.01	ug/g	ND			NC	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	
Endrin	ND	0.02	ug/g	ND			NC	40	
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0959*		*%*		*70.6*	*50-140*			
Physical Characteristics									
% Solids	75.4	0.1	% by Wt.	75.5			0.1	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	0.032	0.02	ug/g	0.029			7.2	40	
Benzo [a] pyrene	0.026	0.02	ug/g	0.022			12.9	40	
Benzo [b] fluoranthene	0.026	0.02	ug/g	0.028			7.4	40	
Benzo [g,h,i] perylene	0.022	0.02	ug/g	0.021			6.5	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	0.027	0.02	ug/g	0.031			12.8	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.079	0.02	ug/g	0.070			12.4	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	0.046	0.02	ug/g	0.037			21.7	40	
Pyrene	0.067	0.02	ug/g	0.057			15.8	40	
Surrogate: 2-Fluorobiphenyl	*0.829*		*%*		*46.1*	*50-140*			*S-04*
Surrogate: Terphenyl-d14	*0.782*		*%*		*43.5*	*50-140*			*S-04*
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*2.87*		*%*		*87.4*	*50-140*			
Surrogate: Dibromofluoromethane	*2.92*		*%*		*88.9*	*50-140*			
Surrogate: Toluene-d8	*2.40*		*%*		*72.9*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.288	0.03	ug/g	ND	93.4	50-150			
Hydrocarbons									
F1 PHCs (C6-C10)	176	7	ug/g	ND	88.2	85-115			
F2 PHCs (C10-C16)	133	4	ug/g	ND	115	60-140			
F3 PHCs (C16-C34)	367	8	ug/g	ND	129	60-140			
F4 PHCs (C34-C50)	246	6	ug/g	ND	137	60-140			
Metals									
Arsenic	48.7	1.0	ug/g	2.9	91.5	70-130			
Barium	68.3	1.0	ug/g	26.4	83.8	70-130			
Beryllium	46.3	0.5	ug/g	ND	92.0	70-130			
Boron, available	3.72	0.5	ug/g	ND	74.3	70-122			
Boron	49.3	5.0	ug/g	ND	89.4	70-130			
Cadmium	40.8	0.5	ug/g	ND	81.4	70-130			
Chromium (VI)	5.2	0.2	ug/g	ND	98.5	70-130			
Chromium	56.1	5.0	ug/g	8.2	95.7	70-130			
Cobalt	49.4	1.0	ug/g	3.6	91.5	70-130			
Copper	51.0	5.0	ug/g	6.5	89.1	70-130			
Lead	44.9	1.0	ug/g	4.1	81.6	70-130			
Mercury	1.39	0.1	ug/g	ND	92.9	70-130			
Molybdenum	43.7	1.0	ug/g	1.5	84.5	70-130			
Nickel	55.1	5.0	ug/g	9.9	90.4	70-130			
Selenium	42.9	1.0	ug/g	ND	85.6	70-130			
Silver	40.3	0.3	ug/g	ND	80.6	70-130			
Thallium	44.3	1.0	ug/g	ND	88.3	70-130			
Uranium	43.8	1.0	ug/g	ND	86.4	70-130			
Vanadium	59.9	10.0	ug/g	13.2	93.4	70-130			
Zinc	64.0	20.0	ug/g	21.3	85.3	70-130			
PCBs									
PCBs, total	0.830	0.05	ug/g	ND	127	60-140			
Surrogate: Decachlorobiphenyl	*0.167*		*%*		*102*	*60-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Pesticides, OC									
Aldrin	0.29	0.01	ug/g	ND	106	50-140			
gamma-BHC (Lindane)	0.36	0.01	ug/g	ND	132	50-140			
alpha-Chlordane	0.34	0.01	ug/g	ND	127	50-140			
gamma-Chlordane	0.31	0.01	ug/g	ND	116	50-140			
o,p'-DDD	0.22	0.01	ug/g	ND	80.4	50-140			
p,p'-DDD	0.33	0.02	ug/g	ND	120	50-140			
o,p'-DDE	0.26	0.01	ug/g	ND	95.9	50-140			
p,p'-DDE	0.32	0.01	ug/g	ND	117	50-140			
o,p'-DDT	0.26	0.01	ug/g	ND	97.2	50-140			
p,p'-DDT	0.33	0.01	ug/g	ND	121	50-140			
Dieldrin	0.29	0.02	ug/g	ND	108	50-140			
Endrin	0.35	0.02	ug/g	ND	130	50-140			
Endosulfan I	0.35	0.01	ug/g	ND	129	50-140			
Endosulfan II	0.34	0.02	ug/g	ND	125	50-140			
Heptachlor	0.31	0.01	ug/g	ND	114	50-140			
Heptachlor epoxide	0.35	0.01	ug/g	ND	127	50-140			
Hexachlorobenzene	0.23	0.01	ug/g	ND	85.4	50-140			
Hexachlorobutadiene	0.35	0.01	ug/g	ND	128	50-140			
Hexachloroethane	0.36	0.01	ug/g	ND	132	50-140			
Methoxychlor	0.34	0.01	ug/g	ND	126	50-140			
Surrogate: Decachlorobiphenyl	*0.0968*		*%*		*71.2*	*50-140*			
Semi-Volatiles									
Acenaphthene	0.159	0.02	ug/g	ND	70.9	50-140			
Acenaphthylene	0.176	0.02	ug/g	ND	78.1	50-140			
Anthracene	0.186	0.02	ug/g	ND	82.9	50-140			
Benzo [a] anthracene	0.206	0.02	ug/g	0.029	78.7	50-140			
Benzo [a] pyrene	0.158	0.02	ug/g	0.022	60.2	50-140			
Benzo [b] fluoranthene	0.193	0.02	ug/g	0.028	73.6	50-140			
Benzo [g,h,i] perylene	0.173	0.02	ug/g	0.021	67.7	50-140			
Benzo [k] fluoranthene	0.211	0.02	ug/g	ND	93.7	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chrysene	0.200	0.02	ug/g	0.031	75.1	50-140			
Dibenzo [a,h] anthracene	0.146	0.02	ug/g	ND	65.2	50-140			
Fluoranthene	0.295	0.02	ug/g	0.070	100	50-140			
Fluorene	0.146	0.02	ug/g	ND	65.1	50-140			
Indeno [1,2,3-cd] pyrene	0.172	0.02	ug/g	ND	76.6	50-140			
1-Methylnaphthalene	0.157	0.02	ug/g	ND	70.0	50-140			
2-Methylnaphthalene	0.159	0.02	ug/g	ND	71.0	50-140			
Naphthalene	0.179	0.01	ug/g	ND	79.5	50-140			
Phenanthrene	0.213	0.02	ug/g	0.037	78.3	50-140			
Pyrene	0.280	0.02	ug/g	0.057	99.2	50-140			
Surrogate: 2-Fluorobiphenyl	*1.23*		*%*		*68.5*	*50-140*			
Surrogate: Terphenyl-d14	*1.17*		*%*		*65.0*	*50-140*			
Volatiles									
Acetone	10.6	0.50	ug/g	ND	106	50-140			
Benzene	4.15	0.02	ug/g	ND	104	60-130			
Bromodichloromethane	4.21	0.05	ug/g	ND	105	60-130			
Bromoform	4.45	0.05	ug/g	ND	111	60-130			
Bromomethane	4.38	0.05	ug/g	ND	109	50-140			
Carbon Tetrachloride	4.74	0.05	ug/g	ND	119	60-130			
Chlorobenzene	4.25	0.05	ug/g	ND	106	60-130			
Chloroform	4.29	0.05	ug/g	ND	107	60-130			
Dibromochloromethane	4.18	0.05	ug/g	ND	104	60-130			
Dichlorodifluoromethane	4.13	0.05	ug/g	ND	103	50-140			
1,2-Dichlorobenzene	3.77	0.05	ug/g	ND	94.3	60-130			
1,3-Dichlorobenzene	3.91	0.05	ug/g	ND	97.8	60-130			
1,4-Dichlorobenzene	3.86	0.05	ug/g	ND	96.6	60-130			
1,1-Dichloroethane	3.69	0.05	ug/g	ND	92.2	60-130			
1,2-Dichloroethane	4.01	0.05	ug/g	ND	100	60-130			
1,1-Dichloroethylene	3.84	0.05	ug/g	ND	96.0	60-130			
cis-1,2-Dichloroethylene	3.89	0.05	ug/g	ND	97.3	60-130			
trans-1,2-Dichloroethylene	4.05	0.05	ug/g	ND	101	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloropropane	3.63	0.05	ug/g	ND	90.7	60-130			
cis-1,3-Dichloropropylene	3.77	0.05	ug/g	ND	94.1	60-130			
trans-1,3-Dichloropropylene	3.60	0.05	ug/g	ND	90.1	60-130			
Ethylbenzene	3.56	0.05	ug/g	ND	89.0	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	3.81	0.05	ug/g	ND	95.3	60-130			
Hexane	4.32	0.05	ug/g	ND	108	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.16	0.50	ug/g	ND	91.6	50-140			
Methyl Isobutyl Ketone	8.41	0.50	ug/g	ND	84.1	50-140			
Methyl tert-butyl ether	8.74	0.05	ug/g	ND	87.4	50-140			
Methylene Chloride	4.04	0.05	ug/g	ND	101	60-130			
Styrene	3.62	0.05	ug/g	ND	90.4	60-130			
1,1,1,2-Tetrachloroethane	4.19	0.05	ug/g	ND	105	60-130			
1,1,2,2-Tetrachloroethane	3.53	0.05	ug/g	ND	88.2	60-130			
Tetrachloroethylene	4.78	0.05	ug/g	ND	120	60-130			
Toluene	4.02	0.05	ug/g	ND	100	60-130			
1,1,1-Trichloroethane	4.68	0.05	ug/g	ND	117	60-130			
1,1,2-Trichloroethane	4.10	0.05	ug/g	ND	103	60-130			
Trichloroethylene	4.23	0.05	ug/g	ND	106	60-130			
Trichlorofluoromethane	4.71	0.05	ug/g	ND	118	50-140			
Vinyl chloride	3.81	0.02	ug/g	ND	95.2	50-140			
m,p-Xylenes	7.64	0.05	ug/g	ND	95.5	60-130			
o-Xylene	3.81	0.05	ug/g	ND	95.3	60-130			
Surrogate: 4-Bromofluorobenzene	*2.20*		*%*		*68.7*	*50-140*			
Surrogate: Dibromofluoromethane	*3.13*		*%*		*97.9*	*50-140*			
Surrogate: Toluene-d8	*2.24*		*%*		*70.1*	*50-140*			

Qualifier Notes:

QC Qualifiers:

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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 unlesss 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 crite

- When reported, data for F4G has been processed using a silica gel cleanup.

PARACEL LABORATORIES LTD.

Paracel ID: 2351184

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2351184	№ 129604

Client Name: LRL Associates
Contact Name: Raed K
Address: 5430 Canotek, Rd, Ottawa,
Telephone: 6132804445

Project Ref: 230202
Quote #:
PO #:
E-mail: rkendalaft@lrl.ca
Jarthurs@lrl.ca

Page 1 of 1

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

Regulation 153/04: ☐ 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)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs	VOCs	PAHs	Metals (O.Reg 153/04)	Hg	CrVI	B (HWS)	Inorganics	ecp	PCB's			
1	~~TP1-SS1~~ TP1-SS1	SS		3	18.12.2023	Am	X	X	X										
2	TP1-SS2									X				X	X				
3	TP1-SS4															X			
4	TP2-SS1									X				X					
5	TP2-SS2														X	X			
6	TP2-SS5						X	X	X										
7	TP3-SS1														X				
8	TP3-SS2									X				X		X			
9	TP3-SS3	↓		↓	↓	↓	X	X	X										
10																			

Comments:

Method of Delivery: Walkin.

Relinquished By (Sign): [signature]
Relinquished By (Print): Raed K
Date/Time: 19.12.23 4:35
Temperature: °C

Received By Driver/Depot:
Date/Time:
Temperature: °C

Received at Lab: D. POWELL
Date/Time: Dec. 19, 23 4:35
Temperature: 8.7 °C

Verified By: Hiral
Date/Time: Dec 19, 23 | 17:47
pH Verified: ☐ By:

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Certificate of Analysis

LRL Associates Ltd.
5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Raed Kandalaft

Client PO:
Project: 230202
Custody:

Report Date: 2-Jan-2024
Order Date: 20-Dec-2023

Order #: 2351279

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

Paracel ID	Client ID
2351279-01	MW20-2
2351279-02	MW20-3
2351279-03	MW20-5
2351279-04	MW20-10
2351279-05	MW23-3 (Test Pit)

Approved By:

Dale Robertson, BSc
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	21-Dec-23	22-Dec-23
Chromium, hexavalent - water	MOE E3056 - colourimetric	22-Dec-23	22-Dec-23
Cyanide, free	MOE E3015 - Auto Colour	21-Dec-23	21-Dec-23
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	21-Dec-23	21-Dec-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	21-Dec-23	21-Dec-23
PCBs, total	EPA 608 - GC-ECD	29-Dec-23	29-Dec-23
pH	EPA 150.1 - pH probe @25 °C	21-Dec-23	21-Dec-23
PHC F1	CWS Tier 1 - P&T GC-FID	21-Dec-23	21-Dec-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	22-Dec-23	22-Dec-23
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	28-Dec-23	28-Dec-23
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	29-Dec-23	29-Dec-23
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	21-Dec-23	21-Dec-23

Certificate of Analysis

Report Date: 02-Jan-2024

Client: LRL Associates Ltd.

Order Date: 20-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	MW20-2	MW20-3	MW20-5	MW20-10	-	-
	Sample Date:	20-Dec-23 13:20	20-Dec-23 10:00	20-Dec-23 09:00	20-Dec-23 12:00		
	Sample ID:	2351279-01	2351279-02	2351279-03	2351279-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
General Inorganics							
Cyanide, free	2 ug/L	<2	<2	<2	<2	-	-
pH	0.1 pH Units	7.7	7.5	7.4	7.6	-	-
Anions							
Chloride	1 mg/L	411	193	50	335	-	-
Metals							
Mercury	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	-	-
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Arsenic	1 ug/L	2	<1	3	<1	-	-
Barium	1 ug/L	30	17	26	29	-	-
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Boron	10 ug/L	190	87	64	73	-	-
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	-	-
Chromium (VI)	10 ug/L	<10	<10	<10	<10	-	-
Chromium	1 ug/L	<1	<1	<1	<1	-	-
Cobalt	0.5 ug/L	<0.5	<0.5	0.7	<0.5	-	-
Copper	0.5 ug/L	0.9	1.3	0.6	2.4	-	-
Lead	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	0.5 ug/L	3.7	2.2	1.8	2.3	-	-
Nickel	1 ug/L	<1	2	3	3	-	-
Selenium	1 ug/L	<1	<1	<1	<1	-	-
Silver	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	-	-
Sodium	200 ug/L	342000	162000	78600	195000	-	-
Thallium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	-	-
Uranium	0.1 ug/L	4.8	4.8	3.6	4.9	-	-
Vanadium	0.5 ug/L	1.0	9.9	1.5	1.7	-	-

Certificate of Analysis

Report Date: 02-Jan-2024

Client: **LRL Associates Ltd.**

Order Date: 20-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	MW20-2	MW20-3	MW20-5	MW20-10	-	-
	Sample Date:	20-Dec-23 13:20	20-Dec-23 10:00	20-Dec-23 09:00	20-Dec-23 12:00		
	Sample ID:	2351279-01	2351279-02	2351279-03	2351279-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Metals							
Zinc	5 ug/L	<5	<5	<5	<5	-	-
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	-	-

Certificate of Analysis

Report Date: 02-Jan-2024

Client: LRL Associates Ltd.

Order Date: 20-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	MW20-2	MW20-3	MW20-5	MW20-10	-	-
	Sample Date:	20-Dec-23 13:20	20-Dec-23 10:00	20-Dec-23 09:00	20-Dec-23 12:00		
	Sample ID:	2351279-01	2351279-02	2351279-03	2351279-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Volatiles							
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Toluene-d8	Surrogate	115%	118%	109%	124%	-	-
Dibromofluoromethane	Surrogate	109%	117%	100%	103%	-	-
4-Bromofluorobenzene	Surrogate	94.8%	131%	122%	98.4%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100	-	-

Certificate of Analysis

Report Date: 02-Jan-2024

Client: **LRL Associates Ltd.**

Order Date: 20-Dec-2023

Client PO:

Project Description: 230202

	Client ID:	MW20-2	MW20-3	MW20-5	MW20-10	-	-
	Sample Date:	20-Dec-23 13:20	20-Dec-23 10:00	20-Dec-23 09:00	20-Dec-23 12:00		
	Sample ID:	2351279-01	2351279-02	2351279-03	2351279-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100	-	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	-	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	-	-
Anthracene	0.01 ug/L	0.04	0.03	0.04	0.02	-	-
Benzo [a] anthracene	0.01 ug/L	0.10	0.02	0.06	0.03	-	-
Benzo [a] pyrene	0.01 ug/L	0.21	0.04	0.05	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	0.40	0.05	0.06	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	0.60	0.18	0.15	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	0.21	<0.05	<0.05	<0.05	-	-
Chrysene	0.05 ug/L	0.14	<0.05	0.06	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	0.05	<0.05	<0.05	<0.05	-	-
Fluoranthene	0.01 ug/L	0.06	0.01	0.16	0.04	-	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	0.38	0.12	0.09	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	<0.10	-	-
Naphthalene	0.05 ug/L	<0.05	0.11	0.05	0.19	-	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	0.09	0.06	-	-
Pyrene	0.01 ug/L	0.41	0.07	0.18	0.04	-	-
2-Fluorobiphenyl	Surrogate	61.9%	65.9%	67.9%	65.6%	-	-
Terphenyl-d14	Surrogate	81.0%	86.6%	109%	93.1%	-	-
Pesticides, OC							

	Client ID:	MW20-2	MW20-3	MW20-5	MW20-10	-	-
	Sample Date:	20-Dec-23 13:20	20-Dec-23 10:00	20-Dec-23 09:00	20-Dec-23 12:00		
	Sample ID:	2351279-01	2351279-02	2351279-03	2351279-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Pesticides, OC							
Aldrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
gamma-BHC (Lindane)	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
alpha-Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
gamma-Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Dieldrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan I	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan II	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan I/II	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor epoxide	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobenzene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobutadiene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Hexachloroethane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Methoxychlor	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-

	Client ID:	MW20-2	MW20-3	MW20-5	MW20-10	-	-
	Sample Date:	20-Dec-23 13:20	20-Dec-23 10:00	20-Dec-23 09:00	20-Dec-23 12:00		
	Sample ID:	2351279-01	2351279-02	2351279-03	2351279-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Pesticides, OC							
Decachlorobiphenyl	Surrogate	72.5%	78.9%	81.9%	119%	-	-
PCBs							
PCBs, total	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	-	-
Decachlorobiphenyl	Surrogate	98.1%	104%	103%	107%	-	-

	Client ID:	MW23-3 (Test Pit)				-	-
	Sample Date:	20-Dec-23 10:40					
	Sample ID:	2351279-05					
	Matrix:	Ground Water					
	MDL/Units						
General Inorganics							
Cyanide, free	2 ug/L	<2	-	-	-	-	-
pH	0.1 pH Units	7.2	-	-	-	-	-
Anions							
Chloride	1 mg/L	543	-	-	-	-	-
Metals							
Mercury	0.1 ug/L	<0.1	-	-	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-	-	-
Arsenic	1 ug/L	<1	-	-	-	-	-
Barium	1 ug/L	62	-	-	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-	-	-
Boron	10 ug/L	93	-	-	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-	-	-
Chromium	1 ug/L	<1	-	-	-	-	-
Cobalt	0.5 ug/L	0.9	-	-	-	-	-
Copper	0.5 ug/L	1.7	-	-	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-	-	-
Molybdenum	0.5 ug/L	1.4	-	-	-	-	-
Nickel	1 ug/L	2	-	-	-	-	-
Selenium	1 ug/L	<1	-	-	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-	-	-
Sodium	200 ug/L	191000	-	-	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-	-	-
Uranium	0.1 ug/L	11.8	-	-	-	-	-
Vanadium	0.5 ug/L	2.1	-	-	-	-	-

	Client ID:	MW23-3 (Test Pit)				-	-
	Sample Date:	20-Dec-23 10:40					
	Sample ID:	2351279-05					
	Matrix:	Ground Water					
	MDL/Units						
Metals							
Zinc	5 ug/L	<5	-	-	-	-	-
Volatiles							
Acetone	5.0 ug/L	67.4	-	-	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-	-	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	-	-	-	-	-

	Client ID:	MW23-3 (Test Pit)				-	-
	Sample Date:	20-Dec-23 10:40					
	Sample ID:	2351279-05					
	Matrix:	Ground Water					
	MDL/Units						
Volatiles							
Ethylbenzene	0.5 ug/L	<0.5	-	-	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-	-	-
Dibromofluoromethane	Surrogate	135%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	92.6%	-	-	-	-	-
Toluene-d8	Surrogate	115%	-	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-	-	-

	Client ID:	MW23-3 (Test Pit)				-	-
	Sample Date:	20-Dec-23 10:40					
	Sample ID:	2351279-05					
	Matrix:	Ground Water					
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	-	-	-	-	-
Acenaphthylene	0.05 ug/L	0.20	-	-	-	-	-
Anthracene	0.01 ug/L	0.23	-	-	-	-	-
Benzo [a] anthracene	0.01 ug/L	0.36	-	-	-	-	-
Benzo [a] pyrene	0.01 ug/L	0.30	-	-	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	0.29	-	-	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	0.21	-	-	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	0.17	-	-	-	-	-
Chrysene	0.05 ug/L	0.35	-	-	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-	-	-
Fluoranthene	0.01 ug/L	1.06	-	-	-	-	-
Fluorene	0.05 ug/L	<0.05	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	0.17	-	-	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	-	-	-	-
Naphthalene	0.05 ug/L	0.14	-	-	-	-	-
Phenanthrene	0.05 ug/L	0.51	-	-	-	-	-
Pyrene	0.01 ug/L	0.88	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	57.8%	-	-	-	-	-
Terphenyl-d14	Surrogate	69.0%	-	-	-	-	-
Pesticides, OC							

	Client ID:	MW23-3 (Test Pit)				-	-
	Sample Date:	20-Dec-23 10:40					
	Sample ID:	2351279-05					
	Matrix:	Ground Water					
	MDL/Units						
Pesticides, OC							
Aldrin	0.01 ug/L	<0.01	-	-	-	-	-
gamma-BHC (Lindane)	0.01 ug/L	<0.01	-	-	-	-	-
alpha-Chlordane	0.01 ug/L	<0.01	-	-	-	-	-
gamma-Chlordane	0.01 ug/L	<0.01	-	-	-	-	-
Chlordane	0.01 ug/L	<0.01	-	-	-	-	-
o,p'-DDD	0.01 ug/L	<0.01	-	-	-	-	-
p,p'-DDD	0.01 ug/L	<0.01	-	-	-	-	-
DDD	0.01 ug/L	<0.01	-	-	-	-	-
o,p'-DDE	0.01 ug/L	<0.01	-	-	-	-	-
p,p'-DDE	0.01 ug/L	<0.01	-	-	-	-	-
DDE	0.01 ug/L	<0.01	-	-	-	-	-
o,p'-DDT	0.01 ug/L	0.02	-	-	-	-	-
p,p'-DDT	0.01 ug/L	<0.01	-	-	-	-	-
DDT	0.01 ug/L	0.02	-	-	-	-	-
Dieldrin	0.01 ug/L	<0.01	-	-	-	-	-
Endrin	0.01 ug/L	<0.01	-	-	-	-	-
Endosulfan I	0.01 ug/L	<0.01	-	-	-	-	-
Endosulfan II	0.01 ug/L	<0.01	-	-	-	-	-
Endosulfan I/II	0.01 ug/L	<0.01	-	-	-	-	-
Heptachlor	0.01 ug/L	<0.01	-	-	-	-	-
Heptachlor epoxide	0.01 ug/L	<0.01	-	-	-	-	-
Hexachlorobenzene	0.01 ug/L	<0.01	-	-	-	-	-
Hexachlorobutadiene	0.01 ug/L	<0.01	-	-	-	-	-
Hexachloroethane	0.01 ug/L	<0.01	-	-	-	-	-
Methoxychlor	0.01 ug/L	<0.01	-	-	-	-	-

	Client ID:	MW23-3 (Test Pit)				-	-
	Sample Date:	20-Dec-23 10:40					
	Sample ID:	2351279-05					
	Matrix:	Ground Water					
	MDL/Units						
Pesticides, OC							
Decachlorobiphenyl	Surrogate	105%	-	-	-	-	-
PCBs							
PCBs, total	0.05 ug/L	<0.05	-	-	-	-	-
Decachlorobiphenyl	Surrogate	85.9%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions								
Chloride	ND	1	mg/L					
General Inorganics								
Cyanide, free	ND	2	ug/L					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Metals								
Mercury	ND	0.1	ug/L					
Antimony	ND	0.5	ug/L					
Arsenic	ND	1	ug/L					
Barium	ND	1	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10	ug/L					
Cadmium	ND	0.1	ug/L					
Chromium (VI)	ND	10	ug/L					
Chromium	ND	1	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.1	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1	ug/L					
Selenium	ND	1	ug/L					
Silver	ND	0.1	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.1	ug/L					
Uranium	ND	0.1	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5	ug/L					
PCBs								
PCBs, total	ND	0.05	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.373*		*%*	*74.6*	*60-140*			
Pesticides, OC								
Aldrin	ND	0.01	ug/L					
gamma-BHC (Lindane)	ND	0.01	ug/L					
alpha-Chlordane	ND	0.01	ug/L					
gamma-Chlordane	ND	0.01	ug/L					
Chlordane	ND	0.01	ug/L					
o,p'-DDD	ND	0.01	ug/L					
p,p'-DDD	ND	0.01	ug/L					
DDD	ND	0.01	ug/L					
o,p'-DDE	ND	0.01	ug/L					
p,p'-DDE	ND	0.01	ug/L					
DDE	ND	0.01	ug/L					
o,p'-DDT	ND	0.01	ug/L					
p,p'-DDT	ND	0.01	ug/L					
DDT	ND	0.01	ug/L					
Dieldrin	ND	0.01	ug/L					
Endrin	ND	0.01	ug/L					
Endosulfan I	ND	0.01	ug/L					
Endosulfan II	ND	0.01	ug/L					
Endosulfan I/II	ND	0.01	ug/L					
Heptachlor	ND	0.01	ug/L					
Heptachlor epoxide	ND	0.01	ug/L					
Hexachlorobenzene	ND	0.01	ug/L					
Hexachlorobutadiene	ND	0.01	ug/L					
Hexachloroethane	ND	0.01	ug/L					
Methoxychlor	ND	0.01	ug/L					
Surrogate: Decachlorobiphenyl	*0.521*		*%*	*104*	*50-140*			
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*13.7*		*%*	*68.5*	*50-140*			
Surrogate: Terphenyl-d14	*23.1*		*%*	*115*	*50-140*			
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*107*		*%*	*134*	*50-140*			
Surrogate: Dibromofluoromethane	*88.2*		*%*	*110*	*50-140*			
Surrogate: Toluene-d8	*84.1*		*%*	*105*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	92.9	1	mg/L	91.8			1.2	20	
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	10.0	0.1	pH Units	10.0			0.5	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	122	1	ug/L	119			2.4	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	148	10	ug/L	154			4.0	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	ND	0.5	ug/L	ND			NC	20	
Lead	0.13	0.1	ug/L	0.13			4.0	20	
Molybdenum	0.60	0.5	ug/L	0.61			2.1	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	68600	200	ug/L	71900			4.7	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	1.1	0.1	ug/L	1.1			0.6	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	6	5	ug/L	6			1.7	20	
Volatiles									
Acetone	76.2	5.0	ug/L	67.4			12.2	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*81.7*		*%*		*102*	*50-140*			
Surrogate: Dibromofluoromethane	*90.7*		*%*		*113*	*50-140*			
Surrogate: Toluene-d8	*106*		*%*		*133*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	101	1	mg/L	91.8	96.0	70-124			
General Inorganics									
Cyanide, free	47.5	2	ug/L	ND	95.0	61-139			
Hydrocarbons									
F1 PHCs (C6-C10)	1850	25	ug/L	ND	92.6	85-115			
F2 PHCs (C10-C16)	1590	100	ug/L	ND	99.3	60-140			
F3 PHCs (C16-C34)	4210	100	ug/L	ND	107	60-140			
F4 PHCs (C34-C50)	2320	100	ug/L	ND	93.6	60-140			
Metals									
Mercury	2.52	0.1	ug/L	ND	84.1	70-130			
Arsenic	48.3	1	ug/L	ND	95.9	80-120			
Beryllium	45.1	0.5	ug/L	ND	90.2	80-120			
Boron	47	10	ug/L	ND	93.9	80-120			
Cadmium	40.2	0.1	ug/L	ND	80.3	80-120			
Chromium (VI)	191	10	ug/L	ND	95.5	70-130			
Chromium	47.7	1	ug/L	ND	95.1	80-120			
Cobalt	45.0	0.5	ug/L	ND	89.6	80-120			
Copper	41.4	0.5	ug/L	ND	82.5	80-120			
Lead	37.8	0.1	ug/L	0.13	75.4	80-120			QM-07
Molybdenum	43.3	0.5	ug/L	0.61	85.4	80-120			
Nickel	43.9	1	ug/L	ND	86.7	80-120			
Selenium	47.5	1	ug/L	ND	94.7	80-120			
Silver	42.0	0.1	ug/L	ND	83.9	80-120			
Sodium	8650	200	ug/L	ND	86.5	80-120			
Thallium	40.1	0.1	ug/L	ND	80.2	80-120			
Uranium	42.5	0.1	ug/L	1.1	82.7	80-120			
Vanadium	49.4	0.5	ug/L	ND	98.5	80-120			
Zinc	45	5	ug/L	6	77.9	80-120			QM-07
PCBs									
PCBs, total	1.01	0.05	ug/L	ND	101	65-135			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.401*		*%*		*80.2*	*60-140*			
Pesticides, OC									
Aldrin	0.51	0.01	ug/L	ND	102	50-140			
gamma-BHC (Lindane)	0.61	0.01	ug/L	ND	121	50-140			
alpha-Chlordane	0.65	0.01	ug/L	ND	130	50-140			
gamma-Chlordane	0.61	0.01	ug/L	ND	122	50-140			
o,p'-DDD	0.30	0.01	ug/L	ND	60.5	50-140			
p,p'-DDD	0.52	0.01	ug/L	ND	104	50-140			
o,p'-DDE	0.42	0.01	ug/L	ND	84.2	50-140			
p,p'-DDE	0.56	0.01	ug/L	ND	113	50-140			
o,p'-DDT	0.38	0.01	ug/L	ND	76.3	50-140			
p,p'-DDT	0.51	0.01	ug/L	ND	102	50-140			
Dieldrin	0.66	0.01	ug/L	ND	132	50-140			
Endrin	0.58	0.01	ug/L	ND	116	50-140			
Endosulfan I	0.66	0.01	ug/L	ND	131	50-140			
Endosulfan II	0.57	0.01	ug/L	ND	113	50-140			
Heptachlor	0.48	0.01	ug/L	ND	96.7	50-140			
Heptachlor epoxide	0.67	0.01	ug/L	ND	134	50-140			
Hexachlorobenzene	0.54	0.01	ug/L	ND	108	50-140			
Hexachlorobutadiene	0.61	0.01	ug/L	ND	122	50-140			
Hexachloroethane	0.36	0.01	ug/L	ND	72.8	50-140			
Methoxychlor	0.49	0.01	ug/L	ND	97.1	50-140			
Surrogate: Decachlorobiphenyl	*0.399*		*%*		*79.7*	*50-140*			
Semi-Volatiles									
Acenaphthene	4.62	0.05	ug/L	ND	92.4	50-140			
Acenaphthylene	4.55	0.05	ug/L	ND	91.1	50-140			
Anthracene	5.00	0.01	ug/L	ND	100	50-140			
Benzo [a] anthracene	4.10	0.01	ug/L	ND	82.0	50-140			
Benzo [a] pyrene	4.17	0.01	ug/L	ND	83.4	50-140			
Benzo [b] fluoranthene	4.04	0.05	ug/L	ND	80.8	50-140			
Benzo [g,h,i] perylene	4.20	0.05	ug/L	ND	84.1	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [k] fluoranthene	4.06	0.05	ug/L	ND	81.3	50-140			
Chrysene	4.51	0.05	ug/L	ND	90.3	50-140			
Dibenzo [a,h] anthracene	4.42	0.05	ug/L	ND	88.4	50-140			
Fluoranthene	4.79	0.01	ug/L	ND	95.7	50-140			
Fluorene	4.19	0.05	ug/L	ND	83.8	50-140			
Indeno [1,2,3-cd] pyrene	4.41	0.05	ug/L	ND	88.1	50-140			
1-Methylnaphthalene	4.09	0.05	ug/L	ND	81.9	50-140			
2-Methylnaphthalene	4.42	0.05	ug/L	ND	88.4	50-140			
Naphthalene	5.20	0.05	ug/L	ND	104	50-140			
Phenanthrene	4.52	0.05	ug/L	ND	90.3	50-140			
Pyrene	4.93	0.01	ug/L	ND	98.6	50-140			
Surrogate: 2-Fluorobiphenyl	*12.3*		*%*		*61.7*	*50-140*			
Surrogate: Terphenyl-d14	*24.2*		*%*		*121*	*50-140*			
Volatiles									
Acetone	94.4	5.0	ug/L	ND	94.4	50-140			
Benzene	41.9	0.5	ug/L	ND	105	60-130			
Bromodichloromethane	48.7	0.5	ug/L	ND	122	60-130			
Bromoform	46.0	0.5	ug/L	ND	115	60-130			
Bromomethane	39.0	0.5	ug/L	ND	97.6	50-140			
Carbon Tetrachloride	43.8	0.2	ug/L	ND	110	60-130			
Chlorobenzene	50.1	0.5	ug/L	ND	125	60-130			
Chloroform	44.1	0.5	ug/L	ND	110	60-130			
Dibromochloromethane	41.3	0.5	ug/L	ND	103	60-130			
Dichlorodifluoromethane	34.7	1.0	ug/L	ND	86.8	50-140			
1,2-Dichlorobenzene	49.4	0.5	ug/L	ND	123	60-130			
1,3-Dichlorobenzene	48.7	0.5	ug/L	ND	122	60-130			
1,4-Dichlorobenzene	40.1	0.5	ug/L	ND	100	60-130			
1,1-Dichloroethane	48.1	0.5	ug/L	ND	120	60-130			
1,2-Dichloroethane	47.1	0.5	ug/L	ND	118	60-130			
1,1-Dichloroethylene	38.4	0.5	ug/L	ND	95.9	60-130			
cis-1,2-Dichloroethylene	37.2	0.5	ug/L	ND	93.1	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,2-Dichloroethylene	46.6	0.5	ug/L	ND	116	60-130			
1,2-Dichloropropane	44.3	0.5	ug/L	ND	111	60-130			
cis-1,3-Dichloropropylene	50.4	0.5	ug/L	ND	126	60-130			
trans-1,3-Dichloropropylene	41.0	0.5	ug/L	ND	102	60-130			
Ethylbenzene	44.3	0.5	ug/L	ND	111	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	42.6	0.2	ug/L	ND	107	60-130			
Hexane	44.8	1.0	ug/L	ND	112	60-130			
Methyl Ethyl Ketone (2-Butanone)	123	5.0	ug/L	ND	123	50-140			
Methyl Isobutyl Ketone	80.2	5.0	ug/L	ND	80.2	50-140			
Methyl tert-butyl ether	115	2.0	ug/L	ND	115	50-140			
Methylene Chloride	51.1	5.0	ug/L	ND	128	60-130			
Styrene	44.0	0.5	ug/L	ND	110	60-130			
1,1,1,2-Tetrachloroethane	40.4	0.5	ug/L	ND	101	60-130			
1,1,2,2-Tetrachloroethane	45.4	0.5	ug/L	ND	114	60-130			
Tetrachloroethylene	45.7	0.5	ug/L	ND	114	60-130			
Toluene	41.9	0.5	ug/L	ND	105	60-130			
1,1,1-Trichloroethane	47.1	0.5	ug/L	ND	118	60-130			
1,1,2-Trichloroethane	33.4	0.5	ug/L	ND	83.4	60-130			
Trichloroethylene	42.5	0.5	ug/L	ND	106	60-130			
Trichlorofluoromethane	38.0	1.0	ug/L	ND	95.0	60-130			
Vinyl chloride	34.6	0.5	ug/L	ND	86.6	50-140			
m,p-Xylenes	82.2	0.5	ug/L	ND	103	60-130			
o-Xylene	48.8	0.5	ug/L	ND	122	60-130			
Surrogate: 4-Bromofluorobenzene	*74.2*		*%*		*92.7*	*50-140*			
Surrogate: Dibromofluoromethane	*86.1*		*%*		*108*	*50-140*			
Surrogate: Toluene-d8	*74.6*		*%*		*93.3*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

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

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.

PARACEL LABORATORIES LTD

Paracel ID: 2351279

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2351279	

Client Name: LRL Associates
Contact Name: Raed K
Address: 5430 Canotek, Rd, Ottawa, ON.
Telephone: 613-203-4445

Project Ref: 230202
Quote #:
PO #:
E-mail: rkandalaft@LRL.ca
Jarthurs@LRL.ca

Page 1 of 1

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required:

Regulation 153/04
☐ 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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs	VOCs	PAHs	Metals	PCB's	Inorganics ✓	OCP's	
1	MW 20 - 2	GW		11	Dec, 20, 2023	1:20	X	X	X	X	X	X	X	X
2	MW20 - 3					10:00								
3	MW20 - 5					9:00								
4	MW20 - 10					12:00								
5	MW23 - 3 (Test Pit)					10:40								
6														
7														
8														
9														
10														

Comments:

Method of Delivery: Walk On

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: 15:23	Verified By: Hira
Relinquished By (Print): Raed K	Date/Time:	Date/Time: DEC 20/23	Date/Time: Dec 20, 23 | 16:40
Date/Time: 20.12.2023	Temperature: °C	Temperature: 9.0, 6.6 °C	pH Verified: ☑ By: HP