LOPERS & ASSOCIATES

Phase Two Environmental Site Assessment

214-224 Somerset Street East
Ottawa, Ontario

Prepared for:

Ottawa Community Housing Corporation

December 12, 2024

LOP24-025C

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1. Executive Summary

Lopers & Associates (Lopers) was retained by Ottawa Community Housing Corporation ("OCH") to complete a Phase Two Environmental Site Assessment (Phase Two ESA) update of the vacant properties with Civic address Nos. 214, 216, 218, 220, 222 and 224 Somerset Street East, Ottawa, Ontario ("Phase Two Property", "Property" or "Site").

This Phase Two ESA is being completed as part of due diligence requirements associated with the submission of a Development Application to the City of Ottawa Municipal Planning Department. Additionally, this Phase Two ESA was prepared to provide preliminary excess soil characterization for off-Site soil management during construction.

Lopers has previously completed a Phase One Environmental Site Assessment (Phase One ESA) (Reference No. LOP23-025B, dated June 21, 2023) for OCH at the Property. The Phase One ESA identified the presence of one potentially contaminating activity (PCA) at the Property which were interpreted to represent areas of potential environmental concern (APECs). There was evidence of non-native fill material observed during the subsurface drilling and sampling, completed as part of the 2023 Limited Environmental Soil and Groundwater Assessment (LESGA) and geotechnical investigation. The presence of imported fill material is suspected at the Phase Two Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, represents PCA #1 and has been interpreted as APEC #1 for the Phase Two Property.

The Contaminants of Potential Concern ("CPCs") associated with the historical fill materials are PHCs, BTEXs, polycyclic aromatic hydrocarbons (PAHs), metals & inorganics. Volatile Organic Compounds were also included as a CPC for the 2024 sampling and analysis, following an initial groundwater detection of PCE in the groundwater sample from BH1-23 in April 2023.

Based on the date of original development of the Site buildings, it was suspected that heating oil storage tanks may have been present at the Phase Two Property, although no documentation was found to that effect in records reviewed for the Phase One ESA. If historically present, the expected fill locations would have been in similar locations to the recently removed natural gas meters. The CPCs associated with fuel storage are PHCs and BTEXs, which had already been included for assessment for APEC #1.

A Phase Two ESA was recommended to assess the soil and groundwater quality in the vicinity of the identified APECs.

The scope of work for the Phase Two ESA included drilling six (6) boreholes at the Phase Two Property; this drilling and sampling program was completed concurrently with a geotechnical investigation completed by others. Five of the boreholes were instrumented with groundwater monitoring wells with screens installed in the overburden.

Twelve soil samples, including two duplicate samples, were submitted for laboratory analysis for a combination of PHCs, BTEXs, volatile organic compounds (VOCs), PAHs, metals and inorganics. One sample was also submitted for modified Synthetic Precipitate Leaching Procedure (mSPLP) for leachate characterization purposes.

Groundwater sampling of the monitoring wells at the Phase Two Property was completed. A total of eight groundwater samples, including a duplicate sample and 2 trip blanks, were submitted for laboratory analysis for a combination of PHCs, BTEXs, VOCs, PAHs, metals and inorganics.

The applicable site standard was determined to be the full depth generic site condition standard, in a non-potable groundwater condition, with course textured soil, for residential property use, as specified in Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

The following soil samples had exceedance concentrations reported compared to their respective Site Condition Standards, as noted in Table 1a, Table 1b and 1c below:

Table 1a: Soil Exceedances – Petroleum Hydrocarbons

Exceeding Parameter:			F2 PHCs (C10-C16)	F3 PHCs (C16-C34)	F4G PHCs (gravimetric)
Sample Location	MECP Table 3 Site Condition Standards		98 ug/g	300 ug/g	2800 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	-	590	3,500
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	100	310	-

Table 1b: Soil Exceedances - Metals

Exceeding Parameter:			Lead	Conductivity	Sodium Absorption Ratio
Sample Location	MECP Table 3 Site Condition Standards		120 ug/g	0.7 uS/cm	5
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH1-24	BH1-24-AU1	0.0-0.6 m BGS	220	-	-
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	200	2.8	15
	BH2-24-SS3	1.5-2.1 m BGS	-	5.4	-
	DUP2-10/29	Duplicate Sample of BH2-24-SS3	-	5.6	-
BH3-24	BH3-24-SS3	1.5-2.1 m BGS	-	6.1	-
BH4-24	BH4-24-AU1	0.0-0.6 m BGS	-	19	43

Table 1c: Soil Exceedances – Polycyclic Aromatic Hydrocarbons

Exceeding Parameter:			Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a)pyrene	Benzo(b/j) fluoranthene	Benzo(k) fluoranthene	Dibenzo(a,h) anthracene	Fluoranthene	Indeno(1,2,3-cd) pyrene
Sample Location	MECP Table 3 Site Condition Standards		0.15 ug/g	0.67 ug/g	0.5 ug/g	0.3 ug/g	0.78 ug/g	0.78 ug/g	0.1 ug/g	0.69 ug/g	0.38 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)								
BH1-23	BH1-23-SS1	0.1-0.6 m BGS	-	-	0.56	0.56	-	-	0.12	1.37	-
BH1-24	BH1-24-SS1	0.0-0.6 m BGS	-	-	0.72	0.65	0.81	-	-	1.7	0.48
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	0.18	1.3	3.3	3.2	3.9	1.6	0.59	8.1	2.2
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	-	-	-	-	-	-	-	0.74	-

BGS : Below ground surface

All of the other soil results for the Phase Two Property are in compliance with the applicable Site Condition Standards.

The following groundwater sample (and its duplicate) results were in exceedance of the site condition standards:

- BH2-24-GW1 and DUP-11/13, collected from a screen depth of approximately 3.1-6.1 m BGS, had chloride measurements of 2,900 ug/L in both samples, compared to the site condition standard of 2,300 ug/L.

This groundwater sample was collected in a location that would have been subject to road de-icing activities with the application of salts applied to ground surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both and is suspected to exceed the site condition standard solely as a result of these activities. Based on this application and the exemption set forth in Section 49.1 of O.Reg. 153/04, the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act. Based on additional groundwater analysis in other locations at the Phase Two Property, the presence of elevated chloride appears to be isolated into localized area(s) and is not considered to have migrated or impacted the Phase Two Property groundwater quality. All of the other groundwater samples collected as part of the 2023 LESGA and the current 2024 Phase Two ESA were in compliance with the Site Condition Standards.

The Phase Two Property (soil) is not in compliance with the site condition standards as of the certification date of November 24, 2024.

An environmental remediation program, including the bulk removal and off-site disposal of soil in excess of the site condition standards, is recommended for the Phase Two Property. The

submission of a record of site condition will not be required since there will not be a change of land use of the Phase Two Property to a more sensitive use.

Given the scope and timeline for the proposed redevelopment and the requirements for specialized construction techniques to complete remediation of the Phase Two Property to meet the site condition standards, it is recommended that remediation be completed in conjunction with redevelopment of the Property. It should be noted that the proposed redevelopment includes excavation of approximately 1 to 3 m of surficial materials, which is expected to remove the impacted soil at the Phase Two Property.

Preparation of a soil management plan in accordance with O.Reg. 406/19 will be required as part of management of excess soil generated as part of construction activities.

2. Introduction

Lopers & Associates (Lopers) was retained by Ottawa Community Housing Corporation (OCH) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the residential property with civic address Nos. 214, 216, 218, 220, 222 and 224 Somerset Street East, Ottawa, Ontario ("Phase Two Property", "Property" or "Site"). The location of the Phase Two Property within the City of Ottawa is presented on Figure 1: Key Plan.

i. Site Description

The Phase Two Property is legally described as Lot 24 and Part of Lot 25 (West Nelson Street) on Registered Plan 45224 in the City of Ottawa and has property identifier numbers of 04059-0120, 04205-0024 as obtained from the topographical plan of survey by Farley Smith & Denis Surveying Ltd. dated January 16, 2023. The boundaries of the Phase Two Property are presented on Figure 2: Site Plan.

Based on approximate dimensions obtained from the City of Ottawa's GIS mapping software, the Phase Two Property has an approximate area of 536 m^2 (0.05 Hectares) and a zoning designation of R4U C(480), which signifies a 4^{th} density residential use zone. The Phase Two Property is located on the south side of Somerset Street East, immediately west of the Nelson Street intersection.

ii. Property Ownership

The Phase Two Property is currently owned by Ottawa Community Housing Corporation. This Phase Two ESA was commissioned by Mr. Barron Meyerhoffer, Director of Development for OCH. Ottawa Community Housing Corporation has a business address of 39 Auriga Drive, Ottawa, Ontario, K2E 7Y8 and a business telephone number of 613-731-1182.

Current and Proposed Future Use

The Phase Two Property has been vacant for several years and was historically developed and occupied for residential use. It is Lopers' understanding that OCH intends to redevelop the Phase Two Property for multi-tenant residential purposes, including the current concept for construction of one building approximately four storeys in height, with partial subgrade floors and/or utility rooms. It is understood that the buildings which currently occupy the Property will be demolished prior to redevelopment.

As redevelopment of the Phase Two Property will not involve a change in land use to a more stringent use, a record of site condition (RSC) will not be required to be filed with the Ministry of Environment, Conservation and Parks (MECP) for the Phase Two Property.

iii. Applicable Site Condition Standard

Through Ontario Regulation 153/04 (O.Reg. 153/04), the Ministry of Environment, Conservation and Parks (MECP) prescribes the conditions to determine the applicable site condition standard for a property.

The proposed future use of the Phase Two Property is for residential use.

The Phase Two Property and all other properties within 250 m of the property boundaries are supplied by the municipal drinking water system. There is no known agricultural use and there are no wells within 250 m of the property boundaries that are intended for use as a source of water for human consumption or agriculture. As such, the designation of non-potable groundwater setting is determined to be applicable [O.Reg. 153/04, section 35].

The soil and groundwater quality over the full depth of overburden was considered for this Phase Two ESA. The full depth generic site condition standards were selected for comparison for the Phase Two Property [O.Reg. 153/04, sections 36, 37, 38, 39 and 40].

The Phase Two Property is not situated within or adjacent to an area of natural significance and does not include any land within 30 m of an area of natural significance. The pH of the soil was analyzed as part of this Phase Two ESA and was found to range from 6.95 to 7.78. As such, the Phase Two Property is not considered to be an environmentally sensitive area [O.Reg. 153/04, section 41].

A layer of silty sand and gravel was encountered from near ground surface to 1.8 m below ground surface (BGS) and a layer of native glacial till, consisting of silty sand and gravel, cobbles and boulders was present above the bedrock, with an approximate thickness of 1.5 m. Both of these soil types would be classified as coarse grained soil with a total thickness of approximately 3.3 m. Silty clay was encountered between the shallow silty sand and gravel and the native glacial till; the silty clay would be classified as a fine grained soil, as reported through grain size analysis in the 2023 Paterson Geotechnical Investigation and had an approximate thickness of 5.1 m. It is interpreted that greater than 1/3 of the Property has coarse grained soil. For the purposes of this Phase Two ESA, the soil conditions are considered to be coarse grained, which provides a more conservative comparison to the MECP site condition standards than the fine-grained values [O.Reg. 153/04, section 42].

Review of the drilling program and borehole/monitoring well logs completed as part of this Phase Two ESA and previous investigations was completed. It was determined that over 2/3 of the Property has greater than 2 m of overburden soil. The Property is therefore not considered a shallow soil property [O.Reg. 153/04, section 43.1].

The Phase Two Property does not include and does not have any land located within 30 m of a water body. The MECP site condition standards for use within 30 m of a water body do not apply [O.Reg. 153/04, section 43.1].

The full depth generic site condition standards, with non-potable groundwater, course textured soil, for residential/parkland/institutional property use, as specified in Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011 were determined to be the applicable site condition standards for the Property as part of this Phase Two ESA.

3. Background Information

i. Physical Setting

The *Phase One Study Area* referred to in this section and the next section includes the Phase Two Property itself and properties with their boundaries within 250 m of the Phase Two Property limits.

No water bodies or areas of natural and scientific interest (ANSIs) were identified on the Phase Two Property or the Phase One Study Area.

The regional topography in the Phase One Study Area is undulating but generally slopes downward to the southeast, toward the Rideau River. The topography on the Phase Two Property slopes downward from northwest to southeast, with an approximate grade differential of 3 m across the Site. The Rideau River is located approximately 700 m east-northeast of the Phase Two Property, while the Rideau Canal is present approximately 400 m southwest.

Surface water flow is dominated by infiltration with some localized drainage directed towards catch basins in adjacent municipal rights-of-way to the north and east of the Property, which drain into the municipal stormwater sewer system.

No drinking water wells are located at the Phase Two Property. Three domestic water wells identified in the Phase One ESA were drilled in the 1950's, and since the Phase Two Study Area is now serviced by municipally treated drinking water it is not expected that any operational potable water supply wells remain in the Study Area. The Phase Two Property and Phase One Study Area are not located in the vicinity of any well-head protection areas or other designation identified by the City of Ottawa in its official plan for the protection of ground water. No private or agricultural water supply wells are located within the Study Area.

ii. Past Investigations

OCH provided the following four reports for review as part of this Phase One ESA:

1. "Phase One Environmental Site Assessment, Proposed Residential Re-Development, 214-224 Somerset Street East, Ottawa, Ontario", dated June 21, 2023, completed by Lopers & Associates for OCH. ("2023 Lopers Phase One Environmental Site Assessment")

2. "Limited Environmental Soil & Groundwater Assessment, Proposed Residential Re-Development, 214-224 Somerset Street East, Ottawa, ON", dated June 21, 2023, completed by Lopers & Associates for OCH. ("2023 Lopers Limited Environmental Soil & Groundwater Assessment")
3. "Geotechnical Investigation, Proposed Residential Development, 214 Somerset Street East, Ottawa, Ontario", dated May 2, 2023, completed by Paterson Group Inc. for OCH. ("2023 Paterson Geotechnical Investigation")
4. "Project Specific Designated Substance Report, 214-224 Somerset Street, Ottawa, ON", dated October 27, 2016, completed by CM3 Environmental Inc. for Read Jones Christofferson Ltd. ("2016 DSR Investigation")
5. "Designated Substance Survey, 214-224 Somerset Street East, Ottawa, ON", dated January 30, 2023, completed by Lopers & Associates for OCH ("2023 DSS Investigation")

2023 Lopers Phase One ESA

A Phase One ESA report was prepared for the Property in 2023: "Phase One Environmental Site Assessment, 214-224 Somerset Street East, Ottawa, Ontario" dated June 21, 2023 prepared for Ottawa Community Housing Corporation by Lopers & Associates. The Phase One ESA identified one potentially contaminating activity (PCA) at the Phase One Property:

There was evidence of non-native fill material observed during the subsurface drilling and sampling, completed as part of a concurrent Limited Environmental Soil & Groundwater Assessment and geotechnical investigation. The presence of imported fill material is suspected at the Phase One Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, which represents PCA #1 and was interpreted as APEC #1 for the Phase One Property. This PCA #1 has resulted in soil with contaminant concentrations in excess of the MECP Table 3 Standards at the Site, as demonstrated in the LESGA (discussed further below).

Based on the location and orientation of the 15 PCAs identified at neighbouring properties in the Phase One Study Area, they were not considered to represent APECs for the Phase One Property.

It was noted that a detectable concentration of tetrachloroethylene (PCE) was reported in the groundwater monitoring well installed as part of the LESGA; future groundwater sampling and analysis completed as part of the Phase Two ESA are recommended to include VOCs.

2023 Lopers Limited Environmental Soil & Groundwater Assessment (LESGA)

Lopers completed a Limited Environmental Soil & Groundwater Assessment (LESGA) in conjunction with this Phase One ESA and the 2023 Paterson Geotechnical Investigation. The objectives of the LEGSA were to collect soil samples and groundwater for laboratory analysis from locations in the geotechnical boreholes/monitoring wells.

- *It should be noted that the intended field program for the LESGA and concurrent geotechnical field investigation included 2 additional boreholes/monitoring wells, however,*

due to Site access restrictions, the field investigation was limited to a single borehole/monitoring (BH1-23) near the southeast Property limits (see Figure 2).

The borehole (BH1-23) was drilled to an approximate depth of 8.4 meters below ground surface (m BGS). A groundwater monitoring well was installed in BH1-23, with its screened interval approximately 2.3 to 5.3 m BGS, intended to straddle the groundwater table.

Laboratory Analysis consisted of the following:

- 1 surficial soil sample analyzed for Petroleum Hydrocarbons (PHCs) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEXs), Polycyclic Aromatic Hydrocarbons (PAHs) and Metals; and,
- 1 groundwater sample, collected near the center of the measured static water column. The groundwater sample was submitted for analysis of PHCs, VOCs including BTEXs, PAHs and Metals.

The soil sample of the fill material from BH1-23 was analyzed for PHCs, BTEXs, PAHs and metals, which are the contaminants of potential concern (CPCs) most commonly associated with fill material. The soil sample had reported concentrations of various PAHs in excess of their Site Condition Standards, as follows:

- Benzo(a)anthracene 0.56 ug/g vs. 0.36 ug/g;
- Benzo(a)pyrene 0.56 ug/g vs. 0.30 ug/g; and,
- Fluoranthene 1.37 ug/g vs. 0.69 ug/g.

All other soil parameters were in compliance with the MECP Table 3 residential land use standards. It was noted that the soil sample analyzed of the fill material from BH1-23 had a concentration of the F4 range of PHCs and various additional PAHs (to those noted above), in excess of the MECP Table 1 Background standards.

The groundwater sample from BH1-23 was analyzed for PHCs, VOCs, PAHs, metals and inorganics which are the contaminants of potential concern (CPCs) most commonly associated with identified PCAs at neighbouring properties during the Phase One ESA historical research. The groundwater sample had all CPCs reported in compliance with the MECP Table 3 Site Condition Standards. It was noted that the tetrachloroethylene (PCE) was detected in the monitoring well (BH1-23),at a concentration of 0.8 ug/L compared to its Site Condition Standard of 1.6 ug/L. PCE was therefore present but at a concentration of half of the Site Condition Standard.

Given that PCA #1 was identified (Importation of Fill Material of Unknown Quality), which was interpreted as an APEC #1 for the Site, and this PCA #1 has resulted in soil in excess of the MECP Table 3 Standards at the Site, as demonstrated in the LESGA, a Phase Two ESA in accordance with O.Reg. 153/04 was recommended for the Site.

2023 Paterson Geotechnical Investigation

A Geotechnical Investigation report was prepared by Paterson in 2023. Lopers supervised the fieldwork for the Geotechnical drilling investigation in April of 2023. One borehole was drilled to a depth of approximately 8.4 m below ground surface (BGS). Soil conditions were generally found to consist of a thin layer of asphalt over silty sand and gravel fill (0.6 m BGS), followed by silty sand and gravel with clay to approximately 1.8 m BGS. Silty clay was encountered from approximately 1.8 to 6.9 m BGS, the clay was underlain by approximately 1.5 m of sand and gravel glacial till, followed by inferred bedrock at approximately 8.4 m BGS.

2016 DSR Investigation and 2023 DSS Investigation

The Site was occupied by three vacant three-Storey residential buildings with partial basement levels at the time of the 2016 DSR & 2023 DSS. Each of the three buildings at the Site had an approximate footprint area of 1,320 m^2. Based on these reports, the Site buildings were identified to have been constructed in 1902 and had been used as residential rooming housing since that time. No PCAs were identified during completion of the 2016 DSR & 2023 DSS.

There were no discrepancies identified in review of documentation, information or data from previous investigations. As such, previous investigations are considered to be of adequate quality such that they can be relied upon for the purposes of this Phase Two ESA.

4. Scope of Investigation

i. Overview of Site Investigation

This Phase Two ESA was designed to meet the general requirements of O.Reg. 153/04 as amended, with details of scope presented in Lopers' letters entitled:

- "Proposal for Phase One Environmental Site Assessment & Coordination and Field Supervision of Drilling Program, Proposed Residential Re-Development, 214-224 Somerset Street East, Ottawa, ON,", dated March 7, 2023, reference No. reference No. PRO-025B-23-OCH.
- "Proposal for Phase Two Environmental Site Assessment & Supplemental Soil Sampling and Analysis for Future Soil Management Considerations, Proposed Residential Re-Development, 214-224 Somerset Street East, Ottawa, ON", dated October 3, 2024, reference No. PRO-024C-24-OCH.

The scope of work for investigation was discussed with OCH and a sampling and analysis plan (SAP) was prepared to achieve the objectives of the Phase Two ESA; the SAP is provided in Appendix A.

Underground utility locates were completed through Ontario 1-Call to identify any active public services on the Phase Two Property. The only active underground utility services identified at the Property were water and sewer connections present in underground trenches running north towards Somerset Street East and a fiber optic cable in the northeast corner of the Property. Copies of the underground locates are provided in Appendix B. Natural gas meters had been removed with the natural gas lines capped; these connections were present on the north side of the Site buildings.

On March 30, 2023, one borehole (BH1-23) was drilled at the Phase Two Property. Five additional boreholes (BH1-24, BH2-24, BH3s-24, BH3d-24 and BH4-24) were drilled at the Phase Two Property on October 28 and 29, 2024. The boreholes were drilled using a rubber track mounted CME 55 drill rig operated by George Downing Estate Drilling. Soil samples were collected using stainless steel split spoons. Soil samples recovered during the sampling program were screened in the field for volatile vapour concentrations, as well as visual and olfactory observations. Representative and 'worst case' samples were selected and containerized for laboratory analysis.

A total of five groundwater monitoring wells (BH1-23, BH1-24, BH2-24, BH3s-24, BH3d-24) were installed on the southeast, southwest, north-central and northeast portions of the Phase Two Property. The boreholes which were instrumented with groundwater monitoring wells were drilled to the localized depths ranging from 6.1 to 9.1 m BGS and were screened with the intent to straddle the shallow groundwater table. When possible, these groundwater monitoring wells were developed on the day of drilling by removing at least three well volumes or by purging the wells dry three times.

The locations of the boreholes/monitoring wells drilled/installed as part of this Phase Two ESA as well as existing monitoring wells at the Phase Two Property are presented on Figure 2: Site Plan. The rationale for the placement of the boreholes/monitoring wells is provided below:

BH1-23 was drilled in the laneway on the southeast portion of the Phase Two Property. This borehole was placed in a location to assess fill quality at the Site (APEC #1) and for geotechnical assessment purposes. This borehole was instrumented with a groundwater monitoring well, with its screen installed within soil which was observed to be wet during the drilling/soil sample collection in an attempt to straddle the shallow groundwater table.

BH1-24 was drilled in landscaped area in the southwest portion of the Phase Two Property. This borehole was placed in a location to assess fill quality at the Site (APEC #1) and for geotechnical assessment purposes. This borehole was instrumented with a groundwater monitoring well, with its screen installed within soil which was observed to be wet during the drilling/soil sample collection.

BH2-24 was drilled in the north-central portion of the Phase Two Property, near the former natural gas connection to 218 Somerset Street East. This borehole was placed in a location to assess fill quality at the Site (APEC #1) and for geotechnical assessment purposes. This borehole

location would also have been suitable for an assessment of historical heating oil storage/filling, assuming that the Site buildings were possibly historically heated using furnace oil.

BH3s-24 was drilled in the northeast portion of the Phase Two Property, near the former natural gas connection to 222 Somerset Street East. This borehole was placed in a location to assess fill quality at the Site (APEC #1) and for geotechnical assessment purposes. This borehole location would also have been suitable for an assessment of historical heating oil storage/filling, assuming that the Site buildings were possibly historically heated using furnace oil.

BH3d-24 was drilled in immediately adjacent to BH3s-24 in the northeast portion of the Phase Two Property. This borehole was instrumented with a deeper monitoring well for geotechnical and hydrogeological assessment purposes.

BH4-24 was hand dug with a stainless-steel shovel in the northwest portion of the Phase Two Property. This borehole was placed in a location to assess fill quality at the Site (APEC #1).

Soil samples were selected for laboratory analysis of the contaminants of potential concern (CPCs) based on APECs and CPCs identified in the Phase One ESA, as described in Section 3.ii. above as well as field screening observations.

An initial groundwater monitoring and sampling event of the groundwater monitoring well BH1-23 was completed at the Phase Two Property on April 6, 2023. Two additional groundwater monitoring and sampling events were completed on November 13, 2024 and November 24, 2024, for the monitoring well (BH1-23, BH1-24, BH2-24 and BH3d-24) installed as part of this Phase Two ESA; BH3s-24 was found to be dry until at least four weeks following installation.

Static groundwater levels were measured 14 days after installation, prior to disturbance of the water column. During purging, water quality parameters were measured at regular intervals to monitor groundwater quality stabilization; once groundwater quality parameters stabilized (were within approximately 10% on successive readings), groundwater samples were collected. Groundwater samples were selected for laboratory analysis of select CPCs based on APECs and CPCs identified in the Phase One ESA.

An elevation survey was completed of the boreholes/monitoring wells drilled at the Phase Two Property by Paterson Group. The boreholes/monitoring wells were surveyed relative to geodetic elevations. Ground surface elevations were surveyed between 60.0 m above sea level (m ASL) in the southeast portion of the Property to 65.2 m ASL in the northwest portion of the Property.

ii. Media Investigation

Based on the finding of the Phase One ESA, the following media were investigated:

Soil quality at the Phase Two Property was investigated through the collection of soil samples at varying depths facilitated by drilling using a track mounted CME drill rig with stainless-steel split spoon sampling.

Groundwater quality at the Phase Two Property was investigated through the installation of five monitoring wells. The monitoring wells were installed to the localized depths ranging from approximately 4.6 and 9.0 m BGS and were screened to straddle the shallow groundwater table. The monitoring wells of interest at the Phase Two Property have their monitoring well screens installed within weathered overburden and are expected to straddle the shallow groundwater aquifer. The wells were sampled via low-flow procedures using a peristaltic pump.

There were no natural surface water bodies at the Phase Two Property, and as such no sediment sampling was completed as part of the Phase Two ESA.

iii. Phase One Conceptual Site Model

The Phase One Property, which has the same location orientation and property boundaries as the Phase Two Property, is located at Civic Nos. Nos. 214, 216, 218, 220, 222 and 224 Somerset Street East, Ottawa, Ontario and has an approximate area of 536 m^2 (0.05 Hectares).

The Phase One Property was undeveloped prior to 1914 when construction of the present-day residential buildings was completed on the north portion of the Phase One Property. The remaining undeveloped area on the south portion of the Phase One Property is landscaped/vegetated. An asphalt pedestrian pathway is present to the south of the Site building, which is a shared easement with the neighbouring property to the south.

The Property is used for residential purposes (although currently uninhabited) and is zoned for residential use. The Phase One Property was transferred to Ottawa Community Housing Corporation (OCH) in 2004. It is understood that the intended future use is for residential purposes. The Phase One Property is immediately surrounded by residential properties to the south and west, by Nelson Street followed by Community/Parkland to the east and by Somerset Street East followed by residential properties to the north.

The Phase One Study Area includes the Phase One Property and extends to properties with boundaries within 250 m of the Phase One Property limits. Based on a review of the Phase One Property and properties in the Phase One Study Area, their associated historical and/or current uses and operations and physical characteristics of the Phase One Study Area, it was determined that an assessment of properties within 250 m of the Phase One property was sufficient to meet the objectives of the scope of this investigation for a Phase One ESA.

No water bodies or areas of natural significance are located at the Phase One Property or in the Phase One Study Area. No drinking water wells are located at the Phase One Property and the Phase One Study Area is serviced by municipally treated non-potable water.

The regional topography in the Phase One Study Area is undulating but generally slopes downward to the southeast, toward the Rideau River. The topography on the Phase One Property slopes downward from northwest to southeast, with an approximate grade differential of 3 m across the Site. The Rideau River is located approximately 700 m east-northeast of the Phase One Property, while the Rideau Canal is present approximately 400 m southwest.

Based on the historical research and a concurrent geotechnical drilling investigation, general stratigraphy of the Phase One Property and Phase One Study Area consists of sand and gravel fill, followed by silty clay, which was underlain by silty sand and gravel (Glacial Till). The overburden soil is underlain by shale bedrock at depths ranging from 8 to 15 m BGS. Groundwater is expected at a depth of approximately 2 to 4 m BGS and flow in a predominantly east-southeast direction; however, local groundwater flow is expected to be influenced by local and regional topography.

There was evidence of non-native fill material observed during the subsurface drilling and sampling, completed as part of a concurrent Limited Environmental Soil & Groundwater Assessment and geotechnical investigation. The presence of imported fill material is suspected at the Phase One Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, which represents PCA #1 and has been interpreted as APEC #1 for the Phase One Property. This PCA #1 has resulted in soil with contaminant concentrations in excess of the MECP Table 3 Standards at the Site, as demonstrated in the 2023 Lopers LESGA.

The Contaminants of Potential Concern ("CPCs") associated with the historical fill materials are PHCs, BTEXs, polycyclic aromatic hydrocarbons (PAHs), metals & inorganics. Volatile Organic Compounds were included as a CPC for the 2024 sampling and analysis, following an initial groundwater detection of PCE in the groundwater sample from BH1-23 in April 2023.

Based on the location and orientation of the 15 PCAs identified at neighbouring properties in the Phase One Study Area, they are not considered to represent APECs for the Phase One Property.

Underground utility service trenches are present at the Phase One Property. The existing underground utility corridors have the potential to affect contaminant distribution and transport at the Phase One Property.

iv. Deviations from Sampling and Analysis Plan

Borehole/Monitoring well locations were limited on the north (Somerset Street East) portion of the Phase Two Property; obstructions included overhead electricity connections, overhead entry canopies and municipal water connections and/or natural gas service shut-offs. BH4-24 could not be drilled in the northwest corner of the Phase Two Property as initially proposed; instead, a shallow borehole was hand dug with a stainless-steel shovel to 0.6 m BGS to recover representative shallow fill samples.

The monitoring well installed in BH3s-24 was intended to straddle the shallow groundwater table, however, this monitoring well was repeatedly monitored to be dry. A deeper groundwater monitoring well, BH3d-24, was installed immediately adjacent to BH3s-24, which was sampled for an assessment of groundwater quality in the absence of groundwater in BH3s-24. A return Site visit was conducted for sampling of BH3d-24 on November 24, 2024, while the other groundwater monitoring wells were sampled on November 13, 2024.

There were no other deviations to the Sampling and Analysis Plan (SAP) as part of this Phase Two ESA.

v. Impediments

As noted above, overhead electricity connections and underground service shut-offs restricted investigation locations, however, it was determined that the overall objectives of the Phase Two ESA and Excess Soil Characterization were completed. There were no substantial impediments encountered as part of this Phase Two ESA.

5. Investigation Method

i. General

The investigation method for this Phase Two ESA involved an assessment of the soil and/or groundwater quality for the associated CPCs in the vicinity of the APECs identified during the Phase One ESA.

Soil was investigated at the Phase Two Property by drilling boreholes at the Site. The boreholes were drilled using a track mounted CME 55 drill rig operated by George Downing Estate Drilling. Soil samples were collected using stainless steel split spoons. Soil samples recovered during the sampling program were screened in the field for volatile vapour concentrations, as well as visual and olfactory observations. Representative and 'worst case' samples were selected and containerized for laboratory analysis for the CPCs.

Groundwater was assessed using the four groundwater monitoring wells which were installed as part of this Phase Two ESA and concurrent geotechnical investigation. The wells were developed following installation. Static groundwater levels were measured in the monitoring wells prior to disturbance of the water column on the day of sampling. Groundwater samples were collected with a peristaltic pump using low-flow procedures and were submitted for laboratory analysis for the CPCs.

An elevation survey was completed of the boreholes/monitoring wells drilled as part of the Phase Two Property. An elevation survey was completed of the boreholes/monitoring wells drilled at the Phase Two Property by Paterson Group. The boreholes/monitoring wells were surveyed relative to geodetic elevations.

The following sections provide further detailed information regarding the investigation methodology completed as part of the Phase Two ESA.

ii. Drilling

The 2023 LESGA drilling field program was completed on March 30, 2023 under the direction of Mr. Luke Lopers, P.Eng. The 2024 drilling field program was completed on October 28 and 29,

2024 under the direction of Paterson Group and full-time supervision by Lopers. Six boreholes were drilled for the Phase Two ESA and/or for the concurrent Paterson Group Geotechnical Investigation by the drilling subcontractor George Downing Estate Drilling, located at 410 Principale Rue, Grenville-Sur-la-Rouge, Quebec, J0V 1B0. The drill rig used for the Phase Two ESA was a track mounted CME 55 drill, equipped with hollow stem augers and stainless-steel split spoons.

Samples were collected using stainless-steel split spoons from the near surface to the full depth of drilling. Split spoon samples, collected in 0.6 m segments, were recovered at continuous 0.76 m intervals; the additional 0.16 m between split spoon samples was over-drilled to provide undisturbed field measurement of geotechnical parameters (blow counts, shear vanes) and to prevent cave in materials from stratigraphic units above the intended sampling intervals from being collected at unrepresentative depths during sampling.

The split spoons, which were the only media to come into contact with the soil samples, were washed using soap and water and a scrub brush between samples to minimize the potential for cross-contamination among samples. The field technician used sterile nitrile gloves, which were changed prior to the handling of each soil sample to further reduce the potential of cross-contamination. The flights of the hollow stem augers were cleaned manually following each borehole.

iii. Soil Sampling

As described above, soil samples were recovered using stainless steel split spoons.

Soil samples were initially collected in Ziploc bags for initial screening as part of sample selection. Soil samples selected for laboratory analysis were collected in dedicated clear glass jars prepared and provided by the analytical laboratory. Soil samples collected for BTEXs/VOCs and the F1 range of PHCs analysis were collected using a dedicated graduated syringe provided by the laboratory and placed directly into a glass vial with a known quantity of methanol preservative. Analytes and associated preservatives were specified on each jar/vial by the laboratory. Each jar/vial sample set was provided with a unique sample identifier, project number and date of sampling in the field.

Detailed soil descriptions of the stratigraphy for each borehole/monitoring are included on the borehole logs provided in Appendix C.

Based on the observations of soil samples collected during the Phase Two ESA and LESGA field programs, there were five stratigraphic units identified at the Phase Two Property, which include:

- Asphalt
- Silty Sand & Gravel (Fill)
- Silty Clay and Sand (Backfill in certain locations)
- Sand with Gravel (Glacial Till)

Detailed geological and physical descriptions of these stratigraphic units are provided in Section 6.i Geology of this report.

iv. Field Screening Measurements

Initial field screening of the soil samples consisted of visual and olfactory observations made at the time of sample collection during the drilling program.

Additional field screening of the soil samples was completed using an RKI Instruments Model Eagle-2 combustible gas detector ("RKI Eagle"). The RKI Eagles used for soil sample screening as part of this Phase Two ESA were obtained from Maxim Environmental and Safety Inc. and calibrated by Maxim on March 27, 2023 and October 24, 2024. The RKI Eagle is capable of measuring combustible vapours at concentrations ranging from 0 parts per million (PPM) to 50% of the lower explosive limit (LEL). The RKI Eagle is also capable of measuring VOC vapours at concentrations ranging from 0 ppm to 1000 ppm. The readings of the RKI Eagle are shown on the Test Pit and Borehole Logs in Appendix C. Additional equipment and calibration information for the RKI Eagle is provided on the certificate of calibration included in Appendix D.

Where soil samples were selected in a borehole within an APEC and the SAP identified proposed soil analysis in that borehole, the field screening was used as follows to select the appropriate sample for laboratory analysis.

1. Select sample with evidence of visual and/or olfactory indications of suspected contamination, such as staining, PHC odours or deleterious fill material.
2. Select sample with most significant elevated soil vapour concentration.
3. Select sample based on stratigraphy and/or moisture content, as certain CPCs are generally expected to be found in these defined conditions (i.e. fill material at shallow depths or PHC impacts near the groundwater table interface).

v. Groundwater: Monitoring Well Installation

Installation of monitoring wells in BH1-23, BH1-24, BH2-24, BH3s-24 and BH3d-24 were completed by George Downing Estate Drilling. The wells were installed using slotted PVC No. 10 monitoring well screens, which were 32 or 51 mm in inside diameter; these screens were installed at depths intended to straddle the shallow groundwater table in each of the aforementioned boreholes. Well screens were either 1.5 or 3.0 m in length in the monitoring wells installed as part of this Phase Two ESA. The monitoring wells were extended to approximately 1 m above (BH1-24) or 0.15 m below (BH1-23, BH2-24, BH3s-24 and BH3d-24) the surface grade with PVC riser, also 32 or 51 mm in diameter. A threaded PVC end cap was installed at the base of the screen to prevent sediment infiltration, while a J-Plug was installed at the top of the riser.

The annular space in each monitoring well was backfilled with clean silica sand up to approximately 0.3 m above the monitoring well screens. A layer of bentonite chips was then used to make a hydraulic seal above the sand pack to near the ground surface. The monitoring

wells were completed with steel stickup protective casings, which were backfilled with sand to stabilize the casings. Below grade installations were completed with protective flushmount casings, while above grade installations were completed with protective steel stickup boxes.

Development of each of the monitoring wells was completed using dedicated Waterra low density polyethylene (LDPE) tubing and a Waterra footvalve. The monitoring wells were developed on March 30, 2024 and October 29, 2024 by purging the wells dry at least three times. The wells were left to stabilize for up to 14 days prior to groundwater sampling.

vi. Groundwater: Field Measurement of Water Quality Parameters

Measurements of the groundwater quality field parameters were completed to determine stabilization of these parameters prior to sampling. These measurements were completed using a Horiba U-52 groundwater quality measurement device ("Horiba") or YSI Pro Plus Quatro groundwater quality measurement device ("YSI"). The Horiba/YSI used for groundwater quality parameter stabilization measurements as part of this Phase Two ESA was obtained from Maxim Environmental and Safety Inc. and were calibrated on April 4, 2023 and November 12, 2024. The Horiba/YSI is capable of measuring temperature, pH, conductivity, turbidity, dissolved oxygen and oxidation reduction potential. Additional equipment and calibration information for the Horiba/YSI are provided on the certificate of calibration included in Appendix D.

Field measurement of water quality parameters were collected at regular intervals (0 L, 0.5 well volumes, 1 well volume, 2 well volumes, etc.) during purging of the monitoring wells prior to sampling. The Horiba/YSI was placed in a flow-through cell and water quality parameters were measured until they were found to stabilize to within approximately 10% of the previous measurements prior to sample collection.

vii. Groundwater: Sampling

An initial groundwater sampling event of the groundwater monitoring well BH1-23 was completed on April 6, 2023 as part of the 2023 LESGA. Lopers completed a groundwater sampling event of 3 groundwater monitoring wells (BH1-23, BH1-24, BH2-24) on November 13, 2024; at that time BH3s-24 was found to be dry and BH3d-24 could not be accessed. Lopers completed a return monitoring event of all monitoring wells for groundwater elevations and sampling of BH3d-24 on November 24, 2024.

All of these monitoring wells have their screens set in the overburden and were installed with the intention of straddling the shallow aquifer.

Stabilized groundwater levels were measured in each of the groundwater monitoring wells prior to disturbance of the water column prior to sampling. The dedicated Waterra LDPE tubing and footvalve was removed from each of the monitoring wells and 6 m Waterra LDPE tubing was placed in each of the monitoring wells. The LDPE tubing was connected to a dedicated length of silicon tubing, run through a peristaltic pump set to low flow (approximately 0.2-0.5 L/minute) during purging and sampling while monitoring groundwater level to minimize the drop in head.

The monitoring wells were purged on the day of sampling while water quality parameters were measured as noted above.

Groundwater samples were collected in dedicated amber glass bottles and vials or plastic bottles prepared and provided by the analytical laboratory. Analytes and associated preservatives were specified on each bottle by the laboratory. Each bottle sample set was provided with a unique sample identifier, project number and date of sampling in the field. Samples for PHCs, BTEXs, VOCs, PAHs and general chemistry were unfiltered, while metals samples were field filtered using a dedicated 0.45 µm Waterra filter for each sample.

The field technician changed dedicated sterile nitrile gloves prior to initiating the sampling operation at each monitoring well to minimize the potential for cross-contamination.

viii. Sediment: Sampling

There were no natural surface water bodies at the Phase Two Property, and as such no sediment sampling was completed as part of the Phase Two ESA.

ix. Analytical Testing

Soil and groundwater analytical testing was conducted by Paracel Laboratories Ltd. (Paracel) and Bureau Veritas (BV Labs). Paracel and BV Labs are accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) and the National Institute of Standards and Technology (NIST), Standard Services Division, National Voluntary Laboratory Accreditation Program (NVLAP) for specific environmental and IAQ tests listed in the Scopes of Accreditation registered with each association. For the scope of accreditation under CALA Membership Number 1262, Paracel and BV Labs are accredited for analysis including, but not limited to: metals, organics, conventionals, bacteria, mold, and asbestos in various matrices.

x. Residue Management Procedures

No excess soil cuttings were generated as part of the drilling program.

Groundwater from well development and purging was initially placed in a graduated plastic bucket for observations and volume measurements and then was transferred to a dedicated 205 L drum, which was stored in the southwest portion of the Property. This drum was marked with a wax crayon indicating the origin location(s) of the water containerized within.

Fluids from equipment cleaning and decontamination were containerized within the purge water drum.

xi. Elevation Surveying

An elevation survey was completed of the boreholes/monitoring wells drilled as part of the Phase Two Property. An elevation survey was completed of the boreholes/monitoring wells drilled at the Phase Two Property by Paterson Group. The boreholes/monitoring wells were surveyed relative to geodetic elevations.

xii. Quality Assurance and Quality Control Measures

Soil samples were collected in dedicated clear glass jars prepared and provided by the analytical laboratory. Soil samples collected for BTEXs/VOCs and the F1 range of PHCs analysis were collected using dedicated graduated syringes provided by the laboratory and placed directly into a glass vial with methanol preservative. Analytes and associated preservatives were specified on each jar/vial by the laboratory. Each jar/vial sample set was provided with a unique sample identifier, project number and date of sampling in the field.

Groundwater samples were collected in dedicated amber glass bottles and vials or plastic bottles prepared and provided by the analytical laboratory. Analytes and associated preservatives were specified on each bottle by the laboratory. Each bottle sample set was provided with a unique sample identifier, project number and date of sampling in the field.

Following sample collection, the soil and groundwater samples were stored in an ice pack chilled cooler to minimize volatilization and begin the cooling process on the day of sampling. On each day of sample collection, following completion of the fieldwork, samples were delivered directly to the analytical laboratory. Standard chain of custody procedures were used to maintain a custody record of soil and groundwater samples between the field technician and the analytical laboratory.

The split spoons, which were the only media to come into contact with the soil samples, were washed using soap and water and a scrub brush between samples to minimize the potential for cross-contamination among samples. The field technician used sterile nitrile gloves, which were changed prior to the handling of each soil sample to prevent cross-contamination. The field technician changed dedicated sterile nitrile gloves prior to initiating work at each monitoring well and changed gloves prior to groundwater sample collection to minimize the potential for cross-contamination.

Trip blank water samples for VOCs were submitted for laboratory analysis from the groundwater sampling events completed on November 13, 2024 and November 24, 2024. No detectable VOC concentrations were reported in the trip blank water samples.

The soil samples DUP-10/29 (BH3-24-SS11) and DUP2-10/29 (BH2-24-SS3) were submitted to the laboratory as blind field duplicate samples (of their respective samples). The relative percent difference (RPD) for individual parameters soil duplicate results to original sample results were generally 0 to 12%, which meets the required ratio. The Chromium VI sample results from DUP2-10/29 (BH2-24-SS3) had an RPD of 50%, however it should be noted that both results were within 1 order of magnitude of the laboratory method detection limit, and both results were lower than the background standards for Chromium VI. These samples were analyzed for PHCs, VOCs (including BTEXs), PAHs and metals & inorganics, which provide a blind quality assurance and quality control QA/QC validation for all soil parameters analyzed as part of this Phase Two ESA.

The groundwater sample DUP-11/13 was submitted to the laboratory as a blind field duplicate sample of BH2-24-GW1. The RPD of groundwater duplicate results to original sample results for metals was generally 0 to 13%, which meets the required ratio or 67%. For Cadmium, however the results were within 1 order of magnitude of the laboratory method detection limit, and both results were lower than the background standards for Cadmium. There were no deviations in groundwater duplicate ratios of PHC, VOC or PAH parameters, which were all not detected at the laboratory method detection limits. These samples were analyzed for PHCs, VOCs (including BTEXs), PAHs and metals & inorganics, which provide a blind quality assurance and quality control QA/QC validation for all groundwater parameters analyzed as part of this Phase Two ESA.

No equipment blank of groundwater was required since the groundwater samples only came in contact with dedicated tubing.

6. Review and Evaluation

i. Geology

Based on the observations of soil samples collected during the Phase Two ESA and LESGA field programs, there were five stratigraphic units identified at the Phase Two Property, which include:

Asphalt

A thin layer of asphalt, approximately 0.05 m in thickness, was encountered at the ground surface in borehole location BH1-23.

Silty Sand & Gravel (Fill)

A layer of silty sand and gravel and with some clay fill material, ranging from approximately 0.6 to 1.8 m in thickness, was encountered immediately below the asphalt layer in BH1-23 and at ground surface in the other boreholes. This material was generally compact and was found to be moist, becoming wet at approximately 1.2 m BGS. No odours, staining or evidence of deleterious fill or debris were observed in this layer. Possibly asphalt pieces were observed in the fill samples from BH2-24 and BH4-24. Five samples were submitted for laboratory analysis from this layer.

Silty Clay

A layer of silty clay, ranging from approximately 4.8 to 6.9 m in thickness, was encountered below the silty sand & gravel (Fill) layer in all of the boreholes. This material was identified to consist of silty clay, was firm becoming soft with depth and was generally brown to grey in colour. This layer was encountered at varying moisture conditions, generally moist at shallow

depths becoming wet at depths ranging from approximately 3.8 to 5.3 m BGS. Five samples were submitted for laboratory analysis from this layer.

Sand (Backfill, in certain locations)

A layer of backfill sand was encountered between 2 layers of silty clay in BH3s-24 and BH3d-24. This material was identified to consist of coarse-grained sand, was loose and was grey. Lopers interprets that the backfill sand was previously placed as bedding for historic underground utility services. This material was generally moist to wet. No odours, staining or evidence of deleterious fill were observed in this layer.

Sand with Gravel (Glacial Till)

A layer of sand with gravel with some silt (Glacial Till), ranging from approximately 1.8 to 3.4 m in thickness, was encountered below the silty clay layer in all boreholes (advanced deeper than 6 m BGS). This material was identified to consist of sand and gravel with some silt, which was wet, compact and grey. A layer of Clayey Sand was also identified at a depth of 8.1 m BGS below the Silty Clay layer in BH1-24; based on other drilling investigation locations at the Phase Two Property, Lopers interprets that the Clayey Sand is a component of the identified glacial till. No odours, staining or evidence of deleterious fill were observed in this layer. Two samples were submitted for laboratory analysis from this layer.

Bedrock

Bedrock was interbedded limestone and/or shale bedrock, which was encountered at approximately 8.4 to 12.1 m below ground surface.

Aquifer

The shallow (unconfined) aquifer is the aquifer of interest based on the nature of APECs and PCAs identified for the Phase Two Property. Based on observations and measured groundwater monitoring data collected as part of this investigation, the aquifer is present in the silty clay geological unit and extends to the glacial till unit beneath.

Based on moisture contents observed in the soil samples collected as part of this Phase Two ESA, it is expected that seasonal and annual variability affect the groundwater table elevation in the shallow aquifer.

ii. Groundwater and Elevations and Flow Direction

Based on the nature of the primary CPCs identified for groundwater at the Phase Two Property (including light non-aqueous phase liquids (LNAPLs) possibly present in historical fuel storage tanks, the screened intervals for the groundwater monitoring wells were installed to straddle the shallow groundwater table within the overburden.

An elevation survey was completed of the boreholes/monitoring wells drilled as part of the Phase Two Property. An elevation survey was completed of the boreholes/monitoring wells

drilled at the Phase Two Property by Paterson Group. The boreholes/monitoring wells were surveyed relative to geodetic elevations.

A shallow groundwater aquifer was present within the overburden at the Phase Two Property. Given that the groundwater table was found in the silty clay geological unit in all monitoring wells at the Phase Two Property, it is inferred that the same shallow aquifer exists across these units and can be used for a determination of localized groundwater flow direction and hydraulic gradient. Monitoring well construction details are presented in Table 2 below.

Table 2: Monitoring Well Construction Details

Monitoring Well	Ground Surface Elevation (m AMSL)	Top of Piezometer Elevation (m AMSL)	Screen Elevation (m AMSL)	Sand Pack Elevation (m AMSL)	Bentonite Seal (m AMSL)
BH1-23	60.01	59.87	54.62 – 57.67	54.62 – 57.97	57.97– 59.27
BH1-24	61.12	61.80	55.59 – 58.64	55.59 – 58.94	58.94 – 59.55
BH2-24	64.13	64.05	58.00 – 61.05	58.00 – 61.35	61.35 – 62.26
BH3s-24	62.81	62.68	56.95 – 60.00	60.00 – 60.30	60.30 – 60.91
BH3d-24	62.78	62.71	53.81 – 56.86	53.81 – 57.16	57.16 – 57.77

m AMSL – metres Above Mean Sea Level

On November 24, 2024, following a period of 25 days for stabilization after drilling and developing the monitoring wells and 11 days following an initial groundwater sampling event, the groundwater levels were measured in all monitoring wells and are presented in Table 3 below. The groundwater table was measured at depths ranging between 3.23 to 6.41 m BGS on November 24, 2024.

Table 3: Groundwater Table Elevations Measured on November 24, 2024

Monitoring Well	Ground Surface Elevation (m AMSL)	Top of Piezometer Elevation (m AMSL)	Depth to Groundwater (m below TOP)	Groundwater Table Elevation (m AMSL)	Depth to Groundwater (m BGS)
BH1-23	60.01	59.87	4.02	55.85	4.16
BH1-24	61.12	61.80	4.01	57.79	3.33
BH2-24	64.13	64.05	3.23	60.82	3.31
BH3s-24	62.81	62.68	DRY @ 5.60	-	DRY @ 5.73
BH3d-24	62.78	62.71	6.41	56.30	6.48

m AMSL – metres Below Referenced to Datum

m BGS – metres below Ground Surface

Based on the measured groundwater table elevations in the monitoring wells BH1-23, BH1-24 and BH2-24 measured on November 24, 2024, the local groundwater flow direction at the Phase Two Property was towards the southeast as shown on Figure 3.

Three groundwater monitoring well water table elevations are required to triangulate groundwater elevations and determine an approximate groundwater flow direction. The groundwater table elevations in BH1-23, BH1-24 and BH2-24 were used for a determination of groundwater flow direction. The groundwater table elevation recorded from BH3d-24 was treated as an outlier. These groundwater monitoring wells were the primary monitoring wells used for assessment of the APECs identified in the Phase One ESA. Based on the measured groundwater table elevations in these monitoring wells, the local groundwater flow direction at the Phase Two Property is towards the southeast. The interpreted groundwater elevation contours and groundwater flow direction are shown in Figure 3: Groundwater Flow Interpretation. This interpreted local groundwater flow direction is reasonable based on the local topography, which includes an elevation drop of approximately 4 m from the northwest to the southeast corners of the Property.

No observations or indications of free product were observed in any of the monitoring wells accessed as part of this Phase Two ESA, as measured with an interface probe during water level measurements, and through observations of the purge water during development and sampling of the monitoring wells.

The historic underground utility corridors have the potential to affect contaminant distribution and transport, as they would create preferential pathways for lateral migration. Based on the depth to groundwater observed in the monitoring wells as part of Phase Two ESA, observed between 3.23 to 6.41 m BGS, it is unlikely that migration of contaminants (if present) through underground utility service trenches (generally approximately 2 to 3 m BGS) would have been significant.

iii. Groundwater: Hydraulic Gradients

The horizontal hydraulic gradient was determined by plotting groundwater contours interpreted from groundwater elevations presented in Table 3 and then by dividing the difference in hydraulic head by the lateral separation distance in the groundwater contours. Based on the measured groundwater elevations on November 24, 2024, from BH1-23, BH1-24 and BH2-24, the horizontal hydraulic gradient at the Phase Two Property is approximately 0.22 m/m.

iv. Course Grained Soil Texture

A substantial layer of native glacial till, consisting of silty sand and gravel, which would be classified as coarse-grained soil, is present underlaying a silty clay unit to full depth to bedrock at the Phase Two Property while sand and gravel fill is present near surface elsewhere at the Property. It is interpreted that greater than 1/3 of the Phase Two Property has coarse grained soil. For the purposes of this Phase Two ESA, the soil conditions are considered to be coarse

grained, which provides a more conservative comparison to the MECP site condition standards than the fine-grained values.

v. Soil Field Screening

Initial field screening of the soil samples consisted of visual and olfactory observations made at the time of sample collection during the drilling program. Additional field screening of the soil samples was completed using an RKI Eagle gas detector. Combustible soil vapour screening concentrations in the soil samples were found to range from 0 to 25 ppm, which is low and generally not considered indicative of significant PHC or VOC contamination.

vi. Soil Quality

Location and Depth of Soil Samples

The following soil samples, which were collected from the boreholes drilled as part of this Phase Two ESA and the 2023 LESGA, were submitted for laboratory analysis.

Table 4: Soil Samples Selected for Laboratory Analysis

Sample Location	Sample ID	Sample Depth (m BGS)	Analytical Parameters
BH1-23	BH1-23-SS1	0.1 – 0.6	PHCs, BTEXs, PAHs, Metals & Inorganics
BH1-24	BH1-24-SS1	0.0 – 0.6	PHCs, BTEXs, PAHs, Metals & Inorganics
	BH1-24-SS6	3.8 – 4.4	VOCs
BH2-24	BH2-24-AU1	0.0 – 0.6	PHCs, BTEXs, PAHs, Metals & Inorganics
	BH2-24-SS3	1.5 – 2.1	PHCs, BTEXs, PAHs, Metals & Inorganics
	DUP2-10/29 (Duplicate of BH2-24-SS3)	1.5 – 2.1	PAHs, Metals & Inorganics
	BH2-24-SS8	5.3 – 5.9	VOCs
BH3-24	BH3-24-AU1	0.0 – 0.6	PHCs, BTEXs, PAHs, Metals & Inorganics
	BH3-24-SS3	1.5 – 2.1	PHCs, BTEXs, PAHs, Metals & Inorganics
	BH3-24-SS11	7.6 – 8.2	VOCs
	DUP-10/29 (Duplicate of BH3-24-SS11)	7.6 – 8.2	VOCs
BH4-24	BH4-24-GS1	0.0 – 0.6	Metals & Inorganics

Comparison of Soil Analytical Results to Applicable Site Conditions Standards

The analytical soil results were compared to the generic full-depth soil site condition standards, with non-potable groundwater, course textured soil, for residential property use, as specified in Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

The aforementioned soil samples selected for laboratory analysis were submitted to Paracel or BV Labs under chain of custody on the day of completion of the drilling program(s). The laboratory certificates of analysis (Paracel/BV Labs Report #s 2313385, R8394673 and R8397239) are provided in Appendix E.

The following soil samples had exceedance concentrations reported compared to their respective Site Condition Standards, as noted in Table 5a, Table 5b and Table 5c:

Table 5a: Soil Exceedances – Petroleum Hydrocarbons

Exceeding Parameter:			F2 PHCs (C10-C16)	F3 PHCs (C16-C34)	F4G PHCs (gravimetric)
Sample Location	MECP Table 3 Site Condition Standards		98 ug/g	300 ug/g	2800 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	-	590	3,500
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	100	310	-

Table 5b: Soil Exceedances - Metals

Exceeding Parameter:			Lead	Conductivity	Sodium Absorption Ratio
Sample Location	MECP Table 3 Site Condition Standards		120 ug/g	0.7 uS/cm	5
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH1-24	BH1-24-AU1	0.0-0.6 m BGS	220	-	-
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	200	2.8	15
	BH2-24-SS3	1.5-2.1 m BGS	-	5.4	-
	DUP2-10/29	Duplicate Sample of BH2-24-SS3	-	5.6	-
BH3-24	BH3-24-SS3	1.5-2.1 m BGS	-	6.1	-
BH4-24	BH4-24-AU1	0.0-0.6 m BGS	-	19	43

Table 5c: Soil Exceedances – Polycyclic Aromatic Hydrocarbons

Exceeding Parameter:			Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a)pyrene	Benzo(b/j) fluoranthene	Benzo(k) fluoranthene	Dibenzo(a,h) anthracene	Fluoranthene	Indeno(1,2,3-cd) pyrene
Sample Location	MECP Table 3 Site Condition Standards		0.15 ug/g	0.67 ug/g	0.5 ug/g	0.3 ug/g	0.78 ug/g	0.78 ug/g	0.1 ug/g	0.69 ug/g	0.38 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)								
BH1-23	BH1-23-SS1	0.1-0.6 m BGS	-	-	0.56	0.56	-	-	0.12	1.37	-
BH1-24	BH1-24-SS1	0.0-0.6 m BGS	-	-	0.72	0.65	0.81	-	-	1.7	0.48
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	0.18	1.3	3.3	3.2	3.9	1.6	0.59	8.1	2.2
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	-	-	-	-	-	-	-	0.74	-

All of the other soil results for the Phase Two Property are in compliance with the applicable Site Condition Standards. A full summary of the soil analytical results and comparison to the

applicable Site Condition Standards are presented in Table 9: Soil Analytical Results following the text of this report. Spatial depiction of the soil exceedances at the Phase Two Property are depicted in Figures 4a through 4c.

Comparison of mSPLP Analytical Results to O.Reg. 406/19

A leachate characterization sample was selected for laboratory analysis of modified Synthetic Precipitate Leaching Procedure (mSPLP) analysis for leachate metals & inorganics, leachate VOCs and leachate organics (semi-volatiles and polychlorinated biphenyls (PCBs). This sample was comprised of a composite of worst-case samples, as determined by field screening parameters, from BH2-24 and BH3-24.

The aforementioned composite soil sample selected for mSPLP laboratory analysis was submitted to BV Labs under chain of custody on October 29, 2024. The laboratory certificate of analysis (BV Labs Report # R8397239) is provided in Appendix E.

The analytical leachate results were compared to the O.Reg. 406/19 Table 2.1 and Table 3.1 Leachate Standards for residential/parkland/institutional property use, volume independent. The analyzed leachate sample was in compliance with these criteria. A full summary of the leachate analytical results and comparison to the applicable site condition standards are presented in Table 10: Leachate Analytical Results following the text of this report.

Contaminants of Concern

There was evidence of non-native fill material observed down to a depth of 1.8 m BGS, during the subsurface drilling and sampling, completed as part of the 2023 LESGA and geotechnical investigation. The presence of imported fill material was suspected at the Phase Two Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, which represents PCA #1 and has been interpreted as APEC #1 for the Phase Two Property.

The Contaminants of Potential Concern ("CPCs") associated with the historical fill materials are PHCs, BTEXs, polycyclic aromatic hydrocarbons (PAHs), metals & inorganics. Volatile Organic Compounds were included as a CPC for the 2024 sampling and analysis, following an initial groundwater detection of PCE in the groundwater sample from BH1-23 in April 2023.

Based on the date of original development of the Site buildings, it was suspected that historical heating oil storage tanks may have been present at the Phase Two Property, although no documentation was found to that effect in records reviewed for the Phase One ESA. If historically present, the expected fill locations would have been in similar locations to the recently removed natural gas meters. The CPCs associated with fuel storage are PHCs and BTEXs, which had already been included for assessment for APEC #1.

The contaminants of concern for a particular sample were based on the relative location and depth of the sample, visual and/or olfactory observations and combustible vapour screening concentrations.

Contaminants Related to Chemical and Biological Transformations

Contaminants related to chemical and biological transformations were not suspected to be present at the Phase Two Property and were not identified as part of the Phase Two ESA soil analysis.

Soil Serving as a Source of Contaminant Mass Contributing to Groundwater

Based on the analytical results, there is no soil that serves as a source of contaminant mass contributing to groundwater at the Phase Two Property.

Light or Dense Non-Aqueous Phase Liquids

The groundwater analytical results (discussed below) do not indicate the presence of light or dense non-aqueous phase liquids at the Phase Two Property.

vii. Groundwater Quality

Locations and Sample Depth Interval of Groundwater Samples

The groundwater samples were collected using a peristaltic pump with tubing lowered to between the top and approximate (vertical) center of the water column within each monitoring well and withdrawing the water at low flow rates. The groundwater sample locations, screen depths and parameters analyzed are presented in Table 6 below.

Table 6: Groundwater Samples Selected for Laboratory Analysis

Sample Location	Groundwater Table Elevation (m AMSL)	Screen Elevation (m AMSL)	Analytical Parameters
BH1-23	55.85	54.62 – 57.67	PHCs, VOCs (including BTEXs), PAHs, Metals & Inorganics
BH1-24	57.79	55.59 – 58.64	PHCs, VOCs (including BTEXs), PAHs, Metals & Inorganics
BH2-24	60.82	58.00 – 61.05	PHCs, VOCs (including BTEXs), PAHs, Metals & Inorganics
BH3s-24	-	56.95 – 60.00	No sample collected – dry.
BH3d-24	56.30	53.81 – 56.86	PHCs, VOCs (including BTEXs), PAHs

m AMSL – metres Above Mean Sea Level

Field Filtering

Samples for PHCs, BTEXs, VOCs, PAHs and general chemistry were unfiltered, while metals samples were field filtered using a dedicated 0.45 µm Waterra filter for each sample.

Comparison of Groundwater Analytical Results to Applicable Site Conditions Standards

The analytical groundwater results were compared to the generic full-depth soil site condition standards, with non-potable groundwater, course textured soil, for residential property use, as specified in Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

The groundwater samples selected for laboratory analysis were submitted to Paracel or BV Labs under chain of custody on April 6, 2023, November 13, 2024 and November 14, 2024. The laboratory certificates of analysis (Paracel/BV Labs Report #s 2315005, R8412924 and R8428514) are provided in Appendix E. The following groundwater sample (and its duplicate) results were in exceedance of the site condition standards:

- BH2-24-GW1 and DUP-11/13, collected from a screen depth of approximately 3.1-6.1 m BGS, had chloride measurements of 2,900 ug/L in both samples, compared to the site condition standard of 2,300 ug/L.

This groundwater sample was collected in a location that would have been subject to road de-icing activities with the application of salts applied to ground surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both and is suspected to exceed the site condition standard solely as a result of these activities. Based on this application and the exemption set forth in Section 49.1 of O.Reg. 153/04, the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act. Based on additional groundwater analysis in other locations at the Phase Two Property, the presence of elevated chloride appears to be isolated into localized area(s) and is not considered to have migrated or impacted the Phase Two Property groundwater quality.

All of the other groundwater samples collected as part of the 2023 LESGA and the current 2024 Phase Two ESA were in compliance with the Site Condition Standards.

A full summary of the groundwater analytical results and comparison to the applicable Site Condition Standards are presented in Table 11: Groundwater Analytical Results following the text of this report.

Contaminants of Concern

There was evidence of non-native fill material observed during the subsurface drilling and sampling, completed as part of the 2023 LESGA and geotechnical investigation. The presence of imported fill material is suspected at the Phase Two Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, which represents PCA #1 and has been interpreted as APEC #1 for the Phase Two Property.

The Contaminants of Potential Concern ("CPCs") associated with the historical fill materials are PHCs, BTEXs, polycyclic aromatic hydrocarbons (PAHs), metals & inorganics. Volatile Organic Compounds were included as a CPC for the 2024 sampling and analysis, following an initial groundwater detection of PCE in the groundwater sample from BH1-23 in April 2023.

Based on the date of original development of the Site buildings, it was suspected that historical heating oil storage tanks may have been present at the Phase Two Property, although their historic presence was never documented during the Phase One ESA. If historically present, the expected fill locations would have been in similar locations to the recently removed natural gas meters. The CPCs associated with fuel storage are PHCs and BTEXs, which had already been included for assessment for APEC #1.

The contaminants of concern for a particular sample were based on the location and depth of the sample with respect to the APECs, visual and/or olfactory observations of soil samples collected which could have come into contact with the groundwater table.

Contaminants Related to Chemical and Biological Transformations

Contaminants related to chemical and biological transformations were not suspected to be present at the Phase Two Property and were not identified as part of the Phase Two ESA groundwater analysis.

Soil Serving as a Source of Contaminant Mass Contributing to Groundwater

Based on the analytical results, there is no soil that serves as a source of contaminant mass contributing to groundwater at the Phase Two Property.

Light or Dense Non-Aqueous Phase Liquids

The presence of measurable levels LNAPL and/or DNAPL free product were not observed at the Phase Two Property, as measured with an interface probe and with observations of the purge water recovered from the monitoring wells.

The analytical groundwater results do not indicate the suspected presence of dense non-aqueous phase liquids at the Phase Two Property.

viii. Sediment Quality

There were no natural surface water bodies at the Phase Two Property, and as such no sediment sampling was completed as part of the Phase Two ESA.

ix. Quality Assurance and Quality Control Results

Duplicate Samples

The soil samples DUP-10/29 (BH3-24-SS11) and DUP2-10/29 (BH2-24-SS3) were submitted to the laboratory as blind field duplicate samples (of their respective samples). The relative percent difference (RPD) for individual parameters soil duplicate results to original sample results were

generally 0 to 12%, which meets the required ratio. The Chromium VI sample results from DUP2-10/29 (BH2-24-SS3) had an RPD of 50%, however it should be noted that both results were within 1 order of magnitude of the laboratory method detection limit, and both results were lower than the background standards for Chromium VI. These samples were analyzed for PHCs, VOCs (including BTEXs), PAHs and metals & inorganics, which provide a blind quality assurance and quality control QA/QC validation for all soil parameters analyzed as part of this Phase Two ESA.

The groundwater sample DUP-11/13 was submitted to the laboratory as a blind field duplicate sample of BH2-24-GW1. The RPD of groundwater duplicate results to original sample results for metals was generally 0 to 13%, which meets the required ratio except for an RPD of 67% for Cadmium, however the results were within 1 order of magnitude of the laboratory method detection limit, and both results were lower than the background standards for Cadmium. There were no deviations in groundwater duplicate ratios of PHC, VOC or PAH parameters, which were all not detected at the laboratory method detection limits. These samples were analyzed for PHCs, VOCs (including BTEXs), PAHs and metals & inorganics, which provide a blind quality assurance and quality control QA/QC validation for all groundwater parameters analyzed as part of this Phase Two ESA.

Blanks

Trip blank water samples for VOCs were submitted for laboratory analysis from the groundwater sampling events completed on November 13, 2024 and November 24, 2024. No detectable VOC concentrations were reported in the trip blank water samples.

Laboratory Qualifying Statements

The laboratory made no qualifying statements regarding the sample handling or submission as part of this Phase Two ESA. Any laboratory remarks in certificates of analysis are related to internal QA and is not expected to impact the validity of any of the data.

Data Quality

All certificates of analysis were received pursuant to clause 47 (2) (b) of O.Reg. 153/04 and comply with subsection 47 (3) of O.Reg. 153/04.

The overall quality of the field data from the investigation with respect to the data quality objectives, demonstrate that decision-making was not affected, and the overall objectives of the investigation and the assessment were met.

x. Phase Two Conceptual Site Model

There was evidence of non-native fill material observed down to a depth of 1.8 m BGS during the subsurface drilling and sampling, completed as part of the 2023 LESGA and geotechnical investigation. The presence of imported fill material is suspected at the Phase Two Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, which represents PCA #1 and has been interpreted as APEC #1 for the Phase Two Property.

The Contaminants of Potential Concern ("CPCs") associated with the historical fill materials are PHCs, BTEXs, polycyclic aromatic hydrocarbons (PAHs), metals & inorganics. Volatile Organic Compounds were included as a CPC for the 2024 sampling and analysis, following an initial groundwater detection of PCE in the groundwater sample from BH1-23 in April 2023.

Based on the date of original development of the Site buildings, it was suspected that historical heating oil storage tanks may have been present at the Phase Two Property, although their historic presence was never documented during the Phase One ESA. If historically present, the expected fill locations would have been in similar locations to the recently removed natural gas meters. The CPCs associated with fuel storage are PHCs and BTEXs, which had already been included for assessment for APEC #1.

The only active underground utility services identified at the Property were water and sewer connections present in underground trenches running north towards Somerset Street East and a fiberoptic cable in the northeast corner of the Property. Natural gas meters had been removed with the natural gas lines capped; these connections were present on the north side of the Site buildings. The historic underground utility corridors have the potential to affect contaminant distribution and transport, as they would create preferential pathways for lateral migration. Based on the depth to groundwater observed in the monitoring wells as part of Phase Two ESA, observed between 3.23 to 6.41 m BGS, it is unlikely that migration of contaminants (if present) through underground utility service trenches (generally approximately 2 to 3 m BGS) would have been significant.

The overburden stratigraphy of the Phase Two Property is present in five geological units, including asphalt or topsoil layers at ground surface, silty sand and gravel (fill) layer, Silty Clay, a sand and gravel (Till) layer present across the Property and an intermittent sand (backfill) layer within the Silty Clay layer.

The shallow (unconfined) aquifer is the aquifer of interest based on the nature of APECs and PCAs identified for the Phase Two Property. Based on observations and measured groundwater monitoring data collected as part of this investigation, the aquifer is present in the silty clay geological unit and extends to the glacial till unit beneath. The aquifer is expected to have a relatively low permeability compared to fill materials at shallow depths and the glacial till layer beneath.

The overburden soil is underlain by interbedded limestone and/or shale bedrock, which was encountered at approximately 8.4 to 12.1 m below ground surface.

The groundwater table was measured at depths ranging between 3.23 to 6.41 m BGS on November 24, 2024. The shallow groundwater aquifer was present within the silty clay overburden at the Phase Two Property. Given that the groundwater table was found in the silty clay in each of the shallow monitoring wells at the Phase Two Property, it is inferred that the same shallow aquifer exists across these units and can be used for a determination of groundwater flow direction and hydraulic gradient. The horizontal hydraulic gradient at the Phase Two Property was calculated to be approximately 0.22 m/m with a localized groundwater flow direction towards the southeast.

The proposed redevelopment of the Phase Two Property includes the current concept for construction of one building approximately four storeys in height, with partial subgrade floors and/or utility rooms. It is understood that the buildings which currently occupy the Property will be demolished prior to redevelopment.

The Phase Two Property and all other properties within 250 m of the property boundaries are supplied by Ottawa's municipal potable water supply system. There were no identified agricultural uses and there are no wells within 250 m of the property boundaries that are intended for use as a source of water for human consumption or agriculture. As such, the designation of non-potable groundwater setting is determined to be applicable [O.Reg. 153/04, section 35].

The Phase Two Property is not situated within or adjacent to an area of natural significance and does not include any land within 30 m of an area of natural significance. The pH of the soil was analyzed as part of this Phase Two ESA and was found to range from 6.95 to 7.78. As such, the Phase Two Property is not considered to be an environmentally sensitive area [O.Reg. 153/04, section 41].

A layer of silty sand and gravel was encountered from near ground surface to 1.8 m BGS and a layer of native glacial till, consisting of silty sand and gravel, cobbles and boulders was present above the bedrock, with an approximate thickness of 1.5 m. Both of these soil types would be classified as coarse grained soil with a total thickness of approximately 3.3 m. Silty clay was encountered between the shallow silty sand and gravel and the native glacial till; the silty clay would be classified as a fine grained soil, as reported through grain size analysis in the 2023 Paterson Geotechnical Investigation and had an approximate thickness of 5.1 m. It is interpreted that greater than 1/3 of the Property has coarse grained soil. For the purposes of this Phase Two ESA, the soil conditions are considered to be coarse grained, which provides a more conservative comparison to the MECP site condition standards than the fine-grained values [O.Reg. 153/04, section 42].

Review of the drilling program and borehole/monitoring well logs completed as part of this Phase Two ESA and previous investigations was completed. It was determined that over 2/3 of

the Property has greater than 2 m of overburden soil. The Property is not considered a shallow soil property [O.Reg. 153/04, section 43.1].

The Phase Two Property does not include and does not have any land located within 30 m of a water body. The MECP site condition standards for use within 30 m of a water body do not apply [O.Reg. 153/04, section 43.1].

The full depth generic site condition standards, with non-potable groundwater, course textured soil, for residential/parkland/institutional property use, as specified in Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011 were determined to be the applicable site condition standards for the Property as part of this Phase Two ESA.

The following soil samples had exceedance concentrations reported compared to their respective Site Condition Standards, as noted in Table 7a, Table 7b and Table 7c below:

Table 7a: Soil Exceedances – Petroleum Hydrocarbons

Exceeding Parameter:			F2 PHCs (C10-C16)	F3 PHCs (C16-C34)	F4G PHCs (gravimetric)
Sample Location	MECP Table 3 Site Condition Standards		98 ug/g	300 ug/g	2800 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	-	590	3,500
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	100	310	-

Table 7b: Soil Exceedances - Metals

Exceeding Parameter:			Lead	Conductivity	Sodium Absorption Ratio
Sample Location	MECP Table 3 Site Condition Standards		120 ug/g	0.7 uS/cm	5
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH1-24	BH1-24-AU1	0.0-0.6 m BGS	220	-	-
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	200	2.8	15
	BH2-24-SS3	1.5-2.1 m BGS	-	5.4	-
	DUP2-10/29	Duplicate Sample of BH2-24-SS3	-	5.6	-
BH3-24	BH3-24-SS3	1.5-2.1 m BGS	-	6.1	-
BH4-24	BH4-24-AU1	0.0-0.6 m BGS	-	19	43

Table 7c: Soil Exceedances – Polycyclic Aromatic Hydrocarbons

Exceeding Parameter:			Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a)pyrene	Benzo(b/j) fluoranthene	Benzo(k) fluoranthene	Dibenzo(a,h) anthracene	Fluoranthene	Indeno(1,2,3-cd) pyrene
Sample Location	MECP Table 3 Site Condition Standards		0.15 ug/g	0.67 ug/g	0.5 ug/g	0.3 ug/g	0.78 ug/g	0.78 ug/g	0.1 ug/g	0.69 ug/g	0.38 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)								
BH1-23	BH1-23-SS1	0.1-0.6 m BGS	-	-	0.56	0.56	-	-	0.12	1.37	-
BH1-24	BH1-24-SS1	0.0-0.6 m BGS	-	-	0.72	0.65	0.81	-	-	1.7	0.48
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	0.18	1.3	3.3	3.2	3.9	1.6	0.59	8.1	2.2
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	-	-	-	-	-	-	-	0.74	-

All of the other soil results for the Phase Two Property are in compliance with the applicable Site Condition Standards.

The following groundwater sample (and its duplicate) results were in exceedance of the site condition standards:

- BH2-24-GW1 and DUP-11/13, collected from a screen depth of approximately 3.1-6.1 m BGS, had chloride measurements of 2,900 ug/L in both samples, compared to the site condition standard of 2,300 ug/L.

This groundwater sample was collected in a location that would have been subject to road de-icing activities with the application of salts applied to ground surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both and is suspected to exceed the site condition standard solely as a result of these activities. Based on this application and the exemption set forth in Section 49.1 of O.Reg. 153/04, the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act. Based on additional groundwater analysis in other locations at the Phase Two Property, the presence of elevated chloride appears to be isolated into localized area(s) and is not considered to have migrated or impacted the Phase Two Property groundwater quality.

All of the other groundwater samples collected as part of the 2023 LESGA and the current 2024 Phase Two ESA were in compliance with the Site Condition Standards.

The Phase Two Property (soil) is not in compliance with the site condition standards as of the certification date of November 24, 2024.

7. Conclusions

The following soil samples had exceedance concentrations reported compared to their respective Site Condition Standards, as noted in Table 8a, Table 8b and Table 8c as follows:

Table 8a: Soil Exceedances – Petroleum Hydrocarbons

Exceeding Parameter:			F2 PHCs (C10-C16)	F3 PHCs (C16-C34)	F4G PHCs (gravimetric)
Sample Location	MECP Table 3 Site Condition Standards		98 ug/g	300 ug/g	2800 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	-	590	3,500
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	100	310	-

Table 8b: Soil Exceedances - Metals

Exceeding Parameter:			Lead	Conductivity	Sodium Absorption Ratio
Sample Location	MECP Table 3 Site Condition Standards		120 ug/g	0.7 uS/cm	5
	Sample ID	Sample Depth	Reported Concentration (ug/g)		
BH1-24	BH1-24-AU1	0.0-0.6 m BGS	220	-	-
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	200	2.8	15
	BH2-24-SS3	1.5-2.1 m BGS	-	5.4	-
	DUP2-10/29	Duplicate Sample of BH2-24-SS3	-	5.6	-
BH3-24	BH3-24-SS3	1.5-2.1 m BGS	-	6.1	-
BH4-24	BH4-24-AU1	0.0-0.6 m BGS	-	19	43

Table 8c: Soil Exceedances – Polycyclic Aromatic Hydrocarbons

Exceeding Parameter:			Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a)pyrene	Benzo(b/j) fluoranthene	Benzo(k) fluoranthene	Dibenzo(a,h) anthracene	Fluoranthene	Indeno(1,2,3-cd) pyrene
Sample Location	MECP Table 3 Site Condition Standards		0.15 ug/g	0.67 ug/g	0.5 ug/g	0.3 ug/g	0.78 ug/g	0.78 ug/g	0.1 ug/g	0.69 ug/g	0.38 ug/g
	Sample ID	Sample Depth	Reported Concentration (ug/g)								
BH1-23	BH1-23-SS1	0.1-0.6 m BGS	-	-	0.56	0.56	-	-	0.12	1.37	-
BH1-24	BH1-24-SS1	0.0-0.6 m BGS	-	-	0.72	0.65	0.81	-	-	1.7	0.48
BH2-24	BH2-24-AU1	0.0-0.6 m BGS	0.18	1.3	3.3	3.2	3.9	1.6	0.59	8.1	2.2
BH3-24	BH3-24-AU1	0.0-0.6 m BGS	-	-	-	-	-	-	-	0.74	-

All of the other soil results for the Phase Two Property are in compliance with the applicable Site Condition Standards.

The following groundwater sample (and its duplicate) results were in exceedance of the site condition standards:

- BH2-24-GW1 and DUP-11/13, collected from a screen depth of approximately 3.1-6.1 m BGS, had chloride measurements of 2,900 ug/L in both samples, compared to the site condition standard of 2,300 ug/L.

This groundwater sample was collected in a location that would have been subject to road de-icing activities with the application of salts applied to ground surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both and is suspected to exceed the site condition standard solely as a result of these activities. Based on this application and the exemption set forth in Section 49.1 of O.Reg. 153/04, the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act. Based on additional groundwater analysis in other locations at the Phase Two Property, the presence of elevated chloride appears to be isolated into localized area(s) and is not considered to have migrated or impacted the Phase Two Property groundwater quality. All of the other groundwater samples collected as part of the 2023 LESGA and the current 2024 Phase Two ESA were in compliance with the Site Condition Standards.

The Phase Two Property (soil) is not in compliance with the site condition standards as of the certification date of November 24, 2024.

An environmental remediation program, including the bulk removal and off-site disposal of soil in excess of the site condition standards, is recommended for the Phase Two Property. The submission of a record of site condition will not be required since there will not be a change of land use of the Phase Two Property to a more sensitive use.

Given the scope and timeline for the proposed redevelopment and the requirements for specialized construction techniques to complete remediation of the Phase Two Property to meet the site condition standards, it is recommended that remediation be completed in conjunction with redevelopment of the Property. It should be noted that the proposed redevelopment includes excavation of approximately 1 to 3 m of surficial materials, which is expected to remove the impacted soil at the Phase Two Property.

Preparation of a soil management plan in accordance with O.Reg. 406/19 will be required as part of management of excess soil generated as part of construction activities.

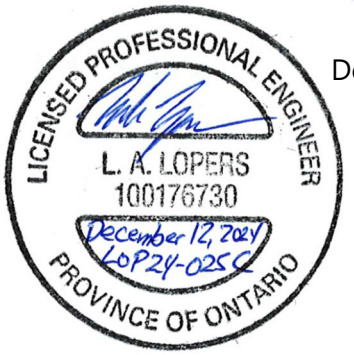
i. Signatures

The Qualified Person for this study is Mr. Luke Lopers, P. Eng. Mr. Lopers has been a Professional Engineer, registered in Ontario since 2012 and has been working on environmental site assessments since 2006. Mr. Lopers has been an author, project manager and/or peer reviewer for hundreds of Phase One ESAs and Phase Two ESAs as well as previously filed RSCs.

The reviewer for this study is Mr. Don Plenderleith, P.Eng. Mr. Plenderleith is a Professional Engineer registered in Ontario since 1994 and has authored and/or reviewed hundreds of Phase One and Two ESAs in Ontario and the rest of Canada. The qualifications of the assessor/Qualified Person and reviewer are included in Appendix G.

Sincerely,

Luke Lopers, P.Eng., QP_{ESA}



Don Plenderleith, P.Eng., QP_{ESA}

8. Limitations

The findings and conclusions of this Phase Two ESA are based on the information provided and/or reviewed as part of this study.

This Phase Two ESA has been completed with the standard of care generally expected in the industry for a study of this nature.

This Phase Two ESA has been prepared for the sole use of Ottawa Community Housing Corporation for the purposes of a due diligence assessment of the potential liabilities which may exist at the Phase Two Property. No other party is permitted to rely on the conclusions or findings of this report without the written consent of Lopers & Associates and Ottawa Community Housing Corporation

Changes to the physical setting of the Phase Two Property, Phase One Study Area and applicable regulations governing Phase One and Two Environmental Site Assessments have the potential to influence the validity of the conclusions and opinions presented in this Phase Two ESA.

9. References

Topographical Plan of Survey, Farley, Smith & Denis Surveying Ltd., on January 16, 2023.

City of Ottawa, geoOttawa mapping website, Visited March 2023 through December 2024. http://maps.ottawa.ca/geoottawa/

Google Earth, Visited March 2023 through December 2024.

"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", produced by the Ontario Ministry of the Environment, dated April 15, 2011.

"Phase One Environmental Site Assessment, Proposed Residential Re-Development, 214-224 Somerset Street East, Ottawa, Ontario", dated June 21, 2023, completed by Lopers & Associates for OCH. ("2023 Lopers Phase One Enivornmental Site Assessment")

"Limited Environmental Soil & Groundwater Assessment, Proposed Residential Re-Development, 214-224 Somerset Street East, Ottawa, ON", dated June 21, 2023, completed by Lopers & Associates for OCH. ("2023 Lopers Limited Environmental Soil & Groundwater Assessment")

"Geotechnical Investigation, Proposed Residential Development, 214 Somerset Street East, Ottawa, Ontario", dated May 2, 2023, completed by Paterson Group Inc. for OCH. ("2023 Paterson Geotechnical Investigation")

"Project Specific Designated Substance Report, 214-224 Somerset Street, Ottawa, ON", dated October 27, 2016, completed by CM3 Environmental Inc. for Read Jones Christofferson Ltd. ("2016 DSR Investigation")

"Designated Substance Survey, 214-224 Somerset Street East, Ottawa, ON", dated January 30, 2023, completed by Lopers & Associates for OCH ("2023 DSS Investigation")

Paracel Certificate of Analysis – Report # 2313385 – Soil Sample Submission March 30, 2023

BV Labs Certificate of Analysis – Report # R8394673 - Soil Sample Submission October 29, 2024

BV Labs Certificate of Analysis – # R8397239 – mSPLP Sample Submission October 29, 2024

Paracel Certificate of Analysis – # 2315005 - Groundwater Sample Submission April 6, 2024

BV Labs Certificate of Analysis – # R8412924 - Groundwater Sample Submission November 13, 2024

BV Labs Certificate of Analysis – # R8428514 - Groundwater Sample Submission November 24, 2024

10. Appendices

Appendix A – Sampling and Analysis Plan

Appendix B – Underground Utility Locates

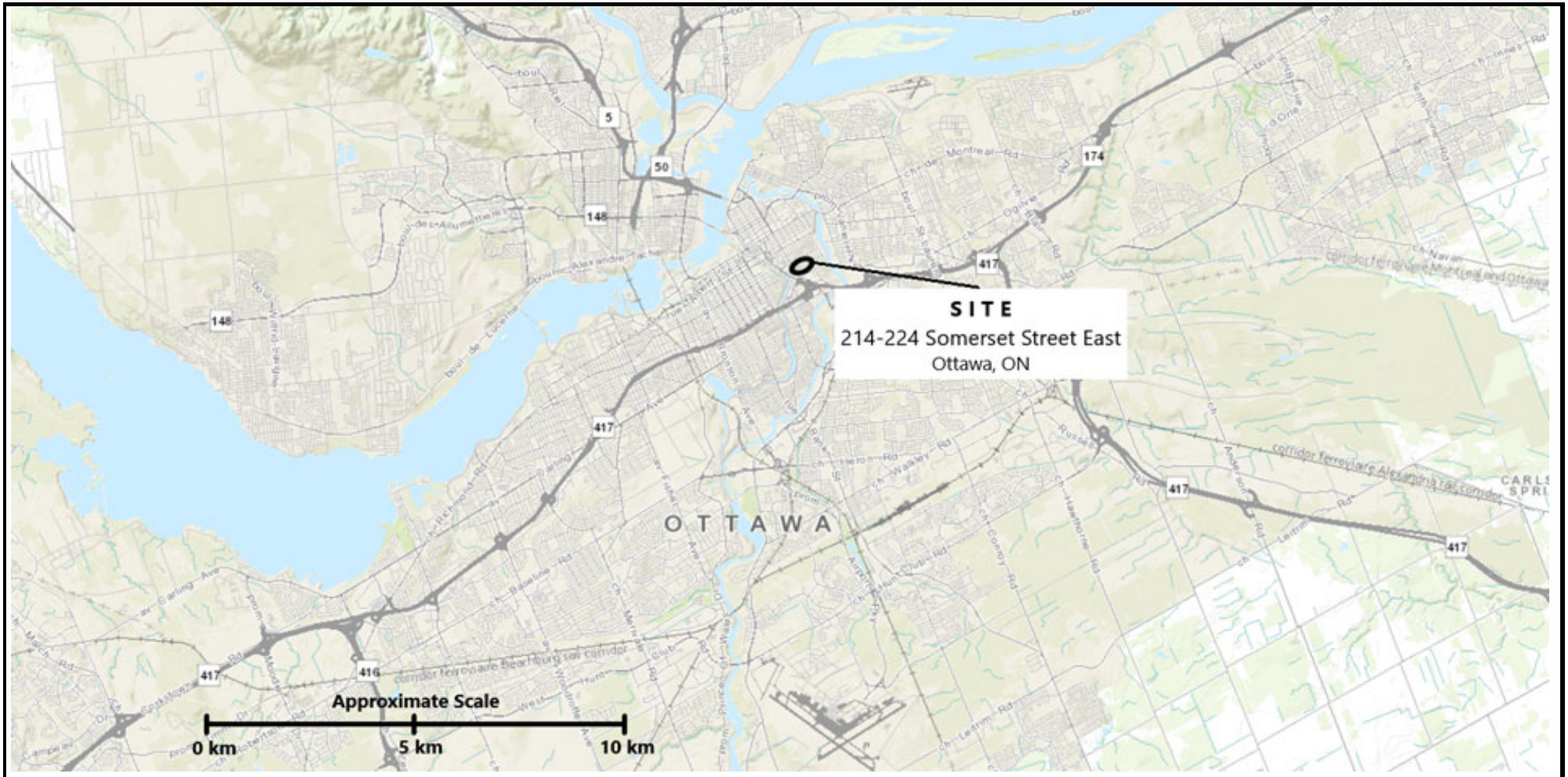
Appendix C – Borehole Logs

Appendix D – Certificates of Equipment Calibration

Appendix E – Laboratory Certificates of Analysis

Appendix F – Qualifications of Assessors

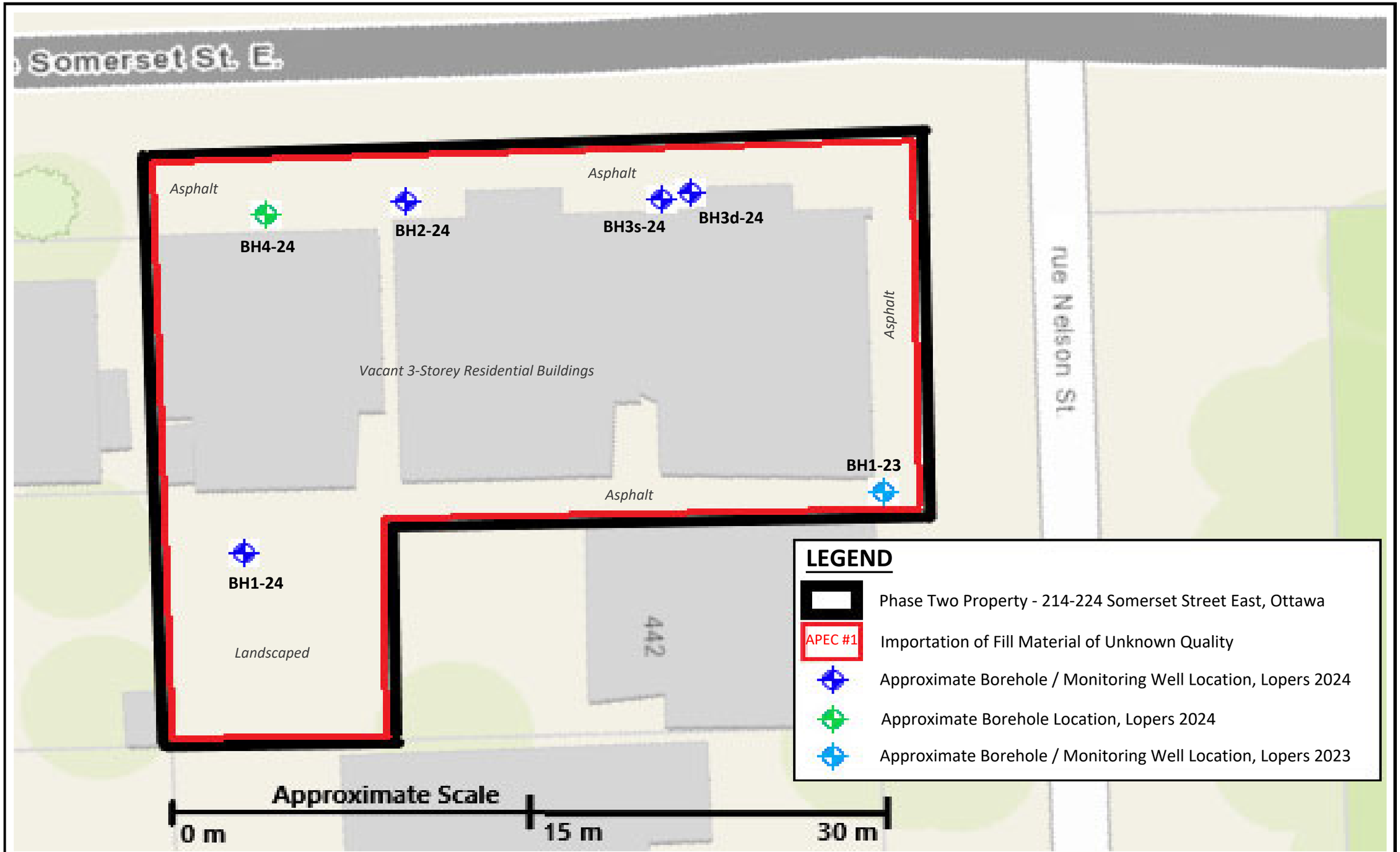
Figures



LOPERS & ASSOCIATES

Figure 1: Key Plan
Phase Two Environmental Site Assessment
214-224 Somerset Street East, Ottawa, Ontario
Ottawa Community Housing Corporation

Project Reference No:	LOP24-025C
Drawing No.:	LOP24-025C-1
Date:	December 5, 2024
Author:	L. Lopers
Source:	geoOttawa



LOPERS & ASSOCIATES

Figure 2: Site Plan
Phase Two Environmental Site Assessment
214-224 Somerset Street East, Ottawa, Ontario
Ottawa Community Housing Corporation

Project Reference No:	LOP24-025C
Drawing No.:	LOP24-025C-2
Date:	December 5, 2024
Author:	L. Lopers
Source:	geoOttawa

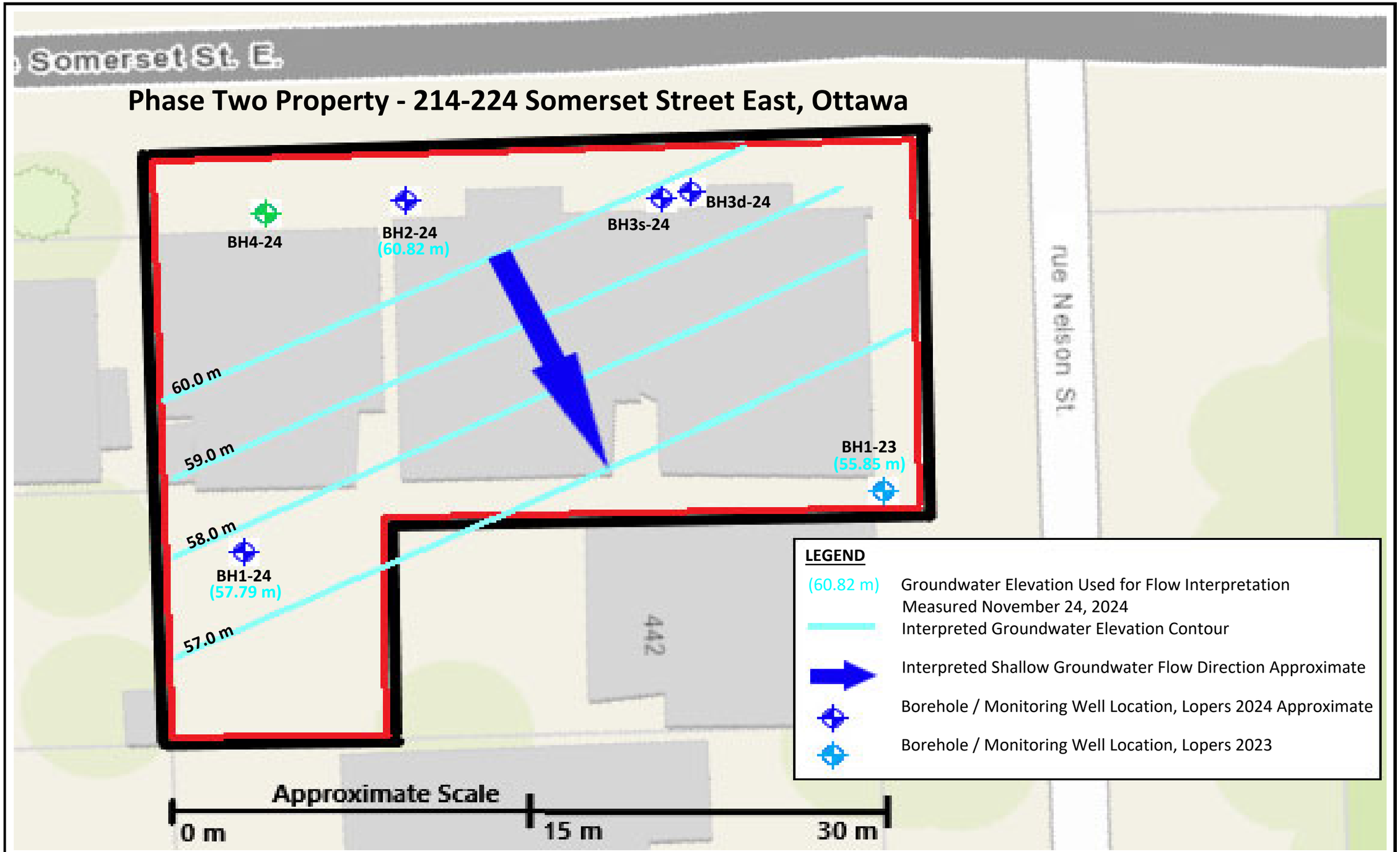


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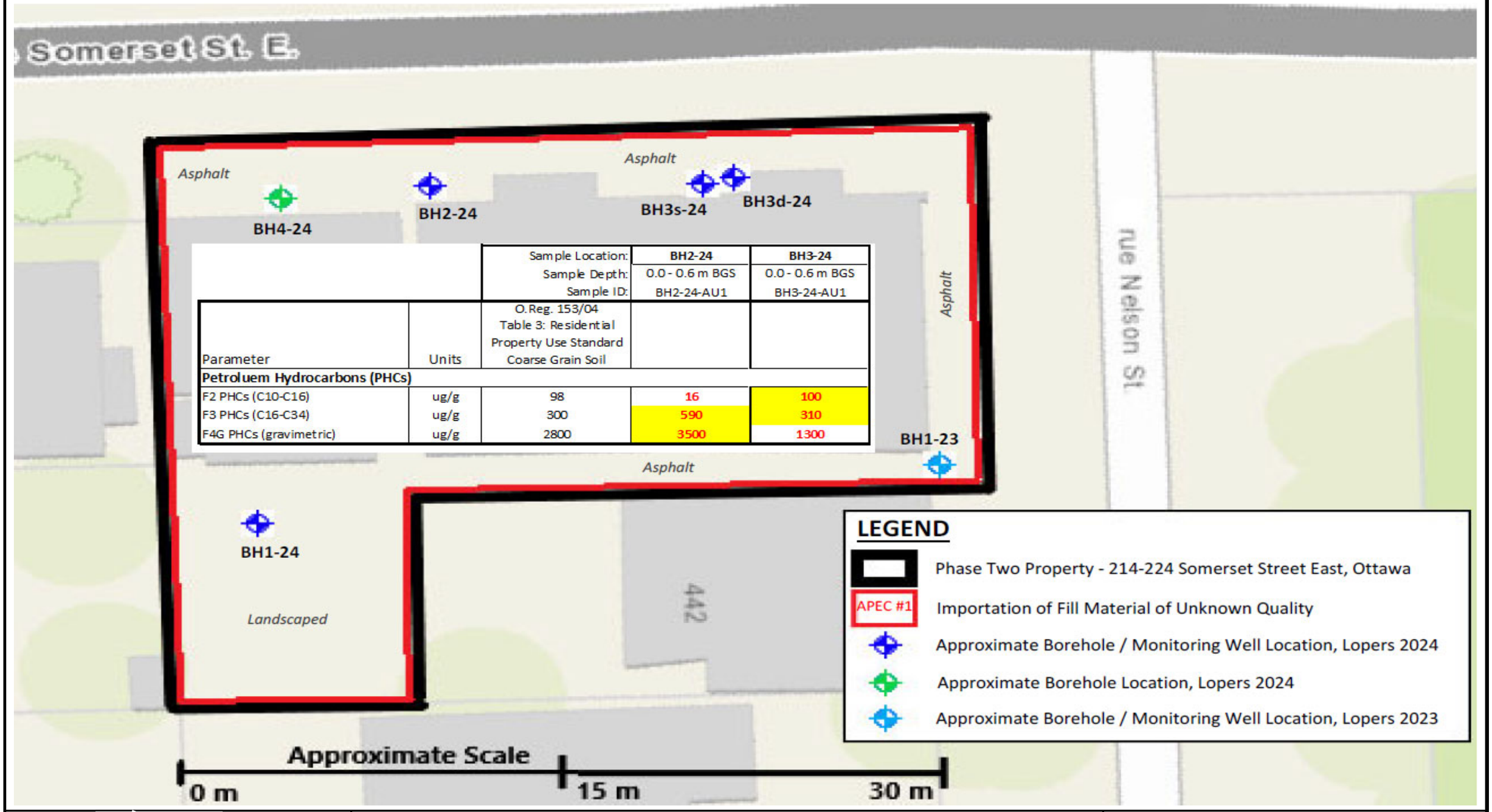
Figure 3: Groiundwater Flow Interpretation
Phase Two Environmental Site Assessment
214-224 Somerset Street East, Ottawa, Ontario
Ottawa Community Housing Corporation

Project Reference No:	LOP24-025C
Drawing No.:	LOP24-025C-3
Date:	December 10, 2024
Author:	L. Lopers
Source:	geoOttawa



		Sample Location:	BH2-24	BH3-24
		Sample Depth:	0.0 - 0.6 m BGS	0.0 - 0.6 m BGS
		Sample ID:	BH2-24-AU1	BH3-24-AU1
Parameter	Units	O.Reg. 153/04 Table 3: Residential Property Use Standard Coarse Grain Soil		
Petroluem Hydrocarbons (PHCs)				
F2 PHCs (C10-C16)	ug/g	98	16	100
F3 PHCs (C16-C34)	ug/g	300	590	310
F4G PHCs (gravimetric)	ug/g	2800	3500	1300

LEGEND

- Phase Two Property - 214-224 Somerset Street East, Ottawa
- APEC #1 — Importation of Fill Material of Unknown Quality
- Approximate Borehole / Monitoring Well Location, Lopers 2024
- Approximate Borehole Location, Lopers 2024
- Approximate Borehole / Monitoring Well Location, Lopers 2023

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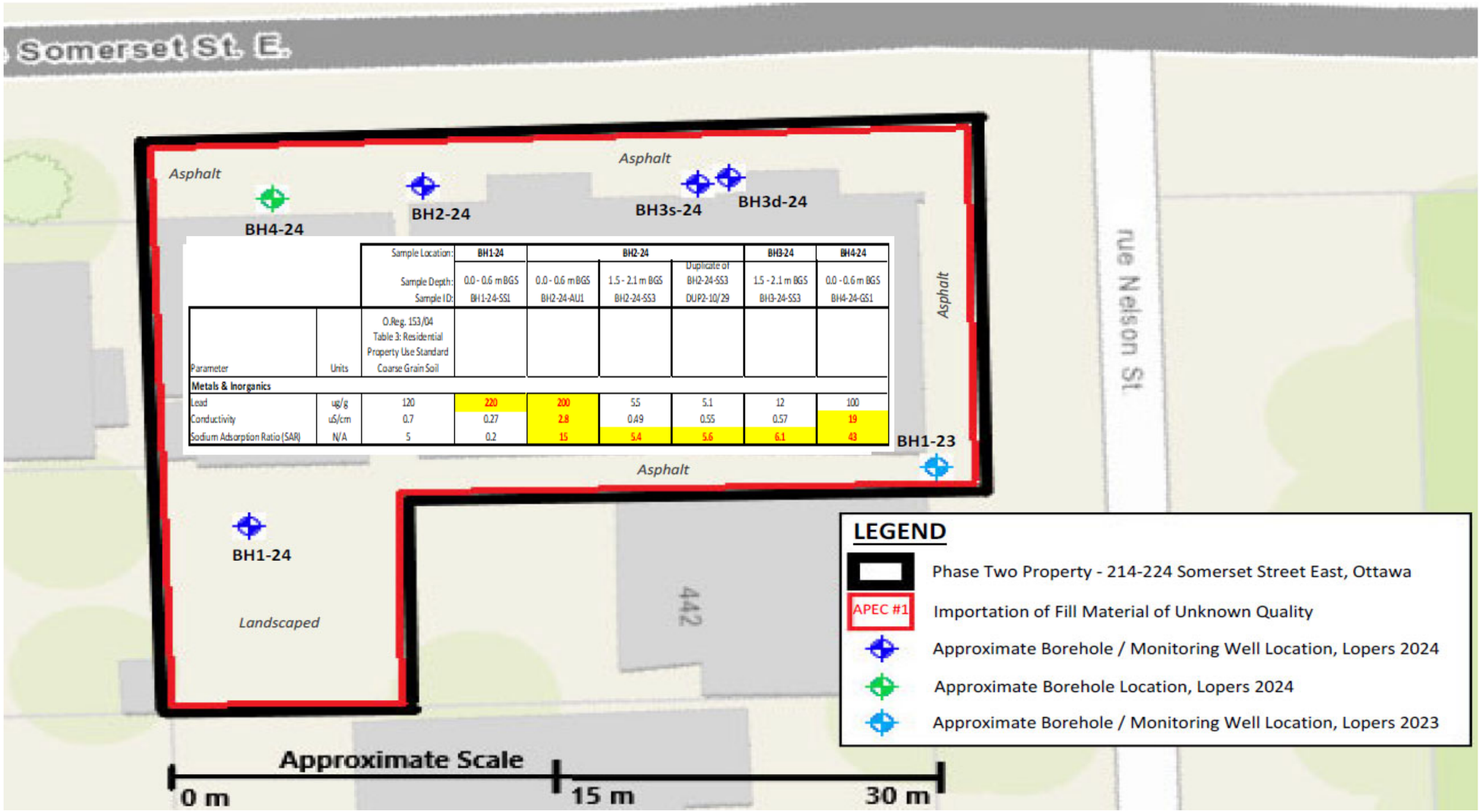
Figure 4a: Petroleum Hydrocarbons Soil Exceedances
Phase Two Environmental Site Assessment
214-224 Somerset Street East, Ottawa, Ontario
Ottawa Community Housing Corporation

Project Reference No:	LOP24-025C
Drawing No.:	LOP24-025C-4a
Date:	December 10, 2024
Author:	L. Lopers
Source:	geoOttawa



		Sample Location:	BH1-24	BH2-24			BH3-24	BH4-24
		Sample Depth:	0.0 - 0.6 m BGS	0.0 - 0.6 m BGS	1.5 - 2.1 m BGS	Duplicate of BH2-24-SS3	1.5 - 2.1 m BGS	0.0 - 0.6 m BGS
		Sample ID:	BH1-24-SS1	BH2-24-AU1	BH2-24-SS3	DUP2-10/29	BH3-24-SS3	BH4-24-GS1
Parameter	Units	O.Reg. 153/04 Table 3: Residential Property Use Standard Coarse Grain Soil						
Metals & Inorganics								
Lead	ug/g	120	220	200	5.5	5.1	12	100
Conductivity	uS/cm	0.7	0.27	2.8	0.49	0.55	0.57	19
Sodium Adsorption Ratio (SAR)	N/A	5	0.2	15	5.4	5.6	6.1	43

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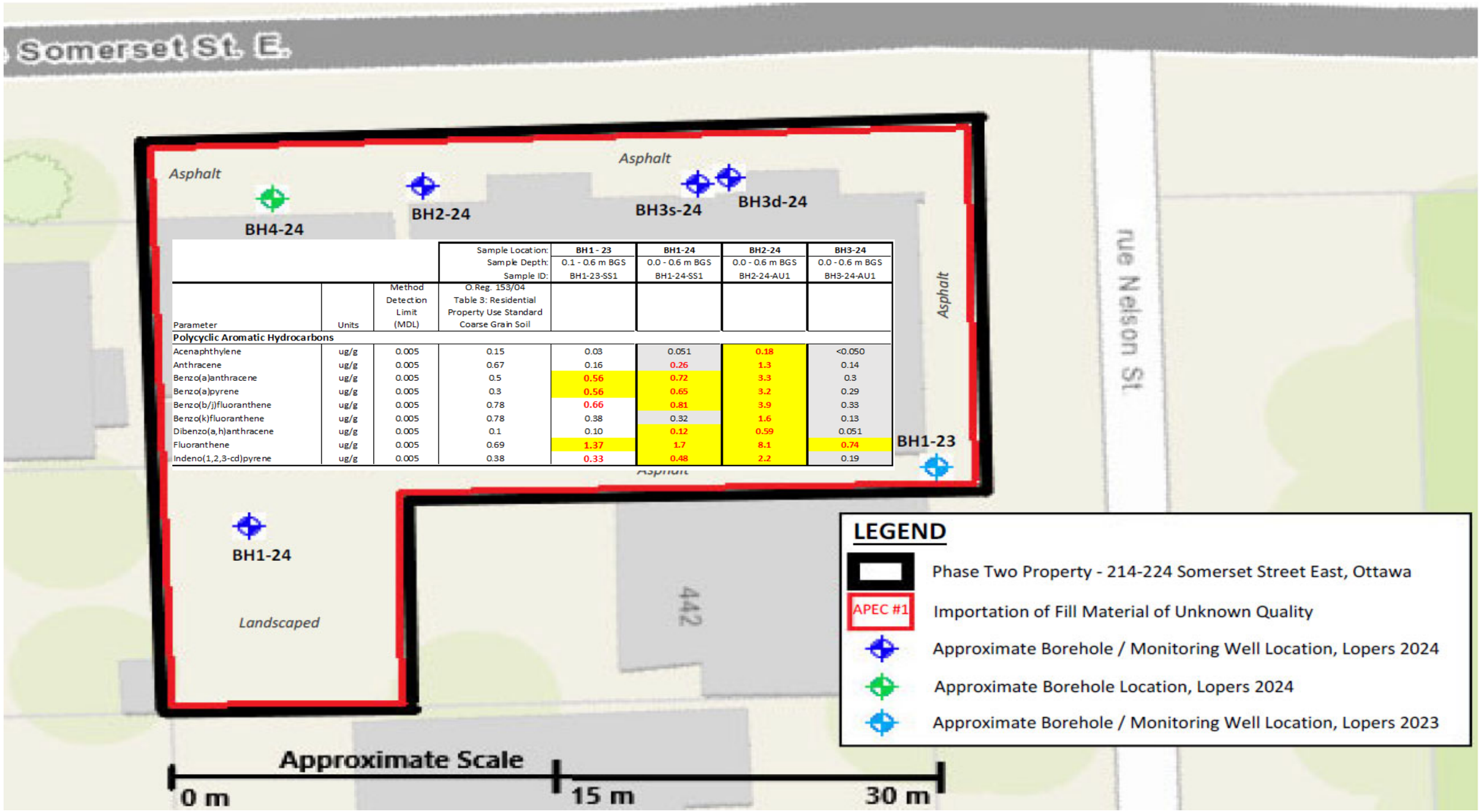
Figure 4b: Metals Soil Exceedances
Phase Two Environmental Site Assessment
214-224 Somerset Street East, Ottawa, Ontario
Ottawa Community Housing Corporation

Project Reference No:	LOP24-025C
Drawing No.:	LOP24-025C-4b
Date:	December 10, 2024
Author:	L. Lopers
Source:	geoOttawa



			Sample Location:	BH1 - 23	BH1-24	BH2-24	BH3-24
			Sample Depth:	0.1 - 0.6 m BGS	0.0 - 0.6 m BGS	0.0 - 0.6 m BGS	0.0 - 0.6 m BGS
			Sample ID:	BH1-23-SS1	BH1-24-SS1	BH2-24-AU1	BH3-24-AU1
Parameter	Units	Method Detection Limit (MDL)	O.Reg. 153/04 Table 3: Residential Property Use Standard Coarse Grain Soil				
Polycyclic Aromatic Hydrocarbons							
Acenaphthylene	ug/g	0.005	0.15	0.03	0.051	0.18	<0.050
Anthracene	ug/g	0.005	0.67	0.16	0.26	1.3	0.14
Benzo(a)anthracene	ug/g	0.005	0.5	0.56	0.72	3.3	0.3
Benzo(a)pyrene	ug/g	0.005	0.3	0.56	0.65	3.2	0.29
Benzo(b/j)fluoranthene	ug/g	0.005	0.78	0.66	0.81	3.9	0.33
Benzo(k)fluoranthene	ug/g	0.005	0.78	0.38	0.32	1.6	0.13
Dibenzo(a,h)anthracene	ug/g	0.005	0.1	0.10	0.12	0.59	0.051
Fluoranthene	ug/g	0.005	0.69	1.37	1.7	8.1	0.74
Indeno(1,2,3-cd)pyrene	ug/g	0.005	0.38	0.33	0.48	2.2	0.19

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Figure 4c: Polycyclic Aromatic Hydrocarbons Soil Exceedances
Phase Two Environmental Site Assessment
214-224 Somerset Street East, Ottawa, Ontario
Ottawa Community Housing Corporation

Project Reference No:	LOP24-025C
Drawing No.:	LOP24-025C-4c
Date:	December 10, 2024
Author:	L. Lopers
Source:	geoOttawa

Tables

Table 9: Soil Analytical Results

214-224 Somerset Street East, Ottawa, Ontario

Parameter	Units	Method Detection Limit (MDL)	O.Reg. 153/04 Table 1: Residential Property Use Standard Coarse Grain Soil	O.Reg. 153/04 Table 3: Residential Property Use Standard Coarse Grain Soil	Sample Location:	BH1 - 23	BH1-24		BH2-24				BH3-24				BH4-24
					Sample Depth:	0.1 - 0.6 m BGS	0.0 - 0.6 m BGS	3.8 - 4.4 m BGS	0.0 - 0.6 m BGS	1.5 - 2.1 m BGS	Duplicate of BH2-24-SS3	5.3 - 5.9 m BGS	0.0 - 0.6 m BGS	1.5 - 2.1 m BGS	7.6 - 8.2 m BGS	Duplicate of BH3-24-SS11	0.0 - 0.6 m BGS
					Sample Date:	March 30, 2023	28-October-2024	28-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024
					Sample ID:	BH1-23-SS1	BH1-24-SS1	BH1-24-SS6	BH2-24-AU1	BH2-24-SS3	DUP2-10/29	BH2-24-SS8	BH3-24-AU1	BH3-24-SS3	BH3-24-SS11	DUP-10/29	BH4-24-GS1
					Laborartory Sample ID:	2313385-01	AHNZ53	AHNZ54	AHNZ55	AHNZ56	AHOA08	AHNZ57	AHNZ58	AHNZ59	AHNZ60	AHNZ62	AHNZ61
Petroluem Hydrocarbons (PHCs)																	
F1 PHCs (C6-C10)	ug/g	5	25	55		<7	<10	-	<10	<10	<10	-	<10	<10	-	-	-
F2 PHCs (C10-C16)	ug/g	10	10	98		<40	<7.0	-	16	<7.0	<7.0	-	100	<7.0	-	-	-
F3 PHCs (C16-C34)	ug/g	50	240	300		236	96	-	590	<50	<50	-	310	<50	-	-	-
F4 PHCs (C34-C50)	ug/g	50	120	2800		397	<50	-	1100	<50	<50	-	330	<50	-	-	-
F4G PHCs (gravimetric)	ug/g	50	120	2800		350		-	3500			-	1300		-	-	-
Volatile Organic Compounds (VOCs) including Benzene, Toluene, Ethylbenzene and Xylenes (BTEXs)																	
Acetone	ug/g	0.49	0.5	16		-	-	<0.49	-	-	-	<0.49	-	-	<0.49	<0.49	-
Benzene	ug/g	0.006	0.02	0.21		<0.02	<0.02	<0.0060	<0.02	<0.02	<0.02	<0.0060	<0.02	<0.02	<0.0060	<0.0060	-
Bromodichloromethane	ug/g	0.04	0.05	13		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Bromoform	ug/g	0.04	0.05	0.27		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Bromomethane	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Carbon Tetrachloride	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Chlorobenzene	ug/g	0.04	0.05	2.4		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Chloroform	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Dibromochloromethane	ug/g	0.04	0.05	9.4		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,2-Dichlorobenzene	ug/g	0.04	0.05	3.4		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,3-Dichlorobenzene	ug/g	0.04	0.05	4.8		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,4-Dichlorobenzene	ug/g	0.04	0.05	0.083		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,1-Dichloroethane	ug/g	0.04	0.05	3.5		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,2-Dichloroethane	ug/g	0.049	0.05	0.05		-	-	<0.049	-	-	-	<0.049	-	-	<0.049	<0.049	-
1,1-Dichloroethylene	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Cis-1,2-Dichloroethylene	ug/g	0.04	0.05	3.4		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Trans-1,2-Dichloroethylene	ug/g	0.04	0.05	0.084		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,2-Dichloropropane	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Cis-1,3-Dichloropropylene	ug/g	0.03	NV	NV		-	-	<0.030	-	-	-	<0.030	-	-	<0.030	<0.030	-
Trans-1,3-Dichloropropylene	ug/g	0.04	NV	NV		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Ethylbenzene	ug/g	0.01	0.05	2		<0.050	<0.02	<0.010	<0.02	<0.02	<0.02	<0.010	<0.02	<0.02	<0.010	<0.010	-
Ethylene Dibromide	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Methyl Ethyl Ketone	ug/g	0.4	0.5	16		-	-	<0.40	-	-	-	<0.40	-	-	<0.40	<0.40	-
Methylene Chloride	ug/g	0.049	0.05	0.1		-	-	<0.049	-	-	-	<0.049	-	-	<0.049	<0.049	-
Methyl Isobutyl Ketone	ug/g	0.4	0.5	1.7		-	-	<0.40	-	-	-	<0.40	-	-	<0.40	<0.40	-
Methyl-t-Butyl Ether	ug/g	0.04	0.05	0.75		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Styrene	ug/g	0.04	0.05	0.7		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	0.058		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,1,2,2-Tetrachloroethane	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Toluene	ug/g	0.02	0.2	2.3		<0.050	<0.02	<0.020	0.022	<0.02	<0.02	<0.020	0.024	<0.02	<0.020	<0.020	-
Tetrachloroethylene	ug/g	0.04	0.05	0.28		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,1,1-Trichloroethane	ug/g	0.04	0.05	0.38		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,1,2-Trichloroethane	ug/g	0.04	0.05	0.05		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Trichloroethylene	ug/g	0.01	0.05	0.061		-	-	<0.010	-	-	-	<0.010	-	-	<0.010	<0.010	-
Vinyl Chloride	ug/g	0.019	0.02	0.02		-	-	<0.019	-	-	-	<0.019	-	-	<0.019	<0.019	-
m-Xylene & p-Xylene	ug/g	0.02	NV	NV		<0.050	<0.040	<0.020	<0.040	<0.040	<0.040	<0.020	0.043	<0.040	<0.020	<0.020	-
o-Xylene	ug/g	0.02	NV	NV		<0.050	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.038	<0.020	<0.020	<0.020	-
Total Xylenes	ug/g	0.02	0.05	3.1		<0.050	<0.040	<0.020	<0.040	<0.040	<0.040	<0.020	0.081	<0.040	<0.020	<0.020	-
Dichlorodifluoromethane	ug/g	0.04	0.05	16		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Hexane(n)	ug/g	0.04	0.05	2.8		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
Trichlorofluoromethane	ug/g	0.04	0.05	4		-	-	<0.040	-	-	-	<0.040	-	-	<0.040	<0.040	-
1,3-Dichloropropene (cis + trans)	ug/g	0.05	0.05	0.05		-	-	<0.050	-	-	-	<0.050	-	-	<0.050	<0.050	-

NV - No value listed in MECP site condition standards

- - Not Analyzed

ND - Not detected above laboratory method detection limits

Exceeds MECP background standards

Exceeds MECP site condition standards

Table 9: Soil Analytical Results

214-224 Somerset Street East, Ottawa, Ontario

Parameter	Units	Method Detection Limit (MDL)	O.Reg. 153/04 Table 1: Residential Property Use Standard Coarse Grain Soil	O.Reg. 153/04 Table 3: Residential Property Use Standard Coarse Grain Soil	Sample Location: BH1 - 23	BH1-24		BH2-24				BH3-24				BH4-24
					Sample Depth: 0.1 - 0.6 m BGS	0.0 - 0.6 m BGS	3.8 - 4.4 m BGS	0.0 - 0.6 m BGS	1.5 - 2.1 m BGS	Duplicate of BH2-24-SS3	5.3 - 5.9 m BGS	0.0 - 0.6 m BGS	1.5 - 2.1 m BGS	7.6 - 8.2 m BGS	Duplicate of BH3-24-SS11	0.0 - 0.6 m BGS
					Sample Date: March 30, 2023	28-October-2024	28-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024	29-October-2024
					Sample ID: BH1-23-SS1	BH1-24-SS1	BH1-24-SS6	BH2-24-AU1	BH2-24-SS3	DUP2-10/29	BH2-24-SS8	BH3-24-AU1	BH3-24-SS3	BH3-24-SS11	DUP-10/29	BH4-24-GS1
					Laborartory Sample ID: 2313385-01	AHNZ53	AHNZ54	AHNZ55	AHNZ56	AHOA08	AHNZ57	AHNZ58	AHNZ59	AHNZ60	AHNZ62	AHNZ61
Polycyclic Aromatic Hydrocarbons																
Acenaphthene	ug/g	0.005	0.072	7.9	0.05	0.11	-	0.48	<0.0050	<0.0050	-	0.052	<0.0050	-	-	-
Acenaphthylene	ug/g	0.005	0.093	0.15	0.03	0.051	-	0.18	<0.0050	<0.0050	-	<0.050	<0.0050	-	-	-
Anthracene	ug/g	0.005	0.16	0.67	0.16	0.26	-	1.3	<0.0050	<0.0050	-	0.14	0.0089	-	-	-
Benzo(a)anthracene	ug/g	0.005	0.36	0.5	0.56	0.72	-	3.3	<0.0050	<0.0050	-	0.3	0.042	-	-	-
Benzo(a)pyrene	ug/g	0.005	0.3	0.3	0.56	0.65	-	3.2	<0.0050	<0.0050	-	0.29	0.044	-	-	-
Benzo(b/j)fluoranthene	ug/g	0.005	0.47	0.78	0.66	0.81	-	3.9	<0.0050	<0.0050	-	0.33	0.046	-	-	-
Benzo(ghi)perylene	ug/g	0.005	0.68	6.6	0.32	0.41	-	1.9	<0.0050	<0.0050	-	0.17	0.024	-	-	-
Benzo(k)fluoranthene	ug/g	0.005	0.48	0.78	0.38	0.32	-	1.6	<0.0050	<0.0050	-	0.13	0.019	-	-	-
Chrysene	ug/g	0.005	2.8	7	0.51	0.56	-	2.7	<0.0050	<0.0050	-	0.24	0.033	-	-	-
Dibenzo(a,h)anthracene	ug/g	0.005	0.1	0.1	0.10	0.12	-	0.59	<0.0050	<0.0050	-	0.051	0.0069	-	-	-
Fluoranthene	ug/g	0.005	0.56	0.69	1.37	1.7	-	8.1	<0.0050	<0.0050	-	0.74	0.079	-	-	-
Fluorene	ug/g	0.005	0.12	62	0.05	0.14	-	0.64	<0.0050	<0.0050	-	0.053	<0.0050	-	-	-
Indeno(1,2,3-cd)pyrene	ug/g	0.005	0.23	0.38	0.33	0.48	-	2.2	<0.0050	<0.0050	-	0.19	0.027	-	-	-
1-Methylnaphthalene	ug/g	0.005	0.59	0.99	<0.02	0.016	-	0.16	<0.0050	<0.0050	-	<0.050	<0.0050	-	-	-
2-Methylnaphthalene	ug/g	0.005	0.59	0.99	<0.02	0.015	-	0.2	<0.0050	<0.0050	-	<0.050	<0.0050	-	-	-
Naphthalene	ug/g	0.005	0.09	0.6	<0.01	0.017	-	0.39	<0.0050	<0.0050	-	<0.050	<0.0050	-	-	-
Phenanthrene	ug/g	0.005	0.69	6.2	0.64	1.2	-	6	<0.0050	<0.0050	-	0.51	0.023	-	-	-
Pyrene	ug/g	0.005	1	78	1.12	1.3	-	6.4	<0.0050	<0.0050	-	0.63	0.078	-	-	-
Methylnaphthalene, 2-(1-)	ug/g	0.01	0.59	0.99	<0.04	0.032	-	0.36	<0.0071	<0.0071	-	<0.0071	<0.0071	-	-	-
Metals & Inorganics																
Antimony	ug/g	0.10	1.3	7.5	<1.0	1.7	-	0.89	<0.20	<0.20	-	<0.20	<0.20	-	-	0.46
Arsenic	ug/g	0.10	18	18	3.3	3.6	-	3	1.4	1.4	-	3.1	<1.0	-	-	1.2
Barium	ug/g	0.50	220	390	156	280	-	140	200	210	-	120	150	-	-	180
Beryllium	ug/g	0.10	2.5	4	<0.5	0.6	-	0.28	0.62	0.69	-	0.29	0.42	-	-	0.34
Boron, Hot Water Soluable	ug/g	0.10	NV	1.5	1.22	0.42	-	0.61	0.12	0.13	-	0.34	0.34	-	-	0.81
Cadmium	ug/g	0.020	1.2	1.2	<0.5	0.4	-	0.44	<0.10	<0.10	-	0.11	<0.10	-	-	0.13
Chromium	ug/g	0.50	70	160	41.2	76	-	39	63	70	-	25	55	-	-	38
Chromium (VI)	ug/g	0.10	0.66	8	<0.10	0.34	-	0.36	0.28	0.47	-	<0.18	0.27	-	-	0.23
Cobalt	ug/g	0.10	21	22	9.6	16	-	6.9	16	15	-	7.8	12	-	-	8.7
Copper	ug/g	0.50	92	140	23.9	43	-	33	28	29	-	17	28	-	-	23
Lead	ug/g	0.50	120	120	36.6	220	-	200	5.5	5.1	-	35	12	-	-	100
Mercury	ug/g	0.0050	0.27	0.27	0.0457	0.074	-	0.25	<0.050	<0.050	-	<0.050	<0.050	-	-	0.22
Molybdenum	ug/g	0.10	2	6.9	1.3	0.6	-	3.4	<0.50	<0.50	-	1.2	<0.50	-	-	<0.50
Nickel	ug/g	0.50	82	100	25.8	46	-	20	37	39	-	18	31	-	-	22
Selenium	ug/g	0.20	1.5	2.4	<1.0	<0.50	-	<0.50	<0.50	<0.50	-	<0.50	<0.50	-	-	<0.50
Silver	ug/g	0.10	0.5	20	<0.3	<0.20	-	<0.20	<0.20	<0.20	-	<0.20	<0.20	-	-	<0.20
Thallium	ug/g	0.050	1	1	<1.0	0.31	-	0.15	0.3	0.28	-	0.18	0.2	-	-	0.17
Vanadium	ug/g	0.20	86	86	37.9	73	-	36	73	74	-	29	61	-	-	40
Zinc	ug/g	2.0	290	340	59.8	210	-	180	80	83	-	53	65	-	-	90
pH	pH Units	0.1	NV	NV	<1.0	7.56	-	7.78	6.95	6.96	-	7.88	7.33	-	-	7.68
Conductivity	uS/cm	5	0.57	0.7	-	0.27	-	2.8	0.49	0.55	-	0.49	0.57	-	-	19
Sodium Adsorption Ratio (SAR)	N/A	0..1	2.4	5	-	0.2	-	15	5.4	5.6	-	3.9	6.1	-	-	43
Cyanide, free	ug/g	0.05	0.051	0.051	-	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	-	0.02
Boron	ug/g	5.0	36	120	6.3	<5.0	-	5.7	<5.0	<5.0	-	<5.0	<5.0	-	-	<5.0
Uranium	ug/g	0.050	2.5	23	-	0.65	-	0.48	0.75	0.72	-	0.59	0.68	-	-	0.46

NV - No value listed in MECP site condition standards

- - Not Analyzed

ND - Not detected above laboratory method detection limits

Exceeds MECP background standards

Exceeds MECP site condition standards

Table 11: Groundwater Analytical Results

214-224 Somerset Street East, Ottawa, Ontario

Parameter	Units	Method Detection Limit (MDL)	Table 3: Residential Property Use Standard Coarse Grain Soil	Sample Location: **BH1 - 23** / Well Screen Depth: 2.3 - 5.3 m BGS / Sample Date: April 6, 2023 / Sample ID: BH1-23-GW1 / Laboratory Sample ID: 2315005-01	**BH1-23** / 13-November-2024 / BH1-23-GW2 / AIUW64	**BH1-24** / 13-November-2024 / BH1-24-GW1 / AIUW65	**BH2-24** / 13-November-2024 / BH2-24-GW1 / AIUW66	Duplicate of BH2-24-GW1 / 13-November-2024 / DUP-11/13 / AIUW67	**BH3d-24** / November 24, 2024 / BH3d-24-GW1 / AJXP76	**TRIP BLANK** / 13-November-2024 / TRIP BLANK / AIUW68	**TRIP BLANK** / November 24, 2024 / TRIP BLANK / AJXP77
Petroluem Hydrocarbons (PHCs)											
F1 PHCs (C6-C10)	ug/L	25	750	ND	-	-	<25	<25	<25	-	-
F2 PHCs (C10-C16)	ug/L	100	150	ND	-	-	<90	<90	<90	-	-
F3 PHCs (C16-C34)	ug/L	100	500	ND	-	-	<200	<200	<200	-	-
F4 PHCs (C34-C50)	ug/L	100	500	ND	-	-	<200	<200	<200	-	-
Volatile Organic Compounds (VOCs)											
Acetone	ug/L	5	130000	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	0.5	44	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	0.5	85000	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	0.5	380	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.5	5.6	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/L	0.2	0.79	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.5	630	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	0.5	2.4	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	0.5	82000	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.2	4600	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	9600	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.5	8	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.5	320	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	1	1.6	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/L	0.5	1.6	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethylene	ug/L	0.5	1.6	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	ug/L	0.5	1.6	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	0.5	16	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropylene	ug/L	0.5	NV	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropylene	ug/L	5	NV	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	0.5	2300	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	ug/L	0.5	0.25	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Ethyl Ketone	ug/L	0.5	470000	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	0.5	610	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ug/L	0.5	140000	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-t-Butyl Ether	ug/L	1	190	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	5	1300	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	5	3.3	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	2	3.2	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	0.5	18000	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/L	0.5	1.6	**0.8**	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	0.5	640	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	4.7	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/L	0.5	1.6	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ug/L	0.5	0.5	ND	ND	ND	ND	ND	ND	ND	ND
m-Xylene & p-Xylene	ug/L	0.5	NV	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	0.5	NV	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	1	4200	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	ND	ND	ND	ND	ND	ND	ND
Hexane(n)	ug/L	0.5	51	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	0.5	2500	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene (cis + trans)	ug/L	0.5	5.2	ND	ND	ND	ND	ND	ND	ND	ND
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	ug/L	0.05	600	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Acenaphthylene	ug/L	0.05	1.8	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Anthracene	ug/L	0.05	2.4	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Benzo(a)anthracene	ug/L	0.05	4.7	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Benzo(a)pyrene	ug/L	0.009	0.81	ND	-	<0.0090	<0.0090	<0.0090	<0.0090	-	-
Benzo(b/j)fluoranthene	ug/L	0.05	0.75	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Benzo(ghi)perylene	ug/L	0.05	0.2	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Benzo(k)fluoranthene	ug/L	0.05	0.4	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Chrysene	ug/L	0.05	1	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Dibenzo(a,h)anthracene	ug/L	0.05	0.52	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Fluoranthene	ug/L	0.05	130	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Fluorene	ug/L	0.05	400	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Indeno(1,2,3-cd)pyrene	ug/L	0.05	0.2	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
1-Methylnaphthalene	ug/L	0.05	1800	ND	-	0.076	<0.050	<0.050	<0.050	-	-
2-Methylnaphthalene	ug/L	0.05	1800	ND	-	0.16	<0.050	<0.050	<0.050	-	-
Naphthalene	ug/L	0.05	1400	ND	-	0.14	<0.050	0.051	<0.050	-	-
Phenanthrene	ug/L	0.03	580	ND	-	<0.030	<0.030	<0.030	<0.030	-	-
Pyrene	ug/L	0.05	68	ND	-	<0.050	<0.050	<0.050	<0.050	-	-
Methylnaphthalene, 2-(1-)	ug/L	0.01	1800	ND	-	0.23	<0.071	<0.071	<0.071	-	-
Metals & Inorganics											
Antimony	ug/L	0.5	20000	ND	-	<0.50	<0.50	<0.50	-	-	-
Arsenic	ug/L	1	1900	ND	-	2.4	<1.0	<1.0	-	-	-
Barium	ug/L	1	29000	110	-	130	200	200	-	-	-
Beryllium	ug/L	0.5	67	ND	-	<0.40	<0.40	<0.40	-	-	-
Boron	ug/L	10	45000	50	-	60	29	29	-	-	-
Cadmium	ug/L	0.1	2.7	ND	-	<0.090	0.12	0.24	-	-	-
Chromium	ug/L	1	810	ND	-	<5.0	<5.0	<5.0	-	-	-
Chromium (VI)	ug/L	10	140	ND	-	<0.50	<1.0	<1.0	-	-	-
Cobalt	ug/L	0.5	66	ND	-	<0.50	0.75	0.7	-	-	-
Copper	ug/L	0.5	87	2	-	<0.90	1.8	1.8	-	-	-
Lead	ug/L	0.1	25	ND	-	<0.50	<0.50	<0.50	-	-	-
Mercury	ug/L	0.1	0.29	ND	-	<0.10	<0.10	<0.10	-	-	-
Molybdenum	ug/L	0.5	9200	0.8	-	13	7.9	7.9	-	-	-
Nickel	ug/L	1	490	3	-	<1.0	4	3.9	-	-	-
Selenium	ug/L	1	2300000	ND	-	29000	1400000	1400000	-	-	-
Silver	ug/L	0.1	63	ND	-	<2.0	<2.0	<2.0	-	-	-
Thallium	ug/L	0.1	1.5	ND	-	<0.090	<0.090	<0.090	-	-	-
Uranium	ug/L	0.1	510	1.4	-	<0.050	<0.050	<0.050	-	-	-
Vanadium	ug/L	0.5	250	2.5	-	0.77	1.4	1.7	-	-	-
Zinc	ug/L	5	1100	ND	-	<5.0	<5.0	<5.0	-	-	-
Cyanide, free	ug/L	2	66	ND	-	<1	<1	<1	-	-	-
Chloride	mg/L	1,000	2,300	445	-	28	2,900	2,900	-	-	-
Uranium	ug/L	0	420	-	-	3	4	4	-	-	-
pH	pH Units	0.1	NV	7.5	-	-	-	-	-	-	-

NV - No value listed in MECP site condition standards

- - Not Analyzed

ND - Not detected above laboratory method detection limits

Exceeds MECP site condition standards

Table 10: Leachate Analytical Results

214-224 Somerset Street East, Ottawa, Ontario

			Sample Location:	BH2-24 & BH3-24
			Sample Depth:	0.0 - 0.6 m BGS
			Sample Date:	October 29, 2024
			Sample ID:	mSPLP
			Laborartory Sample ID:	AHOA09
Parameter	Units	Method Detection Limit (MDL)	O.Reg. 406/19 Table 3.1: Leachate Residential Property Use Standard	
mSPLP Leachate VOCs				
Bis(2-chloroethyl)ether	ug/L	2	NV	<2.0
Bis(2-chloroisopropyl)ether	ug/L	2	NV	<2.0
Bromomethane	ug/L	0.4	0.5	<0.40
Carbon Tetrachloride	ug/L	0.19	0.2	<0.19
Chloroaniline p-	ug/L	5	NV	<5.0
Chloroform	ug/L	0.9	NV	<0.90
Dichlorobenzene, 1,2-	ug/L	0.4	NV	<0.40
Dichlorobenzene, 1,4-	ug/L	0.4	NV	<0.40
Dichlorobenzidine, 3,3'-	ug/L	0.4	NV	<0.40
Dichloroethane, 1,1-	ug/L	0.4	NV	<0.40
Dichloroethane, 1,2-	ug/L	0.4	NV	<0.40
Dichloroethylene, 1,1-	ug/L	0.4	0.5	<0.40
Dichloroethylene, 1,2-cis-	ug/L	0.4	NV	<0.40
Dichloroethylene, 1,2-trans-	ug/L	0.4	0.5	<0.40
Dichloropropane, 1,2-	ug/L	0.4	NV	<0.40
Dichloropropene,1,3-	ug/L	0.42	NV	<0.42
Diethyl Phthalate	ug/L	1	2	<1.0
Dimethylphthalate	ug/L	1	2	<1.0
Dinitrophenol, 2,4-	ug/L	5	NV	<5.0
Dinitrotoluene, 2,4 & 2,6-	ug/L	4.2	NV	<4.2
Ethylene dibromide	ug/L	0.19	0.2	<0.19
Tetrachloroethane, 1,1,1,2-	ug/L	0.4	NV	<0.40
Tetrachloroethane, 1,1,2,2-	ug/L	0.4	NV	<0.40
Tetrachloroethylene	ug/L	0.4	0.5	<0.40
Trichloroethane, 1,1,2-	ug/L	0.4	NV	<0.40
Trichloroethylene	ug/L	0.4	0.5	<0.40
Trichlorophenol, 2,4,6-	ug/L	0.7	NV	<0.70
mSPLP Leachate Metals				
Antimony	ug/L	0.5	NV	<0.5
Arsenic	ug/L	1	NV	<1
Barium	ug/L	5	4600	12
Beryllium	ug/L	0.5	11	<0.5
Boron (total)	ug/L	10	NV	24
Cadmium	ug/L	0.1	NV	<0.1
Chromium Total	ug/L	5	130	<5
Cobalt	ug/L	0.5	10	<0.5
Copper	ug/L	1	14	2
Lead	ug/L	0.5	NV	<0.5
Molybdenum	ug/L	1	NV	1
Nickel	ug/L	1	78	<1
Selenium	ug/L	2	10	<2
Silver	ug/L	0.1	0.3	<0.1
Thallium	ug/L	0.05	NV	<0.05
Uranium	ug/L	0.1	66	<0.1
Vanadium	ug/L	1	NV	19
Zinc	ug/L	5	180	<5

NV - No value listed in MECP site condition standards

Appendix A

Sampling and Analysis Plan

LOPERS & ASSOCIATES

Sampling and Analysis Plan

214-224 Somerset Street East
Ottawa, Ontario

Prepared for:

Ottawa Community Housing Corporation

10/11/2024

Table of Contents

1. Background

Lopers & Associates (Lopers) was retained by Ottawa Community Housing Corporation (OCH) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the commercial property with Civic address No. 214-224 Somerset Street East, Ottawa, Ontario ("Phase Two Property", "Property" or "Site").

Lopers has previously completed a Phase One Environmental Site Assessment (Phase One ESA) (Reference No. LOP23-025B, dated June 21, 2023) for OCH at the Property. The Phase One ESA identified the presence of two potentially contaminating activities (PCAs) at the Property which were interpreted to represent areas of potential environmental concern (APECs). There was evidence of non-native fill material observed during the subsurface drilling and sampling, completed as part of the 2023 Limited Environmental Soil and Groundwater Assessment (LESGA) and geotechnical investigation. The presence of imported fill material is suspected at the Phase Two Property and is associated with O.Reg. 153/04 PCA: Importation of fill material of unknown quality, which represents PCA #1 and has been interpreted as APEC #1 for the Phase Two Property.

Based on the identification of APECs at the Phase One Property, it was recommended that a Phase Two Environmental Site Assessment Report be completed to provide documentation that the Property meets the soil and groundwater quality standards applicable to its future use.

The scope of work for the Phase Two ESA included drilling six boreholes at the Phase Two Property. Five of the boreholes were instrumented with groundwater monitoring wells with screens installed in the overburden. Additional excess soil characterization sampling and analysis was completed concurrently with this Phase Two ESA, for future planning purposes.

In the event that additional contaminants of APECs are identified during the drilling or sampling fieldwork, additional scope of work will be discussed with OCH to complete the Phase Two ESA.

2. Planning Site Investigation - Specific Objectives

The following are the specific objectives for planning a site investigation of the Phase Two Environmental Site Assessment, as defined in O.Reg. 153/04.

1. To plan an investigation that will achieve the general objectives of a Phase Two Environmental Site Assessment,

i. through the use of an appropriate and complete information base concerning the Phase Two Property, and

ii. through the conduct of an investigation based both on information obtained before the Phase Two Environmental Site Assessment begins and on the incorporation of information obtained during the Phase Two Environmental Site Assessment.

2. To develop a sampling and analysis plan that will adequately assess all areas of the Phase Two Property where contaminants may be present in land or water on, in or under the Property.

3. To develop a quality assurance program that is designed to effectively limit errors and bias in sampling and analysis through implementation of assessment and control measures that will ensure data are useful, appropriate and accurate in the determination of whether the Phase Two Property, or any record of site condition (RSC) property within it, meets applicable site condition standards and any standards specified in a risk assessment.

3. Underground Utility Service Locates

Prior to completing the Phase Two ESA field investigation activities, public underground locates will be coordinated through Ontario One Call. As it is understood that the Site is developed with a commercial place and that no privately owned underground services or infrastructure drawings are available, therefore private locates will also be completed in the proposed drilling locations.

The locations of the proposed boreholes will be reviewed in relation to the public underground locates and locations will be modified accordingly if conflicts exist between any location or if the location is in close proximity to an active underground service.

A copy of the public underground locates will be retained by Lopers' field personnel during all excavation components of the fieldwork.

4. Planning Site Investigation - Specific Requirements

The qualified person has ensured the following requirements were met in planning a site investigation. The Phase One conceptual site model for the Phase One Environmental Site Assessment report was used in conjunction with other information in determining:

i. Media for Investigation

Soil and groundwater sampling and analysis for the purpose of assessing environmental quality will be completed as part of the Phase Two ESA.

There are no surface water bodies at the Phase Two Property, as such, sediment and surface water quality sampling and analysis will not be completed as part of this Phase Two ESA.

ii. Locations and Depths for Sampling

A total of five borehole locations have been proposed to provide coverage of the APECs identified at the Phase Two Property. Three boreholes are proposed to be drilled in the north portion of the Phase Two Property, near the former natural gas connections to the buildings. These boreholes will be placed in locations to assess fill quality at the Site (APEC #1) and for geotechnical assessment purposes. This borehole locations would also be suitable for an assessment of historical heating oil storage/filling, assuming that the Site buildings were possibly historically heated using furnace oil. A distribution of 2 boreholes will be spread over the remaining areas of the Property, to assess future excess soil management requirements.

Sampling depths will include as a minimum, collection of samples in 0.6 m intervals from the ground surface to native soil conditions within the groundwater table. Borehole/monitoring wells depths are proposed to be drilled to approximately 5-6 m to intercept the groundwater table in APECs were groundwater quality assessment is required. Boreholes are proposed to be drilled to a depth of approximately 3 m where an assessment of the fill quality is required.

iii. Parameters for Laboratory Analysis.

The parameters for laboratory analysis will be selected based on the contaminants of potential concern for each APEC as well as the field screening observations.

The Contaminants of Potential Concern ("CPCs") associated with the historical fill materials are PHCs, BTEXs, polycyclic aromatic hydrocarbons (PAHs), metals & inorganics. Volatile Organic Compounds were included as a CPC for the 2024 sampling and analysis, following an initial groundwater detection of PCE in the groundwater sample from BH1-23 in April 2023.

Based on the date of original development of the Site buildings, it was suspected that historical heating oil storage tanks may have been present at the Phase Two Property, although their historic presence was never documented during the Phase One ESA. If historically present, the expected fill locations would have been in similar locations to the recently removed natural gas meters. The CPCs associated with fuel storage are PHCs and BTEXs, which had already been included for assessment for APEC #1.

The contaminants of concern for a particular sample will be based on the relative location and depth of the sample, visual and/or olfactory observations and combustible vapour screening concentrations.

Information obtained after the completion of the phase one environmental site assessment shall be used to modify the investigation, as appropriate.

5. Quality Assurance and Quality Control

The qualified person has ensured that there is a quality assurance and quality control program, data quality objectives, standard operating procedures and a description of any physical impediments that interfere with or limit the ability to conduct sampling and analysis.

The quality assurance and quality control program includes the following requirements:

5.1 Field Equipment Decontamination

All non-dedicated sampling and monitoring equipment must be cleaned following each use.

The split spoons, which are the only media to come into contact with the soil samples, will be washed using soap and water and a scrub brush between samples to minimize the potential for cross-contamination among samples. The field technician will use sterile nitrile gloves, which are to be changed prior to the handling of each soil sample to further reduce the potential of cross-contamination. The flights of the hollow stem augers are to be cleaned manually following each borehole.

Water level monitoring equipment, including water level meters and interface probes will be decontaminated with an environmentally safe cleaning solution and rinsed with deionized water between water level readings to prevent cross contamination.

The field technician will change dedicated sterile nitrile gloves prior to initiating work at each monitoring well and change gloves prior to sample collection to minimize the potential for cross-contamination.

5.2 Trip Blanks

Since groundwater samples are to be analyzed for volatile organic compounds (VOCs), one trip blank sample shall be submitted for laboratory analysis with each laboratory submission of groundwater samples.

5.3 Field Duplicates

Sufficient field duplicate samples shall be collected in each medium (soil and groundwater) being sampled, so that at least one field duplicate sample can be submitted for laboratory analysis for every ten samples submitted for laboratory analysis.

At least one field duplicate sample shall be submitted for laboratory analysis for every ten samples submitted for laboratory analysis.

One field duplicate will be submitted from each medium sampled for PHCs, VOCs, PAHs and metals & inorganics which are the parameter suites identified as a contaminants of concern in APECs #1 as part of the previously prepared Phase One ESA.

5.4 Equipment Calibration

Field screening of the soil samples will be completed using an RKI Instruments Model Eagle-2 combustible gas detector ("RKI Eagle"). The RKI Eagle used for soil sample screening as part of this Phase Two ESA will be obtained from Maxim Environmental and Safety Inc. and will be calibrated prior to use.

Measurements of the groundwater quality field parameters will be completed to determine stabilization of these parameters prior to sampling. These measurements will be completed using Horiba U-52 groundwater quality measurement device ("Horiba"). The Horiba used for groundwater quality parameter stabilization measurements as part of this Phase Two ESA will be obtained from Maxim Environmental and Safety Inc. and will be calibrated prior to use.

5.5 Data Quality Objectives

The data quality objectives for all types of field data collected during the Phase Two Environmental Site Assessment field investigation that set the level of uncertainty in environmental data shall be such that,

(a) the decision-making is not affected; and

(b) the overall objectives of the investigation are met.

6. Standard Operating Procedures

Standard operating procedures were developed for all of the following field investigation methods used in the field investigation.

6.1 Borehole Drilling

The drilling field program will be completed under full time supervision of Lopers & Associates personnel. The drilling subcontractor retained for the Phase Two ESA is George Downing Estate Drilling, located at 410 Principale Rue, Grenville-Sur-la-Rouge, Quebec, J0V 1B0. The drill rig used for the Phase Two ESA will be a track mounted CME drill, equipped with hollow stem augers and stainless steel split spoons. Operation of the drilling equipment is the responsibility of the drilling subcontractor, who is trained and competent in the operation of this equipment.

The field technician logs the drilling and recovery of soil samples from each borehole, noting the soil type, physical and environmental characteristics at each borehole location on the field borehole logs.

6.2 Soil Sampling

Samples are to be collected from auger cuttings or split spoons at the ground surface for surficial samples (0-0.6 m below ground surface (m BGS)) and then using split spoons for subsequent samples. Split spoon samples are generally not collected from surficial depths, as poor recovery of loose packed fill material does not yield sufficient volume of samples required for field screening or laboratory analysis. Split spoon samples, collected in 0.6 m segments, are to be recovered at continuous 0.76 m intervals; the additional 0.16 m between split spoon samples will be over-drilled to provide undisturbed field measurement of geotechnical parameters (blow counts) and to prevent cave in materials from stratigraphic units above the intended sampling intervals from being collected at unrepresentative depths during sampling.

Soil samples are initially collected in Ziploc bags for initial screening as part of sample selection. Soil samples selected for laboratory analysis are collected in dedicated clear glass jars prepared and provided by the analytical laboratory. Soil samples collected for BTEXs/VOCs and the F1 range of PHCs analysis are collected using a dedicated graduated syringe provided by the laboratory and placed directly into a glass vial with methanol preservative. Analytes and associated preservatives are specified on each jar/vial by the laboratory. Each jar/vial sample set is provided with a unique sample identifier, project number and date of sampling in the field.

6.3 Field Soil Screening Measurements

Initial field screening of the soil samples will consist of visual and olfactory observations made at the time of sample collection during the drilling program.

Additional field screening of the soil samples will be completed using an RKI Instruments Model Eagle-2 combustible gas detector ("RKI Eagle"). The RKI Eagle is capable of measuring combustible vapours at concentrations ranging from 0 parts per million (PPM) to 50% of the lower explosive limit (LEL). The RKI Eagle is also capable of measuring VOC vapours at concentrations ranging from 0 ppm to 1000 ppm.

6.4 Monitoring Well Installation

Installation of monitoring wells in selected boreholes is to be completed by Downing, who is a licensed well driller in accordance with O.Reg. 903. The wells will be installed using slotted PVC No. 10 monitoring well screens, which are 51 mm in diameter; these screens are to be installed at the base of each of the aforementioned boreholes, directly above the bedrock surface. Well screens can range from 1.5 m to 4.5 m in length. The monitoring wells are extended to approximately 0.15 m below the surface grade with PVC riser, also 51 mm in diameter. A

threaded PVC end cap should be installed at the base of the screen to prevent sediment infiltration, while a J-Plug is installed at the top of the riser to present surface influence.

The annular space in each monitoring well is to be backfill with clean silica sand to approximately 0.3 m above the monitoring well screens. A layer of bentonite chips is then used to make a hydraulic seal above the sand pack to near the ground surface. The monitoring wells are to be completed with flushmount aluminum protective casings, which were backfilled with sand to provide drainage from the protective casing.

6.5 Elevation Survey

An elevation survey of all boreholes and monitoring wells will be conducted following the completion of the drilling program. A fixed temporary benchmark should be used as a reference elevation; the top of the spindle of a fire hydrant is preferred for this purpose as geodetic elevations can be obtained for these points. The reference benchmark should be assigned a field site datum of 100.00 m for the purposes of the elevation survey. The ground surface elevation of all boreholes should be surveyed. The top of piezometer of each monitoring well should also be surveyed; this allows for higher accuracy in the interpretation of groundwater elevations.

6.6 Monitoring Well Development;

Groundwater monitoring wells will be developed on the day of drilling using LDPE tubing and a footvalve. At least three and up to ten well volumes will be removed from the monitoring wells in order to remove as much sediment as possible from the wells. In cases where the monitoring well goes dry prior to purging three well volumes, the well should be purged dry a minimum of three times, waiting at least one hour between purging events. The LDPE tubing should be removed from the monitoring wells following well development.

6.7 Field Measurement of Water Quality Indicators

Field measurement of water quality parameters were collected at regular intervals (0 L, 0.5 well volumes, 1 well volume, 2 well volumes, etc.) during purging of the monitoring wells prior to sampling. The Horiba was placed in a flow-through cell and water quality parameters were measured until they were found to stabilize to within approximately 10% of the previous measurements prior to sample collection.

6.8 Groundwater Sampling

Follow a period of stabilization after drilling and monitoring well development (1 week recommended), static groundwater elevations are measured relative to the top of piezometer at each groundwater monitoring well on the day of sampling, prior to disturbance of the water column.

Following static groundwater elevation measurements, 6 mm LDPE tubing is placed in each of the monitoring wells. The LDPE tubing is connected to silicon tubing, run through a peristaltic pump set to low flow (approximately 0.2-0.5 L/minute) during purging and sampling. The peristaltic pump is used to avoid mixture of sediment into the groundwater column and prevent volatilization during sample collection. The monitoring wells are purged on the day of sampling while water quality parameters were measured and stabilize as noted above.

Groundwater samples are collected in dedicated amber glass bottles and vials or plastic bottles prepared and provided by the analytical laboratory. Analytes and associated preservatives are specified on each bottle by the laboratory. Each bottle sample set will be provided with a unique sample identifier, project number and date of sampling in the field. Samples for PHCs, BTEXs, VOCs, PAHs and general chemistry are unfiltered, while metals samples are to be field filtered using a dedicated 0.45 µm filter for each sample.

Appendix B

Underground Utility Locates

From: solutions@on1call.com
To: Luke Lopers
Subject: Request 2023108349
Date: March 10, 2023 2:05:55 AM

LOCATE REQUEST CONFIRMATION

REQUEST #:	REQUEST PRIORITY:	REQUEST TYPE:	WORK TO BEGIN DATE:
2023108349	**PROJECT WORK**	**REGULAR**	**03/20/2023**
Update of Request #	**Project #:LOP23-025B**	**Call Date: 03/10/2023 02:05:06 AM**	**Transmit Date: 03/10/2023 02:05:06 AM**

REQUESTOR'S CONTACT INFORMATION	
Contractor ID: 343253 **Contact Name:** LUKE LOPERS **Company Name:** LOPERS & ASSOCIATES **Address:** 30 LANSFIELD WAY, OTTAWA, ON, K2G3V8 **Email:** Luke@Lopers.ca **Primary Phone #:** (613) 327-9073 **Cell Phone #:** (613) 327-9073	**On-site Contact Name:** LUKE LOPERS **On-site Contact #:** (613) 327-9073

DIG INFORMATION		
Region/County: OTTAWA **Community:** **City:** OTTAWA **Address:** 214, SOMERSET ST E **Intersecting Street 1:** NELSON ST **Intersecting Street 2:** HENDERSON AVE	**Work Done for:** CITY OF OTTAWA **Reason for Work:** ENVIRONMENTAL **Dig Method:** Machine Dig **Depth:** More than 15 Feet	**Pre-Marked:** Area Not Pre-Marked **Property Type:** Private Property **Site Meeting:** No **Permit #:** No **Work End Date:** 04/20/2023

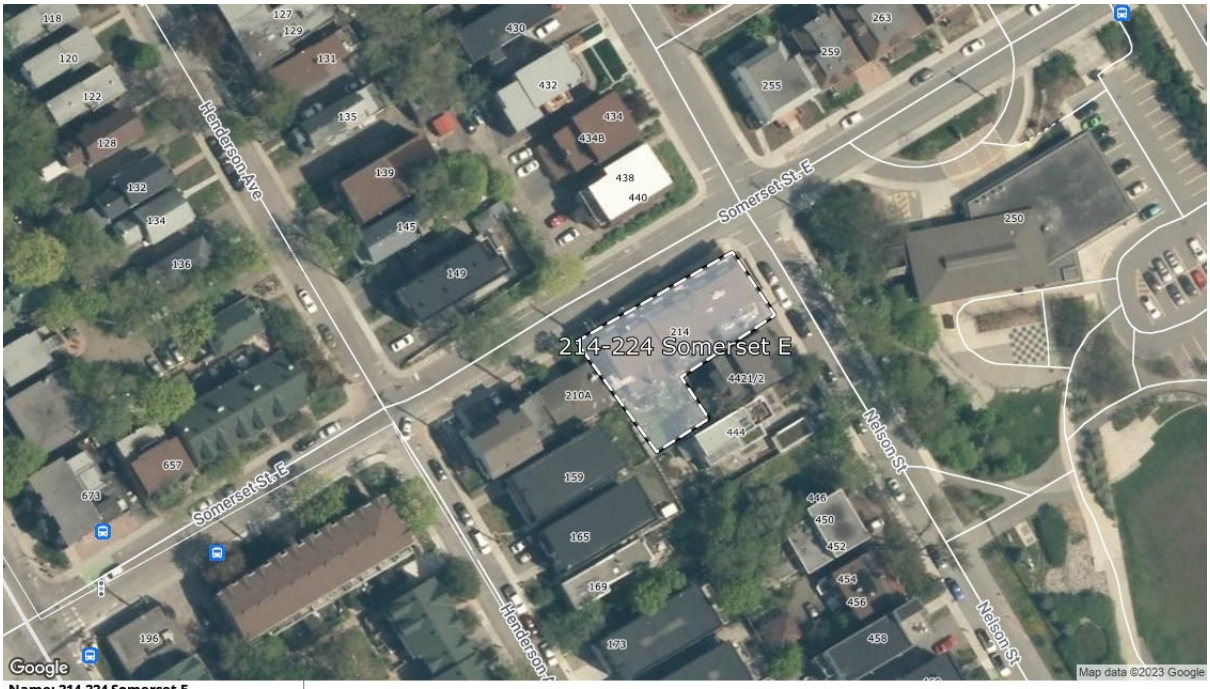
ADDITIONAL INFORMATION	QUALIFYING INFORMATION
SITE IS CURRENTLY HAS 3 VACANT ADJOINING	

TOWNHOUSE BUILDINGS PROPOSED TO BE DEMOLISHED. ENVIRONMENTAL BOREHOLES PROPOSED ON NORTH SIDE OF SITE (INSIDE CURRENT BUILDING FOOTPRINT. GEOTECHNICAL BOREHOLES PROPOSED FOR APPROXIMATE CORNERS AND CENTER OF EXISTING BUILDING FOOTPRINT. ENVIRONMENTAL DELINEATION MAY BE REQUIRED, PLEASE LOCATE ENTIRE PROPERTY.	

MEMBERS NOTIFIED: The following owners of underground infrastructure in the area of your excavation site have been notified.

Member Name	Station Code	Initial Status
HYDRO OTTAWA (HOT1)	HOT1	Notification sent
PROMARK FOR ENBRIDGE GAS (ENOE01)	ENOE01	Notification sent
CLI FOR ROGERS (ROGOTT01)	ROGOTT01	Notification sent
CITY OF OTTAWA WATER/SEWER (OTWAWS01)	OTWAWS01	Notification sent
PROMARK FOR BELL CANADA (BCOE01)	BCOE01	Notification sent

MAP SELECTION: Map Selection provided by the excavator through Ontario One Call's map tool or through agent interpretation by phone



Name: 214-224 Somerset E
Start Date: 2023/03/20
Unit / Lot #: All Lots
Area: 678.20sq. m

IMPORTANT INFORMATION: Please read.

Defining "NC" - Non-Compliant

- Non-compliant members have not met their obligations under section 5 of the Ontario Underground Infrastructure Notification Act. ON1Call has notified these members to ensure they are aware of your excavation. In this circumstance, should the member not respond, the excavator should contact the member directly to obtain their locates or request a status. ON1Call will not be provided with a locate status from the member regarding this request and therefore, cannot provide further information at this time. For locate status contact information please refer to our website.

You have a valid locate when...

- You have reviewed your locate request information for accuracy. UPDATE your request IMMEDIATELY if changes are needed and obtain a corrected locate request confirmation.

NOTE: Intersecting streets are often suggested by Ontario One Call's system, in some circumstances they may not reflect the closest intersecting streets to your excavation. You can change the intersecting streets before submitting the request by going through the "Review" page of your locate request, and editing any inaccurate information. Intersecting streets are for reference only, and unless you change the streets manually, you will not be asked to correct them if they are chosen by the system. If you don't agree with a street name, make sure to edit the request before you submit it, if you found a mistake after submitting the request, update your requests immediately on the web portal.

- You have obtained locates or clearances from all ON1Call members listed in this request before beginning your dig.

You've met your obligations when...

- You respect the marks and instructions provided by the locators and dig with care; the marks and locator instructions MUST MATCH. You must wait for responses from all members notified on your locate request before beginning to dig..
- You have obtained any necessary permits from the municipality in which you are digging.
- You have made Ontario One Call aware if you have come across any new or unlisted infrastructure in the public right of way AND stopped digging to prevent damages while we review.
- You have arranged for locates for your private lines on your private property - where applicable.

What does "Cleared" mean in the "Initial Status" section?

1. The information that you have provided about your dig will not affect that member's underground infrastructure and they have provided you with a
clearance, if anything about your excavation changes, please ensure that you update your request immediately.

What are the images under "Map Selection"?

1. A drawing created by an excavator directly within Ontario One Call's Web request tool, this is expected to be an accurate rendition of the dig site, and it is the excavator's responsibility to ensure the location matches the information they provide under the 'Dig Location'; section OR;

2. A drawing created by an Ontario One Call agent, this drawing is based on a verbal description by phone of the area by the excavator. Agents may create drawings that are larger than the proposed dig to minimize risk of interpretation. It is the excavator's responsibility to review these map selections for accuracy. Changes can be made by the excavator through the Web request tool, to learn how visit www.ontarioonecall.ca.

3. All drawings dictate which members are notified.

Promark telecon
Location of underground infrastructures

Primary Locate Sheet

Request #2023108349

OTTLocateFollowup@Promark-Telecon.ca
Phone 613-723-9888 Toll Free: 1-800-371-8866

NORMAL

Utilities Located:	Revised Excavation Date	Excavation Date	Status
☐ Bell ☐ Gas ☐ Hydro Ottawa ☐ Elexicon ☐ Hydro One ☐ Rogers ☐ 360 ☐ Videotron	mm/dd/yyyy	2023-03-20 8:00:00 AM mm/dd/yyyy	PROJECT WORK Homeowner ☐ Contractor ☐ Project ☐

Requested by:	Company:	Phone:	Fax/email:
LUKE LOPERS	LOPERS & ASSOCIATES	(613)-327-9073 ext.	LUKE@LOPERS.CA

Appt Date:	Received Date:	Locate Address:
mm/dd/yyyy	2023-03-10 2:14:04 AM mm/dd/yyyy	214, SOMERSET ST E NELSON ST HENDERSON AVE

Type of work:	City:
ENVIRONMENTAL	OTTAWA

Caller's Remarks:
MACH. DIG
SITE IS CURRENTLY HAS 3 VACANT ADJOINING TOWNHOUSE BUILDINGS PROPOSED TO BE DEMOLISHED. ENVIRONMENTAL BOREHOLES PROPOSED ON NORTH SIDE OF SITE (INSIDE CURRENT BUILDING FOOTPRINT. GEOTECHNICAL BOREHOLES PROPOSED FOR APPROXIMATE CORNERS AND CENTER OF EXISTING BUILDING FOOTPRINT. ENVIRONMENTAL DELINEATION MAY BE REQUIRED, PLEASE LOCATE ENTIRE PROPERTY.
-75.678545, 45.422548, NB_SEGMENTS::2, NO_PLAN::613 241, BCOE01 PROMARK FOR BELL CAN,OTWAWS01 CITY OF OT, OTWAWS01 CITY OF OTTAWA WATER,ROGOTT01 CLI FOR, ROGOTT01 CLI FOR ROGERS (ROGO,ENOE01 PROMARK FO, ENOE01 PROMARK FOR ENBRIDGE,HOT1HYDRO OTTAWA (H,

Bell Mark | Clear	Gas Mark | Clear	Hydro Ottawa Mark | Clear	Street Lighting Mark | Clear	Elexicon Mark | Clear	Hydro One Mark | Clear	Rogers Mark | Clear	360 Mark | Clear	Videotron Mark | Clear

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE.

Records Reference: ☐ GMobile ☐ LAC Multiviewer ☐ FRA # ☐ GO360

Field Notes, As-Laids, Service Sketches:

Locator Remarks:

☐ Third Party Notification _____

Apply Sticker Here if Required

Excavator shall notify & receive a clearance from utility prior to excavation for the following: **Telecon** ☐ **High Priority Cable** ☐ **Central Office Vicinity**

GAS MATERIAL TYPE: ☐ **Steel (ST)** ☐ **Plastic (PE)** ☐ **Copper (CP)**

Method of Field Marking: ☐ **Paint** ☐ **Stakes** ☐ **Flags** ☐ **Offset Flags** ☐ **Other**

Colour Indicator: Telecom = Orange Gas = Yellow Traffic / Hydro = Red Sewer = Green Water = Blue

Caution: Bell and 360 locates are valid for the life of the excavation. Hydro One – Hydro Ottawa – Enbridge Gas – Elexicon Energy locates are valid for 60 days. Rogers locates are valid for 90 days unless an extension approval is provided by Rogers. Unless otherwise indicated, all other utility locates are VOID after 30 days. For utility specific details, see attached document(s).

Caution: Any changes to location or nature of work will require a new locate. The excavator must not work outside the located area without obtaining a new locate. Privately owned services within the located area have not been marked – check with service / property owner. For all locate requests including remarks, contact Ontario One Call at **1-800-400-2255** or online at **www.on1call.com**

Locator Name: BELAIR DANICK	Start Time:	☐ Mark & Fax ☐ Left on Site ☐ Emailed
ID #: EMP001991	End Time :	Print:
Date	Total Hours:	Signature:

A copy of this Primary Locate Sheet and Auxiliary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.

Promark telecon

Location of underground infrastructures

Primary Locate Sheet

Request #2023108349

OTTLocateFollowup@Promark-Telecon.ca

Phone 613-723-9888 Toll Free: 1-800-371-8866

NORMAL

Utilities Located:	Revised Excavation Date	Excavation Date	Status
☐ Bell ✚ Gas ✚ Hydro Ottawa ☐ Elexicon ☐ Hydro One ☐ Rogers ☐ 360 ☐ Videotron	mm/dd/yyyy	3/20/2023 8:00:00 AM mm/dd/yyyy	PROJECT WORK Homeowner ☐ Contractor ✚ Project ☐

Requested by:	Company:	Phone:	Fax/email:
LUKE LOPERS	LOPERS & ASSOCIATES	(613)-327-9073 ext.	LUKE@LOPERS.CA

Appt Date:	Received Date:	Locate Address:
mm/dd/yyyy	3/10/2023 2:14:04 AM mm/dd/yyyy	214, SOMERSET ST E NELSON ST HENDERSON AVE

Type of work:	City:
ENVIRONMENTAL	OTTAWA

Caller's Remarks:
MACH. DIG
SITE IS CURRENTLY HAS 3 VACANT ADJOINING TOWNHOUSE BUILDINGS PROPOSED TO BE DEMOLISHED. ENVIRONMENTAL BOREHOLES PROPOSED ON NORTH SIDE OF SITE (INSIDE CURRENT BUILDING FOOTPRINT. GEOTECHNICAL BOREHOLES PROPOSED FOR APPROXIMATE CORNERS AND CENTER OF EXISTING BUILDING FOOTPRINT. ENVIRONMENTAL DELINEATION MAY BE REQUIRED, PLEASE LOCATE ENTIRE PROPERTY.

-75.678545, 45.422548, NB_SEGMENTS::2, NO_PLAN::613 241, BCOE01 PROMARK FOR BELL CAN,OTWAWS01 CITY OF OT, OTWAWS01 CITY OF OTTAWA WATER,ROGOTT01 CLI FOR, ROGOTT01 CLI FOR ROGERS (ROGO,ENOE01 PROMARK FO, ENOE01 PROMARK FOR ENBRIDGE,HOT1HYDRO OTTAWA (H, HOT1HYDRO OTTAWA (HOT1), U, CROQUIS1::2023108349.PNG, URO, TO

Bell Mark | Clear	Gas Mark | Clear	Hydro Ottawa Mark | Clear	Street Lighting Mark | Clear	Elexicon Mark | Clear	Hydro One Mark | Clear	Rogers Mark | Clear	360 Mark | Clear	Videotron Mark | Clear
	1	1						

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE.

Records Reference: ☐ GMobile ☒ LAC Multiviewer ☐ GO360

☒ FRA # OE01

Field Notes, As-Laids, Service Sketches: **PTOCPU2309**

NE196,6n1892-1

Locator Remarks:

☒ Third Party Notification

N/A

Apply Sticker Here if Required

Excavator shall notify & receive a clearance from utility prior to excavation for the following: Telecon ☐ High Priority Cable ☐ Central Office Vicinity

GAS MATERIAL TYPE: ☐ Steel (ST) ☐ Plastic (PE) ☐ Copper (CP)

Method of Field Marking: ☒ Paint ☐ Stakes ☒ Flags ☐ Offset Flags ☐ Other

Colour Indicator: Telecom = Orange Gas = Yellow Traffic / Hydro = Red Sewer = Green Water = Blue

Caution: Bell and 360 locates are valid for the life of the excavation. Hydro One – Hydro Ottawa – Enbridge Gas – Elexicon Energy locates are valid for 60 days. Rogers locates are valid for 90 days unless an extension approval is provided by Rogers. Unless otherwise indicated, all other utility locates are VOID after 30 days. For utility specific details, see attached document(s).

Caution: Any changes to location or nature of work will require a new locate. The excavator must not work outside the located area without obtaining a new locate. Privately owned services within the located area have not been marked – check with service / property owner. For all locate requests including remarks, contact Ontario One Call at **1-800-400-2255** or online at **www.on1call.com**

Locator Name:	Start Time:	☐ Mark & Fax ☐ Left on Site ☒ Emailed
ID #: EMP001991	End Time: 0915	Print:
Date MARCH 13 2023	Total Hours: 15MINS	Signature:

A copy of this Primary Locate Sheet and Auxiliary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.

This form revised February 2023

Promark telecon
Location of underground infrastructures

Auxiliary Locate Sheet

OTTLocateFollowup@Promark-Telecon.ca
Phone: 613-723-9888 Toll Free: 1-800-371-8866

Utilities Located:	☐Bell +Gas ☐Hydro One ☐Rogers ☐Zayo ☐Videotron ☐BHT ☐Elexicon Energy	Date Located: MARCH 13 2023	Request # 2023108349

Number of Services marked: (Specify building/house numbers) N/A

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE

FROM: W.BL OF 214 SOMERSET ST E	TO: E.BL OF 224 SOMERSET ST E
FROM: N.BL OF 214 SOMERSET ST E	TO: S.BL OF 214 SOMERSET ST E

Legend

Building Line	-- BL --
Fence Line	-- FL --
Face of Curb	-- FC --
Asphalt Edge	-- AE --
Sidewalk	SW
Driveway	-- DW --
Manhole	M/H
Pedestal	☒
Buried CableTV	--TV--
Flush to Grade Pedestal	FTG
Buried Service Wire	-- BSW --
Buried Cable	-- B --
Conduit	-- C --
Fiber Optic Cable	-- FO --
Bell Hydro Service	-- BH --
Gas Valve	⋈
Gas Service	-- GS --
Gas Main	-- GM --
Transformer	▲
Demarcation	DM
Hydro	-- H --
Hydro Primary	-- HP --
Hydro Secondary	-- HS --
Catch Basin	CB
Sewer Manhole	⊗
Water Valve	⊛
Hydrant	⋇
Water Valve Chamber	W
Hydro / Bell Pole	O
Railway	
End Cap	⊔
Traffic Manhole	Ⓣ
Street Light Cable	-- SL --
Street Light	☼
North	N.
East	E.
West	W.
South	S.
Gas Material - Steel	ST
- Plastic	PE
- Copper	CP

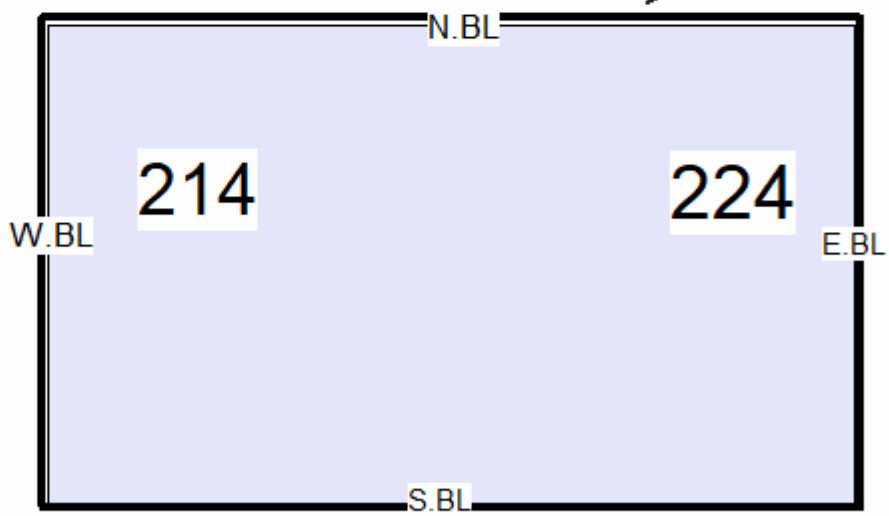
CAUTION: Hand dig within 1 M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable.
If you damage underground plant, contact the facility owner immediately.
Depth varies and MUST be verified by hand digging or vacuum excavation.
LOCATED AREA HAS BEEN ALTERED AS PER:_____

N
W E
S

SOMERSET ST E

ENBRIDGE GAS CLEAR IN LOCATED AREA

LOCATED AREA



THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale.
Any privately owned services within the located area have not been marked- check with service/property owner.

A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.

Promark telecon
Location of underground infrastructures

Auxiliary Locate Sheet

OTTLocateFollowup@Promark-Telecon.ca
Phone: 613-723-9888 Toll Free: 1-800-371-8866

Utilities Located:	Date Located:	Request #
☒ Hydro Ottawa	MARCH 13 2023	2023108349

Number of Services marked: (Specify building/house numbers) N/A

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE

FROM: W.BL OF 214 SOMERSET ST E	TO: E.BL OF 224 SOMERSET ST E
FROM: N.BL OF 214 SOMERSET ST E	TO: S.BL OF 214 SOMERSET ST E

Legend

Building Line	-- BL --
Fence Line	-- FL --
Face of Curb	-- FC --
Asphalt Edge	-- AE --
Sidewalk	SW
Driveway	-- DW --
Manhole	M/H
Pedestal	☒
Buried CableTV	-- TV --
Flush to Grade Pedestal	FTG
Buried Service Wire	-- BSW --
Buried Cable	-- B --
Conduit	-- C --
Fiber Optic Cable	-- FO --
Bell Hydro Service	-- BH --
Gas Valve	⋈
Gas Service	-- GS --
Gas Main	-- GM --
Transformer	▲
Demarcation	DM
Hydro	-- H --
Hydro Primary	-- HP --
Hydro Secondary	-- HS --
Catch Basin	CB
Sewer Manhole	◎
Water Valve	✱
Hydrant	✱
Water Valve Chamber	W
Hydro / Bell Pole	O
Railway	
End Cap	
Traffic Manhole	Ⓣ
Street Light Cable	-- SL --
Street Light	✱
North	N.
East	E.
West	W.
South	S.

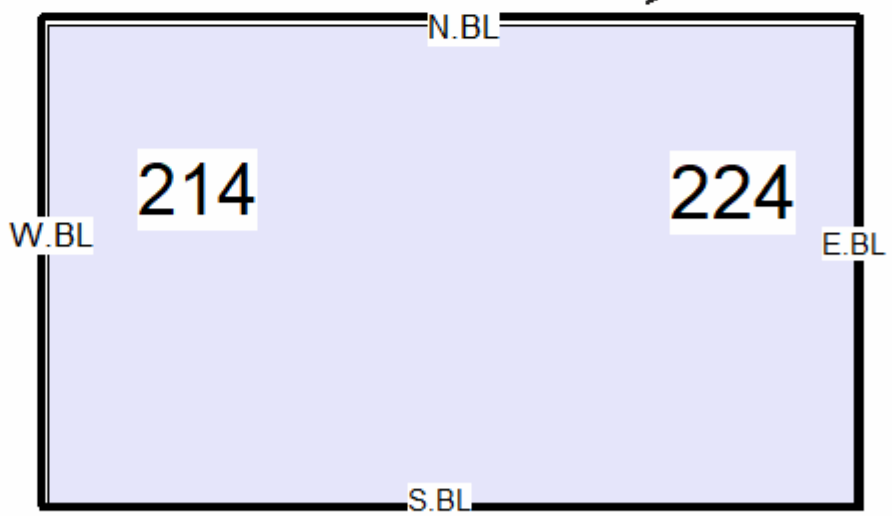
CAUTION: Hand dig within 1.5 M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable.
If you damage underground plant, contact the facility owner immediately.
Depth varies and MUST be verified by hand digging or vacuum excavation.
LOCATED AREA HAS BEEN ALTERED AS PER:_____

N
W E
S

SOMERSET ST E

HYDRO OTTAWA CLEAR IN LOCATED AREA

LOCATED AREA



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Any privately owned services within the located area have not been marked- check with service/property owner.

A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.

Sketches

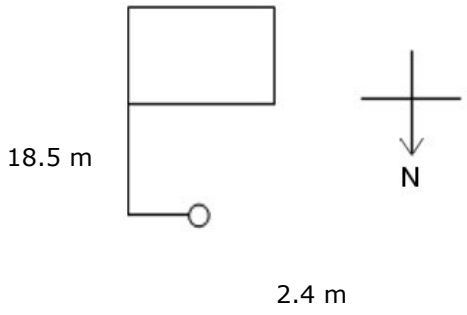
Valve : 368030V003

Location

Address:	222	To		SOMERSET ST W	City:	OO	
Qualifier:		XStreet1:		METCALFE ST	Dist:		Ward: Ward 14
Unit:		XStreet2:		ELGIN ST	Block:		S Plan:

Sketch Information

Looking:	south	North Degree:	180
Facing:	front of	The:	building
Start at the:	left corner	Move straight out:	18.5 m
Then go:	right	For:	2.4 m
Other Structure:		ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	
Warming	N	Function	SERVICE	Condition Rating	
Normally Open?	YES	Currently Open?	YES		

Valve Characteristics

Type	G	Manufacturer		Model	
Size (mm)	152	Year	0	Max Torque (ft.lb)	25
Housing	VB	Turns to Close	19	Dir to Open	RIGHT
Op Nut Size (mm)	152	Op Nut Depth (m)	1.7	Bypass Size (mm)	0
Joint Type	MECH			Tapping Valve Sleeve (TVS) ?	NO

Comments

Sketches

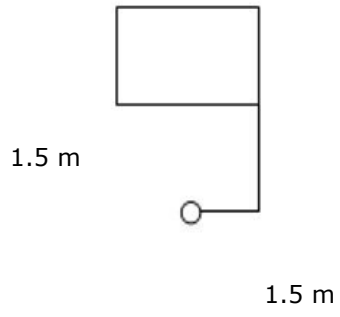
Water Service : S0340186001

Location

Address:	214	To		SOMERSET ST E	City:	OO	
Qualifier:		XStreet1:		HENDERSON AVE	Dist:		Ward: Ward 12
Unit:		XStreet2:		NELSON ST	Block:		S Plan:

Sketch Information

Looking:	unknown	North Degree:	
Facing:	front of	The:	building
Start at the:	right corner	Move straight out:	1.5 m
Then go:	left	For:	1.5 m
Other Structure:		ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	1996-Oct-30
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	8	20	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

Sketches

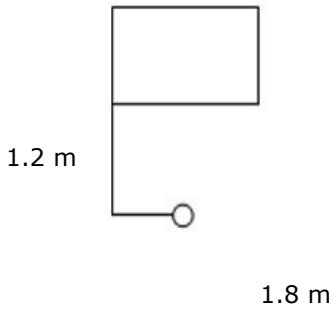
Water Service : S0340186002

Location

Address:	216	To		SOMERSET ST E	City:	OO	
Qualifier:		XStreet1:		HENDERSON AVE	Dist:		Ward: Ward 12
Unit:		XStreet2:		NELSON ST	Block:		S Plan:

Sketch Information

Looking:	unknown	North Degree:	
Facing:	front of	The:	building
Start at the:	left corner	Move straight out:	1.2 m
Then go:	right	For:	1.8 m
Other Structure:		ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	1996-Oct-30
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	8	20	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

Sketches

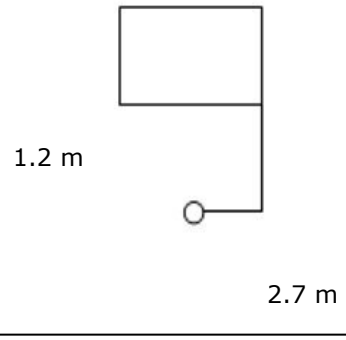
Water Service : S0340188001

Location

Address:	218	To		SOMERSET ST E	City:	OO	
Qualifier:		XStreet1:			Dist:		Ward: Ward 12
Unit:		XStreet2:			Block:		S Plan:

Sketch Information

Looking:	unknown	North Degree:	
Facing:	front of	The:	building
Start at the:	right corner	Move straight out:	1.2 m
Then go:	left	For:	2.7 m
Other Structure:		ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	1996-Oct-30
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	8	20	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

Sketches

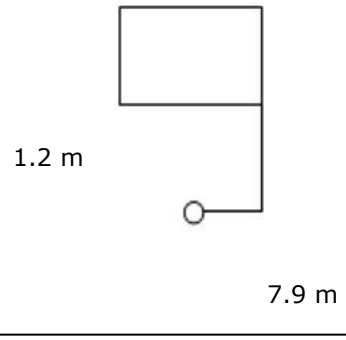
Water Service : S0340188002

Location

Address:	220	To		SOMERSET ST E	City:	OO	
Qualifier:		XStreet1:			Dist:		Ward: Ward 12
Unit:		XStreet2:			Block:		S Plan:

Sketch Information

Looking:	unknown	North Degree:	
Facing:	front of	The:	other
Start at the:	right corner	Move straight out:	1.2 m
Then go:	left	For:	7.9 m
Other Structure:	218 SOMERSET	ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	1996-Oct-30
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	8	20	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

Sketches

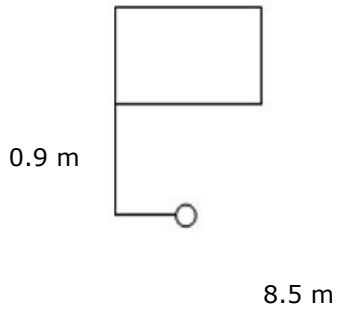
Water Service : S0340188003

Location

Address:	222	To		SOMERSET ST E	City:	OO	
Qualifier:		XStreet1:			Dist:		Ward: Ward 14
Unit:		XStreet2:			Block:		S Plan:

Sketch Information

Looking:	unknown	North Degree:	
Facing:	front of	The:	building
Start at the:	left corner	Move straight out:	0.9 m
Then go:	right	For:	8.5 m
Other Structure:		ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	1996-Oct-30
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	8	20	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

Sketches

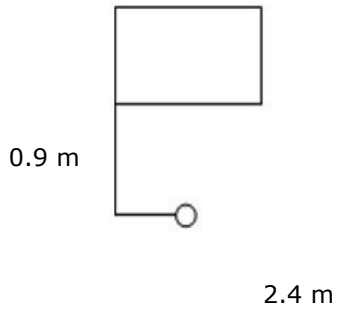
Water Service : S0340188004

Location

Address:	224	To		SOMERSET ST E	City:	OO	
Qualifier:		XStreet1:		HENDERSON AVE	Dist:		Ward: Ward 12
Unit:		XStreet2:		NELSON ST	Block:		S Plan:

Sketch Information

Looking:	unknown	North Degree:	
Facing:	front of	The:	building
Start at the:	left corner	Move straight out:	0.9 m
Then go:	right	For:	2.4 m
Other Structure:		ID:	
Drawing Code:			



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	1996-Oct-30
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	8	20	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

Sketches

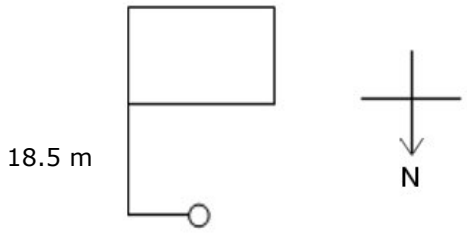
Water Service : S0440050000

Location

Address:	222	To		SOMERSET ST W	City:	OO	
Qualifier:		XStreet1:		METCALFE ST	Dist:		Ward: Ward 14
Unit:		XStreet2:		ELGIN ST	Block:		S Plan:

Sketch Information

Looking:	south	North Degree:	180
Facing:	front of	The:	building
Start at the:	left corner	Move straight out:	18.5 m
Then go:	right	For:	2.4 m
Other Structure:		ID:	
Drawing Code:	368030V003		



Attributes

Status	OPERATING	Ownership	PUBLIC	Install Date	
Billing Account		Frost Warning		Condition Rating	
Tracer?					

Service Characteristics

Located On:	Depth(m)	Diameter(mm)	Material
Public(At Main)	0	51	CO
Private(At Post)	0		

Insulation Type		Soil		Joint Type	
Bedding		Backfill		Surface	
Length	0				

Comments

CANADIAN LOCATORS INC.
Servicing the Utilities Industry

Ph: (905)479-5674 Email: ontario@canadianlocators.com

ROGERS
Primary Locate Sheet

ON 1 Call Ticket # : 2023108349

Contractor / Excavator : LOPERS & ASSOCIATES			**Contact Name :** LUKE LOPERS
Tel : 613-327-9073	**Alt. Phone :** 613-327-9073	**Email :** luke@lopers.ca	
Received Date : Mar 10 2023	**Excavation Date :** Mar 20 2023	**Revised Excavation Date:**	**Type of Work :** ENVIRONMENTAL
Locate Address : 214 SOMERSET ST E			**City / Municipality :** OTTAWA, ONTARIO
Nearest Intersection : NELSON ST & HENDERSON AVE			

Method of Field Marking : ☑ Paint ☐ Stakes ☐ Flags

Caller's Remarks *(Additional Info)* **:**
SITE IS CURRENTLY HAS 3 VACANT ADJOINING TOWNHOUSE BUILDINGS PROPOSED TO BE DEMOLISHED. ENVIRONMENTAL BOREHOLES PROPOSED ON NORTH SIDE OF SITE (INSIDE CURRENT BUILDING FOOTPRINT. GEOTECHNICAL BOREHOLES PROPOSED FOR APPROXIMATE CORNERS AND CENTER OF EXISTING BUILDING FOOTPRINT. ENVIRONMENTAL DELINEATION MAY BE REQUIRED, PLEASE LOCATE ENTIRE PROPERTY. Area Not Marked, TOOLS USED:[Machine Dig], PREMARKED VALUES:[Area Not Pre-Marked], PROPERTY TYPES:[Private Property], SITE MEETING:No, PROJECT NUMBE

Utilities Marked :					**Does this locate have multiple work areas which are greater than 100 m apart?**
☐ Coaxial Plant	☑ Fibre Optics Plant				☐ Yes How many?
Total Length : m	**Total Length :** 4 m				☑ No

Field sketch and Located Area shown on auxiliary locate sheet(s)

This locate is for ROGERS plant / infrastructure ONLY !

Apply sticker here

ROGERS

HIGH RISK FIBER CABLE IN WORK AREA!

HIGH RISK FIBER CABLE IS PRESENT WITHIN THE WORK AREA. EXCAVATOR MUST NOTIFY ROGERS LOCATE DESK 72 HOURS PRIOR TO EXCAVATION. SEE ATTACHED HIGH RISK FIBER PROCESS DOCUMENT.

CAUTION : Locate is VOID after 90 days !

CAUTION : Hand dig within one (1) meter or 3.28 feet of markings. The Located Area defined on the Auxiliary Locate Sheet(s) contains all known ROGERS infrastructure. Any changes to excavation area or nature of work requires a new locate.

For all cut cable, please call :
1-800-265-9501

Locator's Comments :

Locator's Name : *(Please Print)* David Stoddard

Date :	**Start Time :**	**End Time :**
Mar 15 2023	8:30 AM	10:30 AM

A copy of this Primary Locate Sheet and Auxiliary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. Should sketch and markings not coincide, a new locate MUST be obtained.

CANADIAN LOCATORS INC.
Servicing the Utilities Industry

Ph: (905)479-5674 Email: ontario@canadianlocators.com

ROGERS
Auxiliary Locate Sheet

ON 1 Call Ticket # : 2023108349

Utilities Marked :

☐ Coaxial Plant m ☑ Fibre Optics Plant 4 m

Number of Services Marked : (specify building/house numbers)

NA

LOCATED AREA CONTAINS ALL KNOWN ROGERS INFRASTRUCTURE

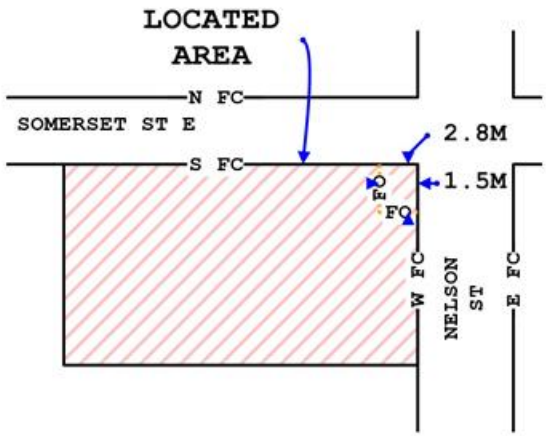
FROM :	TO :
S FC OF SOMERSET ST E	20M S OF S FC OF SOMERSET ST E
FROM :	**TO :**
40M W OF W FC OF NELSON ST	W FC OF NELSON ST

Hand dig within 1 meter or 3.28 feet as measured horizontally from the field markings to avoid damaging the underground utilities.
If you damage the utilities, you may be held liable. **For all cut cable, please call: 1-800-265-9501 immediately!**
Depth of cable plant varies and **MUST** be determined by hand digging or vacuum excavation.
LOCATED AREA ALTERED AS PER :

ROGERS

HIGH RISK FIBER CABLE IN WORK AREA!

HIGH RISK FIBER CABLE IS PRESENT WITHIN THE WORK AREA. EXCAVATOR MUST NOTIFY ROGERS LOCATE DESK 72 HOURS PRIOR TO EXCAVATION. SEE ATTACHED HIGH RISK FIBER PROCESS DOCUMENT.



Sketch not drawn to scale

LEGEND :

Fibre Optic — FO —	Road Edge — RE —	Property Line — PL —	Tree	Transformer TPR	Streetlight SL
Cable / T.V. — CATV —	Bldg Line — BL —	Lot Line — LL —	Pedestal	Manhole	Hand Hole HH
Conduit — C —	North Direction N	Face of Curb — FC —	Pole	Catch Basin CB	Hydrant H
Railway	Sidewalk SW	Driveway — DW —	Valve	North N	East E
Work Area	Measurement	Fence Line — FL —	Vault	South S	West W

A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. Should sketch and markings not coincide, a new locate MUST be obtained.

From:	Michelle Miville - EXT
To:	Locate Screening; Graeme Juhasz
Cc:	Tabatha Waugh; Luke Lopers
Subject:	RE: HIGH RISK FIBRE WATCH: 214 Somerset St E, Ottawa - TICKET 2023108349 - COMPANY NAME:LOPERS & ASSOCIATES
Date:	March 16, 2023 7:47:26 AM
Attachments:	image001.png

Good Morning,

Please proceed with the civil worked based on Hydrovacing and Hand Digging within 1m of the Rogers Plant. If structure is required to be exposed notify Rogers immediately to have a Technician observe and inspect. If you have any concerns or questions email us and we will respond as soon as possible.

Thank you,

Michelle Miville
Construction Coordinator

Network Construction & Commissioning - HFC Network Implementation
475 Richmond Road
Ottawa, ON K2A 3Y8

michelle.miville@rci.rogers.com

ROGERS.

From: Locate Screening <LocateScreening@topshelfsolutions.ca>
Sent: March 15, 2023 5:13 PM
To: Graeme Juhasz <Graeme.Juhasz@rci.rogers.com>
Cc: Michelle Miville - EXT <Michelle.Miville@rci.rogers.com>; Tabatha Waugh <Tabatha.Waugh@rci.rogers.com>; Locate Screening <LocateScreening@topshelfsolutions.ca>; Luke@lopers.ca
Subject: HIGH RISK FIBRE WATCH: 214 Somerset St E, Ottawa - TICKET 2023108349 - COMPANY NAME:LOPERS & ASSOCIATES
Importance: High

Good Afternoon,

Please see below for contractor information for high-risk fibre watch. Site map attached.

Ticket #: 2023108349
Site Address: 214 SOMERSET ST E
Contractor Name: LOPERS & ASSOCIATES
Work to begin date: March 30, 2023.
Site Contact name & cell: Luke Lopers Cell: 613-327-9073
Type of Work: Environmental – Bore holes

SITE IS CURRENTLY HAS 3 VACANT ADJOINING TOWNHOUSE BUILDINGS PROPOSED TO BE DEMOLISHED. ENVIRONMENTAL BOREHOLES PROPOSED ON NORTH SIDE OF SITE (INSIDE CURRENT BUILDING FOOTPRINT. GEOTECHNICAL BOREHOLES PROPOSED FOR APPROXIMATE CORNERS AND CENTER OF EXISTING BUILDING FOOTPRINT. ENVIRONMENTAL DELINEATION MAY BE REQUIRED, PLEASE LOCATE ENTIRE PROPERTY.
We will be drilling boreholes along the south portion of the Property (see attached sketch). This looks to be approximately 10 m south of the high risk fibre shown on the attached locates.

Thank you,
Jenn
Top Shelf Screening

From: agt_comm@irth.com
To: Luke Lopers
Subject: Ticket 2023108349 - Response to Dig Request
Date: March 10, 2023 5:01:22 AM

Bell Plant - OE01 CONDITIONAL CLEARANCE

CONDITIONAL CLEARANCE # 2023108349

ONE CALL TICKET #: 2023108349

Issued By: Bell Plant - OE01

For Station Code: BCOE01

Location: 214 SOMERSET ST E

Work Type: ENVIRONMENTAL

Date Issued: 03/10/2023 02:05:45 AM

Primary Contact: LUKE LOPERS

Email Address: Luke@Lopers.ca

Fax:

CONDITION(S)

ALL DIGGING ON PRIVATE PROPERTY ONLY (UP TO BUT NOT CROSSING THE ANY STREET SIDE OF PROPERTY LINE)

As there may be other buried utilities in your dig area, you are advised to contact all buried utility owners for your work area and obtain the necessary locates/clearances.

Please pay special attention to who/what this Clearance is for. Please review the document carefully and compare it to your locate request to ensure you understand what you are being cleared for. We are not responsible for any damages that result from misunderstanding what utility you are cleared for on this paperwork.

If you have any questions, concerns regarding your conditional clearance or to report a damage,

please call the Bell Screening Centre at **866-480-5901.**

Appendix C

Borehole Logs

BH1-23

LOPERS & ASSOCIATES

Lopers & Associates
30 Lansfield Way
Ottawa, Ontario K2G3V8

CLIENT Ottawa Community Housing
PROJECT NAME Phase Two Environmental Site Assessment
PROJECT NUMBER LOP24-025C
PROJECT LOCATION 214-224 Somerset Street East, Ottawa, ON
DATE STARTED 23-3-30 **COMPLETED** 23-3-30
GROUND ELEVATION 60.01 m **HOLE SIZE** 20 cm
DRILLING CONTRACTOR George Downing Estate Drilling
GROUND WATER LEVELS:
DRILLING METHOD Track Mounted CME 55
AFTER DRILLING 4.16 m / Elev 55.85 m
LOGGED BY L. Lopers **CHECKED BY** D. Plenderleith
NOTES Geodetic Elevation Provided by Paterson Group survey on April 7, 2023

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	SS 1	7-4-1-1 (5)	Vapor = 15		0.05 Asphalt 59.96 Silty Sand with some gravel. Brown, compact, moist.	
					0.60 59.41 Silty Sand & Gravel with Clay. Brown to Grey, loose/soft, moist to wet.	
	SS 2	2-1-2-2 (3)	Vapor = 5			
	SS 3	2-2-2-2 (4)	Vapor = 0		1.80 58.21 Silty Clay. Grey, stiff becoming soft with increasing depth and moisture content, moist to wet.	
2	SS 4	1-3-4-6 (7)	Vapor = 15			
	SS 5	1-2-1-3 (3)	Vapor = 10			
4	SS 6	0-0-1-1 (1)	Vapor = 10		Wet and becoming soft at ~ 3.8 m BGS	Groundwater Level 4.16 m BGS
	VA a					
	SS 7	1-1-1-1 (2)	Vapor = 25			
6	VA b					
	SS 8	7-9-15-11 (24)	Vapor = 0		6.86 53.15 Sand & Gravel with some silt. Brown, compact, wet.	
8	SS 9	14-23-31-25 (54)	Vapor = 15		8.43 51.58 DCPT Refusal on inferred bedrock at 8.43 m BGS	

Bottom of hole at 8.43 m.

BH1-24

LOPERS & ASSOCIATES

Lopers & Associates
30 Lansfield Way
Ottawa, Ontario K2G3V8

CLIENT Ottawa Community Housing
PROJECT NAME Phase Two Environmental Site Assessment
PROJECT NUMBER LOP24-025C
PROJECT LOCATION 214-224 Somerset Street East, Ottawa, ON
DATE STARTED 24-10-28 **COMPLETED** 24-10-28
GROUND ELEVATION 61.12 m **HOLE SIZE** 5 cm
DRILLING CONTRACTOR George Downing Estate Drilling
GROUND WATER LEVELS:
DRILLING METHOD Track Mounted CME 55
AFTER DRILLING 3.33 m / Elev 57.79 m
LOGGED BY L. Lopers **CHECKED BY** D. Plenderleith
NOTES Geodetic Elevation Provided by Paterson Group survey on November 11, 2024

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	SS 1	2-2-3-7 (5)	Vapor = 0		Silty Sand with some gravel, clay and organics. Brown, compact, moist.	Casing Top Elev: (m)
					0.60 / 60.52	
	SS 2	2-3-4-5 (7)	Vapor = 0		Silty Clay. Brown to Grey, stiff becoming soft with increasing depth and moisture content, moist to wet.	
2	SS 3	2-3-4-6 (7)	Vapor = 0			
	SS 4	2-4-6-9 (10)	Vapor = 10			
	SS 5	0-0-0-0 (0)	Vapor = 5			Groundwater Level 3.34 m BGS
4	SS 6	0-1-0-1 (1)	Vapor = 10			
	SS 7	0-0-0-0 (0)			Wet and becoming soft at ~ 5 m BGS	
	SS 8	1-0-0-1 (0)	Vapor = 0			
6	SS 9	0-0-3-2 (3)				
	SS 10	1-1-1-1 (2)	Vapor = 0			
					7.47 / 53.65	
					Sand & Gravel with some silt. Brown, compact, wet.	
8	SS 11	5-4-4-5 (8)	Vapor = 0			
					8.36 / 52.76	

DCPT Refusal on inferred bedrock at 9.59 m BGS
Bottom of hole at 8.36 m.

LOPERS & ASSOCIATES

Lopers & Associates
30 Lansfield Way
Ottawa, Ontario K2G3V8

CLIENT Ottawa Community Housing
PROJECT NAME Phase Two Environmental Site Assessment
PROJECT NUMBER LOP24-025C
PROJECT LOCATION 214-224 Somerset Street East, Ottawa, ON
DATE STARTED 24-10-29 **COMPLETED** 24-10-29
GROUND ELEVATION 64.13 m **HOLE SIZE** 5 cm
DRILLING CONTRACTOR George Downing Estate Drilling
GROUND WATER LEVELS:
DRILLING METHOD Track Mounted CME 55
AFTER DRILLING 3.31 m / Elev 60.82 m
LOGGED BY L. Lopers **CHECKED BY** D. Plenderleith
NOTES Geodetic Elevation Provided by Paterson Group survey on November 11, 2024

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	SS 1	4-2-4-4 (6)	Vapor = 0		Silty Sand with some gravel, clay and organics. Brown, compact, moist.	
					0.60 / 63.53	
	SS 2	1-2-1-1 (3)	Vapor = 0		Silty Clay. Brown to Grey, stiff becoming soft with increasing depth and moisture content, moist to wet.	
2	SS 3	2-2-3-4 (5)	Vapor = 0			
	SS 4	1-2-3-3 (5)	Vapor = 0			Groundwater Level 2.58 m BGS
	SS 5	2-3-3-3 (6)	Vapor = 0			
4	SS 6	2-3-3-4 (6)	Vapor = 0			
	SS 7	1-2-1-3 (3)			Wet and becoming soft at ~ 5.3 m BGS	
	SS 8	0-1-2-2 (3)	Vapor = 0			
6					6.06 / 58.07	

DCPT Refusal on inferred bedrock at 12.09 m BGS
Bottom of hole at 6.06 m.

BH3D-24

LOPERS & ASSOCIATES

Lopers & Associates
30 Lansfield Way
Ottawa, Ontario K2G3V8

CLIENT Ottawa Community Housing
PROJECT NAME Phase Two Environmental Site Assessment
PROJECT NUMBER LOP24-025C
PROJECT LOCATION 214-224 Somerset Street East, Ottawa, ON
DATE STARTED 24-10-29 **COMPLETED** 24-10-29
GROUND ELEVATION 62.78 m **HOLE SIZE** 5 cm
DRILLING CONTRACTOR George Downing Estate Drilling
GROUND WATER LEVELS:
DRILLING METHOD Track Mounted CME 55
AFTER DRILLING 6.48 m / Elev 56.30 m
LOGGED BY L. Lopers **CHECKED BY** D. Plenderleith
NOTES Geodetic Elevation Provided by Paterson Group survey on November 11, 2024

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	AU 1		Vapor = 0		Silty Sand with some gravel, clay and organics. Brown, compact, moist.	
					0.60 / 62.18	
	SS 2	0-1-0-1 (1)	Vapor = 0		Silty Clay. Brown to Grey, stiff, moist.	
					1.50 / 61.28	
	SS 3	0-1-0-1 (1)	Vapor = 0		Sand. Backfill sand. Grey, loose, moist.	
					1.80 / 60.98	
2					Silty Clay. Grey, stiff becoming soft with increasing depth and moisture content, moist to wet.	
	SS 4	1-1-4-6 (5)	Vapor = 0			
	SS 5	2-5-7-7 (12)	Vapor = 0			
4	SS 6	3-4-6-5 (10)	Vapor = 0			
	SS 7	1-1-3-2 (4)				
	SS 8	0-0-1-2 (1)	Vapor = 0		Wet and becoming soft at ~ 5.3 m BGS	
6	SS 9	0-1-0-0 (1)				Groundwater Level 6.48 m BGS
	SS 10	0-0-0-0 (0)	Vapor = 0			
8	SS 11	1-2-1-1 (3)	Vapor = 0			
					8.08 / 54.70	
					Clayey Sand. Grey, loose, wet.	
					9.06 / 53.72	

DCPT Refusal on inferred bedrock at 10.52 m BGS
Bottom of hole at 9.06 m.

LOPERS & ASSOCIATES

Lopers & Associates
30 Lansfield Way
Ottawa, Ontario K2G3V8

BH3S-24

CLIENT Ottawa Community Housing
PROJECT NAME Phase Two Environmental Site Assessment
PROJECT NUMBER LOP24-025C
PROJECT LOCATION 214-224 Somerset Street East, Ottawa, ON
DATE STARTED 24-10-29 **COMPLETED** 24-10-29
GROUND ELEVATION 62.81 m **HOLE SIZE** 5 cm
DRILLING CONTRACTOR George Downing Estate Drilling
GROUND WATER LEVELS:
DRILLING METHOD Track Mounted CME 55
AFTER DRILLING 5.73 m / Elev 57.08 m
LOGGED BY L. Lopers **CHECKED BY** D. Plenderleith
NOTES Geodetic Elevation Provided by Paterson Group survey on November 11, 2024

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	AU 1		Vapor = 0		Silty Sand with some gravel, clay and organics. Brown, compact, moist.	
					0.60 / 62.21	
	SS 2	0-1-0-1 (1)	Vapor = 0		Silty Clay. Brown to Grey, stiff, moist.	
					1.50 / 61.31	
	SS 3	0-1-0-1 (1)	Vapor = 0		Sand. Backfill sand. Grey, loose, moist.	
					1.80 / 61.01	
2					Silty Clay. Grey, stiff becoming soft with increasing depth and moisture content, moist to wet.	
	SS 4	1-1-4-6 (5)	Vapor = 0			
	SS 5	2-5-7-7 (12)	Vapor = 0			
4						
	SS 6	3-4-6-5 (10)	Vapor = 0			
	SS 7	1-1-3-2 (4)				
	SS 8	0-0-1-2 (1)	Vapor = 0		Wet and becoming soft at ~ 5.3 m BGS	Monitoring Well Dry @ 5.73 m BGS
6					6.10 / 56.71	

Bottom of hole at 6.10 m.

LOPERS & ASSOCIATES

Lopers & Associates
30 Lansfield Way
Ottawa, Ontario K2G3V8

BH4-24

CLIENT Ottawa Community Housing
PROJECT NAME Phase Two Environmental Site Assessment
PROJECT NUMBER LOP24-025C
PROJECT LOCATION 214-224 Somerset Street East, Ottawa, ON
DATE STARTED 24-10-29 **COMPLETED** 24-10-29
GROUND ELEVATION 65.21 m **HOLE SIZE** 5 cm
DRILLING CONTRACTOR George Downing Estate Drilling
GROUND WATER LEVELS:
DRILLING METHOD Track Mounted CME 55
AFTER DRILLING ---
LOGGED BY L. Lopers **CHECKED BY** D. Plenderleith
NOTES

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	GB 1		Vapor = 0		Silty Sand with some gravel, clay and organics. Brown, compact, moist.	
					0.60 64.61	

Bottom of hole at 0.60 m.

Appendix D

Certificates of Equipment Calibration

CERTIFICATE OF CALIBRATION

The RKI Instrument listed below has been inspected and calibrated following the Manufacturer's specifications and methods.

Instrument Model: **RKI Eagle 2** *Serial Number:* **E2F982** *Calibration Date:* **March 27, 2023**

SENSOR	CALIBRATION GAS STANDARD	CALIBRATION GAS CONCENTRATION	READING PRIOR TO ADJUSTMENT	INSTRUMENT SPAN SETTINGS	ALARM LEVEL SETTING
VOC	Isobutylene LOT# 302-402473275-56	100 PPM	100 PPM	100 PPM	400 & 1000 PPM
Combustible	Methane LOT# 1496966	50% LEL	<500 PPM	"ME" MODE	
Combustible	Hexane LOT# 302-402216613A-35	15% LEL	15% LEL	15% LEL	10 & 50% LEL
Combustible	Hexane LOT# 302-402216613A-35	15% LEL	15% LEL	15% LEL	10 & 50% LEL

The calibration gas standard used is considered to be a certified standard and is traceable to the National Institute of Standards and Technology (NIST). Certificate of Analysis is available upon request.

The instrument indicated above is now certified to be operating within the Manufacturer's specifications. This does not eliminate the requirement for regular maintenance and pre-use sensor response checks in order to ensure continued complete and accurate operating condition.

Certified By: Jeff Loney

Maxim **Environmental and Safety Inc.**

sales@maximenvironmental.com
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Head Office:
9 - 170 Ambassador Dr., Mississauga, ON L5T 2H9
(905)670-1304 | Toll Free (888)285-2324

Ottawa Office:
9 - 148 Colonnade Rd., Ottawa, ON K2E 7R4
(613)224-4747 | Toll Free (888)285-2324

CERTIFICATE OF CALIBRATION

The RKI Instrument listed below has been inspected and calibrated following the Manufacturer's specifications and methods.

Instrument Model: **RKI Eagle 2** *Serial Number:* **E2C465** *Calibration Date:* **October 24, 2024**

SENSOR	CALIBRATION GAS STANDARD	CALIBRATION GAS CONCENTRATION	READING PRIOR TO ADJUSTMENT	INSTRUMENT SPAN SETTINGS	ALARM LEVEL SETTING
VOC	Isobutylene LOT# 22-9430	100 PPM	99 PPM	100 PPM	400 & 1000 PPM
Combustible	Methane LOT# 23-9790	50% LEL	<500 PPM	"ME" MODE	
Combustible	Hexane LOT# 23-9463	1650 PPM	1450 PPM	15% LEL FULL GAS RESPONSE MODE	10 & 50% LEL
Combustible	Hexane LOT# 23-9463	15% LEL	15% LEL	15% LEL "METHANE ELIMINATION" MODE	10 & 50% LEL

The calibration gas standard used is considered to be a certified standard and is traceable to the National Institute of Standards and Technology (NIST). Certificate of Analysis is available upon request.

The instrument indicated above is now certified to be operating within the Manufacturer's specifications. This does not eliminate the requirement for regular maintenance and pre-use sensor response checks in order to ensure continued complete and accurate operating condition.

Certified By: Jeff Loney

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Lot 23-025B
Apr 6, 2023

CERTIFICATE OF CALIBRATION

The HORIBA Instrument listed below has been inspected and calibrated following the Manufacturer's specifications and methods.

Instrument Model: **HORIBA U-52** *Serial Number:* **KFS6BUM3** *Calibration Date:* **April 4, 2023**

2-POINT pH	CONDUCTIVITY	TURBIDITY	DISSOLVED OXYGEN	OXIDIZATION-REDUCTION POTENTIAL	TEMPERATURE
4.00 pH, 7.00 pH	4.49mS/cm ZERO CHECKED	0 & 100 NTU	9.09 mg/L @ 20 DegC SODIUM SULFITE ZERO	240mV	Fisher Scientific s/n 210412377 exp: May 18/2023
AutoCal 4.00 pH Solution LOT # 2GK364	AutoCal Solution LOT # 2GK364	AutoCal Solution LOT# 2GK364	Oakton Zero Solution LOT # 754262	Hanna ORP LOT # 5766	
Expiry Date: November 1, 2023	Expiry Date: November 1, 2023	Expiry Date: November 1, 2023	Expiry Date: May 1, 2023	Expiry Date: October 1, 2025	
pH 7.00 LOT # 2GK014	@25 DegC LOT # 1GF256	Turb. 100 NTU LOT # A1196			
Expiry Date: November 1, 2024	Expiry Date: May 31, 2023	Expiry Date: February 28, 2024			

The calibration standard used is considered to be a certified standard and is traceable to the National Institute of Standards and Technology (NIST). Certificate of Analysis is available upon request.

The instrument indicated above is now certified to be operating within the Manufacturer's specifications. This does not eliminate the requirement for regular maintenance and pre-use sensor response checks in order to ensure continued complete and accurate operating condition.

Certified By: Jeff Loney

Maxim **Environmental and Safety Inc.**

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CERTIFICATE OF CALIBRATION

The HORIBA Instrument listed below has been inspected and calibrated following the Manufacturer's specifications and methods.

Instrument Model: **HORIBA U-52** *Serial Number:* **RS2AMWKL** *Calibration Date:* **November 12, 2024**

2-POINT pH	CONDUCTIVITY	TURBIDITY	DISSOLVED OXYGEN	OXIDIZATION-REDUCTION POTENTIAL	TEMPERATURE
4.00 pH, 7.00 pH	4.49mS/cm ZERO CHECKED	0 & 100 NTU	8.86 mg/L @ 21.3 DegC SODIUM SULFITE ZERO	240mV	Fisher Scientific s/n 230606647
AutoCal 4.00 pH Solution LOT # 4GH0809	AutoCal Solution LOT # 4GH0809	AutoCal Solution LOT# 4GH0809	Oakton Zero Solution LOT# 803313	Hanna ORP LOT # 69	
Expiry Date: August 1, 2025	Expiry Date: August 1, 2025	Expiry Date: August 1, 2025	Expiry Date: May 1, 2025	Expiry Date: April 1, 2029	
pH 7.00 LOT # 4GF0046	@25 DegC LOT # 4GH0809	Turb. 100 NTU LOT # A4152			
Expiry Date: June 1, 2026		Expiry Date: June 1, 2026			

The calibration standard used is considered to be a certified standard and is traceable to the National Institute of Standards and Technology (NIST). Certificate of Analysis is available upon request.

The instrument indicated above is now certified to be operating within the Manufacturer's specifications. This does not eliminate the requirement for regular maintenance and pre-use sensor response checks in order to ensure continued complete and accurate operating condition.

Certified By: Jason Ashe

MAXIM Environmental and Safety Inc.

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Appendix E

Laboratory Certificates of Analysis

PARACEL LABORATORIES LTD.

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1-800-749-1947
www.paracellabs.com

Certificate of Analysis

Lopers & Associates

30 Lansfield Way
Ottawa, ON K2G 3V8
Attn: Luke Lopers

Client PO:
Project: LOP23-025B
Custody: 141120

Report Date: 11-Apr-2023
Order Date: 30-Mar-2023

Order #: 2313385

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

Paracel ID	Client ID
2313385-01	BH1-23-SS1

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 11-Apr-2023

Client: Lopers & Associates

Order Date: 30-Mar-2023

Client PO:

Project Description: LOP23-025B

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	10-Apr-23	10-Apr-23
PHC F1	CWS Tier 1 - P&T GC-FID	10-Apr-23	10-Apr-23
PHC F4G (gravimetric)	CWS Tier 1 - Extraction Gravimetric	11-Apr-23	11-Apr-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	30-Mar-23	3-Apr-23
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	4-Apr-23	4-Apr-23
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	31-Mar-23	3-Apr-23
Solids, %	CWS Tier 1 - Gravimetric	30-Mar-23	31-Mar-23

Certificate of Analysis

Client: **Lopers & Associates**

Client PO:

Report Date: 11-Apr-2023

Order Date: 30-Mar-2023

Project Description: LOP23-025B

	Client ID:	BH1-23-SS1	-	-	-
	Sample Date:	30-Mar-23 09:00	-	-	-
	Sample ID:	2313385-01	-	-	-
	MDL/Units	Soil	-	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	91.4	-	-	-
Metals					
Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	3.3	-	-	-
Barium	1.0 ug/g dry	156	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	6.3	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	41.2	-	-	-
Cobalt	1.0 ug/g dry	9.6	-	-	-
Copper	5.0 ug/g dry	23.9	-	-	-
Lead	1.0 ug/g dry	36.6	-	-	-
Molybdenum	1.0 ug/g dry	1.3	-	-	-
Nickel	5.0 ug/g dry	25.8	-	-	-
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	37.9	-	-	-
Zinc	20.0 ug/g dry	59.8	-	-	-
Volatiles					
Benzene	0.02 ug/g dry	<0.02	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	-	-
Toluene	0.05 ug/g dry	<0.05	-	-	-
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	-	-	-
Toluene-d8	Surrogate	96.8%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<40 [1]	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	236	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	397 [2]	-	-	-
F4G PHCs (gravimetric)	50 ug/g dry	350	-	-	-
Semi-Volatiles					

Certificate of Analysis

Report Date: 11-Apr-2023

Client: **Lopers & Associates**

Order Date: 30-Mar-2023

Client PO:

Project Description: LOP23-025B

	Client ID:	BH1-23-SS1	-	-	-
	Sample Date:	30-Mar-23 09:00	-	-	-
	Sample ID:	2313385-01	-	-	-
	MDL/Units	Soil	-	-	-
Acenaphthene	0.02 ug/g dry	0.05	-	-	-
Acenaphthylene	0.02 ug/g dry	0.03	-	-	-
Anthracene	0.02 ug/g dry	0.16	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	0.56	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	0.56	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.66	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	0.32	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	0.38	-	-	-
Chrysene	0.02 ug/g dry	0.51	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	0.10	-	-	-
Fluoranthene	0.02 ug/g dry	1.37	-	-	-
Fluorene	0.02 ug/g dry	0.05	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.33	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-
Phenanthrene	0.02 ug/g dry	0.64	-	-	-
Pyrene	0.02 ug/g dry	1.12	-	-	-
2-Fluorobiphenyl	Surrogate	106%	-	-	-
Terphenyl-d14	Surrogate	115%	-	-	-

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						
F4G PHCs (gravimetric)	ND	50	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						
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						
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	*1.44*		*ug/g*		*108*	*50-140*			
Surrogate: Terphenyl-d14	*1.49*		*ug/g*		*112*	*50-140*			
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*2.44*		*ug/g*		*76.3*	*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	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	ND	1.0	ug/g	ND			NC	30	
Arsenic	4.4	1.0	ug/g	4.4			0.4	30	
Barium	222	1.0	ug/g	200			10.4	30	
Beryllium	1.0	0.5	ug/g	1.0			3.8	30	
Boron	13.8	5.0	ug/g	14.6			5.9	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium	36.6	5.0	ug/g	36.7			0.3	30	
Cobalt	9.2	1.0	ug/g	9.5			2.9	30	
Copper	20.7	5.0	ug/g	21.3			3.3	30	
Lead	5.4	1.0	ug/g	5.7			4.6	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	23.9	5.0	ug/g	25.1			4.9	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	ND	1.0	ug/g	ND			NC	30	
Vanadium	44.4	10.0	ug/g	44.9			1.2	30	
Zinc	41.8	20.0	ug/g	41.9			0.2	30	
Physical Characteristics									
% Solids	75.9	0.1	% by Wt.	76.6			0.9	25	
Semi-Volatiles									
Acenaphthene	0.072	0.02	ug/g	0.054			29.0	40	
Acenaphthylene	0.032	0.02	ug/g	0.032			0.5	40	
Anthracene	0.238	0.02	ug/g	0.162			38.3	40	
Benzo [a] anthracene	0.675	0.02	ug/g	0.557			19.2	40	
Benzo [a] pyrene	0.666	0.02	ug/g	0.557			17.9	40	
Benzo [b] fluoranthene	0.822	0.02	ug/g	0.664			21.3	40	
Benzo [g,h,i] perylene	0.384	0.02	ug/g	0.325			16.7	40	
Benzo [k] fluoranthene	0.462	0.02	ug/g	0.378			19.9	40	
Chrysene	0.644	0.02	ug/g	0.512			22.7	40	
Dibenzo [a,h] anthracene	0.121	0.02	ug/g	0.103			15.8	40	
Fluoranthene	1.67	0.02	ug/g	1.37			19.7	40	
Fluorene	0.066	0.02	ug/g	0.049			30.7	40	
Indeno [1,2,3-cd] pyrene	0.393	0.02	ug/g	0.326			18.6	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	0.026	0.02	ug/g	ND			NC	40	
Naphthalene	0.034	0.01	ug/g	ND			NC	40	
Phenanthrene	0.895	0.02	ug/g	0.638			33.6	40	
Pyrene	1.34	0.02	ug/g	1.12			17.9	40	
Surrogate: 2-Fluorobiphenyl	*1.45*		*ug/g*		*99.3*	*50-140*			
Surrogate: Terphenyl-d14	*1.64*		*ug/g*		*112*	*50-140*			
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	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: Toluene-d8	*2.68*		*ug/g*		*73.8*	*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)	200	7	ug/g	ND	100	80-120			
F2 PHCs (C10-C16)	146	4	ug/g	ND	127	60-140			
F3 PHCs (C16-C34)	365	8	ug/g	ND	130	60-140			
F4 PHCs (C34-C50)	229	6	ug/g	ND	129	60-140			
F4G PHCs (gravimetric)	1020	50	ug/g	ND	102	80-120			
Metals									
Arsenic	51.3	1.0	ug/g	1.7	99.0	70-130			
Barium	136	1.0	ug/g	79.9	111	70-130			
Beryllium	47.8	0.5	ug/g	ND	94.7	70-130			
Boron	49.5	5.0	ug/g	5.8	87.4	70-130			
Cadmium	50.8	0.5	ug/g	ND	102	70-130			
Chromium	64.0	5.0	ug/g	14.7	98.6	70-130			
Cobalt	51.8	1.0	ug/g	3.8	95.9	70-130			
Copper	52.1	5.0	ug/g	8.5	87.1	70-130			
Lead	42.2	1.0	ug/g	2.3	79.9	70-130			
Molybdenum	47.7	1.0	ug/g	ND	95.0	70-130			
Nickel	55.9	5.0	ug/g	10.0	91.8	70-130			
Selenium	46.1	1.0	ug/g	ND	91.6	70-130			
Silver	47.2	0.3	ug/g	ND	94.3	70-130			
Thallium	50.0	1.0	ug/g	ND	99.7	70-130			
Uranium	43.1	1.0	ug/g	ND	85.6	70-130			
Vanadium	67.5	10.0	ug/g	18.0	99.1	70-130			
Zinc	62.4	20.0	ug/g	ND	91.3	70-130			
Semi-Volatiles									
Acenaphthene	0.327	0.02	ug/g	0.054	150	50-140			QM-4X
Acenaphthylene	0.228	0.02	ug/g	0.032	107	50-140			
Anthracene	0.438	0.02	ug/g	0.162	151	50-140			QM-4X
Benzo [a] anthracene	0.148	0.02	ug/g	ND	89.1	50-140			
Benzo [a] pyrene	0.163	0.02	ug/g	ND	97.5	50-140			
Benzo [b] fluoranthene	0.193	0.02	ug/g	ND	116	50-140			
Benzo [g,h,i] perylene	0.170	0.02	ug/g	ND	102	50-140			
Benzo [k] fluoranthene	0.194	0.02	ug/g	ND	116	50-140			
Chrysene	0.162	0.02	ug/g	ND	97.2	50-140			
Dibenzo [a,h] anthracene	0.382	0.02	ug/g	0.103	153	50-140			QM-4X
Fluoranthene	0.166	0.02	ug/g	ND	99.3	50-140			
Fluorene	0.287	0.02	ug/g	0.049	131	50-140			
Indeno [1,2,3-cd] pyrene	0.723	0.02	ug/g	0.326	217	50-140			QM-4X
1-Methylnaphthalene	0.196	0.02	ug/g	ND	107	50-140			
2-Methylnaphthalene	0.210	0.02	ug/g	ND	115	50-140			
Naphthalene	0.230	0.01	ug/g	ND	126	50-140			
Phenanthrene	0.148	0.02	ug/g	ND	88.7	50-140			
Pyrene	0.163	0.02	ug/g	ND	97.7	50-140			
Surrogate: 2-Fluorobiphenyl	*1.60*		*ug/g*		*110*	*50-140*			
Surrogate: Terphenyl-d14	*1.69*		*ug/g*		*116*	*50-140*			
Volatiles									
Benzene	3.26	0.02	ug/g	ND	81.5	60-130			
Ethylbenzene	3.95	0.05	ug/g	ND	98.7	60-130			
Toluene	4.28	0.05	ug/g	ND	107	60-130			

Certificate of Analysis

Client: Lopers & Associates

Client PO:

Report Date: 11-Apr-2023

Order Date: 30-Mar-2023

Project Description: LOP23-025B

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	8.09	0.05	ug/g	ND	101	60-130			
o-Xylene	4.27	0.05	ug/g	ND	107	60-130			
Surrogate: Toluene-d8	*2.99*		*ug/g*		*93.4*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1 : Elevated reporting limits due to the nature of the sample matrix.

2 : GC-FID signal did not return to baseline by C50

QC Qualifiers :

QM-4X The spike recovery was outside of QC acceptance limits due to elevated analyte concentration.

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 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.

PARACEL LABORATORIES LTD.

Paracel ID: 2313385

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2313385	№ 141120

Client Name: LOPERS & ASSOCIATES
Project Ref: LOP23-025B
Page 1 of 1

Contact Name: Luke Lopers
Quote #:

Address: 30 Lansfield Way, Ottawa, ON
PO #:

E-mail: Luke@Lopers.ca

Telephone: 613-327-9073

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

☒ REG 153/04 ☐ REG 406/19

Other Regulation
☐ Table 1 ☒ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☒ Coarse
☒ Table 3 ☐ Agri/Other
☐ Table
For RSC: ☐ Yes ☐ No
☐ 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	BH1-23-SS1	S		2	March 30/23		X		X	X								
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: walk-in

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Luke Lopers	Date/Time:	Date/Time: Mar 30/23 3:50p	Date/Time: Mar 30/23 1609
Date/Time: March 30, 2023/3:50PM	Temperature: °C	Temperature: 9.7 °C	pH Verified: ☐ By: NA

Your Project #: LOP24-025C
Your C.O.C. #: 1019688-01-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/11/07
Report #: R8394673
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y3361
Received: 2024/10/30, 09:00

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum (1)	5	N/A	2024/11/06	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron (1)	6	2024/11/05	2024/11/06	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum (1)	4	N/A	2024/11/05		EPA 8260C m
Free (WAD) Cyanide (1)	6	2024/11/04	2024/11/05	CAM SOP-00457	OMOE E3015 m
Conductivity (1)	6	2024/11/05	2024/11/05	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1, 2)	6	2024/11/04	2024/11/04	CAM SOP-00436	EPA 3060A/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (1, 3)	5	N/A	2024/11/04	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1, 4)	5	2024/11/03	2024/11/03	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric) (1)	2	2024/11/05	2024/11/05	CAM SOP-00316	CCME PHC-CWS m
Acid Extractable Metals by ICPMS (1)	6	2024/11/04	2024/11/04	CAM SOP-00447	EPA 6020B m
Moisture (1)	10	N/A	2024/11/02	CAM SOP-00445	Carter 2nd ed 70.2 m
PAH Compounds in Soil by GC/MS (SIM) (1)	5	2024/11/04	2024/11/05	CAM SOP-00318	EPA 8270E
pH CaCl2 EXTRACT (1)	6	2024/11/04	2024/11/04	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR) (1)	6	N/A	2024/11/05	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds in Soil (1)	4	N/A	2024/11/04	CAM SOP-00228	EPA 8260D

Remarks:

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

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

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

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

Your Project #: LOP24-025C
Your C.O.C. #: 1019688-01-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/11/07
Report #: R8394673
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y3361

Received: 2024/10/30, 09:00

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

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

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

(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8

(2) Soils are reported on a dry weight basis unless otherwise specified.

(3) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(4) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		AHNZ53			AHNZ54			AHNZ55		
Sampling Date		2024/10/28 11:20			2024/10/28 13:40			2024/10/29 08:30		
COC Number		1019688-01-01			1019688-01-01			1019688-01-01		
	UNITS	BH1-24-SS1	RDL	QC Batch	BH1-24-SS6	RDL	QC Batch	BH2-24-AU1	RDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A	0.20 (1)		9740347				15		9740347
Inorganics										
Conductivity	mS/cm	0.27	0.002	9745355				2.8	0.002	9745355
Moisture	%	19	1.0	9741724	32	1.0	9741723	10	1.0	9741724
Available (CaCl2) pH	pH	7.56		9743740				7.78		9743740
WAD Cyanide (Free)	ug/g	ND	0.01	9742886				ND	0.01	9742886

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Bureau Veritas ID		AHNZ56			AHNZ57			AHNZ58		
Sampling Date		2024/10/29 08:55			2024/10/29 09:40			2024/10/29 11:15		
COC Number		1019688-01-01			1019688-01-01			1019688-01-01		
	UNITS	BH2-24-SS3	RDL	QC Batch	BH2-24-SS8	RDL	QC Batch	BH3-24-AU1	RDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A	5.4		9740347				3.9		9740347
Inorganics										
Conductivity	mS/cm	0.49	0.002	9745355				0.49	0.002	9745355
Moisture	%	21	1.0	9741724	28	1.0	9741723	11	1.0	9741724
Available (CaCl2) pH	pH	6.95		9743740				7.88		9743740
WAD Cyanide (Free)	ug/g	ND	0.01	9742886				ND	0.01	9742886

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		AHNZ59			AHNZ60			AHNZ61		
Sampling Date		2024/10/29 11:40			2024/10/29 13:35			2024/10/29 15:15		
COC Number		1019688-01-01			1019688-01-01			1019688-01-01		
	UNITS	BH3-24-SS3	RDL	QC Batch	BH3-24-SS11	RDL	QC Batch	BH4-24-GS1	RDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A	6.1		9740347				43		9740347
Inorganics										
Conductivity	mS/cm	0.57	0.002	9745355				19	0.002	9745355
Moisture	%	29	1.0	9741724	24	1.0	9741723	11	1.0	9742137
Available (CaCl2) pH	pH	7.33		9743740				7.68		9743740
WAD Cyanide (Free)	ug/g	ND	0.01	9742886				0.02	0.01	9742886

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas ID		AHNZ62		
Sampling Date		2024/10/29		
COC Number		1019688-01-01		
	UNITS	DUP-10/29	RDL	QC Batch
Inorganics				
Moisture	%	24	1.0	9741723

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		AHNZ53	AHNZ55	AHNZ56	AHNZ58	AHNZ59		
Sampling Date		2024/10/28 11:20	2024/10/29 08:30	2024/10/29 08:55	2024/10/29 11:15	2024/10/29 11:40		
COC Number		1019688-01-01	1019688-01-01	1019688-01-01	1019688-01-01	1019688-01-01		
	UNITS	BH1-24-SS1	BH2-24-AU1	BH2-24-SS3	BH3-24-AU1	BH3-24-SS3	RDL	QC Batch
Inorganics								
Chromium (VI)	ug/g	0.34	0.36	0.28	ND	0.27	0.18	9742849
Metals								
Hot Water Ext. Boron (B)	ug/g	0.42	0.61	0.12	0.34	0.34	0.050	9745367
Acid Extractable Antimony (Sb)	ug/g	1.7	0.89	ND	ND	ND	0.20	9743924
Acid Extractable Arsenic (As)	ug/g	3.6	3.0	1.4	3.1	ND	1.0	9743924
Acid Extractable Barium (Ba)	ug/g	280	140	200	120	150	0.50	9743924
Acid Extractable Beryllium (Be)	ug/g	0.60	0.28	0.62	0.29	0.42	0.20	9743924
Acid Extractable Boron (B)	ug/g	ND	5.7	ND	ND	ND	5.0	9743924
Acid Extractable Cadmium (Cd)	ug/g	0.40	0.44	ND	0.11	ND	0.10	9743924
Acid Extractable Chromium (Cr)	ug/g	76	39	63	25	55	1.0	9743924
Acid Extractable Cobalt (Co)	ug/g	16	6.9	16	7.8	12	0.10	9743924
Acid Extractable Copper (Cu)	ug/g	43	33	28	17	28	0.50	9743924
Acid Extractable Lead (Pb)	ug/g	220	200	5.5	35	12	1.0	9743924
Acid Extractable Molybdenum (Mo)	ug/g	0.60	3.4	ND	1.2	ND	0.50	9743924
Acid Extractable Nickel (Ni)	ug/g	46	20	37	18	31	0.50	9743924
Acid Extractable Selenium (Se)	ug/g	ND	ND	ND	ND	ND	0.50	9743924
Acid Extractable Silver (Ag)	ug/g	ND	ND	ND	ND	ND	0.20	9743924
Acid Extractable Thallium (Tl)	ug/g	0.31	0.15	0.30	0.18	0.20	0.050	9743924
Acid Extractable Uranium (U)	ug/g	0.65	0.48	0.75	0.59	0.68	0.050	9743924
Acid Extractable Vanadium (V)	ug/g	73	36	73	29	61	5.0	9743924
Acid Extractable Zinc (Zn)	ug/g	210	180	80	53	65	5.0	9743924
Acid Extractable Mercury (Hg)	ug/g	0.074	0.25	ND	ND	ND	0.050	9743924

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		AHNZ61		
Sampling Date		2024/10/29 15:15		
COC Number		1019688-01-01		
	UNITS	BH4-24-GS1	RDL	QC Batch
Inorganics				
Chromium (VI)	ug/g	0.23	0.18	9742849
Metals				
Hot Water Ext. Boron (B)	ug/g	0.81	0.050	9745367
Acid Extractable Antimony (Sb)	ug/g	0.46	0.20	9743924
Acid Extractable Arsenic (As)	ug/g	1.2	1.0	9743924
Acid Extractable Barium (Ba)	ug/g	180	0.50	9743924
Acid Extractable Beryllium (Be)	ug/g	0.34	0.20	9743924
Acid Extractable Boron (B)	ug/g	ND	5.0	9743924
Acid Extractable Cadmium (Cd)	ug/g	0.13	0.10	9743924
Acid Extractable Chromium (Cr)	ug/g	38	1.0	9743924
Acid Extractable Cobalt (Co)	ug/g	8.7	0.10	9743924
Acid Extractable Copper (Cu)	ug/g	23	0.50	9743924
Acid Extractable Lead (Pb)	ug/g	100	1.0	9743924
Acid Extractable Molybdenum (Mo)	ug/g	ND	0.50	9743924
Acid Extractable Nickel (Ni)	ug/g	22	0.50	9743924
Acid Extractable Selenium (Se)	ug/g	ND	0.50	9743924
Acid Extractable Silver (Ag)	ug/g	ND	0.20	9743924
Acid Extractable Thallium (Tl)	ug/g	0.17	0.050	9743924
Acid Extractable Uranium (U)	ug/g	0.46	0.050	9743924
Acid Extractable Vanadium (V)	ug/g	40	5.0	9743924
Acid Extractable Zinc (Zn)	ug/g	90	5.0	9743924
Acid Extractable Mercury (Hg)	ug/g	0.22	0.050	9743924

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AHNZ53		AHNZ55		AHNZ56		AHNZ58		
Sampling Date		2024/10/28 11:20		2024/10/29 08:30		2024/10/29 08:55		2024/10/29 11:15		
COC Number		1019688-01-01		1019688-01-01		1019688-01-01		1019688-01-01		
	UNITS	BH1-24-SS1	RDL	BH2-24-AU1	RDL	BH2-24-SS3	RDL	BH3-24-AU1	RDL	QC Batch
Calculated Parameters										
Methylnaphthalene, 2-(1-)	ug/g	0.032	0.0071	0.36	0.071	ND	0.0071	ND	0.071	9740518
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	0.11	0.0050	0.48	0.050	ND	0.0050	0.052	0.050	9743962
Acenaphthylene	ug/g	0.051	0.0050	0.18	0.050	ND	0.0050	ND	0.050	9743962
Anthracene	ug/g	0.26	0.0050	1.3	0.050	ND	0.0050	0.14	0.050	9743962
Benzo(a)anthracene	ug/g	0.72	0.0050	3.3	0.050	ND	0.0050	0.30	0.050	9743962
Benzo(a)pyrene	ug/g	0.65	0.0050	3.2	0.050	ND	0.0050	0.29	0.050	9743962
Benzo(b/j)fluoranthene	ug/g	0.81	0.0050	3.9	0.050	ND	0.0050	0.33	0.050	9743962
Benzo(g,h,i)perylene	ug/g	0.41	0.0050	1.9	0.050	ND	0.0050	0.17	0.050	9743962
Benzo(k)fluoranthene	ug/g	0.32	0.0050	1.6	0.050	ND	0.0050	0.13	0.050	9743962
Chrysene	ug/g	0.56	0.0050	2.7	0.050	ND	0.0050	0.24	0.050	9743962
Dibenzo(a,h)anthracene	ug/g	0.12	0.0050	0.59	0.050	ND	0.0050	0.051	0.050	9743962
Fluoranthene	ug/g	1.7	0.0050	8.1	0.050	ND	0.0050	0.74	0.050	9743962
Fluorene	ug/g	0.14	0.0050	0.64	0.050	ND	0.0050	0.053	0.050	9743962
Indeno(1,2,3-cd)pyrene	ug/g	0.48	0.0050	2.2	0.050	ND	0.0050	0.19	0.050	9743962
1-Methylnaphthalene	ug/g	0.016	0.0050	0.16	0.050	ND	0.0050	ND	0.050	9743962
2-Methylnaphthalene	ug/g	0.015	0.0050	0.20	0.050	ND	0.0050	ND	0.050	9743962
Naphthalene	ug/g	0.017	0.0050	0.39	0.050	ND	0.0050	ND	0.050	9743962
Phenanthrene	ug/g	1.2	0.0050	6.0	0.050	ND	0.0050	0.51	0.050	9743962
Pyrene	ug/g	1.3	0.0050	6.4	0.050	ND	0.0050	0.63	0.050	9743962
Surrogate Recovery (%)										
D10-Anthracene	%	93		97		107		98		9743962
D14-Terphenyl (FS)	%	93		88		101		99		9743962
D8-Acenaphthylene	%	93		83		83		93		9743962

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AHNZ59		
Sampling Date		2024/10/29 11:40		
COC Number		1019688-01-01		
	UNITS	BH3-24-SS3	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	9740518
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	9743962
Acenaphthylene	ug/g	ND	0.0050	9743962
Anthracene	ug/g	0.0089	0.0050	9743962
Benzo(a)anthracene	ug/g	0.042	0.0050	9743962
Benzo(a)pyrene	ug/g	0.044	0.0050	9743962
Benzo(b/j)fluoranthene	ug/g	0.046	0.0050	9743962
Benzo(g,h,i)perylene	ug/g	0.024	0.0050	9743962
Benzo(k)fluoranthene	ug/g	0.019	0.0050	9743962
Chrysene	ug/g	0.033	0.0050	9743962
Dibenzo(a,h)anthracene	ug/g	0.0069	0.0050	9743962
Fluoranthene	ug/g	0.079	0.0050	9743962
Fluorene	ug/g	ND	0.0050	9743962
Indeno(1,2,3-cd)pyrene	ug/g	0.027	0.0050	9743962
1-Methylnaphthalene	ug/g	ND	0.0050	9743962
2-Methylnaphthalene	ug/g	ND	0.0050	9743962
Naphthalene	ug/g	ND	0.0050	9743962
Phenanthrene	ug/g	0.023	0.0050	9743962
Pyrene	ug/g	0.078	0.0050	9743962
Surrogate Recovery (%)				
D10-Anthracene	%	102		9743962
D14-Terphenyl (FS)	%	93		9743962
D8-Acenaphthylene	%	83		9743962

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (SOIL)

Bureau Veritas ID		AHNZ54	AHNZ57	AHNZ60	AHNZ62		
Sampling Date		2024/10/28 13:40	2024/10/29 09:40	2024/10/29 13:35	2024/10/29		
COC Number		1019688-01-01	1019688-01-01	1019688-01-01	1019688-01-01		
	UNITS	BH1-24-SS6	BH2-24-SS8	BH3-24-SS11	DUP-10/29	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	ND	ND	0.050	9740520
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.49	9742419
Benzene	ug/g	ND	ND	ND	ND	0.0060	9742419
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.040	9742419
Bromoform	ug/g	ND	ND	ND	ND	0.040	9742419
Bromomethane	ug/g	ND	ND	ND	ND	0.040	9742419
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.040	9742419
Chlorobenzene	ug/g	ND	ND	ND	ND	0.040	9742419
Chloroform	ug/g	ND	ND	ND	ND	0.040	9742419
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.040	9742419
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.040	9742419
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.040	9742419
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.040	9742419
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.040	9742419
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.040	9742419
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.049	9742419
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.040	9742419
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.040	9742419
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.040	9742419
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.040	9742419
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	9742419
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	9742419
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	9742419
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.040	9742419
Hexane	ug/g	ND	ND	ND	ND	0.040	9742419
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.049	9742419
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.40	9742419
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.40	9742419
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.040	9742419
Styrene	ug/g	ND	ND	ND	ND	0.040	9742419

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (SOIL)

Bureau Veritas ID		AHNZ54	AHNZ57	AHNZ60	AHNZ62		
Sampling Date		2024/10/28 13:40	2024/10/29 09:40	2024/10/29 13:35	2024/10/29		
COC Number		1019688-01-01	1019688-01-01	1019688-01-01	1019688-01-01		
	UNITS	BH1-24-SS6	BH2-24-SS8	BH3-24-SS11	DUP-10/29	RDL	QC Batch
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.040	9742419
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.040	9742419
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.040	9742419
Toluene	ug/g	ND	ND	ND	ND	0.020	9742419
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.040	9742419
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.040	9742419
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	9742419
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.040	9742419
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.019	9742419
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	9742419
o-Xylene	ug/g	ND	ND	ND	ND	0.020	9742419
Total Xylenes	ug/g	ND	ND	ND	ND	0.020	9742419
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	100	92	89	92		9742419
D10-o-Xylene	%	110	105	113	93		9742419
D4-1,2-Dichloroethane	%	79	88	92	83		9742419
D8-Toluene	%	100	95	98	94		9742419

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AHNZ53			AHNZ55			AHNZ56		
Sampling Date		2024/10/28 11:20			2024/10/29 08:30			2024/10/29 08:55		
COC Number		1019688-01-01			1019688-01-01			1019688-01-01		
	UNITS	BH1-24-SS1	RDL	QC Batch	BH2-24-AU1	RDL	QC Batch	BH2-24-SS3	RDL	QC Batch
BTEX & F1 Hydrocarbons										
Benzene	ug/g	ND	0.020	9741923	ND	0.020	9741923	ND	0.020	9741923
Toluene	ug/g	ND	0.020	9741923	0.022	0.020	9741923	ND	0.020	9741923
Ethylbenzene	ug/g	ND	0.020	9741923	ND	0.020	9741923	ND	0.020	9741923
o-Xylene	ug/g	ND	0.020	9741923	ND	0.020	9741923	ND	0.020	9741923
p+m-Xylene	ug/g	ND	0.040	9741923	ND	0.040	9741923	ND	0.040	9741923
Total Xylenes	ug/g	ND	0.040	9741923	ND	0.040	9741923	ND	0.040	9741923
F1 (C6-C10)	ug/g	ND	10	9741923	ND	10	9741923	ND	10	9741923
F1 (C6-C10) - BTEX	ug/g	ND	10	9741923	ND	10	9741923	ND	10	9741923
F2-F4 Hydrocarbons										
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g				3500	100	9745209			
F2 (C10-C16 Hydrocarbons)	ug/g	ND	7.0	9742324	16	7.0	9742324	ND	7.0	9742324
F3 (C16-C34 Hydrocarbons)	ug/g	96	50	9742324	590	50	9742324	ND	50	9742324
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	9742324	1100	50	9742324	ND	50	9742324
Reached Baseline at C50	ug/g	Yes		9742324	No		9742324	Yes		9742324
Surrogate Recovery (%)										
1,4-Difluorobenzene	%	103		9741923	91		9741923	92		9741923
4-Bromofluorobenzene	%	89		9741923	93		9741923	87		9741923
D10-o-Xylene	%	112		9741923	118		9741923	107		9741923
D4-1,2-Dichloroethane	%	97		9741923	89		9741923	95		9741923
o-Terphenyl	%	89		9742324	91		9742324	96		9742324

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AHNZ58			AHNZ59		
Sampling Date		2024/10/29 11:15			2024/10/29 11:40		
COC Number		1019688-01-01			1019688-01-01		
	UNITS	BH3-24-AU1	RDL	QC Batch	BH3-24-SS3	RDL	QC Batch
BTEX & F1 Hydrocarbons							
Benzene	ug/g	ND	0.020	9741923	ND	0.020	9741923
Toluene	ug/g	0.024	0.020	9741923	ND	0.020	9741923
Ethylbenzene	ug/g	ND	0.020	9741923	ND	0.020	9741923
o-Xylene	ug/g	0.038	0.020	9741923	ND	0.020	9741923
p+m-Xylene	ug/g	0.043	0.040	9741923	ND	0.040	9741923
Total Xylenes	ug/g	0.081	0.040	9741923	ND	0.040	9741923
F1 (C6-C10)	ug/g	ND	10	9741923	ND	10	9741923
F1 (C6-C10) - BTEX	ug/g	ND	10	9741923	ND	10	9741923
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1300	100	9745209			
F2 (C10-C16 Hydrocarbons)	ug/g	100	7.0	9742324	ND	7.0	9742324
F3 (C16-C34 Hydrocarbons)	ug/g	310	50	9742324	ND	50	9742324
F4 (C34-C50 Hydrocarbons)	ug/g	330	50	9742324	ND	50	9742324
Reached Baseline at C50	ug/g	No		9742324	Yes		9742324
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	90		9741923	95		9741923
4-Bromofluorobenzene	%	99		9741923	95		9741923
D10-o-Xylene	%	113		9741923	121		9741923
D4-1,2-Dichloroethane	%	94		9741923	94		9741923
o-Terphenyl	%	95		9742324	87		9742324

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

GENERAL COMMENTS

Sample AHNZ55 [BH2-24-AU1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample AHNZ56 [BH2-24-SS3] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Sample AHNZ58 [BH3-24-AU1] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample AHNZ59 [BH3-24-SS3] : F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Results relate only to the items tested.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9741723	JA8	RPD	Moisture	2024/11/02	0		%	20
9741724	JA8	RPD	Moisture	2024/11/02	0.52		%	20
9741923	LRA	Matrix Spike	1,4-Difluorobenzene	2024/11/04		99	%	60 - 140
			4-Bromofluorobenzene	2024/11/04		98	%	60 - 140
			D10-o-Xylene	2024/11/04		112	%	60 - 140
			D4-1,2-Dichloroethane	2024/11/04		99	%	60 - 140
			Benzene	2024/11/04		101	%	50 - 140
			Toluene	2024/11/04		98	%	50 - 140
			Ethylbenzene	2024/11/04		111	%	50 - 140
			o-Xylene	2024/11/04		109	%	50 - 140
			p+m-Xylene	2024/11/04		105	%	50 - 140
			F1 (C6-C10)	2024/11/04		115	%	60 - 140
9741923	LRA	Spiked Blank	1,4-Difluorobenzene	2024/11/04		104	%	60 - 140
			4-Bromofluorobenzene	2024/11/04		97	%	60 - 140
			D10-o-Xylene	2024/11/04		102	%	60 - 140
			D4-1,2-Dichloroethane	2024/11/04		103	%	60 - 140
			Benzene	2024/11/04		93	%	50 - 140
			Toluene	2024/11/04		90	%	50 - 140
			Ethylbenzene	2024/11/04		100	%	50 - 140
			o-Xylene	2024/11/04		97	%	50 - 140
			p+m-Xylene	2024/11/04		94	%	50 - 140
			F1 (C6-C10)	2024/11/04		101	%	80 - 120
9741923	LRA	Method Blank	1,4-Difluorobenzene	2024/11/04		116	%	60 - 140
			4-Bromofluorobenzene	2024/11/04		94	%	60 - 140
			D10-o-Xylene	2024/11/04		112	%	60 - 140
			D4-1,2-Dichloroethane	2024/11/04		117	%	60 - 140
			Benzene	2024/11/04	ND, RDL=0.020		ug/g	
			Toluene	2024/11/04	ND, RDL=0.020		ug/g	
			Ethylbenzene	2024/11/04	ND, RDL=0.020		ug/g	
			o-Xylene	2024/11/04	ND, RDL=0.020		ug/g	
			p+m-Xylene	2024/11/04	ND, RDL=0.040		ug/g	
			Total Xylenes	2024/11/04	ND, RDL=0.040		ug/g	
			F1 (C6-C10)	2024/11/04	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2024/11/04	ND, RDL=10		ug/g	
9741923	LRA	RPD	Benzene	2024/11/04	NC		%	50
			Toluene	2024/11/04	NC		%	50
			Ethylbenzene	2024/11/04	NC		%	50
			o-Xylene	2024/11/04	NC		%	50
			p+m-Xylene	2024/11/04	NC		%	50
			Total Xylenes	2024/11/04	NC		%	50
			F1 (C6-C10)	2024/11/04	NC		%	30
			F1 (C6-C10) - BTEX	2024/11/04	NC		%	30
9742137	JA8	RPD	Moisture	2024/11/02	6.1		%	20
9742324	MSZ	Matrix Spike [AHNZ56-02]	o-Terphenyl	2024/11/03		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/03		104	%	60 - 140

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F3 (C16-C34 Hydrocarbons)	2024/11/03		105	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/11/03		105	%	60 - 140
9742324	MSZ	Spiked Blank	o-Terphenyl	2024/11/03		88	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/03		93	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2024/11/03		94	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2024/11/03		94	%	80 - 120
9742324	MSZ	Method Blank	o-Terphenyl	2024/11/03		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/03	ND, RDL=7.0		ug/g	
			F3 (C16-C34 Hydrocarbons)	2024/11/03	ND, RDL=50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2024/11/03	ND, RDL=50		ug/g	
9742324	MSZ	RPD [AHNZ56-02]	F2 (C10-C16 Hydrocarbons)	2024/11/03	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2024/11/03	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2024/11/03	NC		%	30
9742419	NGH	Matrix Spike	4-Bromofluorobenzene	2024/11/04		98	%	60 - 140
			D10-o-Xylene	2024/11/04		103	%	60 - 130
			D4-1,2-Dichloroethane	2024/11/04		87	%	60 - 140
			D8-Toluene	2024/11/04		102	%	60 - 140
			Acetone (2-Propanone)	2024/11/04		101	%	60 - 140
			Benzene	2024/11/04		109	%	60 - 140
			Bromodichloromethane	2024/11/04		93	%	60 - 140
			Bromoform	2024/11/04		100	%	60 - 140
			Bromomethane	2024/11/04		95	%	60 - 140
			Carbon Tetrachloride	2024/11/04		108	%	60 - 140
			Chlorobenzene	2024/11/04		100	%	60 - 140
			Chloroform	2024/11/04		98	%	60 - 140
			Dibromochloromethane	2024/11/04		105	%	60 - 140
			1,2-Dichlorobenzene	2024/11/04		110	%	60 - 140
			1,3-Dichlorobenzene	2024/11/04		113	%	60 - 140
			1,4-Dichlorobenzene	2024/11/04		111	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2024/11/04		66	%	60 - 140
			1,1-Dichloroethane	2024/11/04		101	%	60 - 140
			1,2-Dichloroethane	2024/11/04		98	%	60 - 140
			1,1-Dichloroethylene	2024/11/04		101	%	60 - 140
			cis-1,2-Dichloroethylene	2024/11/04		108	%	60 - 140
			trans-1,2-Dichloroethylene	2024/11/04		114	%	60 - 140
			1,2-Dichloropropane	2024/11/04		101	%	60 - 140
			cis-1,3-Dichloropropene	2024/11/04		95	%	60 - 140
			trans-1,3-Dichloropropene	2024/11/04		97	%	60 - 140
			Ethylbenzene	2024/11/04		102	%	60 - 140
			Ethylene Dibromide	2024/11/04		100	%	60 - 140
			Hexane	2024/11/04		119	%	60 - 140
			Methylene Chloride(Dichloromethane)	2024/11/04		104	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2024/11/04		102	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/04		85	%	60 - 140
			Methyl t-butyl ether (MTBE)	2024/11/04		97	%	60 - 140
			Styrene	2024/11/04		108	%	60 - 140
			1,1,1,2-Tetrachloroethane	2024/11/04		113	%	60 - 140
			1,1,2,2-Tetrachloroethane	2024/11/04		93	%	60 - 140
			Tetrachloroethylene	2024/11/04		108	%	60 - 140
			Toluene	2024/11/04		105	%	60 - 140
			1,1,1-Trichloroethane	2024/11/04		97	%	60 - 140

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1,2-Trichloroethane	2024/11/04		91	%	60 - 140
			Trichloroethylene	2024/11/04		107	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2024/11/04		99	%	60 - 140
			Vinyl Chloride	2024/11/04		110	%	60 - 140
			p+m-Xylene	2024/11/04		103	%	60 - 140
			o-Xylene	2024/11/04		112	%	60 - 140
9742419	NGH	Spiked Blank	4-Bromofluorobenzene	2024/11/04		102	%	60 - 140
			D10-o-Xylene	2024/11/04		107	%	60 - 130
			D4-1,2-Dichloroethane	2024/11/04		85	%	60 - 140
			D8-Toluene	2024/11/04		101	%	60 - 140
			Acetone (2-Propanone)	2024/11/04		101	%	60 - 140
			Benzene	2024/11/04		106	%	60 - 130
			Bromodichloromethane	2024/11/04		97	%	60 - 130
			Bromoform	2024/11/04		109	%	60 - 130
			Bromomethane	2024/11/04		96	%	60 - 140
			Carbon Tetrachloride	2024/11/04		105	%	60 - 130
			Chlorobenzene	2024/11/04		99	%	60 - 130
			Chloroform	2024/11/04		98	%	60 - 130
			Dibromochloromethane	2024/11/04		107	%	60 - 130
			1,2-Dichlorobenzene	2024/11/04		108	%	60 - 130
			1,3-Dichlorobenzene	2024/11/04		110	%	60 - 130
			1,4-Dichlorobenzene	2024/11/04		109	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/04		73	%	60 - 140
			1,1-Dichloroethane	2024/11/04		102	%	60 - 130
			1,2-Dichloroethane	2024/11/04		91	%	60 - 130
			1,1-Dichloroethylene	2024/11/04		100	%	60 - 130
			cis-1,2-Dichloroethylene	2024/11/04		107	%	60 - 130
			trans-1,2-Dichloroethylene	2024/11/04		114	%	60 - 130
			1,2-Dichloropropane	2024/11/04		104	%	60 - 130
			cis-1,3-Dichloropropene	2024/11/04		99	%	60 - 130
			trans-1,3-Dichloropropene	2024/11/04		95	%	60 - 130
			Ethylbenzene	2024/11/04		101	%	60 - 130
			Ethylene Dibromide	2024/11/04		102	%	60 - 130
			Hexane	2024/11/04		116	%	60 - 130
			Methylene Chloride(Dichloromethane)	2024/11/04		107	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/04		103	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/04		94	%	60 - 130
			Methyl t-butyl ether (MTBE)	2024/11/04		101	%	60 - 130
			Styrene	2024/11/04		108	%	60 - 130
			1,1,1,2-Tetrachloroethane	2024/11/04		112	%	60 - 130
			1,1,2,2-Tetrachloroethane	2024/11/04		100	%	60 - 130
			Tetrachloroethylene	2024/11/04		105	%	60 - 130
			Toluene	2024/11/04		103	%	60 - 130
			1,1,1-Trichloroethane	2024/11/04		94	%	60 - 130
			1,1,2-Trichloroethane	2024/11/04		90	%	60 - 130
			Trichloroethylene	2024/11/04		109	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/04		102	%	60 - 130
			Vinyl Chloride	2024/11/04		111	%	60 - 130
			p+m-Xylene	2024/11/04		103	%	60 - 130
			o-Xylene	2024/11/04		112	%	60 - 130
9742419	NGH	Method Blank	4-Bromofluorobenzene	2024/11/04		102	%	60 - 140
			D10-o-Xylene	2024/11/04		108	%	60 - 130
			D4-1,2-Dichloroethane	2024/11/04		89	%	60 - 140
			D8-Toluene	2024/11/04		96	%	60 - 140

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acetone (2-Propanone)	2024/11/04	ND, RDL=0.49		ug/g	
			Benzene	2024/11/04	ND, RDL=0.0060		ug/g	
			Bromodichloromethane	2024/11/04	ND, RDL=0.040		ug/g	
			Bromoform	2024/11/04	ND, RDL=0.040		ug/g	
			Bromomethane	2024/11/04	ND, RDL=0.040		ug/g	
			Carbon Tetrachloride	2024/11/04	ND, RDL=0.040		ug/g	
			Chlorobenzene	2024/11/04	ND, RDL=0.040		ug/g	
			Chloroform	2024/11/04	ND, RDL=0.040		ug/g	
			Dibromochloromethane	2024/11/04	ND, RDL=0.040		ug/g	
			1,2-Dichlorobenzene	2024/11/04	ND, RDL=0.040		ug/g	
			1,3-Dichlorobenzene	2024/11/04	ND, RDL=0.040		ug/g	
			1,4-Dichlorobenzene	2024/11/04	ND, RDL=0.040		ug/g	
			Dichlorodifluoromethane (FREON 12)	2024/11/04	ND, RDL=0.040		ug/g	
			1,1-Dichloroethane	2024/11/04	ND, RDL=0.040		ug/g	
			1,2-Dichloroethane	2024/11/04	ND, RDL=0.049		ug/g	
			1,1-Dichloroethylene	2024/11/04	ND, RDL=0.040		ug/g	
			cis-1,2-Dichloroethylene	2024/11/04	ND, RDL=0.040		ug/g	
			trans-1,2-Dichloroethylene	2024/11/04	ND, RDL=0.040		ug/g	
			1,2-Dichloropropane	2024/11/04	ND, RDL=0.040		ug/g	
			cis-1,3-Dichloropropene	2024/11/04	ND, RDL=0.030		ug/g	
			trans-1,3-Dichloropropene	2024/11/04	ND, RDL=0.040		ug/g	
			Ethylbenzene	2024/11/04	ND, RDL=0.010		ug/g	
			Ethylene Dibromide	2024/11/04	ND, RDL=0.040		ug/g	
			Hexane	2024/11/04	ND, RDL=0.040		ug/g	
			Methylene Chloride(Dichloromethane)	2024/11/04	ND, RDL=0.049		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2024/11/04	ND, RDL=0.40		ug/g	
			Methyl Isobutyl Ketone	2024/11/04	ND, RDL=0.40		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Methyl t-butyl ether (MTBE)	2024/11/04	ND, RDL=0.040		ug/g	
			Styrene	2024/11/04	ND, RDL=0.040		ug/g	
			1,1,1,2-Tetrachloroethane	2024/11/04	ND, RDL=0.040		ug/g	
			1,1,2,2-Tetrachloroethane	2024/11/04	ND, RDL=0.040		ug/g	
			Tetrachloroethylene	2024/11/04	ND, RDL=0.040		ug/g	
			Toluene	2024/11/04	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2024/11/04	ND, RDL=0.040		ug/g	
			1,1,2-Trichloroethane	2024/11/04	ND, RDL=0.040		ug/g	
			Trichloroethylene	2024/11/04	ND, RDL=0.010		ug/g	
			Trichlorofluoromethane (FREON 11)	2024/11/04	ND, RDL=0.040		ug/g	
			Vinyl Chloride	2024/11/04	ND, RDL=0.019		ug/g	
			p+m-Xylene	2024/11/04	ND, RDL=0.020		ug/g	
			o-Xylene	2024/11/04	ND, RDL=0.020		ug/g	
			Total Xylenes	2024/11/04	ND, RDL=0.020		ug/g	
9742419	NGH	RPD	Acetone (2-Propanone)	2024/11/04	NC		%	50
			Benzene	2024/11/04	NC		%	50
			Bromodichloromethane	2024/11/04	NC		%	50
			Bromoform	2024/11/04	NC		%	50
			Bromomethane	2024/11/04	NC		%	50
			Carbon Tetrachloride	2024/11/04	NC		%	50
			Chlorobenzene	2024/11/04	NC		%	50
			Chloroform	2024/11/04	NC		%	50
			Dibromochloromethane	2024/11/04	NC		%	50
			1,2-Dichlorobenzene	2024/11/04	NC		%	50
			1,3-Dichlorobenzene	2024/11/04	NC		%	50
			1,4-Dichlorobenzene	2024/11/04	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2024/11/04	NC		%	50
			1,1-Dichloroethane	2024/11/04	NC		%	50
			1,2-Dichloroethane	2024/11/04	NC		%	50
			1,1-Dichloroethylene	2024/11/04	NC		%	50
			cis-1,2-Dichloroethylene	2024/11/04	NC		%	50
			trans-1,2-Dichloroethylene	2024/11/04	NC		%	50
			1,2-Dichloropropane	2024/11/04	NC		%	50
			cis-1,3-Dichloropropene	2024/11/04	NC		%	50
			trans-1,3-Dichloropropene	2024/11/04	NC		%	50
			Ethylbenzene	2024/11/04	7.5		%	50
			Ethylene Dibromide	2024/11/04	NC		%	50
			Hexane	2024/11/04	NC		%	50
			Methylene Chloride(Dichloromethane)	2024/11/04	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2024/11/04	NC		%	50
			Methyl Isobutyl Ketone	2024/11/04	NC		%	50

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Methyl t-butyl ether (MTBE)	2024/11/04	NC		%	50
			Styrene	2024/11/04	NC		%	50
			1,1,1,2-Tetrachloroethane	2024/11/04	NC		%	50
			1,1,2,2-Tetrachloroethane	2024/11/04	NC		%	50
			Tetrachloroethylene	2024/11/04	NC		%	50
			Toluene	2024/11/04	5.6		%	50
			1,1,1-Trichloroethane	2024/11/04	NC		%	50
			1,1,2-Trichloroethane	2024/11/04	NC		%	50
			Trichloroethylene	2024/11/04	NC		%	50
			Trichlorofluoromethane (FREON 11)	2024/11/04	NC		%	50
			Vinyl Chloride	2024/11/04	NC		%	50
			p+m-Xylene	2024/11/04	NC		%	50
			o-Xylene	2024/11/04	NC		%	50
			Total Xylenes	2024/11/04	NC		%	50
9742849	SB5	Matrix Spike [AHNZ61-01]	Chromium (VI)	2024/11/04		81	%	70 - 130
9742849	SB5	Spiked Blank	Chromium (VI)	2024/11/04		94	%	80 - 120
9742849	SB5	Method Blank	Chromium (VI)	2024/11/04	ND, RDL=0.18		ug/g	
9742849	SB5	RPD [AHNZ61-01]	Chromium (VI)	2024/11/04	23		%	35
9742886	JJH	Matrix Spike [AHNZ61-01]	WAD Cyanide (Free)	2024/11/05		94	%	75 - 125
9742886	JJH	Spiked Blank	WAD Cyanide (Free)	2024/11/04		102	%	80 - 120
9742886	JJH	Method Blank	WAD Cyanide (Free)	2024/11/04	ND, RDL=0.01		ug/g	
9742886	JJH	RPD [AHNZ61-01]	WAD Cyanide (Free)	2024/11/05	NC		%	35
9743740	SRT	Spiked Blank	Available (CaCl2) pH	2024/11/04		100	%	97 - 103
9743740	SRT	RPD [AHNZ61-01]	Available (CaCl2) pH	2024/11/04	0.31		%	N/A
9743924	DT1	Matrix Spike [AHNZ55-01]	Acid Extractable Antimony (Sb)	2024/11/04		93	%	75 - 125
			Acid Extractable Arsenic (As)	2024/11/04		91	%	75 - 125
			Acid Extractable Barium (Ba)	2024/11/04		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2024/11/04		91	%	75 - 125
			Acid Extractable Boron (B)	2024/11/04		82	%	75 - 125
			Acid Extractable Cadmium (Cd)	2024/11/04		92	%	75 - 125
			Acid Extractable Chromium (Cr)	2024/11/04		NC	%	75 - 125
			Acid Extractable Cobalt (Co)	2024/11/04		98	%	75 - 125
			Acid Extractable Copper (Cu)	2024/11/04		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2024/11/04		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2024/11/04		94	%	75 - 125
			Acid Extractable Nickel (Ni)	2024/11/04		99	%	75 - 125
			Acid Extractable Selenium (Se)	2024/11/04		91	%	75 - 125
			Acid Extractable Silver (Ag)	2024/11/04		92	%	75 - 125
			Acid Extractable Thallium (Tl)	2024/11/04		91	%	75 - 125
			Acid Extractable Uranium (U)	2024/11/04		98	%	75 - 125
			Acid Extractable Vanadium (V)	2024/11/04		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2024/11/04		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2024/11/04		92	%	75 - 125
9743924	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2024/11/04		110	%	80 - 120
			Acid Extractable Arsenic (As)	2024/11/04		97	%	80 - 120
			Acid Extractable Barium (Ba)	2024/11/04		95	%	80 - 120
			Acid Extractable Beryllium (Be)	2024/11/04		93	%	80 - 120
			Acid Extractable Boron (B)	2024/11/04		87	%	80 - 120
			Acid Extractable Cadmium (Cd)	2024/11/04		97	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Chromium (Cr)	2024/11/04		96	%	80 - 120
			Acid Extractable Cobalt (Co)	2024/11/04		103	%	80 - 120
			Acid Extractable Copper (Cu)	2024/11/04		95	%	80 - 120
			Acid Extractable Lead (Pb)	2024/11/04		98	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2024/11/04		95	%	80 - 120
			Acid Extractable Nickel (Ni)	2024/11/04		102	%	80 - 120
			Acid Extractable Selenium (Se)	2024/11/04		94	%	80 - 120
			Acid Extractable Silver (Ag)	2024/11/04		95	%	80 - 120
			Acid Extractable Thallium (Tl)	2024/11/04		100	%	80 - 120
			Acid Extractable Uranium (U)	2024/11/04		103	%	80 - 120
			Acid Extractable Vanadium (V)	2024/11/04		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2024/11/04		100	%	80 - 120
			Acid Extractable Mercury (Hg)	2024/11/04		98	%	80 - 120
9743924	DT1	Method Blank	Acid Extractable Antimony (Sb)	2024/11/04	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2024/11/04	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2024/11/04	ND, RDL=0.20		ug/g	
			Acid Extractable Boron (B)	2024/11/04	ND, RDL=5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2024/11/04	ND, RDL=0.10		ug/g	
			Acid Extractable Chromium (Cr)	2024/11/04	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2024/11/04	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Lead (Pb)	2024/11/04	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Selenium (Se)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2024/11/04	ND, RDL=0.20		ug/g	
			Acid Extractable Thallium (Tl)	2024/11/04	ND, RDL=0.050		ug/g	
			Acid Extractable Uranium (U)	2024/11/04	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2024/11/04	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2024/11/04	ND, RDL=5.0		ug/g	
			Acid Extractable Mercury (Hg)	2024/11/04	ND, RDL=0.050		ug/g	
9743924	DT1	RPD [AHNZ55-01]	Acid Extractable Antimony (Sb)	2024/11/04	NC		%	30
			Acid Extractable Arsenic (As)	2024/11/04	5.3		%	30
			Acid Extractable Barium (Ba)	2024/11/04	4.1		%	30
			Acid Extractable Beryllium (Be)	2024/11/04	6.7		%	30

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Boron (B)	2024/11/04	13		%	30
			Acid Extractable Cadmium (Cd)	2024/11/04	1.1		%	30
			Acid Extractable Chromium (Cr)	2024/11/04	5.6		%	30
			Acid Extractable Cobalt (Co)	2024/11/04	2.1		%	30
			Acid Extractable Copper (Cu)	2024/11/04	4.6		%	30
			Acid Extractable Lead (Pb)	2024/11/04	1.1		%	30
			Acid Extractable Molybdenum (Mo)	2024/11/04	8.8		%	30
			Acid Extractable Nickel (Ni)	2024/11/04	6.2		%	30
			Acid Extractable Selenium (Se)	2024/11/04	NC		%	30
			Acid Extractable Silver (Ag)	2024/11/04	NC		%	30
			Acid Extractable Thallium (Tl)	2024/11/04	0.74		%	30
			Acid Extractable Uranium (U)	2024/11/04	5.0		%	30
			Acid Extractable Vanadium (V)	2024/11/04	3.2		%	30
			Acid Extractable Zinc (Zn)	2024/11/04	2.9		%	30
			Acid Extractable Mercury (Hg)	2024/11/04	2.3		%	30
9743962	RAJ	Matrix Spike [AHNZ56-02]	D10-Anthracene	2024/11/05		99	%	50 - 130
			D14-Terphenyl (FS)	2024/11/05		98	%	50 - 130
			D8-Acenaphthylene	2024/11/05		91	%	50 - 130
			Acenaphthene	2024/11/05		96	%	50 - 130
			Acenaphthylene	2024/11/05		101	%	50 - 130
			Anthracene	2024/11/05		99	%	50 - 130
			Benzo(a)anthracene	2024/11/05		92	%	50 - 130
			Benzo(a)pyrene	2024/11/05		89	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/05		90	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/05		98	%	50 - 130
			Benzo(k)fluoranthene	2024/11/05		81	%	50 - 130
			Chrysene	2024/11/05		85	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/05		103	%	50 - 130
			Fluoranthene	2024/11/05		103	%	50 - 130
			Fluorene	2024/11/05		99	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/05		104	%	50 - 130
			1-Methylnaphthalene	2024/11/05		80	%	50 - 130
			2-Methylnaphthalene	2024/11/05		82	%	50 - 130
			Naphthalene	2024/11/05		77	%	50 - 130
			Phenanthrene	2024/11/05		93	%	50 - 130
			Pyrene	2024/11/05		105	%	50 - 130
9743962	RAJ	Spiked Blank	D10-Anthracene	2024/11/05		101	%	50 - 130
			D14-Terphenyl (FS)	2024/11/05		100	%	50 - 130
			D8-Acenaphthylene	2024/11/05		97	%	50 - 130
			Acenaphthene	2024/11/05		99	%	50 - 130
			Acenaphthylene	2024/11/05		106	%	50 - 130
			Anthracene	2024/11/05		102	%	50 - 130
			Benzo(a)anthracene	2024/11/05		95	%	50 - 130
			Benzo(a)pyrene	2024/11/05		92	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/05		95	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/05		103	%	50 - 130
			Benzo(k)fluoranthene	2024/11/05		85	%	50 - 130
			Chrysene	2024/11/05		89	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/05		105	%	50 - 130
			Fluoranthene	2024/11/05		107	%	50 - 130
			Fluorene	2024/11/05		103	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/05		107	%	50 - 130
			1-Methylnaphthalene	2024/11/05		87	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2-Methylnaphthalene	2024/11/05		89	%	50 - 130
			Naphthalene	2024/11/05		89	%	50 - 130
			Phenanthrene	2024/11/05		97	%	50 - 130
			Pyrene	2024/11/05		107	%	50 - 130
9743962	RAJ	Method Blank	D10-Anthracene	2024/11/05		108	%	50 - 130
			D14-Terphenyl (FS)	2024/11/05		103	%	50 - 130
			D8-Acenaphthylene	2024/11/05		98	%	50 - 130
			Acenaphthene	2024/11/05	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2024/11/05	ND, RDL=0.0050		ug/g	
			Anthracene	2024/11/05	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2024/11/05	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2024/11/05	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2024/11/05	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2024/11/05	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2024/11/05	ND, RDL=0.0050		ug/g	
			Chrysene	2024/11/05	ND, RDL=0.0050		ug/g	
			Dibenzo(a,h)anthracene	2024/11/05	ND, RDL=0.0050		ug/g	
			Fluoranthene	2024/11/05	ND, RDL=0.0050		ug/g	
			Fluorene	2024/11/05	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2024/11/05	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2024/11/05	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2024/11/05	ND, RDL=0.0050		ug/g	
			Naphthalene	2024/11/05	ND, RDL=0.0050		ug/g	
			Phenanthrene	2024/11/05	ND, RDL=0.0050		ug/g	
			Pyrene	2024/11/05	ND, RDL=0.0050		ug/g	
9743962	RAJ	RPD [AHNZ56-02]	Acenaphthene	2024/11/05	NC		%	40
			Acenaphthylene	2024/11/05	NC		%	40
			Anthracene	2024/11/05	NC		%	40
			Benzo(a)anthracene	2024/11/05	NC		%	40
			Benzo(a)pyrene	2024/11/05	NC		%	40
			Benzo(b/j)fluoranthene	2024/11/05	NC		%	40
			Benzo(g,h,i)perylene	2024/11/05	NC		%	40
			Benzo(k)fluoranthene	2024/11/05	NC		%	40
			Chrysene	2024/11/05	NC		%	40
			Dibenzo(a,h)anthracene	2024/11/05	NC		%	40
			Fluoranthene	2024/11/05	NC		%	40
			Fluorene	2024/11/05	NC		%	40

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Indeno(1,2,3-cd)pyrene	2024/11/05	NC		%	40
			1-Methylnaphthalene	2024/11/05	NC		%	40
			2-Methylnaphthalene	2024/11/05	NC		%	40
			Naphthalene	2024/11/05	NC		%	40
			Phenanthrene	2024/11/05	NC		%	40
			Pyrene	2024/11/05	NC		%	40
9745209	RDU	Matrix Spike	F4G-sg (Grav. Heavy Hydrocarbons)	2024/11/05		123	%	65 - 135
9745209	RDU	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2024/11/05		101	%	65 - 135
9745209	RDU	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2024/11/05	ND, RDL=100		ug/g	
9745209	RDU	RPD	F4G-sg (Grav. Heavy Hydrocarbons)	2024/11/05	6.1		%	50
9745355	GTK	Spiked Blank	Conductivity	2024/11/05		106	%	90 - 110
9745355	GTK	Method Blank	Conductivity	2024/11/05	ND, RDL=0.002		mS/cm	
9745355	GTK	RPD	Conductivity	2024/11/05	1.3		%	10
9745367	TLG	Matrix Spike	Hot Water Ext. Boron (B)	2024/11/06		100	%	75 - 125
9745367	TLG	Spiked Blank	Hot Water Ext. Boron (B)	2024/11/06		100	%	75 - 125
9745367	TLG	Method Blank	Hot Water Ext. Boron (B)	2024/11/06	ND, RDL=0.050		ug/g	
9745367	TLG	RPD	Hot Water Ext. Boron (B)	2024/11/06	15		%	40

N/A = Not Applicable

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

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

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

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

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

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

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

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

C4Y3361
2024/10/30 09:00

Page of

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

NONT-2024-10-7526

Bottle Order #: 1019688

COC #: C#1019688-01-01

Project Manager: Katherine Szozda

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#39509 Lopers & Associates	Company Name:		Quotation #:	C43362
Attention:	Accounts Payable	Attention:	Luke Lopers	P.O. #:	
Address:	30 Lansfield Way	Address:		Project:	LOP24-025C
	Ottawa ON K2G 3V8			Project Name:	
Tel:	(613) 327-9073 Fax:	Tel:	Fax:	Site #:	
Email:	Luke@Lopers.ca	Email:	Luke@Lopers.ca	Sampled By:	L. Lopers

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

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

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

Special Instructions

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

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O.Reg 153 BTEX by HS & F1-F4 (Soil)	O.Reg 153 PAHs (Soil)	O.Reg 153 Metals & Inorganics Pkg (Soil)	O.Reg 406 Excess Soil SPLP Metals	O.Reg 406 Excess Soil mSPLP Prep	O.Reg 406 Excess Soil SPLP VOCs	O.Reg 406 Excess Soil SPLP ABNs	O.Reg 153 VOCs			# of Bottles	Comments
1		BH1-24-SS1	Oct 28/24	11:20AM	S	X	X	X									
2		BH1-24-SS6	Oct 28/24	1:40PM	S								X				
3		BH2-24-AU1	Oct 29/24	8:30AM	S	X	X	X									
4		BH2-24-SS3	Oct 29/24	8:55AM	S	X	X	X									
5		BH2-24-SS8	Oct 29/24	9:40AM	S								X				
6		BH3-24-AU1	Oct 29/24	11:15AM	S	X	X	X									
7		BH3-24-SS3	Oct 29/24	11:40AM	S	X	X	X									
8		BH3-24-SS11	Oct 29/24	1:35PM	S												
9		BH4-24-GS1	Oct 29/24	3:15PM	S			X									
10		DUP-10/29	Oct 29/24	—	S								X				

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

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

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

Received in Ottawa

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Luke Lopers	24/10/29		Pedro da Silva / [illegible]	2024/10/30	09:00	
				24/10/31	08:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	5/6/7 (ice)	Present	✓	
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

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

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

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

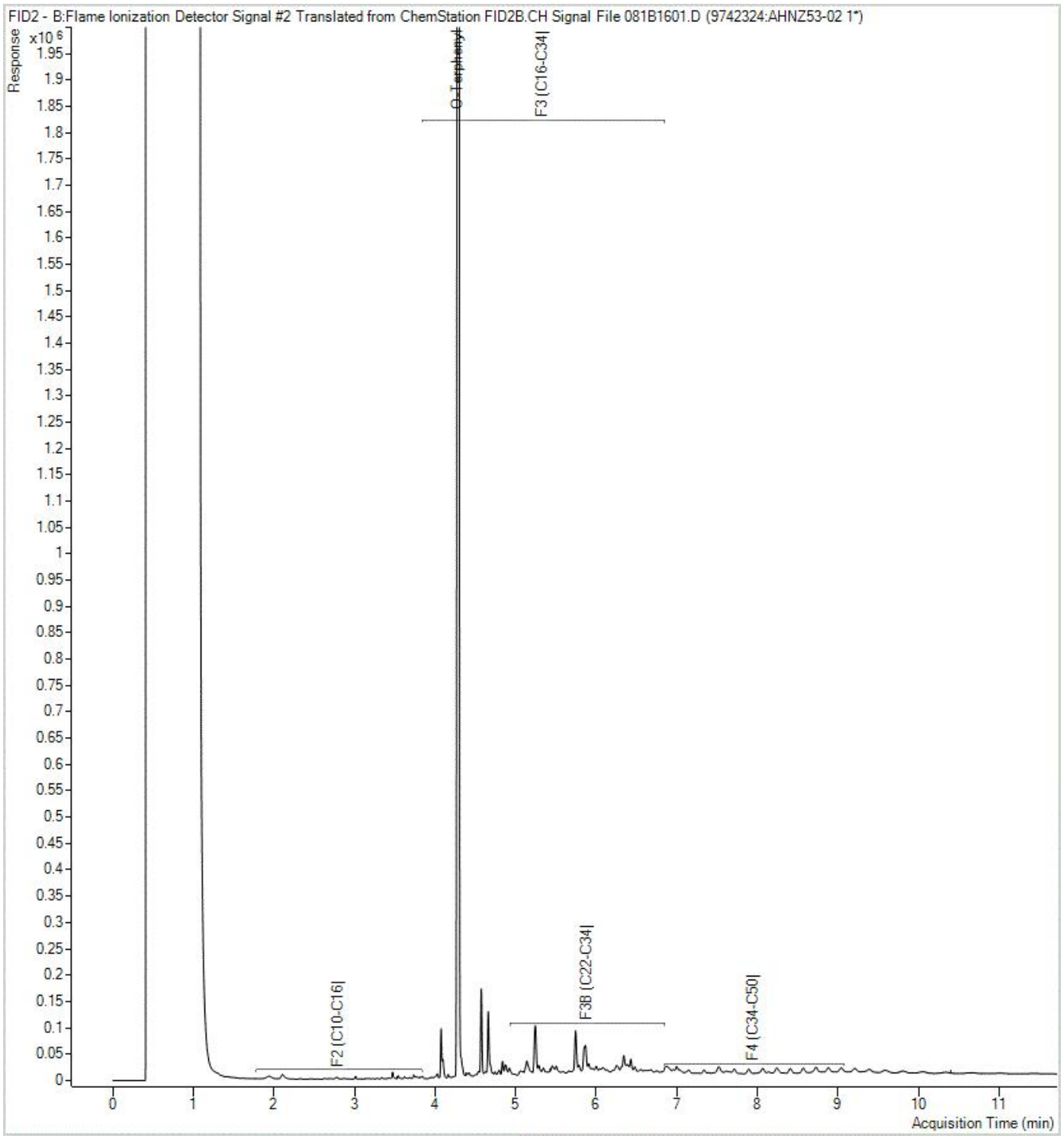
White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Job #: C4Y3361
Report Date: 2024/11/07
Bureau Veritas Sample: AHNZ53

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH1-24-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

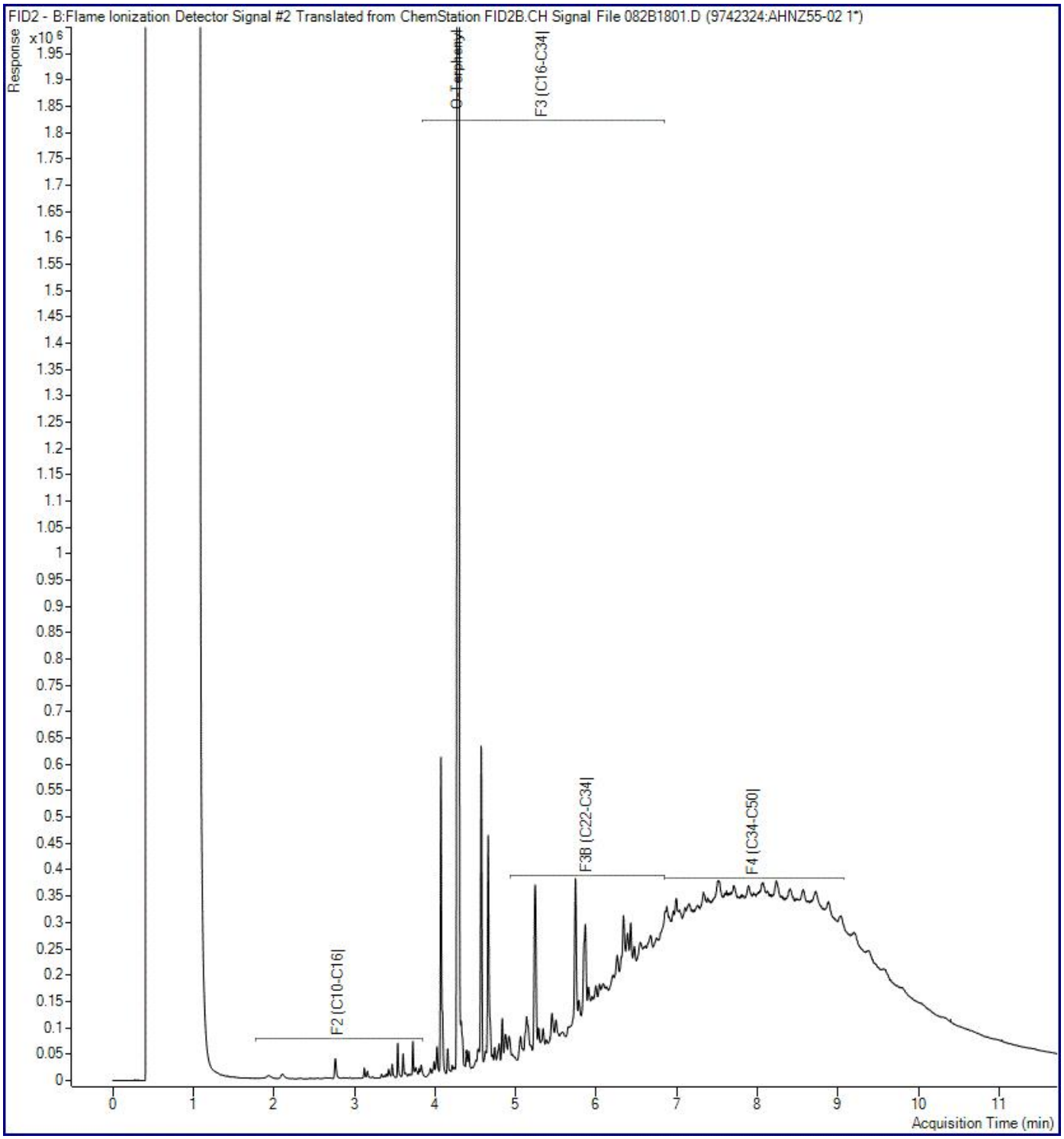


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Y3361
Report Date: 2024/11/07
Bureau Veritas Sample: AHNZ55

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH2-24-AU1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

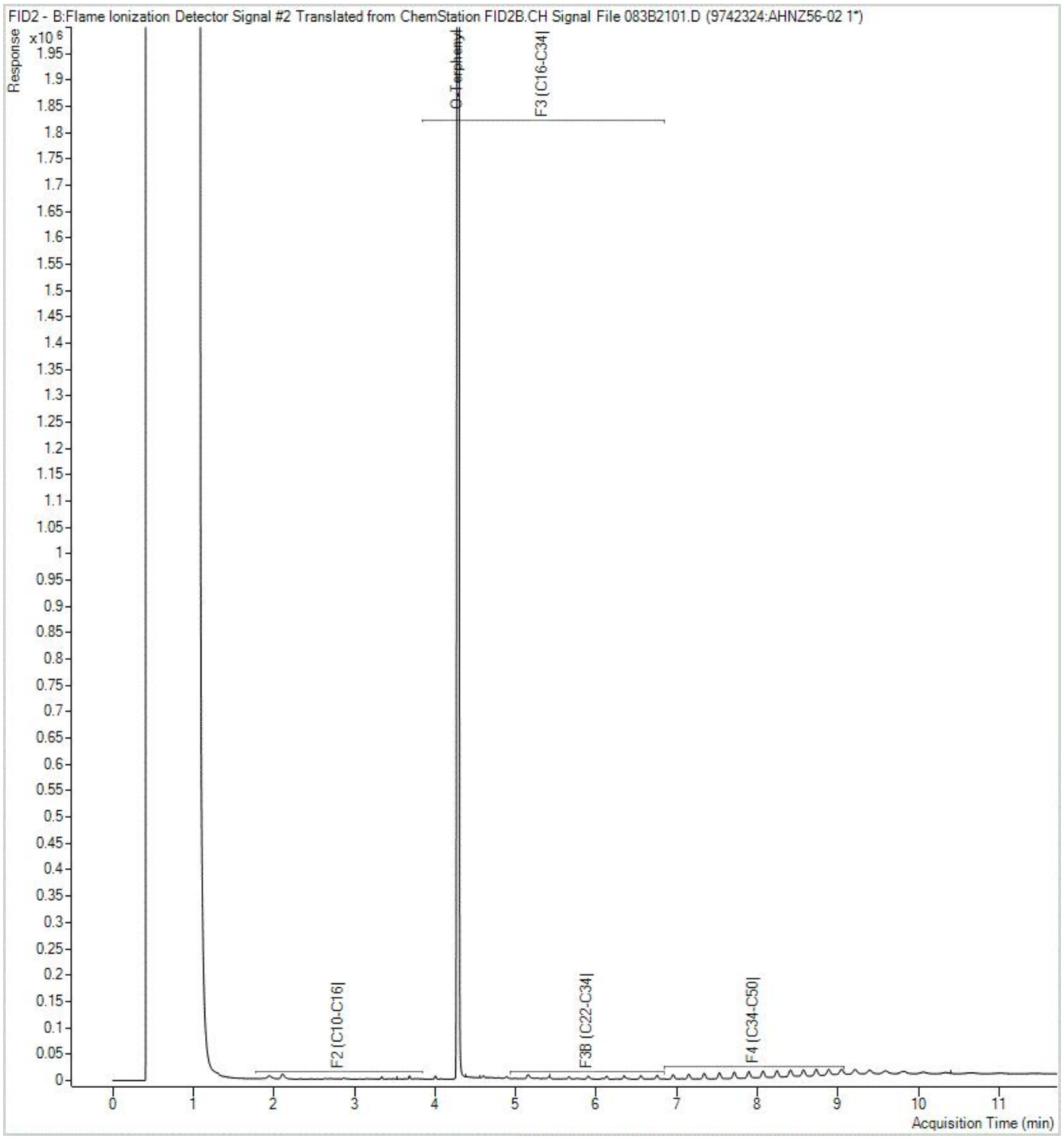


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Y3361
Report Date: 2024/11/07
Bureau Veritas Sample: AHNZ56

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH2-24-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

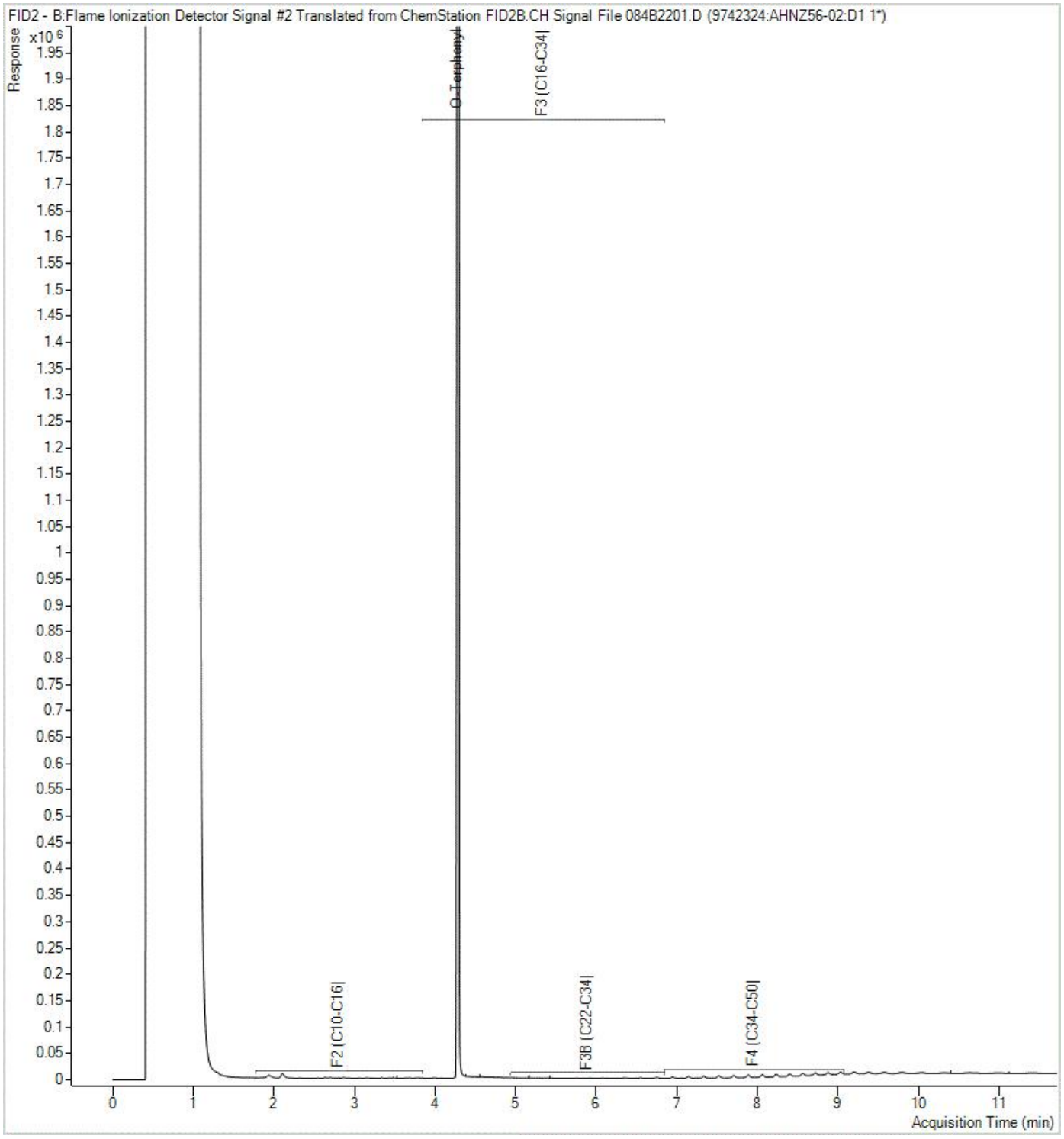


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Y3361
Report Date: 2024/11/07
Bureau Veritas Sample: AHNZ56 Lab-Dup

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH2-24-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

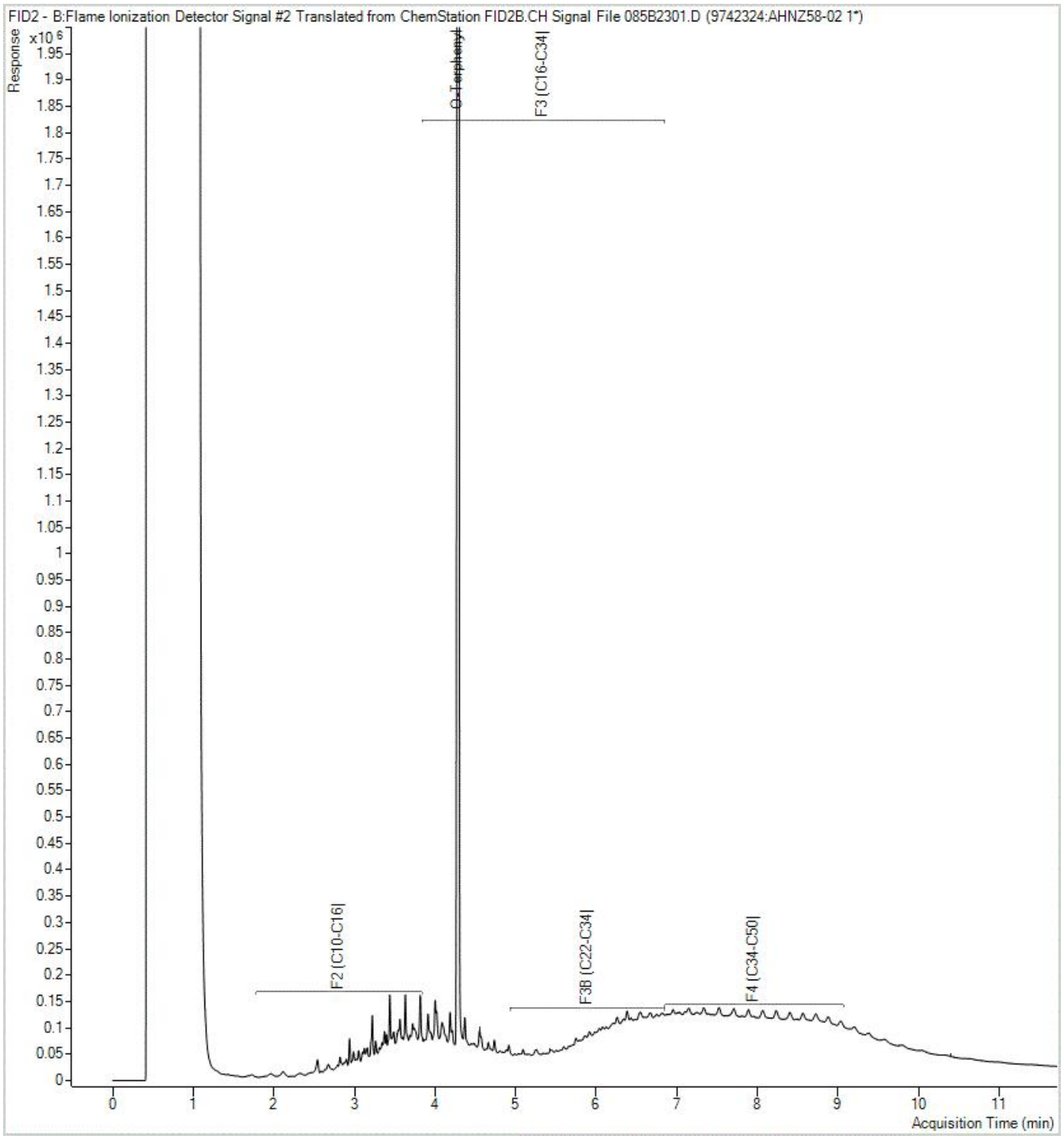


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Y3361
Report Date: 2024/11/07
Bureau Veritas Sample: AHNZ58

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH3-24-AU1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

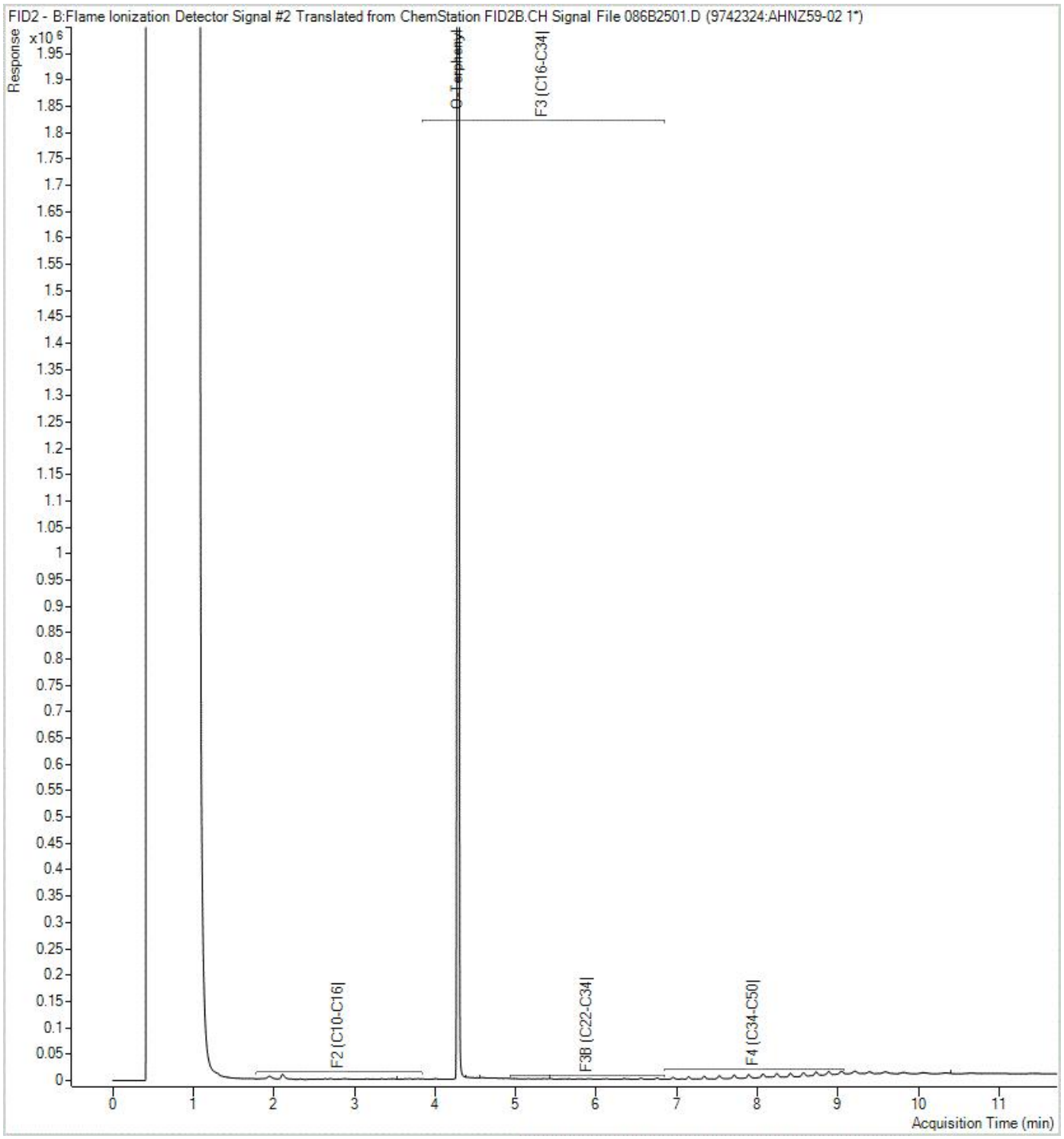


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Y3361
Report Date: 2024/11/07
Bureau Veritas Sample: AHNZ59

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH3-24-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: LOP24-025C
Your C.O.C. #: 1019688-02-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/11/08
Report #: R8397239
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y3367
Received: 2024/10/30, 09:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum (1)	1	N/A	2024/11/04	CAM SOP-00301	EPA 8270D m
ABN Compounds in SPLP Leachates (1)	1	2024/11/07	2024/11/08	CAM SOP-00301	EPA 8270 m
Hot Water Extractable Boron (1)	1	2024/11/04	2024/11/04	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum (1)	1	N/A	2024/11/06		EPA 8260D m
Free (WAD) Cyanide (1)	1	2024/11/04	2024/11/05	CAM SOP-00457	OMOE E3015 m
Conductivity (1)	1	2024/11/05	2024/11/05	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1, 2)	1	2024/11/05	2024/11/05	CAM SOP-00436	EPA 3060A/7199 m
Dinitrotoluene Sum (1)	1	N/A	2024/11/08	CAM SOP - 00301	EPA 8270
Petroleum Hydro. CCME F1 & BTEX in Soil (1, 3)	1	N/A	2024/11/03	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1, 4)	1	2024/11/04	2024/11/05	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS (1)	1	2024/11/04	2024/11/04	CAM SOP-00447	EPA 6020B m
Total Metals in SPLP Leachate by ICPMS (1)	1	2024/11/04	2024/11/04	CAM SOP-00447	EPA 6020B m
Moisture (1)	1	N/A	2024/11/01	CAM SOP-00445	Carter 2nd ed 70.2 m
Modified SPLP extraction - Weight (1)	1	N/A	2024/11/02	CAM SOP-00941	OMOECP LaSB E9003 R3
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2024/11/02	2024/11/02	CAM SOP-00318	EPA 8270E
pH CaCl2 EXTRACT (1)	1	2024/11/05	2024/11/05	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR) (1)	1	N/A	2024/11/05	CAM SOP-00102	EPA 6010C
SPLP Zero Headspace Extraction (1)	1	2024/11/04	2024/11/05	CAM SOP-00430	EPA 1312 m
Volatile organics in SPLP leachates (1)	1	N/A	2024/11/06	CAM SOP-00228	EPA 8260D m

Remarks:

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

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

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

Your Project #: LOP24-025C
Your C.O.C. #: 1019688-02-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/11/08
Report #: R8397239
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y3367
Received: 2024/10/30, 09:00

otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8
(2) Soils are reported on a dry weight basis unless otherwise specified.
(3) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(4) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		AHOA08			AHOA09	
Sampling Date		2024/10/29			2024/10/29 15:30	
COC Number		1019688-02-01			1019688-02-01	
	UNITS	**DUP2-10/29**	**RDL**	**QC Batch**	**MSLP**	**QC Batch**
Calculated Parameters						
Sodium Adsorption Ratio	N/A	5.6		9739072		
Charge/Prep Analysis						
Amount Extracted (Wet Weight) (g)	N/A				25	9743033
Inorganics						
Conductivity	mS/cm	0.55	0.002	9745355		
Dry Weight	g				100	9740146
Moisture	%	21	1.0	9741334		
Available (CaCl2) pH	pH	6.96		9745687		
WAD Cyanide (Free)	ug/g	ND	0.01	9743820		

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		AHOA08			AHOA09		
Sampling Date		2024/10/29			2024/10/29 15:30		
COC Number		1019688-02-01			1019688-02-01		
	UNITS	DUP2-10/29	RDL	QC Batch	MSLP	RDL	QC Batch
Inorganics							
Chromium (VI)	ug/g	0.47	0.18	9745289			
Metals							
Leachable (SPLP) Antimony (Sb)	ug/L				ND	0.5	9742848
Leachable (SPLP) Arsenic (As)	ug/L				ND	1	9742848
Leachable (SPLP) Barium (Ba)	ug/L				12	5	9742848
Leachable (SPLP) Beryllium (Be)	ug/L				ND	0.5	9742848
Hot Water Ext. Boron (B)	ug/g	0.13	0.050	9743254			
Leachable (SPLP) Boron (B)	ug/L				24	10	9742848
Leachable (SPLP) Cadmium (Cd)	ug/L				ND	0.1	9742848
Leachable (SPLP) Chromium (Cr)	ug/L				ND	5	9742848
Leachable (SPLP) Cobalt (Co)	ug/L				ND	0.5	9742848
Leachable (SPLP) Copper (Cu)	ug/L				2	1	9742848
Leachable (SPLP) Lead (Pb)	ug/L				ND	0.5	9742848
Leachable (SPLP) Molybdenum (Mo)	ug/L				1	1	9742848
Leachable (SPLP) Nickel (Ni)	ug/L				ND	1	9742848
Leachable (SPLP) Selenium (Se)	ug/L				ND	2	9742848
Leachable (SPLP) Silver (Ag)	ug/L				ND	0.1	9742848
Leachable (SPLP) Thallium (Tl)	ug/L				ND	0.05	9742848
Leachable (SPLP) Uranium (U)	ug/L				ND	0.1	9742848
Leachable (SPLP) Vanadium (V)	ug/L				19	1	9742848
Leachable (SPLP) Zinc (Zn)	ug/L				ND	5	9742848
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	9743552			
Acid Extractable Arsenic (As)	ug/g	1.4	1.0	9743552			
Acid Extractable Barium (Ba)	ug/g	210	0.50	9743552			
Acid Extractable Beryllium (Be)	ug/g	0.69	0.20	9743552			
Acid Extractable Boron (B)	ug/g	ND	5.0	9743552			
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	9743552			
Acid Extractable Chromium (Cr)	ug/g	70	1.0	9743552			
Acid Extractable Cobalt (Co)	ug/g	15	0.10	9743552			
Acid Extractable Copper (Cu)	ug/g	29	0.50	9743552			
Acid Extractable Lead (Pb)	ug/g	5.1	1.0	9743552			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		AHOA08			AHOA09		
Sampling Date		2024/10/29			2024/10/29 15:30		
COC Number		1019688-02-01			1019688-02-01		
	UNITS	DUP2-10/29	RDL	QC Batch	MSLP	RDL	QC Batch
Acid Extractable Molybdenum (Mo)	ug/g	ND	0.50	9743552			
Acid Extractable Nickel (Ni)	ug/g	39	0.50	9743552			
Acid Extractable Selenium (Se)	ug/g	ND	0.50	9743552			
Acid Extractable Silver (Ag)	ug/g	ND	0.20	9743552			
Acid Extractable Thallium (Tl)	ug/g	0.28	0.050	9743552			
Acid Extractable Uranium (U)	ug/g	0.72	0.050	9743552			
Acid Extractable Vanadium (V)	ug/g	74	5.0	9743552			
Acid Extractable Zinc (Zn)	ug/g	83	5.0	9743552			
Acid Extractable Mercury (Hg)	ug/g	ND	0.050	9743552			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AHOA08			AHOA09		
Sampling Date		2024/10/29			2024/10/29 15:30		
COC Number		1019688-02-01			1019688-02-01		
	UNITS	DUP2-10/29	RDL	QC Batch	MSLP	RDL	QC Batch
Semivolatile Organics							
Leachable (SPLP) Bis(2-chloroethyl)ether	ug/L				ND	2.0	9752586
Leachable (SPLP) Bis(2-chloroisopropyl)ether	ug/L				ND	2.0	9752586
Leachable (SPLP) p-Chloroaniline	ug/L				ND	5.0	9752586
Leachable (SPLP) 3,3'-Dichlorobenzidine	ug/L				ND	0.40	9752586
Leachable (SPLP) Diethyl phthalate	ug/L				ND	1.0	9752586
Leachable (SPLP) Dimethyl phthalate	ug/L				ND	1.0	9752586
Leachable (SPLP) 2,4-Dinitrophenol	ug/L				ND	5.0	9752586
Leachable (SPLP) 2,4-Dinitrotoluene	ug/L				ND	3.0	9752586
Leachable (SPLP) 2,6-Dinitrotoluene	ug/L				ND	3.0	9752586
Leachable (SPLP) 2,4,6-Trichlorophenol	ug/L				ND	0.70	9752586
Calculated Parameters							
Leachable 2,4- & 2,6-Dinitrotoluene	ug/L				ND	4.2	9739377
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	9739074			
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	ND	0.0050	9741863			
Acenaphthylene	ug/g	ND	0.0050	9741863			
Anthracene	ug/g	ND	0.0050	9741863			
Benzo(a)anthracene	ug/g	ND	0.0050	9741863			
Benzo(a)pyrene	ug/g	ND	0.0050	9741863			
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	9741863			
Benzo(g,h,i)perylene	ug/g	ND	0.0050	9741863			
Benzo(k)fluoranthene	ug/g	ND	0.0050	9741863			
Chrysene	ug/g	ND	0.0050	9741863			
Dibenzo(a,h)anthracene	ug/g	ND	0.0050	9741863			
Fluoranthene	ug/g	ND	0.0050	9741863			
Fluorene	ug/g	ND	0.0050	9741863			
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	9741863			
1-Methylnaphthalene	ug/g	ND	0.0050	9741863			
2-Methylnaphthalene	ug/g	ND	0.0050	9741863			
Naphthalene	ug/g	ND	0.0050	9741863			
Phenanthrene	ug/g	ND	0.0050	9741863			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AHOA08			AHOA09		
Sampling Date		2024/10/29			2024/10/29 15:30		
COC Number		1019688-02-01			1019688-02-01		
	UNITS	**DUP2-10/29**	**RDL**	**QC Batch**	**MSLP**	**RDL**	**QC Batch**
Pyrene	ug/g	ND	0.0050	9741863			
Surrogate Recovery (%)							
Leachable (SPLP) 2,4,6-Tribromophenol	%				78		9752586
Leachable (SPLP) 2-Fluorobiphenyl	%				76		9752586
Leachable (SPLP) D14-Terphenyl (FS)	%				81		9752586
Leachable (SPLP) D5-Nitrobenzene	%				78		9752586
D10-Anthracene	%	87		9741863			
D14-Terphenyl (FS)	%	89		9741863			
D8-Acenaphthylene	%	80		9741863			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (SOIL)

Bureau Veritas ID		AHOA09		
Sampling Date		2024/10/29 15:30		
COC Number		1019688-02-01		
	UNITS	**MSLP**	**RDL**	**QC Batch**
Calculated Parameters				
Leachable (ZHE) 1,3-Dichloropropene (cis+trans)	ug/L	ND	0.42	9739375
Volatile Organics				
Leachable (SPLP) Bromomethane	ug/L	ND	0.40	9746484
Leachable (SPLP) Carbon Tetrachloride	ug/L	ND	0.19	9746484
Leachable (SPLP) Chloroform	ug/L	ND	0.90	9746484
Leachable (SPLP) 1,2-Dichlorobenzene	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,4-Dichlorobenzene	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,1-Dichloroethane	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,2-Dichloroethane	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,1-Dichloroethylene	ug/L	ND	0.40	9746484
Leachable (SPLP) cis-1,2-Dichloroethylene	ug/L	ND	0.40	9746484
Leachable (SPLP) trans-1,2-Dichloroethylene	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,2-Dichloropropane	ug/L	ND	0.40	9746484
Leachable (SPLP) cis-1,3-Dichloropropene	ug/L	ND	0.30	9746484
Leachable (SPLP) trans-1,3-Dichloropropene	ug/L	ND	0.30	9746484
Leachable (SPLP) Ethylene Dibromide	ug/L	ND	0.19	9746484
Leachable (SPLP) 1,1,1,2-Tetrachloroethane	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,1,2,2-Tetrachloroethane	ug/L	ND	0.40	9746484
Leachable (SPLP) Tetrachloroethylene	ug/L	ND	0.40	9746484
Leachable (SPLP) 1,1,2-Trichloroethane	ug/L	ND	0.40	9746484
Leachable (SPLP) Trichloroethylene	ug/L	ND	0.40	9746484
Surrogate Recovery (%)				
Leachable (SPLP) 4-Bromofluorobenzene	%	104		9746484
Leachable (SPLP) D4-1,2-Dichloroethane	%	109		9746484
Leachable (SPLP) D8-Toluene	%	97		9746484

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AHOA08		
Sampling Date		2024/10/29		
COC Number		1019688-02-01		
	UNITS	DUP2-10/29	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/g	ND	0.020	9742433
Toluene	ug/g	ND	0.020	9742433
Ethylbenzene	ug/g	ND	0.020	9742433
o-Xylene	ug/g	ND	0.020	9742433
p+m-Xylene	ug/g	ND	0.040	9742433
Total Xylenes	ug/g	ND	0.040	9742433
F1 (C6-C10)	ug/g	ND	10	9742433
F1 (C6-C10) - BTEX	ug/g	ND	10	9742433
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	7.0	9744048
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	9744048
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	9744048
Reached Baseline at C50	ug/g	Yes		9744048
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	98		9742433
4-Bromofluorobenzene	%	97		9742433
D10-o-Xylene	%	114		9742433
D4-1,2-Dichloroethane	%	99		9742433
o-Terphenyl	%	84		9744048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

GENERAL COMMENTS

Sample AHOA08 [DUP2-10/29] : F1/BTEX analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9741334	JTS	RPD	Moisture	2024/11/01	0		%	20
9741863	JYO	Matrix Spike	D10-Anthracene	2024/11/02		86	%	50 - 130
			D14-Terphenyl (FS)	2024/11/02		81	%	50 - 130
			D8-Acenaphthylene	2024/11/02		80	%	50 - 130
			Acenaphthene	2024/11/02		91	%	50 - 130
			Acenaphthylene	2024/11/02		89	%	50 - 130
			Anthracene	2024/11/02		92	%	50 - 130
			Benzo(a)anthracene	2024/11/02		95	%	50 - 130
			Benzo(a)pyrene	2024/11/02		95	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/02		93	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/02		106	%	50 - 130
			Benzo(k)fluoranthene	2024/11/02		97	%	50 - 130
			Chrysene	2024/11/02		97	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/02		119	%	50 - 130
			Fluoranthene	2024/11/02		83	%	50 - 130
			Fluorene	2024/11/02		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/02		104	%	50 - 130
			1-Methylnaphthalene	2024/11/02		86	%	50 - 130
			2-Methylnaphthalene	2024/11/02		84	%	50 - 130
			Naphthalene	2024/11/02		80	%	50 - 130
			Phenanthrene	2024/11/02		94	%	50 - 130
			Pyrene	2024/11/02		83	%	50 - 130
9741863	JYO	Spiked Blank	D10-Anthracene	2024/11/02		89	%	50 - 130
			D14-Terphenyl (FS)	2024/11/02		86	%	50 - 130
			D8-Acenaphthylene	2024/11/02		85	%	50 - 130
			Acenaphthene	2024/11/02		92	%	50 - 130
			Acenaphthylene	2024/11/02		91	%	50 - 130
			Anthracene	2024/11/02		95	%	50 - 130
			Benzo(a)anthracene	2024/11/02		95	%	50 - 130
			Benzo(a)pyrene	2024/11/02		97	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/02		95	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/02		105	%	50 - 130
			Benzo(k)fluoranthene	2024/11/02		100	%	50 - 130
			Chrysene	2024/11/02		98	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/02		115	%	50 - 130
			Fluoranthene	2024/11/02		87	%	50 - 130
			Fluorene	2024/11/02		95	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/02		103	%	50 - 130
			1-Methylnaphthalene	2024/11/02		90	%	50 - 130
			2-Methylnaphthalene	2024/11/02		88	%	50 - 130
			Naphthalene	2024/11/02		89	%	50 - 130
			Phenanthrene	2024/11/02		95	%	50 - 130
			Pyrene	2024/11/02		87	%	50 - 130
9741863	JYO	Method Blank	D10-Anthracene	2024/11/02		86	%	50 - 130
			D14-Terphenyl (FS)	2024/11/02		82	%	50 - 130
			D8-Acenaphthylene	2024/11/02		80	%	50 - 130
			Acenaphthene	2024/11/02	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2024/11/02	ND, RDL=0.0050		ug/g	
			Anthracene	2024/11/02	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2024/11/02	ND, RDL=0.0050		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(a)pyrene	2024/11/02	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2024/11/02	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2024/11/02	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2024/11/02	ND, RDL=0.0050		ug/g	
			Chrysene	2024/11/02	ND, RDL=0.0050		ug/g	
			Dibenzo(a,h)anthracene	2024/11/02	ND, RDL=0.0050		ug/g	
			Fluoranthene	2024/11/02	ND, RDL=0.0050		ug/g	
			Fluorene	2024/11/02	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2024/11/02	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2024/11/02	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2024/11/02	ND, RDL=0.0050		ug/g	
			Naphthalene	2024/11/02	ND, RDL=0.0050		ug/g	
			Phenanthrene	2024/11/02	ND, RDL=0.0050		ug/g	
			Pyrene	2024/11/02	ND, RDL=0.0050		ug/g	
9741863	JYO	RPD	Acenaphthene	2024/11/02	NC		%	40
			Acenaphthylene	2024/11/02	NC		%	40
			Anthracene	2024/11/02	NC		%	40
			Benzo(a)anthracene	2024/11/02	NC		%	40
			Benzo(a)pyrene	2024/11/02	NC		%	40
			Benzo(b/j)fluoranthene	2024/11/02	NC		%	40
			Benzo(g,h,i)perylene	2024/11/02	NC		%	40
			Benzo(k)fluoranthene	2024/11/02	NC		%	40
			Chrysene	2024/11/02	NC		%	40
			Dibenzo(a,h)anthracene	2024/11/02	NC		%	40
			Fluoranthene	2024/11/02	NC		%	40
			Fluorene	2024/11/02	NC		%	40
			Indeno(1,2,3-cd)pyrene	2024/11/02	NC		%	40
			1-Methylnaphthalene	2024/11/02	NC		%	40
			2-Methylnaphthalene	2024/11/02	NC		%	40
			Naphthalene	2024/11/02	NC		%	40
			Phenanthrene	2024/11/02	NC		%	40
			Pyrene	2024/11/02	NC		%	40
9742433	LRA	Matrix Spike	1,4-Difluorobenzene	2024/11/03		96	%	60 - 140
			4-Bromofluorobenzene	2024/11/03		110	%	60 - 140
			D10-o-Xylene	2024/11/03		108	%	60 - 140
			D4-1,2-Dichloroethane	2024/11/03		97	%	60 - 140
			Benzene	2024/11/03		NC	%	50 - 140
			Toluene	2024/11/03		76	%	50 - 140
			Ethylbenzene	2024/11/03		NC	%	50 - 140
			o-Xylene	2024/11/03		70	%	50 - 140
			p+m-Xylene	2024/11/03		NC	%	50 - 140

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F1 (C6-C10)	2024/11/03		NC	%	60 - 140
9742433	LRA	Spiked Blank	1,4-Difluorobenzene	2024/11/05		98	%	60 - 140
			4-Bromofluorobenzene	2024/11/05		101	%	60 - 140
			D10-o-Xylene	2024/11/05		107	%	60 - 140
			D4-1,2-Dichloroethane	2024/11/05		97	%	60 - 140
			Benzene	2024/11/05		90	%	50 - 140
			Toluene	2024/11/05		91	%	50 - 140
			Ethylbenzene	2024/11/05		102	%	50 - 140
			o-Xylene	2024/11/05		97	%	50 - 140
			p+m-Xylene	2024/11/05		99	%	50 - 140
			F1 (C6-C10)	2024/11/05		105	%	80 - 120
9742433	LRA	Method Blank	1,4-Difluorobenzene	2024/11/03		96	%	60 - 140
			4-Bromofluorobenzene	2024/11/03		99	%	60 - 140
			D10-o-Xylene	2024/11/03		97	%	60 - 140
			D4-1,2-Dichloroethane	2024/11/03		101	%	60 - 140
			Benzene	2024/11/03	ND, RDL=0.020		ug/g	
			Toluene	2024/11/03	ND, RDL=0.020		ug/g	
			Ethylbenzene	2024/11/03	ND, RDL=0.020		ug/g	
			o-Xylene	2024/11/03	ND, RDL=0.020		ug/g	
			p+m-Xylene	2024/11/03	ND, RDL=0.040		ug/g	
			Total Xylenes	2024/11/03	ND, RDL=0.040		ug/g	
			F1 (C6-C10)	2024/11/03	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2024/11/03	ND, RDL=10		ug/g	
9742433	LRA	RPD	Benzene	2024/11/03	0.79		%	50
			Toluene	2024/11/03	0.77		%	50
			Ethylbenzene	2024/11/03	1.2		%	50
			o-Xylene	2024/11/03	2.1		%	50
			p+m-Xylene	2024/11/03	1.8		%	50
			Total Xylenes	2024/11/03	1.8		%	50
			F1 (C6-C10)	2024/11/03	0.62		%	30
			F1 (C6-C10) - BTEX	2024/11/03	0.53		%	30
9742848	AFZ	Matrix Spike [AHOA09-01]	Leachable (SPLP) Antimony (Sb)	2024/11/04		108	%	80 - 120
			Leachable (SPLP) Arsenic (As)	2024/11/04		106	%	80 - 120
			Leachable (SPLP) Barium (Ba)	2024/11/04		100	%	80 - 120
			Leachable (SPLP) Beryllium (Be)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Boron (B)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Cadmium (Cd)	2024/11/04		100	%	80 - 120
			Leachable (SPLP) Chromium (Cr)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Cobalt (Co)	2024/11/04		99	%	80 - 120
			Leachable (SPLP) Copper (Cu)	2024/11/04		105	%	80 - 120
			Leachable (SPLP) Lead (Pb)	2024/11/04		98	%	80 - 120
			Leachable (SPLP) Molybdenum (Mo)	2024/11/04		108	%	80 - 120
			Leachable (SPLP) Nickel (Ni)	2024/11/04		99	%	80 - 120
			Leachable (SPLP) Selenium (Se)	2024/11/04		106	%	80 - 120
			Leachable (SPLP) Silver (Ag)	2024/11/04		98	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable (SPLP) Thallium (Tl)	2024/11/04		101	%	80 - 120
			Leachable (SPLP) Uranium (U)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Vanadium (V)	2024/11/04		104	%	80 - 120
			Leachable (SPLP) Zinc (Zn)	2024/11/04		102	%	80 - 120
9742848	AFZ	Leachate Blank	Leachable (SPLP) Antimony (Sb)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Arsenic (As)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Barium (Ba)	2024/11/04	ND,RDL=5		ug/L	
			Leachable (SPLP) Beryllium (Be)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Boron (B)	2024/11/04	ND, RDL=10		ug/L	
			Leachable (SPLP) Cadmium (Cd)	2024/11/04	ND, RDL=0.1		ug/L	
			Leachable (SPLP) Chromium (Cr)	2024/11/04	ND,RDL=5		ug/L	
			Leachable (SPLP) Cobalt (Co)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Copper (Cu)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Lead (Pb)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Molybdenum (Mo)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Nickel (Ni)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Selenium (Se)	2024/11/04	ND,RDL=2		ug/L	
			Leachable (SPLP) Silver (Ag)	2024/11/04	ND, RDL=0.1		ug/L	
			Leachable (SPLP) Thallium (Tl)	2024/11/04	ND, RDL=0.05		ug/L	
			Leachable (SPLP) Uranium (U)	2024/11/04	ND, RDL=0.1		ug/L	
			Leachable (SPLP) Vanadium (V)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Zinc (Zn)	2024/11/04	ND,RDL=5		ug/L	
9742848	AFZ	RPD	Leachable (SPLP) Antimony (Sb)	2024/11/04	NC		%	35
			Leachable (SPLP) Arsenic (As)	2024/11/04	NC		%	35
			Leachable (SPLP) Barium (Ba)	2024/11/04	NC		%	35
			Leachable (SPLP) Beryllium (Be)	2024/11/04	NC		%	35
			Leachable (SPLP) Boron (B)	2024/11/04	NC		%	35
			Leachable (SPLP) Cadmium (Cd)	2024/11/04	NC		%	35
			Leachable (SPLP) Chromium (Cr)	2024/11/04	NC		%	35
			Leachable (SPLP) Cobalt (Co)	2024/11/04	NC		%	35
			Leachable (SPLP) Copper (Cu)	2024/11/04	NC		%	35
			Leachable (SPLP) Lead (Pb)	2024/11/04	NC		%	35
			Leachable (SPLP) Molybdenum (Mo)	2024/11/04	NC		%	35
			Leachable (SPLP) Nickel (Ni)	2024/11/04	NC		%	35
			Leachable (SPLP) Selenium (Se)	2024/11/04	NC		%	35
			Leachable (SPLP) Silver (Ag)	2024/11/04	NC		%	35
			Leachable (SPLP) Thallium (Tl)	2024/11/04	NC		%	35
			Leachable (SPLP) Uranium (U)	2024/11/04	NC		%	35
			Leachable (SPLP) Vanadium (V)	2024/11/04	NC		%	35
			Leachable (SPLP) Zinc (Zn)	2024/11/04	NC		%	35
9742848	AFZ	Spiked Blank	Leachable (SPLP) Antimony (Sb)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Arsenic (As)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Barium (Ba)	2024/11/04		96	%	80 - 120
			Leachable (SPLP) Beryllium (Be)	2024/11/04		100	%	80 - 120
			Leachable (SPLP) Boron (B)	2024/11/04		98	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable (SPLP) Cadmium (Cd)	2024/11/04		99	%	80 - 120
			Leachable (SPLP) Chromium (Cr)	2024/11/04		97	%	80 - 120
			Leachable (SPLP) Cobalt (Co)	2024/11/04		95	%	80 - 120
			Leachable (SPLP) Copper (Cu)	2024/11/04		98	%	80 - 120
			Leachable (SPLP) Lead (Pb)	2024/11/04		99	%	80 - 120
			Leachable (SPLP) Molybdenum (Mo)	2024/11/04		98	%	80 - 120
			Leachable (SPLP) Nickel (Ni)	2024/11/04		96	%	80 - 120
			Leachable (SPLP) Selenium (Se)	2024/11/04		106	%	80 - 120
			Leachable (SPLP) Silver (Ag)	2024/11/04		97	%	80 - 120
			Leachable (SPLP) Thallium (Tl)	2024/11/04		102	%	80 - 120
			Leachable (SPLP) Uranium (U)	2024/11/04		101	%	80 - 120
			Leachable (SPLP) Vanadium (V)	2024/11/04		96	%	80 - 120
			Leachable (SPLP) Zinc (Zn)	2024/11/04		103	%	80 - 120
9742848	AFZ	Method Blank	Leachable (SPLP) Antimony (Sb)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Arsenic (As)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Barium (Ba)	2024/11/04	ND,RDL=5		ug/L	
			Leachable (SPLP) Beryllium (Be)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Boron (B)	2024/11/04	ND, RDL=10		ug/L	
			Leachable (SPLP) Cadmium (Cd)	2024/11/04	ND, RDL=0.1		ug/L	
			Leachable (SPLP) Chromium (Cr)	2024/11/04	ND,RDL=5		ug/L	
			Leachable (SPLP) Cobalt (Co)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Copper (Cu)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Lead (Pb)	2024/11/04	ND, RDL=0.5		ug/L	
			Leachable (SPLP) Molybdenum (Mo)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Nickel (Ni)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Selenium (Se)	2024/11/04	ND,RDL=2		ug/L	
			Leachable (SPLP) Silver (Ag)	2024/11/04	ND, RDL=0.1		ug/L	
			Leachable (SPLP) Thallium (Tl)	2024/11/04	ND, RDL=0.05		ug/L	
			Leachable (SPLP) Uranium (U)	2024/11/04	ND, RDL=0.1		ug/L	
			Leachable (SPLP) Vanadium (V)	2024/11/04	ND,RDL=1		ug/L	
			Leachable (SPLP) Zinc (Zn)	2024/11/04	ND,RDL=5		ug/L	
9742848	AFZ	RPD [AHOA09-01]	Leachable (SPLP) Antimony (Sb)	2024/11/04	NC		%	35
			Leachable (SPLP) Arsenic (As)	2024/11/04	NC		%	35
			Leachable (SPLP) Barium (Ba)	2024/11/04	0.42		%	35
			Leachable (SPLP) Beryllium (Be)	2024/11/04	NC		%	35
			Leachable (SPLP) Boron (B)	2024/11/04	1.2		%	35
			Leachable (SPLP) Cadmium (Cd)	2024/11/04	NC		%	35
			Leachable (SPLP) Chromium (Cr)	2024/11/04	NC		%	35
			Leachable (SPLP) Cobalt (Co)	2024/11/04	NC		%	35
			Leachable (SPLP) Copper (Cu)	2024/11/04	2.4		%	35
			Leachable (SPLP) Lead (Pb)	2024/11/04	NC		%	35
			Leachable (SPLP) Molybdenum (Mo)	2024/11/04	5.3		%	35
			Leachable (SPLP) Nickel (Ni)	2024/11/04	NC		%	35
			Leachable (SPLP) Selenium (Se)	2024/11/04	NC		%	35
			Leachable (SPLP) Silver (Ag)	2024/11/04	NC		%	35

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable (SPLP) Thallium (Tl)	2024/11/04	NC		%	35
			Leachable (SPLP) Uranium (U)	2024/11/04	NC		%	35
			Leachable (SPLP) Vanadium (V)	2024/11/04	3.6		%	35
			Leachable (SPLP) Zinc (Zn)	2024/11/04	NC		%	35
9743254	MEN	Matrix Spike	Hot Water Ext. Boron (B)	2024/11/04		90	%	75 - 125
9743254	MEN	Spiked Blank	Hot Water Ext. Boron (B)	2024/11/04		87	%	75 - 125
9743254	MEN	Method Blank	Hot Water Ext. Boron (B)	2024/11/04	ND, RDL=0.050		ug/g	
9743254	MEN	RPD	Hot Water Ext. Boron (B)	2024/11/04	4.1		%	40
9743552	JWK	Matrix Spike	Acid Extractable Antimony (Sb)	2024/11/04		107	%	75 - 125
			Acid Extractable Arsenic (As)	2024/11/04		106	%	75 - 125
			Acid Extractable Barium (Ba)	2024/11/04		100	%	75 - 125
			Acid Extractable Beryllium (Be)	2024/11/04		110	%	75 - 125
			Acid Extractable Boron (B)	2024/11/04		110	%	75 - 125
			Acid Extractable Cadmium (Cd)	2024/11/04		103	%	75 - 125
			Acid Extractable Chromium (Cr)	2024/11/04		94	%	75 - 125
			Acid Extractable Cobalt (Co)	2024/11/04		100	%	75 - 125
			Acid Extractable Copper (Cu)	2024/11/04		100	%	75 - 125
			Acid Extractable Lead (Pb)	2024/11/04		98	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2024/11/04		95	%	75 - 125
			Acid Extractable Nickel (Ni)	2024/11/04		102	%	75 - 125
			Acid Extractable Selenium (Se)	2024/11/04		107	%	75 - 125
			Acid Extractable Silver (Ag)	2024/11/04		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2024/11/04		102	%	75 - 125
			Acid Extractable Uranium (U)	2024/11/04		102	%	75 - 125
			Acid Extractable Vanadium (V)	2024/11/04		101	%	75 - 125
			Acid Extractable Zinc (Zn)	2024/11/04		100	%	75 - 125
			Acid Extractable Mercury (Hg)	2024/11/04		99	%	75 - 125
9743552	JWK	Spiked Blank	Acid Extractable Antimony (Sb)	2024/11/04		105	%	80 - 120
			Acid Extractable Arsenic (As)	2024/11/04		103	%	80 - 120
			Acid Extractable Barium (Ba)	2024/11/04		99	%	80 - 120
			Acid Extractable Beryllium (Be)	2024/11/04		102	%	80 - 120
			Acid Extractable Boron (B)	2024/11/04		99	%	80 - 120
			Acid Extractable Cadmium (Cd)	2024/11/04		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2024/11/04		99	%	80 - 120
			Acid Extractable Cobalt (Co)	2024/11/04		100	%	80 - 120
			Acid Extractable Copper (Cu)	2024/11/04		96	%	80 - 120
			Acid Extractable Lead (Pb)	2024/11/04		97	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2024/11/04		93	%	80 - 120
			Acid Extractable Nickel (Ni)	2024/11/04		101	%	80 - 120
			Acid Extractable Selenium (Se)	2024/11/04		103	%	80 - 120
			Acid Extractable Silver (Ag)	2024/11/04		97	%	80 - 120
			Acid Extractable Thallium (Tl)	2024/11/04		99	%	80 - 120
			Acid Extractable Uranium (U)	2024/11/04		100	%	80 - 120
			Acid Extractable Vanadium (V)	2024/11/04		100	%	80 - 120
			Acid Extractable Zinc (Zn)	2024/11/04		101	%	80 - 120
			Acid Extractable Mercury (Hg)	2024/11/04		96	%	80 - 120
9743552	JWK	Method Blank	Acid Extractable Antimony (Sb)	2024/11/04	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2024/11/04	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2024/11/04	ND, RDL=0.50		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Beryllium (Be)	2024/11/04	ND, RDL=0.20		ug/g	
			Acid Extractable Boron (B)	2024/11/04	ND, RDL=5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2024/11/04	ND, RDL=0.10		ug/g	
			Acid Extractable Chromium (Cr)	2024/11/04	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2024/11/04	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Lead (Pb)	2024/11/04	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Selenium (Se)	2024/11/04	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2024/11/04	ND, RDL=0.20		ug/g	
			Acid Extractable Thallium (Tl)	2024/11/04	ND, RDL=0.050		ug/g	
			Acid Extractable Uranium (U)	2024/11/04	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2024/11/04	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2024/11/04	ND, RDL=5.0		ug/g	
			Acid Extractable Mercury (Hg)	2024/11/04	ND, RDL=0.050		ug/g	
9743552	JWK	RPD	Acid Extractable Antimony (Sb)	2024/11/04	NC		%	30
			Acid Extractable Arsenic (As)	2024/11/04	NC		%	30
			Acid Extractable Barium (Ba)	2024/11/04	10		%	30
			Acid Extractable Beryllium (Be)	2024/11/04	NC		%	30
			Acid Extractable Boron (B)	2024/11/04	NC		%	30
			Acid Extractable Cadmium (Cd)	2024/11/04	NC		%	30
			Acid Extractable Chromium (Cr)	2024/11/04	6.7		%	30
			Acid Extractable Cobalt (Co)	2024/11/04	13		%	30
			Acid Extractable Copper (Cu)	2024/11/04	6.9		%	30
			Acid Extractable Lead (Pb)	2024/11/04	3.1		%	30
			Acid Extractable Molybdenum (Mo)	2024/11/04	6.3		%	30
			Acid Extractable Nickel (Ni)	2024/11/04	4.8		%	30
			Acid Extractable Selenium (Se)	2024/11/04	NC		%	30
			Acid Extractable Silver (Ag)	2024/11/04	NC		%	30
			Acid Extractable Thallium (Tl)	2024/11/04	NC		%	30
			Acid Extractable Uranium (U)	2024/11/04	10		%	30
			Acid Extractable Vanadium (V)	2024/11/04	5.2		%	30
			Acid Extractable Zinc (Zn)	2024/11/04	11		%	30
			Acid Extractable Mercury (Hg)	2024/11/04	NC		%	30
9743820	GYA	Matrix Spike	WAD Cyanide (Free)	2024/11/05		88	%	75 - 125
9743820	GYA	Spiked Blank	WAD Cyanide (Free)	2024/11/05		96	%	80 - 120
9743820	GYA	Method Blank	WAD Cyanide (Free)	2024/11/05	ND, RDL=0.01		ug/g	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9743820	GYA	RPD	WAD Cyanide (Free)	2024/11/05	NC		%	35
9744048	MSZ	Matrix Spike	o-Terphenyl	2024/11/04		84	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/04		96	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/11/04		97	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/11/04		93	%	60 - 140
9744048	MSZ	Spiked Blank	o-Terphenyl	2024/11/04		77	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/04		86	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2024/11/04		87	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2024/11/04		83	%	80 - 120
9744048	MSZ	Method Blank	o-Terphenyl	2024/11/04		82	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/04	ND, RDL=7.0		ug/g	
			F3 (C16-C34 Hydrocarbons)	2024/11/04	ND, RDL=50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2024/11/04	ND, RDL=50		ug/g	
9744048	MSZ	RPD	F2 (C10-C16 Hydrocarbons)	2024/11/05	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2024/11/05	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2024/11/05	NC		%	30
9745289	SB5	Matrix Spike	Chromium (VI)	2024/11/05		88	%	70 - 130
9745289	SB5	Spiked Blank	Chromium (VI)	2024/11/05		96	%	80 - 120
9745289	SB5	Method Blank	Chromium (VI)	2024/11/05	ND, RDL=0.18		ug/g	
9745289	SB5	RPD	Chromium (VI)	2024/11/05	9.1		%	35
9745355	GTK	Spiked Blank	Conductivity	2024/11/05		106	%	90 - 110
9745355	GTK	Method Blank	Conductivity	2024/11/05	ND, RDL=0.002		mS/cm	
9745355	GTK	RPD	Conductivity	2024/11/05	1.3		%	10
9745687	KIT	Spiked Blank	Available (CaCl2) pH	2024/11/05		100	%	97 - 103
9745687	KIT	RPD	Available (CaCl2) pH	2024/11/05	0.57		%	N/A
9746484	GMN	Matrix Spike	Leachable (SPLP) 4-Bromofluorobenzene	2024/11/06		101	%	70 - 130
			Leachable (SPLP) D4-1,2-Dichloroethane	2024/11/06		109	%	70 - 130
			Leachable (SPLP) D8-Toluene	2024/11/06		98	%	70 - 130
			Leachable (SPLP) Bromomethane	2024/11/06		78	%	60 - 140
			Leachable (SPLP) Carbon Tetrachloride	2024/11/06		106	%	70 - 130
			Leachable (SPLP) Chloroform	2024/11/06		101	%	70 - 130
			Leachable (SPLP) 1,2-Dichlorobenzene	2024/11/06		97	%	70 - 130
			Leachable (SPLP) 1,4-Dichlorobenzene	2024/11/06		103	%	70 - 130
			Leachable (SPLP) 1,1-Dichloroethane	2024/11/06		94	%	70 - 130
			Leachable (SPLP) 1,2-Dichloroethane	2024/11/06		113	%	70 - 130
			Leachable (SPLP) 1,1-Dichloroethylene	2024/11/06		93	%	70 - 130
			Leachable (SPLP) cis-1,2-Dichloroethylene	2024/11/06		104	%	70 - 130
			Leachable (SPLP) trans-1,2-Dichloroethylene	2024/11/06		99	%	70 - 130
			Leachable (SPLP) 1,2-Dichloropropane	2024/11/06		101	%	70 - 130
			Leachable (SPLP) cis-1,3-Dichloropropene	2024/11/06		96	%	70 - 130
			Leachable (SPLP) trans-1,3-Dichloropropene	2024/11/06		108	%	70 - 130
			Leachable (SPLP) Ethylene Dibromide	2024/11/06		107	%	70 - 130
			Leachable (SPLP) 1,1,1,2-Tetrachloroethane	2024/11/06		109	%	70 - 130
			Leachable (SPLP) 1,1,2,2-Tetrachloroethane	2024/11/06		100	%	70 - 130
			Leachable (SPLP) Tetrachloroethylene	2024/11/06		91	%	70 - 130
			Leachable (SPLP) 1,1,2-Trichloroethane	2024/11/06		105	%	70 - 130
			Leachable (SPLP) Trichloroethylene	2024/11/06		99	%	70 - 130
9746484	GMN	Spiked Blank	Leachable (SPLP) 4-Bromofluorobenzene	2024/11/05		100	%	70 - 130
			Leachable (SPLP) D4-1,2-Dichloroethane	2024/11/05		107	%	70 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable (SPLP) D8-Toluene	2024/11/05		99	%	70 - 130
			Leachable (SPLP) Bromomethane	2024/11/05		74	%	60 - 140
			Leachable (SPLP) Carbon Tetrachloride	2024/11/05		104	%	70 - 130
			Leachable (SPLP) Chloroform	2024/11/05		100	%	70 - 130
			Leachable (SPLP) 1,2-Dichlorobenzene	2024/11/05		100	%	70 - 130
			Leachable (SPLP) 1,4-Dichlorobenzene	2024/11/05		109	%	70 - 130
			Leachable (SPLP) 1,1-Dichloroethane	2024/11/05		92	%	70 - 130
			Leachable (SPLP) 1,2-Dichloroethane	2024/11/05		110	%	70 - 130
			Leachable (SPLP) 1,1-Dichloroethylene	2024/11/05		92	%	70 - 130
			Leachable (SPLP) cis-1,2-Dichloroethylene	2024/11/05		102	%	70 - 130
			Leachable (SPLP) trans-1,2-Dichloroethylene	2024/11/05		99	%	70 - 130
			Leachable (SPLP) 1,2-Dichloropropane	2024/11/05		100	%	70 - 130
			Leachable (SPLP) cis-1,3-Dichloropropene	2024/11/05		93	%	70 - 130
			Leachable (SPLP) trans-1,3-Dichloropropene	2024/11/05		104	%	70 - 130
			Leachable (SPLP) Ethylene Dibromide	2024/11/05		105	%	70 - 130
			Leachable (SPLP) 1,1,1,2-Tetrachloroethane	2024/11/05		109	%	70 - 130
			Leachable (SPLP) 1,1,2,2-Tetrachloroethane	2024/11/05		98	%	70 - 130
			Leachable (SPLP) Tetrachloroethylene	2024/11/05		93	%	70 - 130
			Leachable (SPLP) 1,1,2-Trichloroethane	2024/11/05		104	%	70 - 130
			Leachable (SPLP) Trichloroethylene	2024/11/05		99	%	70 - 130
9746484	GMN	Method Blank	Leachable (SPLP) 4-Bromofluorobenzene	2024/11/06		104	%	70 - 130
			Leachable (SPLP) D4-1,2-Dichloroethane	2024/11/06		107	%	70 - 130
			Leachable (SPLP) D8-Toluene	2024/11/06		98	%	70 - 130
			Leachable (SPLP) Bromomethane	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) Carbon Tetrachloride	2024/11/06	ND, RDL=0.19		ug/L	
			Leachable (SPLP) Chloroform	2024/11/06	ND, RDL=0.90		ug/L	
			Leachable (SPLP) 1,2-Dichlorobenzene	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,4-Dichlorobenzene	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,1-Dichloroethane	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,2-Dichloroethane	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,1-Dichloroethylene	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) cis-1,2-Dichloroethylene	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) trans-1,2-Dichloroethylene	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,2-Dichloropropane	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) cis-1,3-Dichloropropene	2024/11/06	ND, RDL=0.30		ug/L	
			Leachable (SPLP) trans-1,3-Dichloropropene	2024/11/06	ND, RDL=0.30		ug/L	
			Leachable (SPLP) Ethylene Dibromide	2024/11/06	ND, RDL=0.19		ug/L	
			Leachable (SPLP) 1,1,1,2-Tetrachloroethane	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,1,2,2-Tetrachloroethane	2024/11/06	ND, RDL=0.40		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable (SPLP) Tetrachloroethylene	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) 1,1,2-Trichloroethane	2024/11/06	ND, RDL=0.40		ug/L	
			Leachable (SPLP) Trichloroethylene	2024/11/06	ND, RDL=0.40		ug/L	
9746484	GMN	RPD	Leachable (SPLP) Bromomethane	2024/11/06	NC		%	30
			Leachable (SPLP) Carbon Tetrachloride	2024/11/06	NC		%	30
			Leachable (SPLP) Chloroform	2024/11/06	NC		%	30
			Leachable (SPLP) 1,2-Dichlorobenzene	2024/11/06	NC		%	30
			Leachable (SPLP) 1,4-Dichlorobenzene	2024/11/06	NC		%	30
			Leachable (SPLP) 1,1-Dichloroethane	2024/11/06	NC		%	30
			Leachable (SPLP) 1,2-Dichloroethane	2024/11/06	NC		%	30
			Leachable (SPLP) 1,1-Dichloroethylene	2024/11/06	NC		%	30
			Leachable (SPLP) cis-1,2-Dichloroethylene	2024/11/06	NC		%	30
			Leachable (SPLP) trans-1,2-Dichloroethylene	2024/11/06	NC		%	30
			Leachable (SPLP) 1,2-Dichloropropane	2024/11/06	NC		%	30
			Leachable (SPLP) cis-1,3-Dichloropropene	2024/11/06	NC		%	30
			Leachable (SPLP) trans-1,3-Dichloropropene	2024/11/06	NC		%	30
			Leachable (SPLP) Ethylene Dibromide	2024/11/06	NC		%	30
			Leachable (SPLP) 1,1,1,2-Tetrachloroethane	2024/11/06	NC		%	30
			Leachable (SPLP) 1,1,2,2-Tetrachloroethane	2024/11/06	NC		%	30
			Leachable (SPLP) Tetrachloroethylene	2024/11/06	NC		%	30
			Leachable (SPLP) 1,1,2-Trichloroethane	2024/11/06	NC		%	30
			Leachable (SPLP) Trichloroethylene	2024/11/06	NC		%	30
9752586	MYI	Matrix Spike [AHOA09-01]	Leachable (SPLP) 2,4,6-Tribromophenol	2024/11/08		102	%	30 - 130
			Leachable (SPLP) 2-Fluorobiphenyl	2024/11/08		67	%	30 - 130
			Leachable (SPLP) D14-Terphenyl (FS)	2024/11/08		87	%	30 - 130
			Leachable (SPLP) D5-Nitrobenzene	2024/11/08		67	%	30 - 130
			Leachable (SPLP) Bis(2-chloroethyl)ether	2024/11/08		66	%	30 - 130
			Leachable (SPLP) Bis(2-chloroisopropyl)ether	2024/11/08		58	%	30 - 130
			Leachable (SPLP) p-Chloroaniline	2024/11/08		61	%	30 - 130
			Leachable (SPLP) 3,3'-Dichlorobenzidine	2024/11/08		88	%	30 - 130
			Leachable (SPLP) Diethyl phthalate	2024/11/08		95	%	30 - 130
			Leachable (SPLP) Dimethyl phthalate	2024/11/08		92	%	30 - 130
			Leachable (SPLP) 2,4-Dinitrophenol	2024/11/08		90	%	10 - 130
			Leachable (SPLP) 2,4-Dinitrotoluene	2024/11/08		88	%	30 - 130
			Leachable (SPLP) 2,6-Dinitrotoluene	2024/11/08		86	%	30 - 130
			Leachable (SPLP) 2,4,6-Trichlorophenol	2024/11/08		84	%	10 - 130
9752586	MYI	Spiked Blank	Leachable (SPLP) 2,4,6-Tribromophenol	2024/11/08		104	%	30 - 130
			Leachable (SPLP) 2-Fluorobiphenyl	2024/11/08		76	%	30 - 130
			Leachable (SPLP) D14-Terphenyl (FS)	2024/11/08		83	%	30 - 130
			Leachable (SPLP) D5-Nitrobenzene	2024/11/08		79	%	30 - 130
			Leachable (SPLP) Bis(2-chloroethyl)ether	2024/11/08		77	%	30 - 130
			Leachable (SPLP) Bis(2-chloroisopropyl)ether	2024/11/08		68	%	30 - 130
			Leachable (SPLP) p-Chloroaniline	2024/11/08		79	%	30 - 130
			Leachable (SPLP) 3,3'-Dichlorobenzidine	2024/11/08		105	%	30 - 130
			Leachable (SPLP) Diethyl phthalate	2024/11/08		103	%	30 - 130
			Leachable (SPLP) Dimethyl phthalate	2024/11/08		99	%	30 - 130
			Leachable (SPLP) 2,4-Dinitrophenol	2024/11/08		97	%	10 - 130
			Leachable (SPLP) 2,4-Dinitrotoluene	2024/11/08		100	%	30 - 130
			Leachable (SPLP) 2,6-Dinitrotoluene	2024/11/08		95	%	30 - 130
			Leachable (SPLP) 2,4,6-Trichlorophenol	2024/11/08		87	%	10 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9752586	MYI	Method Blank	Leachable (SPLP) 2,4,6-Tribromophenol	2024/11/08		61	%	30 - 130
			Leachable (SPLP) 2-Fluorobiphenyl	2024/11/08		62	%	30 - 130
			Leachable (SPLP) D14-Terphenyl (FS)	2024/11/08		78	%	30 - 130
			Leachable (SPLP) D5-Nitrobenzene	2024/11/08		67	%	30 - 130
			Leachable (SPLP) Bis(2-chloroethyl)ether	2024/11/08	ND, RDL=2.0		ug/L	
			Leachable (SPLP) Bis(2-chloroisopropyl)ether	2024/11/08	ND, RDL=2.0		ug/L	
			Leachable (SPLP) p-Chloroaniline	2024/11/08	ND, RDL=5.0		ug/L	
			Leachable (SPLP) 3,3'-Dichlorobenzidine	2024/11/08	ND, RDL=0.40		ug/L	
			Leachable (SPLP) Diethyl phthalate	2024/11/08	ND, RDL=1.0		ug/L	
			Leachable (SPLP) Dimethyl phthalate	2024/11/08	ND, RDL=1.0		ug/L	
			Leachable (SPLP) 2,4-Dinitrophenol	2024/11/08	ND, RDL=5.0		ug/L	
			Leachable (SPLP) 2,4-Dinitrotoluene	2024/11/08	ND, RDL=3.0		ug/L	
			Leachable (SPLP) 2,6-Dinitrotoluene	2024/11/08	ND, RDL=3.0		ug/L	
			Leachable (SPLP) 2,4,6-Trichlorophenol	2024/11/08	ND, RDL=0.70		ug/L	
9752586	MYI	RPD [AHOA09-01]	Leachable (SPLP) Bis(2-chloroethyl)ether	2024/11/08	NC		%	40
			Leachable (SPLP) Bis(2-chloroisopropyl)ether	2024/11/08	NC		%	40
			Leachable (SPLP) p-Chloroaniline	2024/11/08	NC		%	40
			Leachable (SPLP) 3,3'-Dichlorobenzidine	2024/11/08	NC		%	40
			Leachable (SPLP) Diethyl phthalate	2024/11/08	NC		%	40
			Leachable (SPLP) Dimethyl phthalate	2024/11/08	NC		%	40
			Leachable (SPLP) 2,4-Dinitrophenol	2024/11/08	NC		%	40
			Leachable (SPLP) 2,4-Dinitrotoluene	2024/11/08	NC		%	40
			Leachable (SPLP) 2,6-Dinitrotoluene	2024/11/08	NC		%	40
			Leachable (SPLP) 2,4,6-Trichlorophenol	2024/11/08	NC		%	40

N/A = Not Applicable

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

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

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

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

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

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

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

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

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

C4Y3367
2024/10/30 09:00

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

Page of

NONT-2024-10-7527

Bottle Order #: 1019688

COC #: C#1019688-02-01

Project Manager: Katherine Szozda

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#39509 Lopers & Associates	Company Name:		Quotation #:	C43362
Attention:	Accounts Payable	Attention:	Luke Lopers	P.O. #:	
Address:	30 Lansfield Way Ottawa ON K2G 3V8	Address:		Project:	LOP24-025C
Tel:	(613) 327-9073 Fax:	Tel:	Fax:	Project Name:	
Email:	Luke@Lopers.ca	Email:	Luke@Lopers.ca	Site #:	
				Sampled By:	L.Lopers

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

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

Other Regulations
- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg 558. [ ] Storm Sewer Bylaw
- [ ] MISA Municipality
- [ ] PWQO [X] Reg 406 Table 2.1 Res.
- [ ] Other

Special Instructions

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

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O.Reg 153-[illegible]by HS & F1-F4 (Soil)	O.Reg 153 PAHs (Soil)	O.Reg 153 Metals & Inorganics Pkg (Soil)	O.Reg 406 Excess Soil SPLP Metals	O.Reg 406 Excess Soil mSPLP Prep	O.Reg 406 Excess Soil SPLP VOCs	O.Reg 406 Excess Soil SPLP ABNs	# of Bottles	Comments
1		DUP 2 - 10/29	oct 29/24	-	S	BTEX X	X	X						
2		mSPLP	oct 29/24	3:30 PM	S				X	X	X	X		
3														
4														
5														
6														
7														
8														
9														Received in Ottawa
10														

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

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

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

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	24/10/29		Pedro da Silva 1100	2024/10/30	09:00	
[signature]			[signature]	24/10/31	08:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	5/6/7 (ice)	Present	V	
		Intact	V	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. 7/8/8

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

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

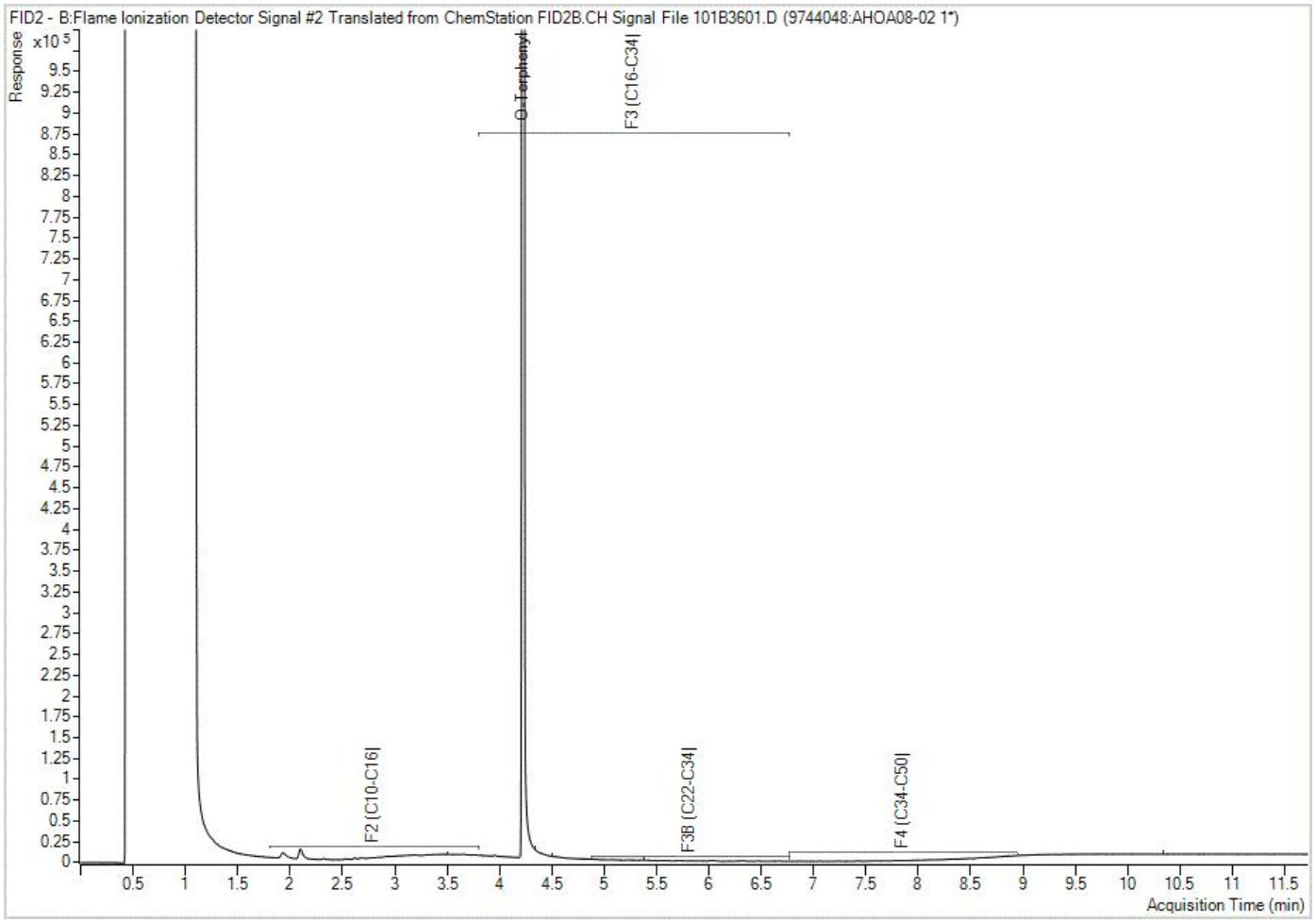
White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Job #: C4Y3367
Report Date: 2024/11/08
Bureau Veritas Sample: AHOA08

Lopers & Associates
Client Project #: LOP24-025C
Client ID: DUP2-10/29

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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www.paracellabs.com

Certificate of Analysis

Lopers & Associates

30 Lansfield Way
Ottawa, ON K2G 3V8
Attn: Luke Lopers

Client PO:
Project: LOP23-025B
Custody: 139954

Report Date: 19-Apr-2023
Order Date: 6-Apr-2023

Order #: 2315005

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

Paracel ID	Client ID
2315005-01	BH1-23-GW1

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 19-Apr-2023

Client: Lopers & Associates

Order Date: 6-Apr-2023

Client PO:

Project Description: LOP23-025B

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	10-Apr-23	11-Apr-23
Chromium, hexavalent - water	MOE E3056 - colourimetric	10-Apr-23	11-Apr-23
Cyanide, free	MOE E3015 - Auto Colour	12-Apr-23	12-Apr-23
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	10-Apr-23	10-Apr-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	10-Apr-23	10-Apr-23
pH	EPA 150.1 - pH probe @25 °C	13-Apr-23	13-Apr-23
PHC F1	CWS Tier 1 - P&T GC-FID	11-Apr-23	11-Apr-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Apr-23	18-Apr-23
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	18-Apr-23	19-Apr-23
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	11-Apr-23	11-Apr-23

Certificate of Analysis

Client: **Lopers & Associates**

Client PO:

Report Date: 19-Apr-2023

Order Date: 6-Apr-2023

Project Description: LOP23-025B

	Client ID:	BH1-23-GW1	-	-	-
	Sample Date:	06-Apr-23 16:30	-	-	-
	Sample ID:	2315005-01	-	-	-
	MDL/Units	Ground Water	-	-	-
General Inorganics					
Cyanide, free	2 ug/L	<2	-	-	-
pH	0.1 pH Units	7.5	-	-	-
Anions					
Chloride	1 mg/L	445	-	-	-
Metals					
Mercury	0.1 ug/L	<0.1	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-
Arsenic	1 ug/L	<1	-	-	-
Barium	1 ug/L	110	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10 ug/L	50	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Chromium	1 ug/L	<1	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-
Cobalt	0.5 ug/L	<0.5	-	-	-
Copper	0.5 ug/L	2.0	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-
Molybdenum	0.5 ug/L	0.8	-	-	-
Nickel	1 ug/L	3	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	151000	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Uranium	0.1 ug/L	1.4	-	-	-
Vanadium	0.5 ug/L	2.5	-	-	-
Zinc	5 ug/L	<5	-	-	-
Volatiles					
Acetone	5.0 ug/L	<5.0	-	-	-
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	-	-	-

Certificate of Analysis

Client: Lopers & Associates

Client PO:

Report Date: 19-Apr-2023

Order Date: 6-Apr-2023

Project Description: LOP23-025B

	Client ID:	BH1-23-GW1	-	-	-
	Sample Date:	06-Apr-23 16:30	-	-	-
	Sample ID:	2315005-01	-	-	-
	MDL/Units	Ground Water	-	-	-
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	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	-	-	-
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	0.8	-	-	-
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	-	-	-
4-Bromofluorobenzene	Surrogate	105%	-	-	-
Dibromofluoromethane	Surrogate	91.5%	-	-	-

Certificate of Analysis

Client: Lopers & Associates

Client PO:

Report Date: 19-Apr-2023

Order Date: 6-Apr-2023

Project Description: LOP23-025B

	Client ID:	BH1-23-GW1	-	-	-
	Sample Date:	06-Apr-23 16:30	-	-	-
	Sample ID:	2315005-01	-	-	-
	MDL/Units	Ground Water	-	-	-
Toluene-d8	Surrogate	118%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
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	<0.05	-	-	-
Anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	-	-
Chrysene	0.05 ug/L	<0.05	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-
Fluoranthene	0.01 ug/L	<0.01	-	-	-
Fluorene	0.05 ug/L	<0.05	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	-	-
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	<0.05	-	-	-
Phenanthrene	0.05 ug/L	<0.05	-	-	-
Pyrene	0.01 ug/L	<0.01	-	-	-
2-Fluorobiphenyl	Surrogate	109%	-	-	-
Terphenyl-d14	Surrogate	116%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%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						
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
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	*22.7*		*ug/L*		*114*	*50-140*			
Surrogate: Terphenyl-d14	*22.7*		*ug/L*		*114*	*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						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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, 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	*83.4*		*ug/L*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*73.5*		*ug/L*		*91.8*	*50-140*			
Surrogate: Toluene-d8	*94.0*		*ug/L*		*118*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	210	1	mg/L	206			1.7	20	
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	7.8	0.1	pH Units	7.8			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	0.72	0.5	ug/L	0.75			3.2	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	20.2	1	ug/L	20.7			2.6	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	17	10	ug/L	16			3.8	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	0.98	0.5	ug/L	1.03			5.5	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	0.70	0.5	ug/L	0.67			3.8	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	13900	200	ug/L	16700			18.7	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	11	5	ug/L	11			3.1	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
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	2.19	0.5	ug/L	2.10			4.2	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	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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	
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	*84.1*		*ug/L*		*105*	*50-140*			
Surrogate: Dibromofluoromethane	*74.8*		*ug/L*		*93.5*	*50-140*			
Surrogate: Toluene-d8	*95.8*		*ug/L*		*120*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	217	1	mg/L	206	106	70-124			
General Inorganics									
Cyanide, free	45.3	2	ug/L	ND	90.6	61-139			
Hydrocarbons									
F1 PHCs (C6-C10)	1980	25	ug/L	ND	99.1	68-117			
F2 PHCs (C10-C16)	1560	100	ug/L	ND	97.3	60-140			
F3 PHCs (C16-C34)	3930	100	ug/L	ND	100	60-140			
F4 PHCs (C34-C50)	2510	100	ug/L	ND	101	60-140			
Metals									
Mercury	2.97	0.1	ug/L	ND	99.1	70-130			
Arsenic	52.2	1	ug/L	ND	104	80-120			
Barium	63.9	1	ug/L	20.7	86.5	80-120			
Beryllium	49.7	0.5	ug/L	ND	99.5	80-120			
Boron	59	10	ug/L	16	85.4	80-120			
Cadmium	46.1	0.1	ug/L	ND	92.2	80-120			
Chromium (VI)	206	10	ug/L	ND	103	70-130			
Chromium	50.4	1	ug/L	ND	101	80-120			
Cobalt	47.8	0.5	ug/L	ND	95.5	80-120			
Copper	46.1	0.5	ug/L	1.03	90.0	80-120			
Lead	39.7	0.1	ug/L	ND	79.4	80-120			QM-07
Molybdenum	43.9	0.5	ug/L	0.67	86.4	80-120			
Nickel	47.3	1	ug/L	ND	93.6	80-120			
Selenium	47.6	1	ug/L	ND	95.1	80-120			
Silver	44.7	0.1	ug/L	ND	89.4	80-120			
Sodium	8980	200	ug/L	ND	89.8	80-120			
Thallium	45.2	0.1	ug/L	ND	90.5	80-120			
Uranium	44.0	0.1	ug/L	ND	88.0	80-120			
Vanadium	48.9	0.5	ug/L	ND	97.6	80-120			
Zinc	55	5	ug/L	11	89.2	80-120			
Semi-Volatiles									
Acenaphthene	4.08	0.05	ug/L	ND	81.7	50-140			
Acenaphthylene	3.62	0.05	ug/L	ND	72.4	50-140			
Anthracene	3.88	0.01	ug/L	ND	77.6	50-140			
Benzo [a] anthracene	4.39	0.01	ug/L	ND	87.9	50-140			
Benzo [a] pyrene	4.89	0.01	ug/L	ND	97.7	50-140			
Benzo [b] fluoranthene	4.72	0.05	ug/L	ND	94.4	50-140			
Benzo [g,h,i] perylene	3.41	0.05	ug/L	ND	68.2	50-140			
Benzo [k] fluoranthene	5.20	0.05	ug/L	ND	104	50-140			
Chrysene	5.22	0.05	ug/L	ND	104	50-140			
Dibenzo [a,h] anthracene	3.63	0.05	ug/L	ND	72.7	50-140			
Fluoranthene	3.76	0.01	ug/L	ND	75.2	50-140			
Fluorene	4.10	0.05	ug/L	ND	82.0	50-140			
Indeno [1,2,3-cd] pyrene	3.55	0.05	ug/L	ND	71.0	50-140			
1-Methylnaphthalene	5.39	0.05	ug/L	ND	108	50-140			
2-Methylnaphthalene	5.57	0.05	ug/L	ND	111	50-140			
Naphthalene	4.68	0.05	ug/L	ND	93.5	50-140			
Phenanthrene	3.95	0.05	ug/L	ND	79.1	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Pyrene	3.87	0.01	ug/L	ND	77.5	50-140			
Surrogate: 2-Fluorobiphenyl	*21.0*		*ug/L*		*105*	*50-140*			
Surrogate: Terphenyl-d14	*22.3*		*ug/L*		*111*	*50-140*			
Volatiles									
Acetone	65.0	5.0	ug/L	ND	65.0	50-140			
Benzene	43.8	0.5	ug/L	ND	110	60-130			
Bromodichloromethane	33.1	0.5	ug/L	ND	82.8	60-130			
Bromoform	40.2	0.5	ug/L	ND	101	60-130			
Bromomethane	30.1	0.5	ug/L	ND	75.3	50-140			
Carbon Tetrachloride	33.6	0.2	ug/L	ND	84.0	60-130			
Chlorobenzene	41.2	0.5	ug/L	ND	103	60-130			
Chloroform	33.4	0.5	ug/L	ND	83.4	60-130			
Dibromochloromethane	38.0	0.5	ug/L	ND	95.1	60-130			
Dichlorodifluoromethane	30.6	1.0	ug/L	ND	76.5	50-140			
1,2-Dichlorobenzene	41.4	0.5	ug/L	ND	104	60-130			
1,3-Dichlorobenzene	37.1	0.5	ug/L	ND	92.8	60-130			
1,4-Dichlorobenzene	36.7	0.5	ug/L	ND	91.7	60-130			
1,1-Dichloroethane	41.7	0.5	ug/L	ND	104	60-130			
1,2-Dichloroethane	33.0	0.5	ug/L	ND	82.5	60-130			
1,1-Dichloroethylene	44.6	0.5	ug/L	ND	111	60-130			
cis-1,2-Dichloroethylene	43.4	0.5	ug/L	ND	109	60-130			
trans-1,2-Dichloroethylene	42.1	0.5	ug/L	ND	105	60-130			
1,2-Dichloropropane	46.6	0.5	ug/L	ND	116	60-130			
cis-1,3-Dichloropropylene	37.6	0.5	ug/L	ND	94.0	60-130			
trans-1,3-Dichloropropylene	36.3	0.5	ug/L	ND	90.8	60-130			
Ethylbenzene	39.0	0.5	ug/L	ND	97.4	60-130			
Ethylene dibromide (dibromoethane, 1,2	43.1	0.2	ug/L	ND	108	60-130			
Hexane	45.0	1.0	ug/L	ND	113	60-130			
Methyl Ethyl Ketone (2-Butanone)	119	5.0	ug/L	ND	119	50-140			
Methyl Isobutyl Ketone	103	5.0	ug/L	ND	103	50-140			
Methyl tert-butyl ether	96.1	2.0	ug/L	ND	96.1	50-140			
Methylene Chloride	42.4	5.0	ug/L	ND	106	60-130			
Styrene	39.4	0.5	ug/L	ND	98.4	60-130			
1,1,1,2-Tetrachloroethane	33.6	0.5	ug/L	ND	83.9	60-130			
1,1,2,2-Tetrachloroethane	35.6	0.5	ug/L	ND	89.0	60-130			
Tetrachloroethylene	40.5	0.5	ug/L	ND	101	60-130			
Toluene	43.4	0.5	ug/L	ND	109	60-130			
1,1,1-Trichloroethane	36.2	0.5	ug/L	ND	90.5	60-130			
1,1,2-Trichloroethane	44.3	0.5	ug/L	ND	111	60-130			
Trichloroethylene	38.4	0.5	ug/L	ND	96.0	60-130			
Trichlorofluoromethane	39.3	1.0	ug/L	ND	98.3	60-130			
Vinyl chloride	32.0	0.5	ug/L	ND	80.0	50-140			
m,p-Xylenes	77.0	0.5	ug/L	ND	96.3	60-130			
o-Xylene	36.0	0.5	ug/L	ND	90.1	60-130			
Surrogate: 4-Bromofluorobenzene	*77.4*		*ug/L*		*96.8*	*50-140*			
Surrogate: Dibromofluoromethane	*71.1*		*ug/L*		*88.8*	*50-140*			
Surrogate: Toluene-d8	*81.4*		*ug/L*		*102*	*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: 2315005

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2315005	№ 139954

Client Name: LOPERS & ASSOCIATES	Project Ref: LOP23-025B
Contact Name: Luke Lopers	Quote #:
Address: 30 Lansfield Way, Ottawa, ON	PO #:
Telephone: 613-327-9073	E-mail: Luke@Lopers.ca

Page 1 of 1

Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular — Date Required: 5 DAYS

REG 153/04	Other Regulation	Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)
☐ 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:	

	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)	Inorganics				
1	BH1-23-GW1	GW		9	April 6/23	4:30PM	X	X	X	X	X	X		X				
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: Walk-In

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Mark Foto	Verified By: Sandra Demarais
Relinquished By (Print): Luke Lopers	Date/Time:	Date/Time: Apr 6, 2023 5:50PM	Date/Time: April 10, 9:57
Date/Time: April 6, 2023 / 5:19PM	Temperature: °C	Temperature: 10.4 °C	pH Verified: ☑ By: Sandra Demarais

Your Project #: LOP24-025C
Site#: PHASE 2 ESA
Site Location: 214 SOMERSET
Your C.O.C. #: C#1022820-01-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/11/20
Report #: R8412924
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Z8508
Received: 2024/11/13, 16:27

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum (1)	2	N/A	2024/11/19	CAM SOP-00301	EPA 8270D m
Methylnaphthalene Sum (1)	1	N/A	2024/11/20	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	3	N/A	2024/11/19		EPA 8260C m
1,3-Dichloropropene Sum (1)	2	N/A	2024/11/20		EPA 8260C m
Chloride by Automated Colourimetry (1)	3	N/A	2024/11/19	CAM SOP-00463	SM 24 4500-Cl E m
Chromium (VI) in Water (1)	3	N/A	2024/11/18	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide (1)	3	N/A	2024/11/16	CAM SOP-00457	OMOE E3015 m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	2	2024/11/18	2024/11/19	CAM SOP-00316	CCME PHC-CWS m
Mercury (1)	3	2024/11/18	2024/11/19	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS (1)	3	N/A	2024/11/18	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM) (1)	2	2024/11/18	2024/11/18	CAM SOP-00318	EPA 8270E
PAH Compounds in Water by GC/MS (SIM) (1)	1	2024/11/19	2024/11/20	CAM SOP-00318	EPA 8270E
Volatile Organic Compounds and F1 PHCs (1)	2	N/A	2024/11/20	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water (1)	3	N/A	2024/11/18	CAM SOP-00228	EPA 8260D

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Your Project #: LOP24-025C
Site#: PHASE 2 ESA
Site Location: 214 SOMERSET
Your C.O.C. #: C#1022820-01-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/11/20
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Z8508
Received: 2024/11/13, 16:27

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

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

(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4Z8508
Report Date: 2024/11/20

Lopers & Associates
Client Project #: LOP24-025C
Site Location: 214 SOMERSET
Sampler Initials: LL

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AIUW65		AIUW66	AIUW67		
Sampling Date		2024/11/13 12:10		2024/11/13 14:45	2024/11/13		
COC Number		C#1022820-01-01		C#1022820-01-01	C#1022820-01-01		
	UNITS	**BH1-24-GW1**	**RDL**	**BH2-24-GW1**	**DUP-11/13**	**RDL**	**QC Batch**
Inorganics							
WAD Cyanide (Free)	ug/L	ND	1	ND	ND	1	9768861
Dissolved Chloride (Cl-)	mg/L	28	1.0	2900	2900	20	9770979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas Job #: C4Z8508
Report Date: 2024/11/20

Lopers & Associates
Client Project #: LOP24-025C
Site Location: 214 SOMERSET
Sampler Initials: LL

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AIUW65		AIUW66	AIUW67		
Sampling Date		2024/11/13 12:10		2024/11/13 14:45	2024/11/13		
COC Number		C#1022820-01-01		C#1022820-01-01	C#1022820-01-01		
	UNITS	BH1-24-GW1	RDL	BH2-24-GW1	DUP-11/13	RDL	QC Batch
Metals							
Chromium (VI)	ug/L	ND	0.50	ND (1)	ND (1)	1.0	9772464
Mercury (Hg)	ug/L	ND	0.10	ND	ND	0.10	9772401
Dissolved Antimony (Sb)	ug/L	ND	0.50	ND	ND	0.50	9771756
Dissolved Arsenic (As)	ug/L	2.4	1.0	ND	ND	1.0	9771756
Dissolved Barium (Ba)	ug/L	130	2.0	200	200	2.0	9771756
Dissolved Beryllium (Be)	ug/L	ND	0.40	ND	ND	0.40	9771756
Dissolved Boron (B)	ug/L	60	10	29	29	10	9771756
Dissolved Cadmium (Cd)	ug/L	ND	0.090	0.12	0.24	0.090	9771756
Dissolved Chromium (Cr)	ug/L	ND	5.0	ND	ND	5.0	9771756
Dissolved Cobalt (Co)	ug/L	ND	0.50	0.75	0.70	0.50	9771756
Dissolved Copper (Cu)	ug/L	ND	0.90	1.8	1.8	0.90	9771756
Dissolved Lead (Pb)	ug/L	ND	0.50	ND	ND	0.50	9771756
Dissolved Molybdenum (Mo)	ug/L	13	0.50	7.9	7.9	0.50	9771756
Dissolved Nickel (Ni)	ug/L	ND	1.0	4.0	3.9	1.0	9771756
Dissolved Selenium (Se)	ug/L	ND	2.0	ND	ND	2.0	9771756
Dissolved Silver (Ag)	ug/L	ND	0.090	ND	ND	0.090	9771756
Dissolved Sodium (Na)	ug/L	29000	100	1400000	1400000	500	9771756
Dissolved Thallium (Tl)	ug/L	ND	0.050	ND	ND	0.050	9771756
Dissolved Uranium (U)	ug/L	2.6	0.10	3.9	3.9	0.10	9771756
Dissolved Vanadium (V)	ug/L	0.77	0.50	1.4	1.7	0.50	9771756
Dissolved Zinc (Zn)	ug/L	ND	5.0	ND	ND	5.0	9771756

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.
(1) Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AIUW65		AIUW66	AIUW67		
Sampling Date		2024/11/13 12:10		2024/11/13 14:45	2024/11/13		
COC Number		C#1022820-01-01		C#1022820-01-01	C#1022820-01-01		
	UNITS	BH1-24-GW1	QC Batch	BH2-24-GW1	DUP-11/13	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	0.23	9768381	ND	ND	0.071	9768381
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	ND	9774687	ND	ND	0.050	9772139
Acenaphthylene	ug/L	ND	9774687	ND	ND	0.050	9772139
Anthracene	ug/L	ND	9774687	ND	ND	0.050	9772139
Benzo(a)anthracene	ug/L	ND	9774687	ND	ND	0.050	9772139
Benzo(a)pyrene	ug/L	ND	9774687	ND	ND	0.0090	9772139
Benzo(b/j)fluoranthene	ug/L	ND	9774687	ND	ND	0.050	9772139
Benzo(g,h,i)perylene	ug/L	ND	9774687	ND	ND	0.050	9772139
Benzo(k)fluoranthene	ug/L	ND	9774687	ND	ND	0.050	9772139
Chrysene	ug/L	ND	9774687	ND	ND	0.050	9772139
Dibenzo(a,h)anthracene	ug/L	ND	9774687	ND	ND	0.050	9772139
Fluoranthene	ug/L	ND	9774687	ND	ND	0.050	9772139
Fluorene	ug/L	ND	9774687	ND	ND	0.050	9772139
Indeno(1,2,3-cd)pyrene	ug/L	ND	9774687	ND	ND	0.050	9772139
1-Methylnaphthalene	ug/L	0.076	9774687	ND	ND	0.050	9772139
2-Methylnaphthalene	ug/L	0.16	9774687	ND	ND	0.050	9772139
Naphthalene	ug/L	0.14	9774687	ND	0.051	0.050	9772139
Phenanthrene	ug/L	ND	9774687	ND	ND	0.030	9772139
Pyrene	ug/L	ND	9774687	ND	ND	0.050	9772139
Surrogate Recovery (%)							
D10-Anthracene	%	96	9774687	121	124		9772139
D14-Terphenyl (FS)	%	92	9774687	101	104		9772139
D8-Acenaphthylene	%	89	9774687	97	100		9772139

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AIUW64	AIUW65			AIUW66		
Sampling Date		2024/11/13 11:05	2024/11/13 12:10			2024/11/13 14:45		
COC Number		C#1022820-01-01	C#1022820-01-01			C#1022820-01-01		
	UNITS	BH1-23-GW2	BH1-24-GW1	RDL	QC Batch	BH2-24-GW1	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	0.50	9768180	ND	0.50	9768180
Volatile Organics								
Acetone (2-Propanone)	ug/L	ND	ND	10	9770542	ND	10	9771763
Benzene	ug/L	ND	ND	0.20	9770542	ND	0.17	9771763
Bromodichloromethane	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
Bromoform	ug/L	ND	ND	1.0	9770542	ND	1.0	9771763
Bromomethane	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
Carbon Tetrachloride	ug/L	ND	ND	0.19	9770542	ND	0.20	9771763
Chlorobenzene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
Chloroform	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
Dibromochloromethane	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
1,2-Dichlorobenzene	ug/L	ND	ND	0.40	9770542	ND	0.50	9771763
1,3-Dichlorobenzene	ug/L	ND	ND	0.40	9770542	ND	0.50	9771763
1,4-Dichlorobenzene	ug/L	ND	ND	0.40	9770542	ND	0.50	9771763
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	1.0	9770542	ND	1.0	9771763
1,1-Dichloroethane	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
1,2-Dichloroethane	ug/L	ND	ND	0.49	9770542	ND	0.50	9771763
1,1-Dichloroethylene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
1,2-Dichloropropane	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
cis-1,3-Dichloropropene	ug/L	ND	ND	0.30	9770542	ND	0.30	9771763
trans-1,3-Dichloropropene	ug/L	ND	ND	0.40	9770542	ND	0.40	9771763
Ethylbenzene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
Ethylene Dibromide	ug/L	ND	ND	0.19	9770542	ND	0.20	9771763
Hexane	ug/L	ND	ND	1.0	9770542	ND	1.0	9771763
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	2.0	9770542	ND	2.0	9771763
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	10	9770542	ND	10	9771763
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	9770542	ND	5.0	9771763
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AIUW64	AIUW65			AIUW66		
Sampling Date		2024/11/13 11:05	2024/11/13 12:10			2024/11/13 14:45		
COC Number		C#1022820-01-01	C#1022820-01-01			C#1022820-01-01		
	UNITS	BH1-23-GW2	BH1-24-GW1	RDL	QC Batch	BH2-24-GW1	RDL	QC Batch
Styrene	ug/L	ND	ND	0.40	9770542	ND	0.50	9771763
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.40	9770542	ND	0.50	9771763
Tetrachloroethylene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
Toluene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
1,1,1-Trichloroethane	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
1,1,2-Trichloroethane	ug/L	ND	ND	0.40	9770542	ND	0.50	9771763
Trichloroethylene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.50	9770542	ND	0.50	9771763
Vinyl Chloride	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
p+m-Xylene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
o-Xylene	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
Total Xylenes	ug/L	ND	ND	0.20	9770542	ND	0.20	9771763
F1 (C6-C10)	ug/L					ND	25	9771763
F1 (C6-C10) - BTEX	ug/L					ND	25	9771763
Surrogate Recovery (%)								
4-Bromofluorobenzene	%					96		9771763
D4-1,2-Dichloroethane	%					115		9771763
D8-Toluene	%					92		9771763
4-Bromofluorobenzene	%	101	103		9770542			
D4-1,2-Dichloroethane	%	106	108		9770542			
D8-Toluene	%	91	91		9770542			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AIUW67			AIUW68		
Sampling Date		2024/11/13			2024/11/13		
COC Number		C#1022820-01-01			C#1022820-01-01		
	UNITS	DUP-11/13	RDL	QC Batch	TRIP BLANK	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	9768180	ND	0.50	9768180
Volatile Organics							
Acetone (2-Propanone)	ug/L	ND	10	9771763	ND	10	9770542
Benzene	ug/L	ND	0.17	9771763	ND	0.20	9770542
Bromodichloromethane	ug/L	ND	0.50	9771763	ND	0.50	9770542
Bromoform	ug/L	ND	1.0	9771763	ND	1.0	9770542
Bromomethane	ug/L	ND	0.50	9771763	ND	0.50	9770542
Carbon Tetrachloride	ug/L	ND	0.20	9771763	ND	0.19	9770542
Chlorobenzene	ug/L	ND	0.20	9771763	ND	0.20	9770542
Chloroform	ug/L	ND	0.20	9771763	ND	0.20	9770542
Dibromochloromethane	ug/L	ND	0.50	9771763	ND	0.50	9770542
1,2-Dichlorobenzene	ug/L	ND	0.50	9771763	ND	0.40	9770542
1,3-Dichlorobenzene	ug/L	ND	0.50	9771763	ND	0.40	9770542
1,4-Dichlorobenzene	ug/L	ND	0.50	9771763	ND	0.40	9770542
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	9771763	ND	1.0	9770542
1,1-Dichloroethane	ug/L	ND	0.20	9771763	ND	0.20	9770542
1,2-Dichloroethane	ug/L	ND	0.50	9771763	ND	0.49	9770542
1,1-Dichloroethylene	ug/L	ND	0.20	9771763	ND	0.20	9770542
cis-1,2-Dichloroethylene	ug/L	ND	0.50	9771763	ND	0.50	9770542
trans-1,2-Dichloroethylene	ug/L	ND	0.50	9771763	ND	0.50	9770542
1,2-Dichloropropane	ug/L	ND	0.20	9771763	ND	0.20	9770542
cis-1,3-Dichloropropene	ug/L	ND	0.30	9771763	ND	0.30	9770542
trans-1,3-Dichloropropene	ug/L	ND	0.40	9771763	ND	0.40	9770542
Ethylbenzene	ug/L	ND	0.20	9771763	ND	0.20	9770542
Ethylene Dibromide	ug/L	ND	0.20	9771763	ND	0.19	9770542
Hexane	ug/L	ND	1.0	9771763	ND	1.0	9770542
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	9771763	ND	2.0	9770542
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	9771763	ND	10	9770542
Methyl Isobutyl Ketone	ug/L	ND	5.0	9771763	ND	5.0	9770542
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	9771763	ND	0.50	9770542

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AIUW67			AIUW68		
Sampling Date		2024/11/13			2024/11/13		
COC Number		C#1022820-01-01			C#1022820-01-01		
	UNITS	DUP-11/13	RDL	QC Batch	TRIP BLANK	RDL	QC Batch
Styrene	ug/L	ND	0.50	9771763	ND	0.40	9770542
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	9771763	ND	0.50	9770542
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	9771763	ND	0.40	9770542
Tetrachloroethylene	ug/L	ND	0.20	9771763	ND	0.20	9770542
Toluene	ug/L	ND	0.20	9771763	ND	0.20	9770542
1,1,1-Trichloroethane	ug/L	ND	0.20	9771763	ND	0.20	9770542
1,1,2-Trichloroethane	ug/L	ND	0.50	9771763	ND	0.40	9770542
Trichloroethylene	ug/L	ND	0.20	9771763	ND	0.20	9770542
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	9771763	ND	0.50	9770542
Vinyl Chloride	ug/L	ND	0.20	9771763	ND	0.20	9770542
p+m-Xylene	ug/L	ND	0.20	9771763	ND	0.20	9770542
o-Xylene	ug/L	ND	0.20	9771763	ND	0.20	9770542
Total Xylenes	ug/L	ND	0.20	9771763	ND	0.20	9770542
F1 (C6-C10)	ug/L	ND	25	9771763			
F1 (C6-C10) - BTEX	ug/L	ND	25	9771763			
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	94		9771763			
D4-1,2-Dichloroethane	%	116		9771763			
D8-Toluene	%	92		9771763			
4-Bromofluorobenzene	%				98		9770542
D4-1,2-Dichloroethane	%				108		9770542
D8-Toluene	%				91		9770542

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AIUW66	AIUW67		
Sampling Date		2024/11/13 14:45	2024/11/13		
COC Number		C#1022820-01-01	C#1022820-01-01		
	UNITS	BH2-24-GW1	DUP-11/13	RDL	QC Batch
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	90	9772141
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	200	9772141
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	200	9772141
Reached Baseline at C50	ug/L	Yes	Yes		9772141
Surrogate Recovery (%)					
o-Terphenyl	%	101	103		9772141

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9768861	JJH	Matrix Spike	WAD Cyanide (Free)	2024/11/16		106	%	80 - 120
9768861	JJH	Spiked Blank	WAD Cyanide (Free)	2024/11/16		106	%	80 - 120
9768861	JJH	Method Blank	WAD Cyanide (Free)	2024/11/16	ND,RDL=1		ug/L	
9768861	JJH	RPD	WAD Cyanide (Free)	2024/11/16	NC		%	20
9770542	MS4	Matrix Spike	4-Bromofluorobenzene	2024/11/18		96	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/18		101	%	70 - 130
			D8-Toluene	2024/11/18		101	%	70 - 130
			Acetone (2-Propanone)	2024/11/18		98	%	60 - 140
			Benzene	2024/11/18		102	%	70 - 130
			Bromodichloromethane	2024/11/18		98	%	70 - 130
			Bromoform	2024/11/18		96	%	70 - 130
			Bromomethane	2024/11/18		86	%	60 - 140
			Carbon Tetrachloride	2024/11/18		104	%	70 - 130
			Chlorobenzene	2024/11/18		93	%	70 - 130
			Chloroform	2024/11/18		99	%	70 - 130
			Dibromochloromethane	2024/11/18		105	%	70 - 130
			1,2-Dichlorobenzene	2024/11/18		103	%	70 - 130
			1,3-Dichlorobenzene	2024/11/18		106	%	70 - 130
			1,4-Dichlorobenzene	2024/11/18		99	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/18		85	%	60 - 140
			1,1-Dichloroethane	2024/11/18		96	%	70 - 130
			1,2-Dichloroethane	2024/11/18		104	%	70 - 130
			1,1-Dichloroethylene	2024/11/18		102	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/18		106	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/18		107	%	70 - 130
			1,2-Dichloropropane	2024/11/18		101	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/18		101	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/18		113	%	70 - 130
			Ethylbenzene	2024/11/18		100	%	70 - 130
			Ethylene Dibromide	2024/11/18		101	%	70 - 130
			Hexane	2024/11/18		116	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/18		99	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/18		108	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/18		109	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/18		99	%	70 - 130
			Styrene	2024/11/18		106	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/18		106	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/18		90	%	70 - 130
			Tetrachloroethylene	2024/11/18		100	%	70 - 130
			Toluene	2024/11/18		101	%	70 - 130
			1,1,1-Trichloroethane	2024/11/18		97	%	70 - 130
			1,1,2-Trichloroethane	2024/11/18		107	%	70 - 130
			Trichloroethylene	2024/11/18		102	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/18		96	%	70 - 130
			Vinyl Chloride	2024/11/18		94	%	70 - 130
			p+m-Xylene	2024/11/18		101	%	70 - 130
			o-Xylene	2024/11/18		107	%	70 - 130
9770542	MS4	Spiked Blank	4-Bromofluorobenzene	2024/11/18		101	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/18		100	%	70 - 130
			D8-Toluene	2024/11/18		101	%	70 - 130
			Acetone (2-Propanone)	2024/11/18		97	%	60 - 140
			Benzene	2024/11/18		104	%	70 - 130
			Bromodichloromethane	2024/11/18		99	%	70 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromoform	2024/11/18		102	%	70 - 130
			Bromomethane	2024/11/18		84	%	60 - 140
			Carbon Tetrachloride	2024/11/18		107	%	70 - 130
			Chlorobenzene	2024/11/18		94	%	70 - 130
			Chloroform	2024/11/18		101	%	70 - 130
			Dibromochloromethane	2024/11/18		100	%	70 - 130
			1,2-Dichlorobenzene	2024/11/18		103	%	70 - 130
			1,3-Dichlorobenzene	2024/11/18		105	%	70 - 130
			1,4-Dichlorobenzene	2024/11/18		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/18		87	%	60 - 140
			1,1-Dichloroethane	2024/11/18		98	%	70 - 130
			1,2-Dichloroethane	2024/11/18		104	%	70 - 130
			1,1-Dichloroethylene	2024/11/18		105	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/18		108	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/18		110	%	70 - 130
			1,2-Dichloropropane	2024/11/18		102	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/18		98	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/18		105	%	70 - 130
			Ethylbenzene	2024/11/18		101	%	70 - 130
			Ethylene Dibromide	2024/11/18		96	%	70 - 130
			Hexane	2024/11/18		119	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/18		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/18		107	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/18		110	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/18		104	%	70 - 130
			Styrene	2024/11/18		107	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/18		107	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/18		90	%	70 - 130
			Tetrachloroethylene	2024/11/18		98	%	70 - 130
			Toluene	2024/11/18		102	%	70 - 130
			1,1,1-Trichloroethane	2024/11/18		100	%	70 - 130
			1,1,2-Trichloroethane	2024/11/18		106	%	70 - 130
			Trichloroethylene	2024/11/18		105	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/18		99	%	70 - 130
			Vinyl Chloride	2024/11/18		96	%	70 - 130
			p+m-Xylene	2024/11/18		103	%	70 - 130
			o-Xylene	2024/11/18		111	%	70 - 130
9770542	MS4	Method Blank	4-Bromofluorobenzene	2024/11/18		103	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/18		104	%	70 - 130
			D8-Toluene	2024/11/18		95	%	70 - 130
			Acetone (2-Propanone)	2024/11/18	ND, RDL=10		ug/L	
			Benzene	2024/11/18	ND, RDL=0.20		ug/L	
			Bromodichloromethane	2024/11/18	ND, RDL=0.50		ug/L	
			Bromoform	2024/11/18	ND, RDL=1.0		ug/L	
			Bromomethane	2024/11/18	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2024/11/18	ND, RDL=0.19		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chlorobenzene	2024/11/18	ND, RDL=0.20		ug/L	
			Chloroform	2024/11/18	ND, RDL=0.20		ug/L	
			Dibromochloromethane	2024/11/18	ND, RDL=0.50		ug/L	
			1,2-Dichlorobenzene	2024/11/18	ND, RDL=0.40		ug/L	
			1,3-Dichlorobenzene	2024/11/18	ND, RDL=0.40		ug/L	
			1,4-Dichlorobenzene	2024/11/18	ND, RDL=0.40		ug/L	
			Dichlorodifluoromethane (FREON 12)	2024/11/18	ND, RDL=1.0		ug/L	
			1,1-Dichloroethane	2024/11/18	ND, RDL=0.20		ug/L	
			1,2-Dichloroethane	2024/11/18	ND, RDL=0.49		ug/L	
			1,1-Dichloroethylene	2024/11/18	ND, RDL=0.20		ug/L	
			cis-1,2-Dichloroethylene	2024/11/18	ND, RDL=0.50		ug/L	
			trans-1,2-Dichloroethylene	2024/11/18	ND, RDL=0.50		ug/L	
			1,2-Dichloropropane	2024/11/18	ND, RDL=0.20		ug/L	
			cis-1,3-Dichloropropene	2024/11/18	ND, RDL=0.30		ug/L	
			trans-1,3-Dichloropropene	2024/11/18	ND, RDL=0.40		ug/L	
			Ethylbenzene	2024/11/18	ND, RDL=0.20		ug/L	
			Ethylene Dibromide	2024/11/18	ND, RDL=0.19		ug/L	
			Hexane	2024/11/18	ND, RDL=1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2024/11/18	ND, RDL=2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2024/11/18	ND, RDL=10		ug/L	
			Methyl Isobutyl Ketone	2024/11/18	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2024/11/18	ND, RDL=0.50		ug/L	
			Styrene	2024/11/18	ND, RDL=0.40		ug/L	
			1,1,1,2-Tetrachloroethane	2024/11/18	ND, RDL=0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2024/11/18	ND, RDL=0.40		ug/L	
			Tetrachloroethylene	2024/11/18	ND, RDL=0.20		ug/L	
			Toluene	2024/11/18	ND, RDL=0.20		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1,1-Trichloroethane	2024/11/18	ND, RDL=0.20		ug/L	
			1,1,2-Trichloroethane	2024/11/18	ND, RDL=0.40		ug/L	
			Trichloroethylene	2024/11/18	ND, RDL=0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2024/11/18	ND, RDL=0.50		ug/L	
			Vinyl Chloride	2024/11/18	ND, RDL=0.20		ug/L	
			p+m-Xylene	2024/11/18	ND, RDL=0.20		ug/L	
			o-Xylene	2024/11/18	ND, RDL=0.20		ug/L	
			Total Xylenes	2024/11/18	ND, RDL=0.20		ug/L	
9770542	MS4	RPD	Chloroform	2024/11/18	3.0		%	30
			Toluene	2024/11/18	NC		%	30
9770979	ADB	Matrix Spike	Dissolved Chloride (Cl-)	2024/11/19		NC	%	80 - 120
9770979	ADB	Spiked Blank	Dissolved Chloride (Cl-)	2024/11/19		100	%	80 - 120
9770979	ADB	Method Blank	Dissolved Chloride (Cl-)	2024/11/19	ND, RDL=1.0		mg/L	
9770979	ADB	RPD	Dissolved Chloride (Cl-)	2024/11/19	0.57		%	20
9771756	GR1	Matrix Spike	Dissolved Antimony (Sb)	2024/11/18		101	%	80 - 120
			Dissolved Arsenic (As)	2024/11/18		98	%	80 - 120
			Dissolved Barium (Ba)	2024/11/18		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/11/18		98	%	80 - 120
			Dissolved Boron (B)	2024/11/18		95	%	80 - 120
			Dissolved Cadmium (Cd)	2024/11/18		97	%	80 - 120
			Dissolved Chromium (Cr)	2024/11/18		97	%	80 - 120
			Dissolved Cobalt (Co)	2024/11/18		95	%	80 - 120
			Dissolved Copper (Cu)	2024/11/18		95	%	80 - 120
			Dissolved Lead (Pb)	2024/11/18		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/11/18		98	%	80 - 120
			Dissolved Nickel (Ni)	2024/11/18		95	%	80 - 120
			Dissolved Selenium (Se)	2024/11/18		98	%	80 - 120
			Dissolved Silver (Ag)	2024/11/18		96	%	80 - 120
			Dissolved Sodium (Na)	2024/11/18		96	%	80 - 120
			Dissolved Thallium (Tl)	2024/11/18		103	%	80 - 120
			Dissolved Uranium (U)	2024/11/18		103	%	80 - 120
			Dissolved Vanadium (V)	2024/11/18		97	%	80 - 120
			Dissolved Zinc (Zn)	2024/11/18		98	%	80 - 120
9771756	GR1	Spiked Blank	Dissolved Antimony (Sb)	2024/11/18		99	%	80 - 120
			Dissolved Arsenic (As)	2024/11/18		98	%	80 - 120
			Dissolved Barium (Ba)	2024/11/18		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/11/18		97	%	80 - 120
			Dissolved Boron (B)	2024/11/18		94	%	80 - 120
			Dissolved Cadmium (Cd)	2024/11/18		95	%	80 - 120
			Dissolved Chromium (Cr)	2024/11/18		96	%	80 - 120
			Dissolved Cobalt (Co)	2024/11/18		94	%	80 - 120
			Dissolved Copper (Cu)	2024/11/18		93	%	80 - 120
			Dissolved Lead (Pb)	2024/11/18		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/11/18		96	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Nickel (Ni)	2024/11/18		95	%	80 - 120
			Dissolved Selenium (Se)	2024/11/18		97	%	80 - 120
			Dissolved Silver (Ag)	2024/11/18		94	%	80 - 120
			Dissolved Sodium (Na)	2024/11/18		94	%	80 - 120
			Dissolved Thallium (Tl)	2024/11/18		100	%	80 - 120
			Dissolved Uranium (U)	2024/11/18		100	%	80 - 120
			Dissolved Vanadium (V)	2024/11/18		96	%	80 - 120
			Dissolved Zinc (Zn)	2024/11/18		98	%	80 - 120
9771756	GR1	Method Blank	Dissolved Antimony (Sb)	2024/11/18	ND, RDL=0.50		ug/L	
			Dissolved Arsenic (As)	2024/11/18	ND, RDL=1.0		ug/L	
			Dissolved Barium (Ba)	2024/11/18	ND, RDL=2.0		ug/L	
			Dissolved Beryllium (Be)	2024/11/18	ND, RDL=0.40		ug/L	
			Dissolved Boron (B)	2024/11/18	ND, RDL=10		ug/L	
			Dissolved Cadmium (Cd)	2024/11/18	ND, RDL=0.090		ug/L	
			Dissolved Chromium (Cr)	2024/11/18	ND, RDL=5.0		ug/L	
			Dissolved Cobalt (Co)	2024/11/18	ND, RDL=0.50		ug/L	
			Dissolved Copper (Cu)	2024/11/18	ND, RDL=0.90		ug/L	
			Dissolved Lead (Pb)	2024/11/18	ND, RDL=0.50		ug/L	
			Dissolved Molybdenum (Mo)	2024/11/18	ND, RDL=0.50		ug/L	
			Dissolved Nickel (Ni)	2024/11/18	ND, RDL=1.0		ug/L	
			Dissolved Selenium (Se)	2024/11/18	ND, RDL=2.0		ug/L	
			Dissolved Silver (Ag)	2024/11/18	ND, RDL=0.090		ug/L	
			Dissolved Sodium (Na)	2024/11/18	ND, RDL=100		ug/L	
			Dissolved Thallium (Tl)	2024/11/18	ND, RDL=0.050		ug/L	
			Dissolved Uranium (U)	2024/11/18	ND, RDL=0.10		ug/L	
			Dissolved Vanadium (V)	2024/11/18	ND, RDL=0.50		ug/L	
			Dissolved Zinc (Zn)	2024/11/18	ND, RDL=5.0		ug/L	
9771756	GR1	RPD	Dissolved Antimony (Sb)	2024/11/19	NC		%	20
			Dissolved Arsenic (As)	2024/11/19	NC		%	20
			Dissolved Barium (Ba)	2024/11/19	NC		%	20
			Dissolved Beryllium (Be)	2024/11/19	NC		%	20
			Dissolved Boron (B)	2024/11/19	NC		%	20
			Dissolved Cadmium (Cd)	2024/11/19	NC		%	20
			Dissolved Chromium (Cr)	2024/11/19	NC		%	20
			Dissolved Cobalt (Co)	2024/11/19	NC		%	20

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Copper (Cu)	2024/11/19	NC		%	20
			Dissolved Lead (Pb)	2024/11/19	NC		%	20
			Dissolved Molybdenum (Mo)	2024/11/19	NC		%	20
			Dissolved Nickel (Ni)	2024/11/19	NC		%	20
			Dissolved Selenium (Se)	2024/11/19	NC		%	20
			Dissolved Silver (Ag)	2024/11/19	NC		%	20
			Dissolved Sodium (Na)	2024/11/19	NC		%	20
			Dissolved Vanadium (V)	2024/11/19	NC		%	20
			Dissolved Zinc (Zn)	2024/11/19	NC		%	20
9771763	DW5	Matrix Spike	4-Bromofluorobenzene	2024/11/19		102	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/19		107	%	70 - 130
			D8-Toluene	2024/11/19		104	%	70 - 130
			Acetone (2-Propanone)	2024/11/19		103	%	60 - 140
			Benzene	2024/11/19		98	%	70 - 130
			Bromodichloromethane	2024/11/19		100	%	70 - 130
			Bromoform	2024/11/19		101	%	70 - 130
			Bromomethane	2024/11/19		82	%	60 - 140
			Carbon Tetrachloride	2024/11/19		104	%	70 - 130
			Chlorobenzene	2024/11/19		91	%	70 - 130
			Chloroform	2024/11/19		101	%	70 - 130
			Dibromochloromethane	2024/11/19		105	%	70 - 130
			1,2-Dichlorobenzene	2024/11/19		98	%	70 - 130
			1,3-Dichlorobenzene	2024/11/19		96	%	70 - 130
			1,4-Dichlorobenzene	2024/11/19		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/19		79	%	60 - 140
			1,1-Dichloroethane	2024/11/19		97	%	70 - 130
			1,2-Dichloroethane	2024/11/19		108	%	70 - 130
			1,1-Dichloroethylene	2024/11/19		101	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/19		106	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/19		103	%	70 - 130
			1,2-Dichloropropane	2024/11/19		101	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/19		88	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/19		99	%	70 - 130
			Ethylbenzene	2024/11/19		93	%	70 - 130
			Ethylene Dibromide	2024/11/19		100	%	70 - 130
			Hexane	2024/11/19		115	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/19		100	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/19		102	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/19		103	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/19		98	%	70 - 130
			Styrene	2024/11/19		99	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/19		107	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/19		95	%	70 - 130
			Tetrachloroethylene	2024/11/19		94	%	70 - 130
			Toluene	2024/11/19		97	%	70 - 130
			1,1,1-Trichloroethane	2024/11/19		98	%	70 - 130
			1,1,2-Trichloroethane	2024/11/19		104	%	70 - 130
			Trichloroethylene	2024/11/19		99	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/19		98	%	70 - 130
			Vinyl Chloride	2024/11/19		92	%	70 - 130
			p+m-Xylene	2024/11/19		93	%	70 - 130
			o-Xylene	2024/11/19		104	%	70 - 130
			F1 (C6-C10)	2024/11/19		93	%	60 - 140

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9771763	DW5	Spiked Blank	4-Bromofluorobenzene	2024/11/19		101	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/19		104	%	70 - 130
			D8-Toluene	2024/11/19		110	%	70 - 130
			Acetone (2-Propanone)	2024/11/19		96	%	60 - 140
			Benzene	2024/11/19		98	%	70 - 130
			Bromodichloromethane	2024/11/19		98	%	70 - 130
			Bromoform	2024/11/19		103	%	70 - 130
			Bromomethane	2024/11/19		81	%	60 - 140
			Carbon Tetrachloride	2024/11/19		105	%	70 - 130
			Chlorobenzene	2024/11/19		91	%	70 - 130
			Chloroform	2024/11/19		99	%	70 - 130
			Dibromochloromethane	2024/11/19		104	%	70 - 130
			1,2-Dichlorobenzene	2024/11/19		99	%	70 - 130
			1,3-Dichlorobenzene	2024/11/19		97	%	70 - 130
			1,4-Dichlorobenzene	2024/11/19		99	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/19		80	%	60 - 140
			1,1-Dichloroethane	2024/11/19		96	%	70 - 130
			1,2-Dichloroethane	2024/11/19		104	%	70 - 130
			1,1-Dichloroethylene	2024/11/19		101	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/19		104	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/19		103	%	70 - 130
			1,2-Dichloropropane	2024/11/19		99	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/19		89	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/19		104	%	70 - 130
			Ethylbenzene	2024/11/19		96	%	70 - 130
			Ethylene Dibromide	2024/11/19		99	%	70 - 130
			Hexane	2024/11/19		115	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/19		97	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/19		96	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/19		99	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/19		96	%	70 - 130
			Styrene	2024/11/19		100	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/19		107	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/19		91	%	70 - 130
			Tetrachloroethylene	2024/11/19		99	%	70 - 130
			Toluene	2024/11/19		100	%	70 - 130
			1,1,1-Trichloroethane	2024/11/19		99	%	70 - 130
			1,1,2-Trichloroethane	2024/11/19		105	%	70 - 130
			Trichloroethylene	2024/11/19		99	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/19		98	%	70 - 130
			Vinyl Chloride	2024/11/19		91	%	70 - 130
			p+m-Xylene	2024/11/19		96	%	70 - 130
			o-Xylene	2024/11/19		108	%	70 - 130
			F1 (C6-C10)	2024/11/19		94	%	60 - 140
9771763	DW5	Method Blank	4-Bromofluorobenzene	2024/11/19		96	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/19		112	%	70 - 130
			D8-Toluene	2024/11/19		92	%	70 - 130
			Acetone (2-Propanone)	2024/11/19	ND, RDL=10		ug/L	
			Benzene	2024/11/19	ND, RDL=0.17		ug/L	
			Bromodichloromethane	2024/11/19	ND, RDL=0.50		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromoform	2024/11/19	ND, RDL=1.0		ug/L	
			Bromomethane	2024/11/19	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2024/11/19	ND, RDL=0.20		ug/L	
			Chlorobenzene	2024/11/19	ND, RDL=0.20		ug/L	
			Chloroform	2024/11/19	ND, RDL=0.20		ug/L	
			Dibromochloromethane	2024/11/19	ND, RDL=0.50		ug/L	
			1,2-Dichlorobenzene	2024/11/19	ND, RDL=0.50		ug/L	
			1,3-Dichlorobenzene	2024/11/19	ND, RDL=0.50		ug/L	
			1,4-Dichlorobenzene	2024/11/19	ND, RDL=0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2024/11/19	ND, RDL=1.0		ug/L	
			1,1-Dichloroethane	2024/11/19	ND, RDL=0.20		ug/L	
			1,2-Dichloroethane	2024/11/19	ND, RDL=0.50		ug/L	
			1,1-Dichloroethylene	2024/11/19	ND, RDL=0.20		ug/L	
			cis-1,2-Dichloroethylene	2024/11/19	ND, RDL=0.50		ug/L	
			trans-1,2-Dichloroethylene	2024/11/19	ND, RDL=0.50		ug/L	
			1,2-Dichloropropane	2024/11/19	ND, RDL=0.20		ug/L	
			cis-1,3-Dichloropropene	2024/11/19	ND, RDL=0.30		ug/L	
			trans-1,3-Dichloropropene	2024/11/19	ND, RDL=0.40		ug/L	
			Ethylbenzene	2024/11/19	ND, RDL=0.20		ug/L	
			Ethylene Dibromide	2024/11/19	ND, RDL=0.20		ug/L	
			Hexane	2024/11/19	ND, RDL=1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2024/11/19	ND, RDL=2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2024/11/19	ND, RDL=10		ug/L	
			Methyl Isobutyl Ketone	2024/11/19	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2024/11/19	ND, RDL=0.50		ug/L	
			Styrene	2024/11/19	ND, RDL=0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2024/11/19	ND, RDL=0.50		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1,2,2-Tetrachloroethane	2024/11/19	ND, RDL=0.50		ug/L	
			Tetrachloroethylene	2024/11/19	ND, RDL=0.20		ug/L	
			Toluene	2024/11/19	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2024/11/19	ND, RDL=0.20		ug/L	
			1,1,2-Trichloroethane	2024/11/19	ND, RDL=0.50		ug/L	
			Trichloroethylene	2024/11/19	ND, RDL=0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2024/11/19	ND, RDL=0.50		ug/L	
			Vinyl Chloride	2024/11/19	ND, RDL=0.20		ug/L	
			p+m-Xylene	2024/11/19	ND, RDL=0.20		ug/L	
			o-Xylene	2024/11/19	ND, RDL=0.20		ug/L	
			Total Xylenes	2024/11/19	ND, RDL=0.20		ug/L	
			F1 (C6-C10)	2024/11/19	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2024/11/19	ND, RDL=25		ug/L	
9771763	DW5	RPD	Acetone (2-Propanone)	2024/11/19	NC		%	30
			Benzene	2024/11/19	NC		%	30
			Bromodichloromethane	2024/11/19	NC		%	30
			Bromoform	2024/11/19	NC		%	30
			Bromomethane	2024/11/19	NC		%	30
			Carbon Tetrachloride	2024/11/19	NC		%	30
			Chlorobenzene	2024/11/19	NC		%	30
			Chloroform	2024/11/19	NC		%	30
			Dibromochloromethane	2024/11/19	NC		%	30
			1,2-Dichlorobenzene	2024/11/19	NC		%	30
			1,3-Dichlorobenzene	2024/11/19	NC		%	30
			1,4-Dichlorobenzene	2024/11/19	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2024/11/19	NC		%	30
			1,1-Dichloroethane	2024/11/19	NC		%	30
			1,2-Dichloroethane	2024/11/19	NC		%	30
			1,1-Dichloroethylene	2024/11/19	NC		%	30
			cis-1,2-Dichloroethylene	2024/11/19	NC		%	30
			trans-1,2-Dichloroethylene	2024/11/19	NC		%	30
			1,2-Dichloropropane	2024/11/19	NC		%	30
			cis-1,3-Dichloropropene	2024/11/19	NC		%	30
			trans-1,3-Dichloropropene	2024/11/19	NC		%	30
			Ethylbenzene	2024/11/19	NC		%	30
			Ethylene Dibromide	2024/11/19	NC		%	30
			Hexane	2024/11/19	NC		%	30
			Methylene Chloride(Dichloromethane)	2024/11/19	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2024/11/19	NC		%	30
			Methyl Isobutyl Ketone	2024/11/19	NC		%	30

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Methyl t-butyl ether (MTBE)	2024/11/19	NC		%	30
			Styrene	2024/11/19	NC		%	30
			1,1,1,2-Tetrachloroethane	2024/11/19	NC		%	30
			1,1,2,2-Tetrachloroethane	2024/11/19	NC		%	30
			Tetrachloroethylene	2024/11/19	NC		%	30
			Toluene	2024/11/19	NC		%	30
			1,1,1-Trichloroethane	2024/11/19	NC		%	30
			1,1,2-Trichloroethane	2024/11/19	NC		%	30
			Trichloroethylene	2024/11/19	NC		%	30
			Trichlorofluoromethane (FREON 11)	2024/11/19	NC		%	30
			Vinyl Chloride	2024/11/19	NC		%	30
			p+m-Xylene	2024/11/19	NC		%	30
			o-Xylene	2024/11/19	NC		%	30
			Total Xylenes	2024/11/19	NC		%	30
			F1 (C6-C10)	2024/11/19	NC		%	30
			F1 (C6-C10) - BTEX	2024/11/19	NC		%	30
9772139	RAJ	Matrix Spike [AIUW66-06]	D10-Anthracene	2024/11/18		124	%	50 - 130
			D14-Terphenyl (FS)	2024/11/18		108	%	50 - 130
			D8-Acenaphthylene	2024/11/18		104	%	50 - 130
			Acenaphthene	2024/11/18		114	%	50 - 130
			Acenaphthylene	2024/11/18		114	%	50 - 130
			Anthracene	2024/11/18		115	%	50 - 130
			Benzo(a)anthracene	2024/11/18		106	%	50 - 130
			Benzo(a)pyrene	2024/11/18		103	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/18		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/18		84	%	50 - 130
			Benzo(k)fluoranthene	2024/11/18		104	%	50 - 130
			Chrysene	2024/11/18		108	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/18		81	%	50 - 130
			Fluoranthene	2024/11/18		113	%	50 - 130
			Fluorene	2024/11/18		109	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/18		84	%	50 - 130
			1-Methylnaphthalene	2024/11/18		105	%	50 - 130
			2-Methylnaphthalene	2024/11/18		103	%	50 - 130
			Naphthalene	2024/11/18		111	%	50 - 130
			Phenanthrene	2024/11/18		120	%	50 - 130
			Pyrene	2024/11/18		115	%	50 - 130
9772139	RAJ	Spiked Blank	D10-Anthracene	2024/11/18		124	%	50 - 130
			D14-Terphenyl (FS)	2024/11/18		108	%	50 - 130
			D8-Acenaphthylene	2024/11/18		102	%	50 - 130
			Acenaphthene	2024/11/18		107	%	50 - 130
			Acenaphthylene	2024/11/18		107	%	50 - 130
			Anthracene	2024/11/18		110	%	50 - 130
			Benzo(a)anthracene	2024/11/18		103	%	50 - 130
			Benzo(a)pyrene	2024/11/18		101	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/18		103	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/18		86	%	50 - 130
			Benzo(k)fluoranthene	2024/11/18		103	%	50 - 130
			Chrysene	2024/11/18		108	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/18		80	%	50 - 130
			Fluoranthene	2024/11/18		107	%	50 - 130
			Fluorene	2024/11/18		103	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Indeno(1,2,3-cd)pyrene	2024/11/18		85	%	50 - 130
			1-Methylnaphthalene	2024/11/18		99	%	50 - 130
			2-Methylnaphthalene	2024/11/18		98	%	50 - 130
			Naphthalene	2024/11/18		106	%	50 - 130
			Phenanthrene	2024/11/18		115	%	50 - 130
			Pyrene	2024/11/18		109	%	50 - 130
9772139	RAJ	Method Blank	D10-Anthracene	2024/11/18		128	%	50 - 130
			D14-Terphenyl (FS)	2024/11/18		110	%	50 - 130
			D8-Acenaphthylene	2024/11/18		103	%	50 - 130
			Acenaphthene	2024/11/18	ND, RDL=0.050		ug/L	
			Acenaphthylene	2024/11/18	ND, RDL=0.050		ug/L	
			Anthracene	2024/11/18	ND, RDL=0.050		ug/L	
			Benzo(a)anthracene	2024/11/18	ND, RDL=0.050		ug/L	
			Benzo(a)pyrene	2024/11/18	ND, RDL=0.0090		ug/L	
			Benzo(b/j)fluoranthene	2024/11/18	ND, RDL=0.050		ug/L	
			Benzo(g,h,i)perylene	2024/11/18	ND, RDL=0.050		ug/L	
			Benzo(k)fluoranthene	2024/11/18	ND, RDL=0.050		ug/L	
			Chrysene	2024/11/18	ND, RDL=0.050		ug/L	
			Dibenzo(a,h)anthracene	2024/11/18	ND, RDL=0.050		ug/L	
			Fluoranthene	2024/11/18	ND, RDL=0.050		ug/L	
			Fluorene	2024/11/18	ND, RDL=0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/11/18	ND, RDL=0.050		ug/L	
			1-Methylnaphthalene	2024/11/18	ND, RDL=0.050		ug/L	
			2-Methylnaphthalene	2024/11/18	ND, RDL=0.050		ug/L	
			Naphthalene	2024/11/18	ND, RDL=0.050		ug/L	
			Phenanthrene	2024/11/18	ND, RDL=0.030		ug/L	
			Pyrene	2024/11/18	ND, RDL=0.050		ug/L	
9772139	RAJ	RPD [AIUW67-06]	Acenaphthene	2024/11/18	NC		%	30
			Acenaphthylene	2024/11/18	NC		%	30
			Anthracene	2024/11/18	NC		%	30
			Benzo(a)anthracene	2024/11/18	NC		%	30
			Benzo(a)pyrene	2024/11/18	NC		%	30
			Benzo(b/j)fluoranthene	2024/11/18	NC		%	30
			Benzo(g,h,i)perylene	2024/11/18	NC		%	30
			Benzo(k)fluoranthene	2024/11/18	NC		%	30
			Chrysene	2024/11/18	NC		%	30

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenzo(a,h)anthracene	2024/11/18	NC		%	30
			Fluoranthene	2024/11/18	NC		%	30
			Fluorene	2024/11/18	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/11/18	NC		%	30
			1-Methylnaphthalene	2024/11/18	NC		%	30
			2-Methylnaphthalene	2024/11/18	11		%	30
			Naphthalene	2024/11/18	24		%	30
			Phenanthrene	2024/11/18	NC		%	30
			Pyrene	2024/11/18	NC		%	30
9772141	MSZ	Matrix Spike	o-Terphenyl	2024/11/19		102	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/19		88	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/11/19		94	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/11/19		93	%	60 - 140
9772141	MSZ	Spiked Blank	o-Terphenyl	2024/11/19		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/19		88	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/11/19		95	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/11/19		95	%	60 - 140
9772141	MSZ	Method Blank	o-Terphenyl	2024/11/19		100	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/19	ND, RDL=90		ug/L	
			F3 (C16-C34 Hydrocarbons)	2024/11/19	ND, RDL=200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2024/11/19	ND, RDL=200		ug/L	
9772141	MSZ	RPD [AIUW67-06]	F2 (C10-C16 Hydrocarbons)	2024/11/19	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2024/11/19	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2024/11/19	NC		%	30
9772401	MPJ	Matrix Spike	Mercury (Hg)	2024/11/19		96	%	75 - 125
9772401	MPJ	Spiked Blank	Mercury (Hg)	2024/11/19		99	%	80 - 120
9772401	MPJ	Method Blank	Mercury (Hg)	2024/11/19	ND, RDL=0.10		ug/L	
9772401	MPJ	RPD	Mercury (Hg)	2024/11/19	NC		%	20
9772464	RSU	Matrix Spike	Chromium (VI)	2024/11/18		104	%	80 - 120
9772464	RSU	Spiked Blank	Chromium (VI)	2024/11/18		103	%	80 - 120
9772464	RSU	Method Blank	Chromium (VI)	2024/11/18	ND, RDL=0.50		ug/L	
9772464	RSU	RPD	Chromium (VI)	2024/11/18	NC		%	20
9774687	RAJ	Matrix Spike	D10-Anthracene	2024/11/20		98	%	50 - 130
			D14-Terphenyl (FS)	2024/11/20		101	%	50 - 130
			D8-Acenaphthylene	2024/11/20		85	%	50 - 130
			Acenaphthene	2024/11/20		91	%	50 - 130
			Acenaphthylene	2024/11/20		88	%	50 - 130
			Anthracene	2024/11/20		94	%	50 - 130
			Benzo(a)anthracene	2024/11/20		90	%	50 - 130
			Benzo(a)pyrene	2024/11/20		95	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/20		92	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/20		92	%	50 - 130
			Benzo(k)fluoranthene	2024/11/20		95	%	50 - 130
			Chrysene	2024/11/20		93	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/20		80	%	50 - 130
			Fluoranthene	2024/11/20		105	%	50 - 130
			Fluorene	2024/11/20		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/20		93	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1-Methylnaphthalene	2024/11/20		96	%	50 - 130
			2-Methylnaphthalene	2024/11/20		94	%	50 - 130
			Naphthalene	2024/11/20		93	%	50 - 130
			Phenanthrene	2024/11/20		94	%	50 - 130
			Pyrene	2024/11/20		103	%	50 - 130
9774687	RAJ	Spiked Blank	D10-Anthracene	2024/11/20		110	%	50 - 130
			D14-Terphenyl (FS)	2024/11/20		118	%	50 - 130
			D8-Acenaphthylene	2024/11/20		91	%	50 - 130
			Acenaphthene	2024/11/20		103	%	50 - 130
			Acenaphthylene	2024/11/20		99	%	50 - 130
			Anthracene	2024/11/20		106	%	50 - 130
			Benzo(a)anthracene	2024/11/20		100	%	50 - 130
			Benzo(a)pyrene	2024/11/20		105	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/20		104	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/20		101	%	50 - 130
			Benzo(k)fluoranthene	2024/11/20		109	%	50 - 130
			Chrysene	2024/11/20		106	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/20		90	%	50 - 130
			Fluoranthene	2024/11/20		119	%	50 - 130
			Fluorene	2024/11/20		100	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/20		101	%	50 - 130
			1-Methylnaphthalene	2024/11/20		108	%	50 - 130
			2-Methylnaphthalene	2024/11/20		106	%	50 - 130
			Naphthalene	2024/11/20		104	%	50 - 130
			Phenanthrene	2024/11/20		106	%	50 - 130
			Pyrene	2024/11/20		117	%	50 - 130
9774687	RAJ	Method Blank	D10-Anthracene	2024/11/20		110	%	50 - 130
			D14-Terphenyl (FS)	2024/11/20		121	%	50 - 130
			D8-Acenaphthylene	2024/11/20		93	%	50 - 130
			Acenaphthene	2024/11/20	ND, RDL=0.050		ug/L	
			Acenaphthylene	2024/11/20	ND, RDL=0.050		ug/L	
			Anthracene	2024/11/20	ND, RDL=0.050		ug/L	
			Benzo(a)anthracene	2024/11/20	ND, RDL=0.050		ug/L	
			Benzo(a)pyrene	2024/11/20	ND, RDL=0.0090		ug/L	
			Benzo(b/j)fluoranthene	2024/11/20	ND, RDL=0.050		ug/L	
			Benzo(g,h,i)perylene	2024/11/20	ND, RDL=0.050		ug/L	
			Benzo(k)fluoranthene	2024/11/20	ND, RDL=0.050		ug/L	
			Chrysene	2024/11/20	ND, RDL=0.050		ug/L	
			Dibenzo(a,h)anthracene	2024/11/20	ND, RDL=0.050		ug/L	
			Fluoranthene	2024/11/20	ND, RDL=0.050		ug/L	
			Fluorene	2024/11/20	ND, RDL=0.050		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Indeno(1,2,3-cd)pyrene	2024/11/20	ND, RDL=0.050		ug/L	
			1-Methylnaphthalene	2024/11/20	ND, RDL=0.050		ug/L	
			2-Methylnaphthalene	2024/11/20	ND, RDL=0.050		ug/L	
			Naphthalene	2024/11/20	ND, RDL=0.050		ug/L	
			Phenanthrene	2024/11/20	ND, RDL=0.030		ug/L	
			Pyrene	2024/11/20	ND, RDL=0.050		ug/L	
9774687	RAJ	RPD	Acenaphthene	2024/11/20	NC		%	30
			Acenaphthylene	2024/11/20	NC		%	30
			Anthracene	2024/11/20	NC		%	30
			Benzo(a)anthracene	2024/11/20	NC		%	30
			Benzo(a)pyrene	2024/11/20	NC		%	30
			Benzo(b/j)fluoranthene	2024/11/20	NC		%	30
			Benzo(g,h,i)perylene	2024/11/20	NC		%	30
			Benzo(k)fluoranthene	2024/11/20	NC		%	30
			Chrysene	2024/11/20	NC		%	30
			Dibenzo(a,h)anthracene	2024/11/20	NC		%	30
			Fluoranthene	2024/11/20	NC		%	30
			Fluorene	2024/11/20	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/11/20	NC		%	30
			1-Methylnaphthalene	2024/11/20	NC		%	30
			2-Methylnaphthalene	2024/11/20	NC		%	30
			Naphthalene	2024/11/20	NC		%	30
			Phenanthrene	2024/11/20	NC		%	30
			Pyrene	2024/11/20	NC		%	30

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

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

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

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

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

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

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

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

C4Z8508
2024/11/13 16:27

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

Page of

NONT-2024-11-2769

Bottle Order #: 1022820

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#39509 Lopers & Associates	Company Name:		Quotation #:	C43362
Attention:	Luke Lopers	Attention:	Luke Lopers	P.O. #:	
Address:	30 Lansfield Way Ottawa ON K2G 3V8	Address:		Project:	LOP24-025C
Tel:	(613) 327-9073 Fax:	Tel:	Fax:	Project Name:	Phase 2 ESA
Email:	Luke@lopers.ca	Email:	Luke@lopers.ca	Site #:	214 Somerset
				Sampled By:	L. Lopers

COC #: C#1022820-01-01

Project Manager: Katherine Szozda

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

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

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

Special Instructions

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

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

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

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

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	ANALYSIS REQUESTED (PLEASE BE SPECIFIC): O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 VOCs by HS							# of Bottles	Comments
1		BH1-23-GW2	Nov 13/24	11:05AM	GW					X								
2		BH1-24-GW1		12:10PM	GW		X	X		X								
3		BH2-24-GW1		2:45PM	GW		X	X	X	X								
4		DUP-11/13			GW		X	X	X	X								
5		Trip Blank								X								
6																		
7																		
8																		
9																		
10																		

Received in Ottawa

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
	24/11/13	4:22PM	Rocio da Silva 11000	2024/11/13	16:27	
Lukee Lopers			SUGAR SALVIN	2024/11/14	08:36	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	4.5/6 (ice pack)	Present		✓
		Intact		✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

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

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

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

White: Bureau Veritas Yellow: Client

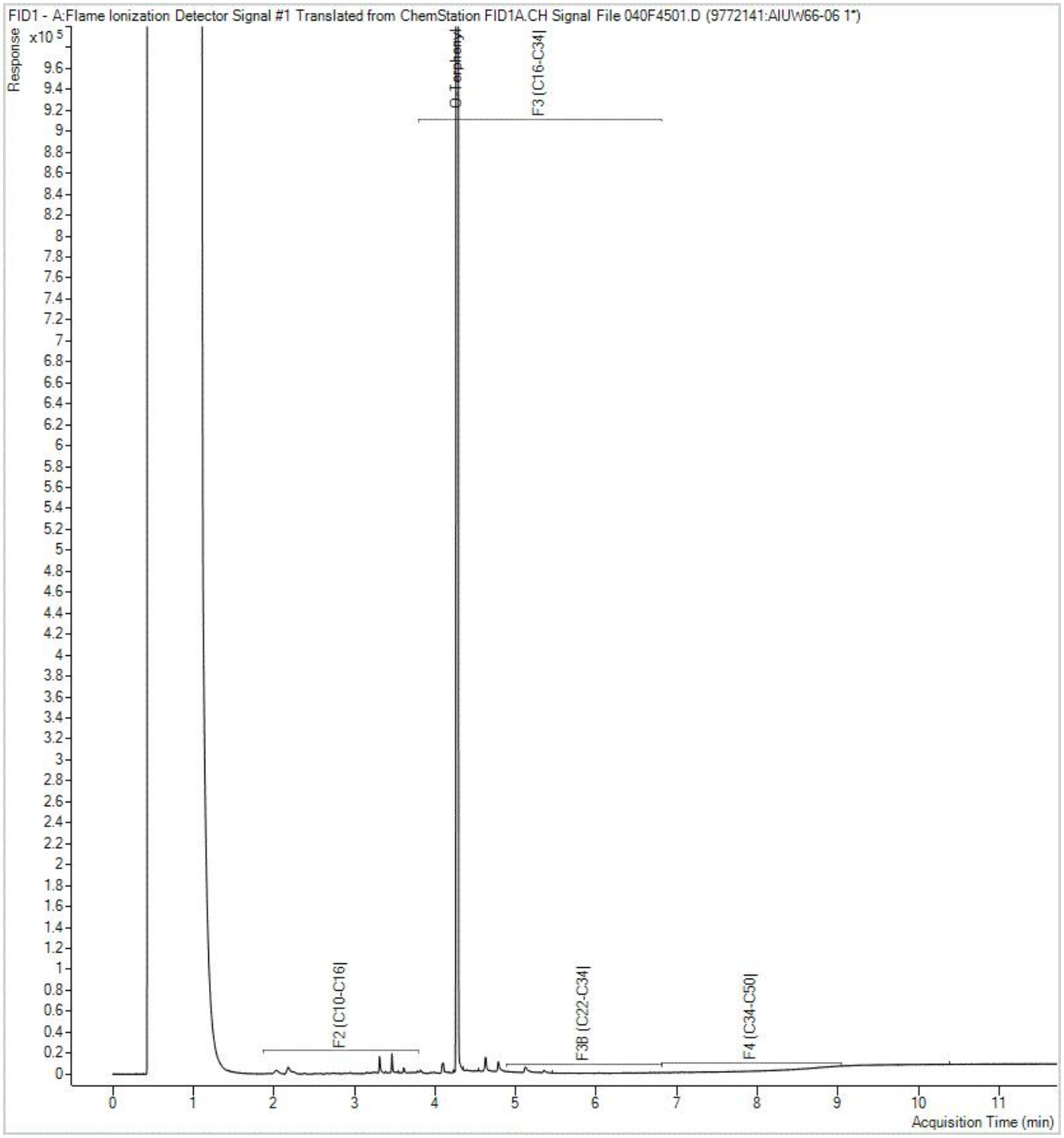
Custody Seal Present Intact
Cooling Media Yes No

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Job #: C4Z8508
Report Date: 2024/11/20
Bureau Veritas Sample: AIUW66

Lopers & Associates
Client Project #: LOP24-025C
Project name: 214 SOMERSET
Client ID: BH2-24-GW1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

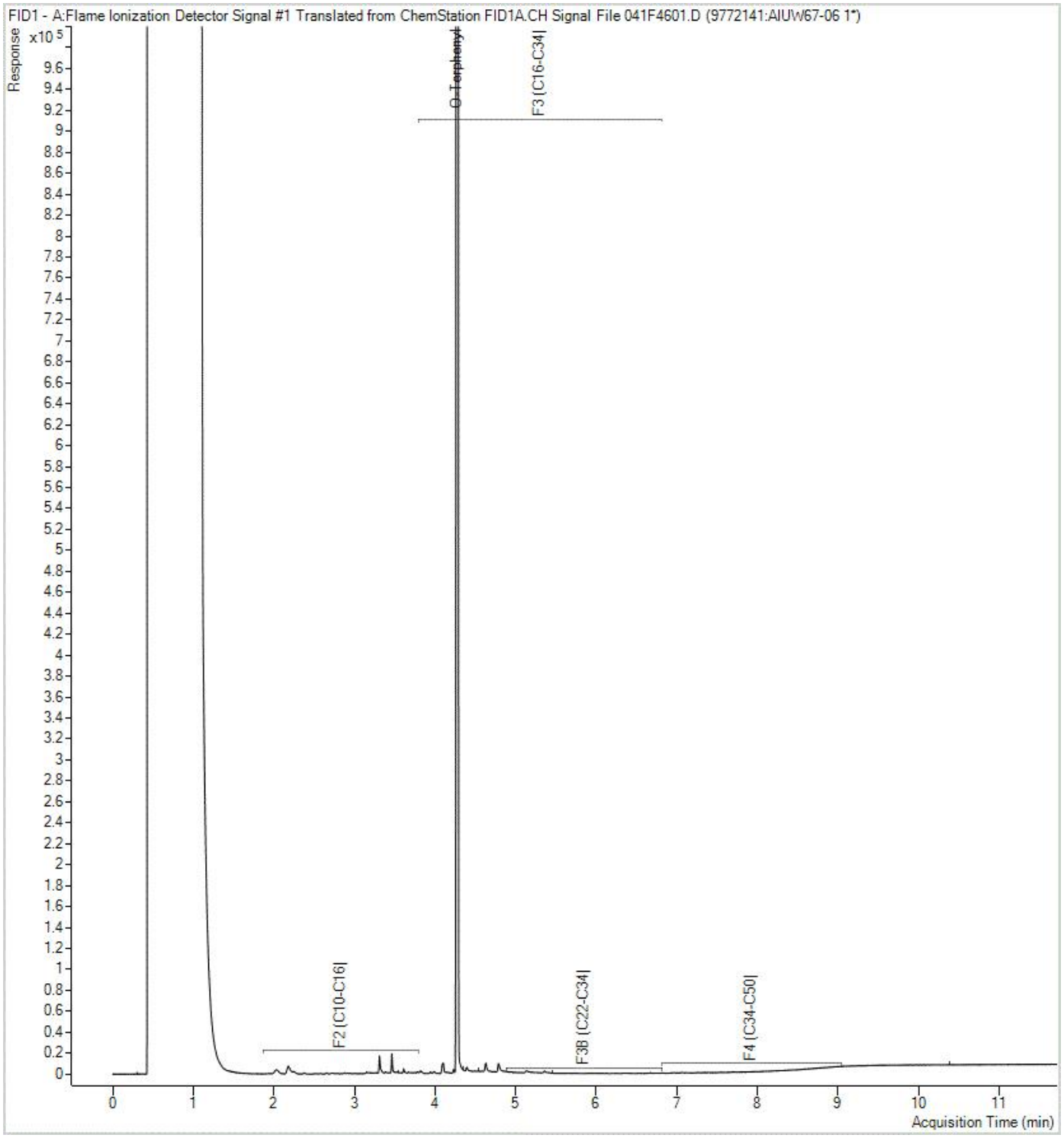


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Z8508
Report Date: 2024/11/20
Bureau Veritas Sample: AIUW67

Lopers & Associates
Client Project #: LOP24-025C
Project name: 214 SOMERSET
Client ID: DUP-11/13

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

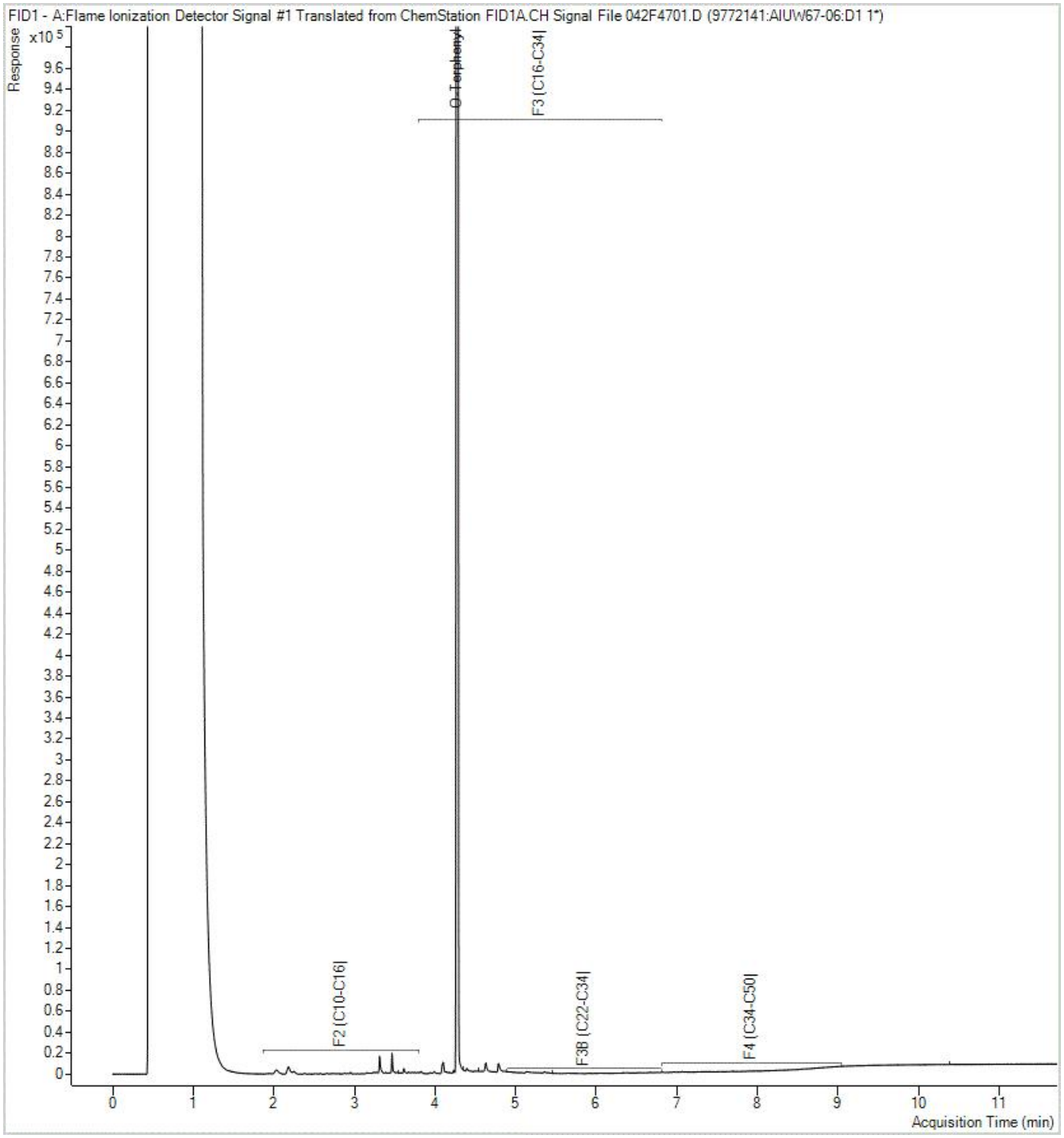


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C4Z8508
Report Date: 2024/11/20
Bureau Veritas Sample: AIUW67 Lab-Dup

Lopers & Associates
Client Project #: LOP24-025C
Project name: 214 SOMERSET
Client ID: DUP-11/13

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: LOP24-025C
Your C.O.C. #: C#1024572-01-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/12/02
Report #: R8428514
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AL295
Received: 2024/11/25, 10:30

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum (1)	1	N/A	2024/11/29	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	1	N/A	2024/11/29		EPA 8260C m
1,3-Dichloropropene Sum (1)	1	N/A	2024/12/02		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	1	2024/11/28	2024/11/29	CAM SOP-00316	CCME PHC-CWS m
PAH Compounds in Water by GC/MS (SIM) (1)	1	2024/11/28	2024/11/29	CAM SOP-00318	EPA 8270E
Volatile Organic Compounds and F1 PHCs (1)	1	N/A	2024/11/29	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water (1)	1	N/A	2024/11/28	CAM SOP-00228	EPA 8260D

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Your Project #: LOP24-025C
Your C.O.C. #: C#1024572-01-01

Attention: Luke Lopers

Lopers & Associates
30 Lansfield Way
Ottawa, ON
CANADA K2G 3V8

Report Date: 2024/12/02
Report #: R8428514
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AL295
Received: 2024/11/25, 10:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AJXP76		
Sampling Date		2024/11/24 14:50		
COC Number		C#1024572-01-01		
	UNITS	BH3D-24-GW1	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/L	ND	0.071	9790612
Polyaromatic Hydrocarbons				
Acenaphthene	ug/L	ND	0.050	9794511
Acenaphthylene	ug/L	ND	0.050	9794511
Anthracene	ug/L	ND	0.050	9794511
Benzo(a)anthracene	ug/L	ND	0.050	9794511
Benzo(a)pyrene	ug/L	ND	0.0090	9794511
Benzo(b/j)fluoranthene	ug/L	ND	0.050	9794511
Benzo(g,h,i)perylene	ug/L	ND	0.050	9794511
Benzo(k)fluoranthene	ug/L	ND	0.050	9794511
Chrysene	ug/L	ND	0.050	9794511
Dibenzo(a,h)anthracene	ug/L	ND	0.050	9794511
Fluoranthene	ug/L	ND	0.050	9794511
Fluorene	ug/L	ND	0.050	9794511
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.050	9794511
1-Methylnaphthalene	ug/L	ND	0.050	9794511
2-Methylnaphthalene	ug/L	ND	0.050	9794511
Naphthalene	ug/L	ND	0.050	9794511
Phenanthrene	ug/L	ND	0.030	9794511
Pyrene	ug/L	ND	0.050	9794511
Surrogate Recovery (%)				
D10-Anthracene	%	110		9794511
D14-Terphenyl (FS)	%	99		9794511
D8-Acenaphthylene	%	98		9794511

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AJXP76			AJXP77		
Sampling Date		2024/11/24 14:50			2024/11/24		
COC Number		C#1024572-01-01			C#1024572-01-01		
	UNITS	BH3D-24-GW1	RDL	QC Batch	TRIP BLANK	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	9790613	ND	0.50	9790613
Volatile Organics							
Acetone (2-Propanone)	ug/L	ND	10	9793766	ND	10	9793787
Benzene	ug/L	ND	0.17	9793766	ND	0.20	9793787
Bromodichloromethane	ug/L	ND	0.50	9793766	ND	0.50	9793787
Bromoform	ug/L	ND	1.0	9793766	ND	1.0	9793787
Bromomethane	ug/L	ND	0.50	9793766	ND	0.50	9793787
Carbon Tetrachloride	ug/L	ND	0.20	9793766	ND	0.19	9793787
Chlorobenzene	ug/L	ND	0.20	9793766	ND	0.20	9793787
Chloroform	ug/L	ND	0.20	9793766	ND	0.20	9793787
Dibromochloromethane	ug/L	ND	0.50	9793766	ND	0.50	9793787
1,2-Dichlorobenzene	ug/L	ND	0.50	9793766	ND	0.40	9793787
1,3-Dichlorobenzene	ug/L	ND	0.50	9793766	ND	0.40	9793787
1,4-Dichlorobenzene	ug/L	ND	0.50	9793766	ND	0.40	9793787
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	9793766	ND	1.0	9793787
1,1-Dichloroethane	ug/L	ND	0.20	9793766	ND	0.20	9793787
1,2-Dichloroethane	ug/L	ND	0.50	9793766	ND	0.49	9793787
1,1-Dichloroethylene	ug/L	ND	0.20	9793766	ND	0.20	9793787
cis-1,2-Dichloroethylene	ug/L	ND	0.50	9793766	ND	0.50	9793787
trans-1,2-Dichloroethylene	ug/L	ND	0.50	9793766	ND	0.50	9793787
1,2-Dichloropropane	ug/L	ND	0.20	9793766	ND	0.20	9793787
cis-1,3-Dichloropropene	ug/L	ND	0.30	9793766	ND	0.30	9793787
trans-1,3-Dichloropropene	ug/L	ND	0.40	9793766	ND	0.40	9793787
Ethylbenzene	ug/L	ND	0.20	9793766	ND	0.20	9793787
Ethylene Dibromide	ug/L	ND	0.20	9793766	ND	0.19	9793787
Hexane	ug/L	ND	1.0	9793766	ND	1.0	9793787
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	9793766	ND	2.0	9793787
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	9793766	ND	10	9793787
Methyl Isobutyl Ketone	ug/L	ND	5.0	9793766	ND	5.0	9793787
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	9793766	ND	0.50	9793787
Styrene	ug/L	ND	0.50	9793766	ND	0.40	9793787

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AJXP76			AJXP77		
Sampling Date		2024/11/24 14:50			2024/11/24		
COC Number		C#1024572-01-01			C#1024572-01-01		
	UNITS	BH3D-24-GW1	RDL	QC Batch	TRIP BLANK	RDL	QC Batch
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	9793766	ND	0.50	9793787
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	9793766	ND	0.40	9793787
Tetrachloroethylene	ug/L	ND	0.20	9793766	ND	0.20	9793787
Toluene	ug/L	ND	0.20	9793766	ND	0.20	9793787
1,1,1-Trichloroethane	ug/L	ND	0.20	9793766	ND	0.20	9793787
1,1,2-Trichloroethane	ug/L	ND	0.50	9793766	ND	0.40	9793787
Trichloroethylene	ug/L	ND	0.20	9793766	ND	0.20	9793787
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	9793766	ND	0.50	9793787
Vinyl Chloride	ug/L	ND	0.20	9793766	ND	0.20	9793787
p+m-Xylene	ug/L	ND	0.20	9793766	ND	0.20	9793787
o-Xylene	ug/L	ND	0.20	9793766	ND	0.20	9793787
Total Xylenes	ug/L	ND	0.20	9793766	ND	0.20	9793787
F1 (C6-C10)	ug/L	ND	25	9793766			
F1 (C6-C10) - BTEX	ug/L	ND	25	9793766			
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	100		9793766			
D4-1,2-Dichloroethane	%	106		9793766			
D8-Toluene	%	91		9793766			
4-Bromofluorobenzene	%				102		9793787
D4-1,2-Dichloroethane	%				108		9793787
D8-Toluene	%				94		9793787

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AJXP76		
Sampling Date		2024/11/24 14:50		
COC Number		C#1024572-01-01		
	UNITS	BH3D-24-GW1	RDL	QC Batch
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	ND	90	9794514
F3 (C16-C34 Hydrocarbons)	ug/L	ND	200	9794514
F4 (C34-C50 Hydrocarbons)	ug/L	ND	200	9794514
Reached Baseline at C50	ug/L	Yes		9794514
Surrogate Recovery (%)				
o-Terphenyl	%	98		9794514

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9793766	DW5	Matrix Spike	4-Bromofluorobenzene	2024/11/29		105	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/29		104	%	70 - 130
			D8-Toluene	2024/11/29		101	%	70 - 130
			Acetone (2-Propanone)	2024/11/29		96	%	60 - 140
			Benzene	2024/11/29		97	%	70 - 130
			Bromodichloromethane	2024/11/29		99	%	70 - 130
			Bromoform	2024/11/29		104	%	70 - 130
			Bromomethane	2024/11/29		86	%	60 - 140
			Carbon Tetrachloride	2024/11/29		108	%	70 - 130
			Chlorobenzene	2024/11/29		93	%	70 - 130
			Chloroform	2024/11/29		100	%	70 - 130
			Dibromochloromethane	2024/11/29		103	%	70 - 130
			1,2-Dichlorobenzene	2024/11/29		99	%	70 - 130
			1,3-Dichlorobenzene	2024/11/29		92	%	70 - 130
			1,4-Dichlorobenzene	2024/11/29		93	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/29		78	%	60 - 140
			1,1-Dichloroethane	2024/11/29		94	%	70 - 130
			1,2-Dichloroethane	2024/11/29		104	%	70 - 130
			1,1-Dichloroethylene	2024/11/29		102	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/29		107	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/29		107	%	70 - 130
			1,2-Dichloropropane	2024/11/29		98	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/29		94	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/29		104	%	70 - 130
			Ethylbenzene	2024/11/29		96	%	70 - 130
			Ethylene Dibromide	2024/11/29		99	%	70 - 130
			Hexane	2024/11/29		116	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/29		94	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/29		96	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/29		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/29		99	%	70 - 130
			Styrene	2024/11/29		101	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/29		107	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/29		91	%	70 - 130
			Tetrachloroethylene	2024/11/29		99	%	70 - 130
			Toluene	2024/11/29		95	%	70 - 130
			1,1,1-Trichloroethane	2024/11/29		98	%	70 - 130
			1,1,2-Trichloroethane	2024/11/29		95	%	70 - 130
			Trichloroethylene	2024/11/29		102	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/29		100	%	70 - 130
			Vinyl Chloride	2024/11/29		93	%	70 - 130
			p+m-Xylene	2024/11/29		95	%	70 - 130
			o-Xylene	2024/11/29		103	%	70 - 130
			F1 (C6-C10)	2024/11/29		94	%	60 - 140
9793766	DW5	Spiked Blank	4-Bromofluorobenzene	2024/11/29		104	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/29		101	%	70 - 130
			D8-Toluene	2024/11/29		103	%	70 - 130
			Acetone (2-Propanone)	2024/11/29		98	%	60 - 140
			Benzene	2024/11/29		99	%	70 - 130
			Bromodichloromethane	2024/11/29		99	%	70 - 130
			Bromoform	2024/11/29		101	%	70 - 130
			Bromomethane	2024/11/29		90	%	60 - 140
			Carbon Tetrachloride	2024/11/29		111	%	70 - 130
			Chlorobenzene	2024/11/29		95	%	70 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chloroform	2024/11/29		101	%	70 - 130
			Dibromochloromethane	2024/11/29		103	%	70 - 130
			1,2-Dichlorobenzene	2024/11/29		101	%	70 - 130
			1,3-Dichlorobenzene	2024/11/29		102	%	70 - 130
			1,4-Dichlorobenzene	2024/11/29		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/29		84	%	60 - 140
			1,1-Dichloroethane	2024/11/29		97	%	70 - 130
			1,2-Dichloroethane	2024/11/29		104	%	70 - 130
			1,1-Dichloroethylene	2024/11/29		107	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/29		108	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/29		110	%	70 - 130
			1,2-Dichloropropane	2024/11/29		100	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/29		96	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/29		108	%	70 - 130
			Ethylbenzene	2024/11/29		100	%	70 - 130
			Ethylene Dibromide	2024/11/29		97	%	70 - 130
			Hexane	2024/11/29		120	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/29		97	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/29		96	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/29		96	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/29		101	%	70 - 130
			Styrene	2024/11/29		104	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/29		107	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/29		90	%	70 - 130
			Tetrachloroethylene	2024/11/29		101	%	70 - 130
			Toluene	2024/11/29		99	%	70 - 130
			1,1,1-Trichloroethane	2024/11/29		101	%	70 - 130
			1,1,2-Trichloroethane	2024/11/29		95	%	70 - 130
			Trichloroethylene	2024/11/29		104	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/29		105	%	70 - 130
			Vinyl Chloride	2024/11/29		99	%	70 - 130
			p+m-Xylene	2024/11/29		99	%	70 - 130
			o-Xylene	2024/11/29		108	%	70 - 130
			F1 (C6-C10)	2024/11/29		96	%	60 - 140
9793766	DW5	Method Blank	4-Bromofluorobenzene	2024/11/29		100	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/29		105	%	70 - 130
			D8-Toluene	2024/11/29		91	%	70 - 130
			Acetone (2-Propanone)	2024/11/29	ND, RDL=10		ug/L	
			Benzene	2024/11/29	ND, RDL=0.17		ug/L	
			Bromodichloromethane	2024/11/29	ND, RDL=0.50		ug/L	
			Bromoform	2024/11/29	ND, RDL=1.0		ug/L	
			Bromomethane	2024/11/29	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2024/11/29	ND, RDL=0.20		ug/L	
			Chlorobenzene	2024/11/29	ND, RDL=0.20		ug/L	
			Chloroform	2024/11/29	ND, RDL=0.20		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibromochloromethane	2024/11/29	ND, RDL=0.50		ug/L	
			1,2-Dichlorobenzene	2024/11/29	ND, RDL=0.50		ug/L	
			1,3-Dichlorobenzene	2024/11/29	ND, RDL=0.50		ug/L	
			1,4-Dichlorobenzene	2024/11/29	ND, RDL=0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2024/11/29	ND, RDL=1.0		ug/L	
			1,1-Dichloroethane	2024/11/29	ND, RDL=0.20		ug/L	
			1,2-Dichloroethane	2024/11/29	ND, RDL=0.50		ug/L	
			1,1-Dichloroethylene	2024/11/29	ND, RDL=0.20		ug/L	
			cis-1,2-Dichloroethylene	2024/11/29	ND, RDL=0.50		ug/L	
			trans-1,2-Dichloroethylene	2024/11/29	ND, RDL=0.50		ug/L	
			1,2-Dichloropropane	2024/11/29	ND, RDL=0.20		ug/L	
			cis-1,3-Dichloropropene	2024/11/29	ND, RDL=0.30		ug/L	
			trans-1,3-Dichloropropene	2024/11/29	ND, RDL=0.40		ug/L	
			Ethylbenzene	2024/11/29	ND, RDL=0.20		ug/L	
			Ethylene Dibromide	2024/11/29	ND, RDL=0.20		ug/L	
			Hexane	2024/11/29	ND, RDL=1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2024/11/29	ND, RDL=2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2024/11/29	ND, RDL=10		ug/L	
			Methyl Isobutyl Ketone	2024/11/29	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2024/11/29	ND, RDL=0.50		ug/L	
			Styrene	2024/11/29	ND, RDL=0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2024/11/29	ND, RDL=0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2024/11/29	ND, RDL=0.50		ug/L	
			Tetrachloroethylene	2024/11/29	ND, RDL=0.20		ug/L	
			Toluene	2024/11/29	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2024/11/29	ND, RDL=0.20		ug/L	
			1,1,2-Trichloroethane	2024/11/29	ND, RDL=0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Trichloroethylene	2024/11/29	ND, RDL=0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2024/11/29	ND, RDL=0.50		ug/L	
			Vinyl Chloride	2024/11/29	ND, RDL=0.20		ug/L	
			p+m-Xylene	2024/11/29	ND, RDL=0.20		ug/L	
			o-Xylene	2024/11/29	ND, RDL=0.20		ug/L	
			Total Xylenes	2024/11/29	ND, RDL=0.20		ug/L	
			F1 (C6-C10)	2024/11/29	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2024/11/29	ND, RDL=25		ug/L	
9793766	DW5	RPD	Acetone (2-Propanone)	2024/11/29	NC		%	30
			Benzene	2024/11/29	NC		%	30
			Bromodichloromethane	2024/11/29	NC		%	30
			Bromoform	2024/11/29	NC		%	30
			Bromomethane	2024/11/29	NC		%	30
			Carbon Tetrachloride	2024/11/29	NC		%	30
			Chlorobenzene	2024/11/29	NC		%	30
			Chloroform	2024/11/29	NC		%	30
			Dibromochloromethane	2024/11/29	NC		%	30
			1,2-Dichlorobenzene	2024/11/29	NC		%	30
			1,3-Dichlorobenzene	2024/11/29	NC		%	30
			1,4-Dichlorobenzene	2024/11/29	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2024/11/29	NC		%	30
			1,1-Dichloroethane	2024/11/29	NC		%	30
			1,2-Dichloroethane	2024/11/29	NC		%	30
			1,1-Dichloroethylene	2024/11/29	NC		%	30
			cis-1,2-Dichloroethylene	2024/11/29	NC		%	30
			trans-1,2-Dichloroethylene	2024/11/29	NC		%	30
			1,2-Dichloropropane	2024/11/29	NC		%	30
			cis-1,3-Dichloropropene	2024/11/29	NC		%	30
			trans-1,3-Dichloropropene	2024/11/29	NC		%	30
			Ethylbenzene	2024/11/29	NC		%	30
			Ethylene Dibromide	2024/11/29	NC		%	30
			Hexane	2024/11/29	NC		%	30
			Methylene Chloride(Dichloromethane)	2024/11/29	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2024/11/29	NC		%	30
			Methyl Isobutyl Ketone	2024/11/29	NC		%	30
			Methyl t-butyl ether (MTBE)	2024/11/29	NC		%	30
			Styrene	2024/11/29	NC		%	30
			1,1,1,2-Tetrachloroethane	2024/11/29	NC		%	30
			1,1,2,2-Tetrachloroethane	2024/11/29	NC		%	30
			Tetrachloroethylene	2024/11/29	NC		%	30
			Toluene	2024/11/29	NC		%	30
			1,1,1-Trichloroethane	2024/11/29	NC		%	30
			1,1,2-Trichloroethane	2024/11/29	NC		%	30
			Trichloroethylene	2024/11/29	NC		%	30
			Trichlorofluoromethane (FREON 11)	2024/11/29	NC		%	30
			Vinyl Chloride	2024/11/29	NC		%	30

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			p+m-Xylene	2024/11/29	NC		%	30
			o-Xylene	2024/11/29	NC		%	30
			Total Xylenes	2024/11/29	NC		%	30
			F1 (C6-C10)	2024/11/29	NC		%	30
			F1 (C6-C10) - BTEX	2024/11/29	NC		%	30
9793787	HST	Matrix Spike	4-Bromofluorobenzene	2024/11/28		102	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/28		104	%	70 - 130
			D8-Toluene	2024/11/28		106	%	70 - 130
			Acetone (2-Propanone)	2024/11/28		116	%	60 - 140
			Benzene	2024/11/28		104	%	70 - 130
			Bromodichloromethane	2024/11/28		106	%	70 - 130
			Bromoform	2024/11/28		107	%	70 - 130
			Bromomethane	2024/11/28		87	%	60 - 140
			Carbon Tetrachloride	2024/11/28		111	%	70 - 130
			Chlorobenzene	2024/11/28		101	%	70 - 130
			Chloroform	2024/11/28		107	%	70 - 130
			Dibromochloromethane	2024/11/28		113	%	70 - 130
			1,2-Dichlorobenzene	2024/11/28		108	%	70 - 130
			1,3-Dichlorobenzene	2024/11/28		108	%	70 - 130
			1,4-Dichlorobenzene	2024/11/28		110	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/28		80	%	60 - 140
			1,1-Dichloroethane	2024/11/28		101	%	70 - 130
			1,2-Dichloroethane	2024/11/28		112	%	70 - 130
			1,1-Dichloroethylene	2024/11/28		104	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/28		113	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/28		114	%	70 - 130
			1,2-Dichloropropane	2024/11/28		105	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/28		101	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/28		116	%	70 - 130
			Ethylbenzene	2024/11/28		102	%	70 - 130
			Ethylene Dibromide	2024/11/28		111	%	70 - 130
			Hexane	2024/11/28		121	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/28		106	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/28		107	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/28		111	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/28		104	%	70 - 130
			Styrene	2024/11/28		107	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/28		116	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/28		103	%	70 - 130
			Tetrachloroethylene	2024/11/28		104	%	70 - 130
			Toluene	2024/11/28		108	%	70 - 130
			1,1,1-Trichloroethane	2024/11/28		103	%	70 - 130
			1,1,2-Trichloroethane	2024/11/28		112	%	70 - 130
			Trichloroethylene	2024/11/28		105	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/28		102	%	70 - 130
			Vinyl Chloride	2024/11/28		96	%	70 - 130
			p+m-Xylene	2024/11/28		105	%	70 - 130
			o-Xylene	2024/11/28		104	%	70 - 130
9793787	HST	Spiked Blank	4-Bromofluorobenzene	2024/11/28		104	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/28		102	%	70 - 130
			D8-Toluene	2024/11/28		106	%	70 - 130
			Acetone (2-Propanone)	2024/11/28		111	%	60 - 140
			Benzene	2024/11/28		104	%	70 - 130
			Bromodichloromethane	2024/11/28		105	%	70 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromoform	2024/11/28		101	%	70 - 130
			Bromomethane	2024/11/28		89	%	60 - 140
			Carbon Tetrachloride	2024/11/28		114	%	70 - 130
			Chlorobenzene	2024/11/28		98	%	70 - 130
			Chloroform	2024/11/28		107	%	70 - 130
			Dibromochloromethane	2024/11/28		107	%	70 - 130
			1,2-Dichlorobenzene	2024/11/28		104	%	70 - 130
			1,3-Dichlorobenzene	2024/11/28		104	%	70 - 130
			1,4-Dichlorobenzene	2024/11/28		106	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2024/11/28		86	%	60 - 140
			1,1-Dichloroethane	2024/11/28		102	%	70 - 130
			1,2-Dichloroethane	2024/11/28		110	%	70 - 130
			1,1-Dichloroethylene	2024/11/28		107	%	70 - 130
			cis-1,2-Dichloroethylene	2024/11/28		112	%	70 - 130
			trans-1,2-Dichloroethylene	2024/11/28		116	%	70 - 130
			1,2-Dichloropropane	2024/11/28		105	%	70 - 130
			cis-1,3-Dichloropropene	2024/11/28		100	%	70 - 130
			trans-1,3-Dichloropropene	2024/11/28		108	%	70 - 130
			Ethylbenzene	2024/11/28		102	%	70 - 130
			Ethylene Dibromide	2024/11/28		104	%	70 - 130
			Hexane	2024/11/28		124	%	70 - 130
			Methylene Chloride(Dichloromethane)	2024/11/28		104	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2024/11/28		102	%	60 - 140
			Methyl Isobutyl Ketone	2024/11/28		108	%	70 - 130
			Methyl t-butyl ether (MTBE)	2024/11/28		105	%	70 - 130
			Styrene	2024/11/28		107	%	70 - 130
			1,1,1,2-Tetrachloroethane	2024/11/28		112	%	70 - 130
			1,1,2,2-Tetrachloroethane	2024/11/28		96	%	70 - 130
			Tetrachloroethylene	2024/11/28		103	%	70 - 130
			Toluene	2024/11/28		106	%	70 - 130
			1,1,1-Trichloroethane	2024/11/28		106	%	70 - 130
			1,1,2-Trichloroethane	2024/11/28		105	%	70 - 130
			Trichloroethylene	2024/11/28		107	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2024/11/28		105	%	70 - 130
			Vinyl Chloride	2024/11/28		99	%	70 - 130
			p+m-Xylene	2024/11/28		105	%	70 - 130
			o-Xylene	2024/11/28		108	%	70 - 130
9793787	HST	Method Blank	4-Bromofluorobenzene	2024/11/28		107	%	70 - 130
			D4-1,2-Dichloroethane	2024/11/28		108	%	70 - 130
			D8-Toluene	2024/11/28		92	%	70 - 130
			Acetone (2-Propanone)	2024/11/28	ND, RDL=10		ug/L	
			Benzene	2024/11/28	ND, RDL=0.20		ug/L	
			Bromodichloromethane	2024/11/28	ND, RDL=0.50		ug/L	
			Bromoform	2024/11/28	ND, RDL=1.0		ug/L	
			Bromomethane	2024/11/28	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2024/11/28	ND, RDL=0.19		ug/L	
			Chlorobenzene	2024/11/28	ND, RDL=0.20		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chloroform	2024/11/28	ND, RDL=0.20		ug/L	
			Dibromochloromethane	2024/11/28	ND, RDL=0.50		ug/L	
			1,2-Dichlorobenzene	2024/11/28	ND, RDL=0.40		ug/L	
			1,3-Dichlorobenzene	2024/11/28	ND, RDL=0.40		ug/L	
			1,4-Dichlorobenzene	2024/11/28	ND, RDL=0.40		ug/L	
			Dichlorodifluoromethane (FREON 12)	2024/11/28	ND, RDL=1.0		ug/L	
			1,1-Dichloroethane	2024/11/28	ND, RDL=0.20		ug/L	
			1,2-Dichloroethane	2024/11/28	ND, RDL=0.49		ug/L	
			1,1-Dichloroethylene	2024/11/28	ND, RDL=0.20		ug/L	
			cis-1,2-Dichloroethylene	2024/11/28	ND, RDL=0.50		ug/L	
			trans-1,2-Dichloroethylene	2024/11/28	ND, RDL=0.50		ug/L	
			1,2-Dichloropropane	2024/11/28	ND, RDL=0.20		ug/L	
			cis-1,3-Dichloropropene	2024/11/28	ND, RDL=0.30		ug/L	
			trans-1,3-Dichloropropene	2024/11/28	ND, RDL=0.40		ug/L	
			Ethylbenzene	2024/11/28	ND, RDL=0.20		ug/L	
			Ethylene Dibromide	2024/11/28	ND, RDL=0.19		ug/L	
			Hexane	2024/11/28	ND, RDL=1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2024/11/28	ND, RDL=2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2024/11/28	ND, RDL=10		ug/L	
			Methyl Isobutyl Ketone	2024/11/28	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2024/11/28	ND, RDL=0.50		ug/L	
			Styrene	2024/11/28	ND, RDL=0.40		ug/L	
			1,1,1,2-Tetrachloroethane	2024/11/28	ND, RDL=0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2024/11/28	ND, RDL=0.40		ug/L	
			Tetrachloroethylene	2024/11/28	ND, RDL=0.20		ug/L	
			Toluene	2024/11/28	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2024/11/28	ND, RDL=0.20		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1,2-Trichloroethane	2024/11/28	ND, RDL=0.40		ug/L	
			Trichloroethylene	2024/11/28	ND, RDL=0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2024/11/28	ND, RDL=0.50		ug/L	
			Vinyl Chloride	2024/11/28	ND, RDL=0.20		ug/L	
			p+m-Xylene	2024/11/28	ND, RDL=0.20		ug/L	
			o-Xylene	2024/11/28	ND, RDL=0.20		ug/L	
			Total Xylenes	2024/11/28	ND, RDL=0.20		ug/L	
9793787	HST	RPD	Acetone (2-Propanone)	2024/11/28	NC		%	30
			Benzene	2024/11/28	NC		%	30
			Bromodichloromethane	2024/11/28	NC		%	30
			Bromoform	2024/11/28	NC		%	30
			Bromomethane	2024/11/28	NC		%	30
			Carbon Tetrachloride	2024/11/28	NC		%	30
			Chlorobenzene	2024/11/28	NC		%	30
			Chloroform	2024/11/28	NC		%	30
			Dibromochloromethane	2024/11/28	NC		%	30
			1,2-Dichlorobenzene	2024/11/28	NC		%	30
			1,3-Dichlorobenzene	2024/11/28	NC		%	30
			1,4-Dichlorobenzene	2024/11/28	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2024/11/28	NC		%	30
			1,1-Dichloroethane	2024/11/28	NC		%	30
			1,2-Dichloroethane	2024/11/28	NC		%	30
			1,1-Dichloroethylene	2024/11/28	4.2		%	30
			cis-1,2-Dichloroethylene	2024/11/28	NC		%	30
			trans-1,2-Dichloroethylene	2024/11/28	NC		%	30
			1,2-Dichloropropane	2024/11/28	NC		%	30
			cis-1,3-Dichloropropene	2024/11/28	NC		%	30
			trans-1,3-Dichloropropene	2024/11/28	NC		%	30
			Ethylbenzene	2024/11/28	NC		%	30
			Ethylene Dibromide	2024/11/28	NC		%	30
			Hexane	2024/11/28	NC		%	30
			Methylene Chloride(Dichloromethane)	2024/11/28	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2024/11/28	NC		%	30
			Methyl Isobutyl Ketone	2024/11/28	NC		%	30
			Methyl t-butyl ether (MTBE)	2024/11/28	NC		%	30
			Styrene	2024/11/28	NC		%	30
			1,1,1,2-Tetrachloroethane	2024/11/28	NC		%	30
			1,1,2,2-Tetrachloroethane	2024/11/28	NC		%	30
			Tetrachloroethylene	2024/11/28	NC		%	30
			Toluene	2024/11/28	NC		%	30
			1,1,1-Trichloroethane	2024/11/28	NC		%	30
			1,1,2-Trichloroethane	2024/11/28	NC		%	30
			Trichloroethylene	2024/11/28	NC		%	30
			Trichlorofluoromethane (FREON 11)	2024/11/28	NC		%	30
			Vinyl Chloride	2024/11/28	NC		%	30
			p+m-Xylene	2024/11/28	NC		%	30
			o-Xylene	2024/11/28	NC		%	30

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Xylenes	2024/11/28	NC		%	30
9794511	RAJ	Matrix Spike	D10-Anthracene	2024/11/29		99	%	50 - 130
			D14-Terphenyl (FS)	2024/11/29		92	%	50 - 130
			D8-Acenaphthylene	2024/11/29		89	%	50 - 130
			Acenaphthene	2024/11/29		100	%	50 - 130
			Acenaphthylene	2024/11/29		98	%	50 - 130
			Anthracene	2024/11/29		101	%	50 - 130
			Benzo(a)anthracene	2024/11/29		97	%	50 - 130
			Benzo(a)pyrene	2024/11/29		96	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/29		97	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/29		90	%	50 - 130
			Benzo(k)fluoranthene	2024/11/29		98	%	50 - 130
			Chrysene	2024/11/29		96	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/29		89	%	50 - 130
			Fluoranthene	2024/11/29		101	%	50 - 130
			Fluorene	2024/11/29		98	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/29		93	%	50 - 130
			1-Methylnaphthalene	2024/11/29		99	%	50 - 130
			2-Methylnaphthalene	2024/11/29		98	%	50 - 130
			Naphthalene	2024/11/29		96	%	50 - 130
			Phenanthrene	2024/11/29		99	%	50 - 130
			Pyrene	2024/11/29		103	%	50 - 130
9794511	RAJ	Spiked Blank	D10-Anthracene	2024/11/29		112	%	50 - 130
			D14-Terphenyl (FS)	2024/11/29		107	%	50 - 130
			D8-Acenaphthylene	2024/11/29		100	%	50 - 130
			Acenaphthene	2024/11/29		103	%	50 - 130
			Acenaphthylene	2024/11/29		101	%	50 - 130
			Anthracene	2024/11/29		107	%	50 - 130
			Benzo(a)anthracene	2024/11/29		97	%	50 - 130
			Benzo(a)pyrene	2024/11/29		100	%	50 - 130
			Benzo(b/j)fluoranthene	2024/11/29		103	%	50 - 130
			Benzo(g,h,i)perylene	2024/11/29		94	%	50 - 130
			Benzo(k)fluoranthene	2024/11/29		102	%	50 - 130
			Chrysene	2024/11/29		100	%	50 - 130
			Dibenzo(a,h)anthracene	2024/11/29		91	%	50 - 130
			Fluoranthene	2024/11/29		105	%	50 - 130
			Fluorene	2024/11/29		100	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/11/29		98	%	50 - 130
			1-Methylnaphthalene	2024/11/29		100	%	50 - 130
			2-Methylnaphthalene	2024/11/29		99	%	50 - 130
			Naphthalene	2024/11/29		102	%	50 - 130
			Phenanthrene	2024/11/29		103	%	50 - 130
			Pyrene	2024/11/29		108	%	50 - 130
9794511	RAJ	Method Blank	D10-Anthracene	2024/11/29		113	%	50 - 130
			D14-Terphenyl (FS)	2024/11/29		109	%	50 - 130
			D8-Acenaphthylene	2024/11/29		100	%	50 - 130
			Acenaphthene	2024/11/29	ND, RDL=0.050		ug/L	
			Acenaphthylene	2024/11/29	ND, RDL=0.050		ug/L	
			Anthracene	2024/11/29	ND, RDL=0.050		ug/L	
			Benzo(a)anthracene	2024/11/29	ND, RDL=0.050		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(a)pyrene	2024/11/29	ND, RDL=0.0090		ug/L	
			Benzo(b/j)fluoranthene	2024/11/29	ND, RDL=0.050		ug/L	
			Benzo(g,h,i)perylene	2024/11/29	ND, RDL=0.050		ug/L	
			Benzo(k)fluoranthene	2024/11/29	ND, RDL=0.050		ug/L	
			Chrysene	2024/11/29	ND, RDL=0.050		ug/L	
			Dibenzo(a,h)anthracene	2024/11/29	ND, RDL=0.050		ug/L	
			Fluoranthene	2024/11/29	ND, RDL=0.050		ug/L	
			Fluorene	2024/11/29	ND, RDL=0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/11/29	ND, RDL=0.050		ug/L	
			1-Methylnaphthalene	2024/11/29	ND, RDL=0.050		ug/L	
			2-Methylnaphthalene	2024/11/29	ND, RDL=0.050		ug/L	
			Naphthalene	2024/11/29	ND, RDL=0.050		ug/L	
			Phenanthrene	2024/11/29	ND, RDL=0.030		ug/L	
			Pyrene	2024/11/29	ND, RDL=0.050		ug/L	
9794511	RAJ	RPD	Acenaphthene	2024/11/29	NC		%	30
			Acenaphthylene	2024/11/29	NC		%	30
			Anthracene	2024/11/29	NC		%	30
			Benzo(a)anthracene	2024/11/29	NC		%	30
			Benzo(a)pyrene	2024/11/29	NC		%	30
			Benzo(b/j)fluoranthene	2024/11/29	NC		%	30
			Benzo(g,h,i)perylene	2024/11/29	NC		%	30
			Benzo(k)fluoranthene	2024/11/29	NC		%	30
			Chrysene	2024/11/29	NC		%	30
			Dibenzo(a,h)anthracene	2024/11/29	NC		%	30
			Fluoranthene	2024/11/29	NC		%	30
			Fluorene	2024/11/29	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/11/29	NC		%	30
			1-Methylnaphthalene	2024/11/29	NC		%	30
			2-Methylnaphthalene	2024/11/29	NC		%	30
			Naphthalene	2024/11/29	NC		%	30
			Phenanthrene	2024/11/29	NC		%	30
			Pyrene	2024/11/29	NC		%	30
9794514	MSZ	Matrix Spike	o-Terphenyl	2024/11/29		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/29		96	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/11/29		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/11/29		93	%	60 - 140
9794514	MSZ	Spiked Blank	o-Terphenyl	2024/11/29		105	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/11/29		97	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/11/29		102	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/11/29		94	%	60 - 140
9794514	MSZ	Method Blank	o-Terphenyl	2024/11/29		99	%	60 - 140

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F2 (C10-C16 Hydrocarbons)	2024/11/29	ND, RDL=90		ug/L	
			F3 (C16-C34 Hydrocarbons)	2024/11/29	ND, RDL=200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2024/11/29	ND, RDL=200		ug/L	
9794514	MSZ	RPD	F2 (C10-C16 Hydrocarbons)	2024/11/29	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2024/11/29	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2024/11/29	NC		%	30

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

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

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

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

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

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

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

C4AL295
2024/11/25 10:30

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

NONT-2024-11-5268

Page of

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#39509 Lopers & Associates	Company Name:		Quotation #:	C43362
Attention:	Luke Lopers	Attention:	Luke Lopers	P.O. #:	
Address:	30 Lansfield Way Ottawa ON K2G 3V8	Address:		Project:	LOP24-025C
Tel:	(613) 327-9073 Fax:	Tel:	Fax:	Project Name:	
Email:	Luke@lopers.ca	Email:	Luke@lopers.ca	Site #:	
				Sampled By:	

Bottle Order #: 1024572

COC #: C#1024572-01-01

Project Manager: Katherine Szozda

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

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

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

Special Instructions

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

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

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

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

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	VOCs	# of Bottles	Comments
1		BH3D-24-GW1	Nov 24/24	2:50 PM	GW		X	X			High silt content noted in Groundwater while sampling
2		Trip Blnk	Nov 24/24						X		
3											
4											
5											
6											
7											
8											
9											
10											2/2/2

Received in Ottawa

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Luke Lopers	24/11/24	3:20 PM	Pedro da Silva 1000	2024/11/25	10:30	
			VIJAYASHREE PATIL VJY	2024/11/26	08:58	

Laboratory Use Only
Time Sensitive
Temperature (°C) on Recei: 4/1/1 (icepack)
Custody Seal: Present ✓ Intact ✓ — Yes / No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

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

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

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

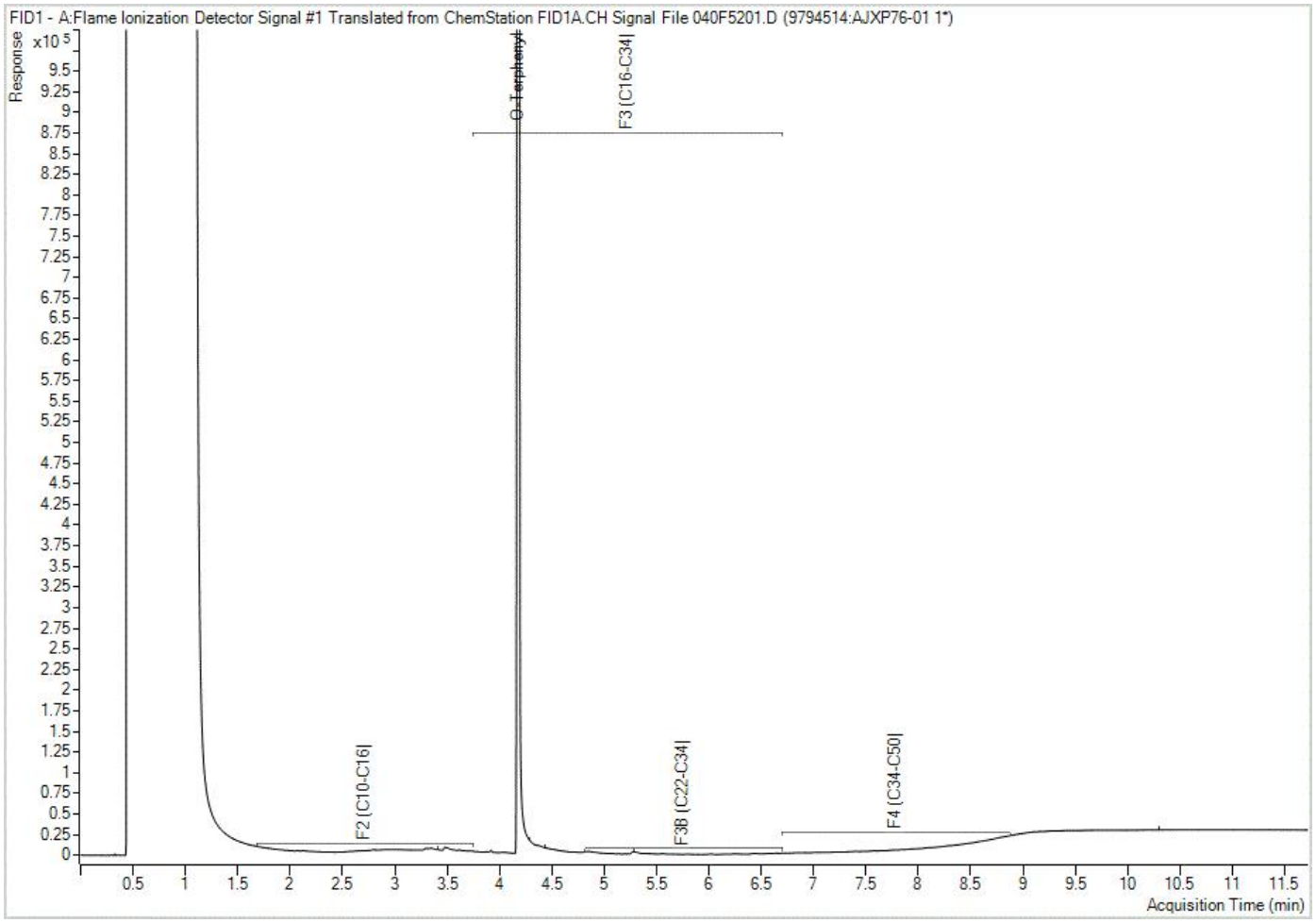
White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Job #: C4AL295
Report Date: 2024/12/02
Bureau Veritas Sample: AJXP76

Lopers & Associates
Client Project #: LOP24-025C
Client ID: BH3D-24-GW1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Appendix F

Qualifications of Assessors

PROFILE

Mr. Lopers is an environmental engineer with over 17 years of experience in environmental consulting, specializing in due diligence investigations. Mr. Lopers has extensive experience in Phase I and II Environmental Site Assessments; environmental remediation direction and supervision; record of site condition submissions; asset inventory; designated substance surveys and abatement projects; environmental expertise on legal issues; and coordination of various monitoring programs (groundwater, surface water, air).

Mr. Lopers has a strong commitment to health and safety, having experience leading a regional health and safety committee as a certified employee representative and Ottawa office safety captain. Mr. Lopers has extensive training including OSHA 40-hour HAZWOPER, ASP Health and Safety on Construction Sites in Quebec, Ontario Working at Heights, Emergency First Aid/CPR and WHMIS.

CONTACT

EMAIL:
Luke@Lopers.ca

LUKE LOPERS

Principal
LOPERS & ASSOCIATES

EDUCATION

University of Waterloo,
B.A.Sc., Honours Environmental Engineering
Management Science Option Designation - 2002 - 2008

PROFESSIONAL EXPERIENCE

Lopers & Associates, Principal, Project Manager, Senior Environmental Engineer
Ottawa, Ontario - 2020–Present
Responsible for the management, coordination, supervision, completion and delivery of Phase I/1 and II/2 Environmental Site Assessments, Environmental Remediation Programs, Environmental litigation support, Designated Substance Surveys, scope of work development, cost estimates and proposals

GHD Limited, Project Manager, Senior Environmental Engineer
Ottawa, Ontario - 2013–2020
Responsible for the management, senior technical review, coordination, supervision, completion and delivery of Phase I/1 and II/2 Environmental Site Assessments, Environmental Remediation Programs, Environmental litigation support, Designated Substance Surveys, scope of work development, cost estimates and proposals
Office Safety Captain and Joint Health and Safety Committee team leader

Paterson Group Inc., Project Manager, Environmental Engineer
Ottawa, Ontario - 2009–2013
Responsible for supervision, completion and review for Phase I/1 and II/2 Environmental Site Assessments, Environmental Remediation Programs, Designated Substance Surveys

NEXT Environmental Inc., Site Investigation Staff
Burnaby, British Columbia - 2008–2009
Responsible for fieldwork and reporting for Stage/Phase I and II Environmental Site Assessments, Environmental Remediation Programs

PROFESSIONAL DESIGNATIONS

Licensed Professional Engineer (P.Eng.) with Professional Engineers Ontario (PEO) since 2012

Qualified Person (QP), Environmental Site Assessments with Ontario Ministry of the Environment, Conservation and Parks

SELECT LIST OF CLIENTS

Ottawa Community Housing Corporation
Brigil Construction
Willms & Shier Environmental Lawyers LLP

RECENT & RELEVANT PROJECT EXPERIENCE

Phase One Environmental Site Assessments

Project Engineer/ Project Manager & Site Assessor | Various Clients | Ottawa, Ontario | 2020-2024

Mr. Lopers has completed 18 Phase One Environmental Site Assessments since starting Lopers & Associates 2020. Several of these Phase One ESA Sites progressed to subsequent stages of investigation and remediation, which is discussed in further detail in the sections below.

Project Engineer / Manager & Site Assessor | Various Clients | Ottawa & GTA, ON, Vancouver, BC | 2006-2020

Prior to starting Lopers & Associates in 2020, Mr. Lopers completed over 250 Phase One/I Environmental Site Assessments in 3 large urban centers in Canada including Ottawa, Toronto and Vancouver. Mr. Lopers developed Phase One Environmental Site Assessment Report templates for 3 unaffiliated Engineering companies.

Phase Two Environmental Site Assessments

Project Engineer/ Environmental Project Manager & Site Supervisor | Various Clients | Ottawa, Ontario | 2020-2024

Coordination & Field Supervision consisting of meeting with underground service locators, determining investigation locations, supervising and directing drilling subcontractors, logging soil profiles for borehole logs, daily field notes and subcontractor timesheets. Also completed independent field elevation surveys and groundwater sampling in active pedestrian traffic areas.

Project Engineer/Manager for the following Phase Two ESA field investigation and/or environmental delineation and environmental remediation programs and other Site Investigations:

- Former Canex Fuel Outlet and Residential Lands, Former CFB Rockliffe, Ottawa Community Housing Corporation.
- Former Petro Canada Retail Fuel Outlet, Automotive Service Garage and Commercial Lands, Ridgewood Avenue, Brigil Construction.
- Former Urban Waste Disposal Site and Operational Commercial Lands, DuMaurier Avenue, Brigil Construction.
- Residential Properties (regional dNAPL groundwater concerns), Parkdale Avenue, Homestead Developments Corporation.
- Former Private Fuel Outlet and Construction & Equipment Rental Yard and Service Garage, 2940 Baseline Road, Brigil Construction.
- Former historic lumberyard, Central Bus Terminal and Fuel Outlet, 265 Catherine Street, Brigil Construction.
- Residential Property (adjacent up-gradient dry-cleaner APEC), Penfield Avenue, Ottawa Community Housing Corporation.
- Former Private Fuel Outlet and Contractor's Yard, Ogilvie & Cummings Avenue, Lux Place LP.
- Former Residential Developments with historic USTs, poor environmental quality fill materials and/or in vicinity to off-Site VOC groundwater plume, Gladstone Avenue & Rochester Street, Ottawa Community Housing Corporation.

Environmental Remediation Programs (Lopers & Associates)

Project Engineer/ Environmental Project Manager & Site Supervisor / Client/Owner Advisor | Various Clients | Ottawa, Ontario | 2021-2024

Coordination & Field Supervision consisting of supervising and directing excavation/remediation subcontractors, logging trucking information for off-Site disposal, daily field notes and subcontractor invoice review and approval. Independent determination of remediation extents based on field soil and groundwater sampling in active remediation/excavation under timeline constricted conditions. Filing of Record of Site Conditions with Ontario Ministry of Environment, Conservation and Parks.

- Former Private Fuel Outlet and Construction & Equipment Rental Yard and Service Garage, Baseline Road, Brigil Construction.
    - Site Environmental Project Experience dating back to 2009, with 2 unaffiliated property owners and Mr. Lopers practicing Professional Engineering for 3 unaffiliated Engineering companies.
- Former Private Fuel Outlet and Contractor's Yard, Ogilvie & Cummings Avenue, Lux Place LP.
    - Project Experience dating back to 2011, with several changes in ownership structure and with Mr. Lopers practicing Professional Engineering for 3 unaffiliated Engineering companies.
    - Site Remediation Complete, RSC #: B-403-1823439436

    - Lopers assisted the Client with regulatory approvals and in obtaining municipal brownfields redevelopment grant funding as part of Site remediation/redevelopment.
- Former lumberyard, Central Bus Terminal and Fuel Outlet, Catherine Street, Brigil Construction.
    - Project Experience dating back to 2010, with 2 unaffiliated property owners and with Mr. Lopers practicing Professional Engineering for 2 unaffiliated Engineering companies.
    - Environmental Remediation Plan prepared by Mr. Lopers Fuel terminal remediation February-April 2024. UST removal, bulk soil excavation, groundwater pump & treat & discharge to municipal storm sewer under SSA. Post-remediation groundwater monitoring in progress to support RSC application (2025)
    - Lopers is also assisting the Client with regulatory approvals and in obtaining municipal brownfields redevelopment grant funding as part of Site remediation/redevelopment.
- Former Retail Fuel Outlet and Automotive Service Garage, Ridgewood, Brigil Construction.
    - Environmental Remediation Plan prepared by Mr. Lopers Fuel remediation June-October 2024. Bulk soil excavation and off-Site disposal. Post-remediation groundwater monitoring in progress to support RSC application (2025)
    - Lopers is also assisting the Client with obtaining municipal brownfields redevelopment grant funding as part of Site remediation/redevelopment.
- Former Residential Developments with historic USTs, poor environmental quality fill materials and/or in vicinity to off-Site VOC groundwater plume, Gladstone Avenue & Rochester Street, Ottawa Community Housing Corporation.
    - Environmental Remediation Plan prepared by Mr. Lopers poor environmental quality fill remediation September-October 2024 (periodically on-goint). Bulk soil excavation and off-Site disposal.
    - Lopers is also assisting the Client with verification of contractor quantities and rates for disposal of contaminated soil.

Designated Substance Surveys

Project Manager for portfolio Designated Substance Surveys and Hazardous Building Materials Assessment | Ottawa, Pembroke, Southeastern Ontario | 2010- 2024

- DSSs at various municipal facilities for the City of Pembroke, Pembroke, Ontario. Preparation of Asbestos Management Plan. Supervised 3 staff (remotely from Ottawa) completing DSS on 10 municipal facilities.
- HBMAs at various institutional buildings for the Catholic District School Board of Eastern Ontario, Southeastern Ontario. Supervised 2-3 staff (remotely from Ottawa) complete 10-20 DSS on schools and maintenance buildings, generally after hours or on weekends.

Project Manager for asbestos containing material (ACM) surveys, designated substance surveys (DSSs), Hazardous Building Materials Assessments (HBMAs) or mould assessments at the following sites:

- DSSs and ACM surveys at various residential, buildings (dwellings and apartment buildings) for private residential clients, Ottawa, Ontario.
- DSS and abatement oversight and contractor approvals during demolition, residential buildings (townhouses) for Ottawa Community Housing Corporation, 818 Gladstone Avenue, Ottawa, Ontario.
    - Completed contractor compliance oversight and daily field inspection reports. Provided additional recommendations when warranted.
- DSS for residential buildings (townhouses) for Ottawa Community Housing Corporation, 66-82 Finch Private, Ottawa, Ontario.
- DSS for residential buildings (adjoining rooming houses) for Ottawa Community Housing Corporation, 214-224 Somerset Street East, Ottawa, Ontario.
- DSS commercial building (Central Bus Terminal) for Brigil Construction, 265 Catherine Street, Ottawa, Ontario.
- DSS commercial buildings (2 Commercial Plaza buildings) for Brigil Construction, 729 Ridgewood Avenue, Ottawa, Ontario.

Environmental Litigation Support

Project Manager, Field Engineer, Expert Witness l Ottawa, Ontario | 2014-2020

Project Manager, Field Engineer and Expert Witness for a fuel spill, remediation program, groundwater monitoring program and litigation review for redevelopment of a residential property adjacent to a central heating plant at an institutional facility.

- Coordination & Field Supervision consisting of meeting with underground service locators, determining investigation locations, supervising and directing drilling and remediation subcontractors, logging soil profiles for borehole logs, daily field notes and subcontractor timesheets. Also completed independent field elevation surveys and groundwater sampling.

Project Manager, Field Engineer, Expert Witness l Gladstone Avenue, Ottawa, Ontario | 2021-2023

Project Manager, Field Engineer and Expert Witness for assessment of damages resulting from temporary expropriation of residential lands for industrial use (Bridge Construction).

- Coordination & Field Supervision consisting of determining investigation locations, supervising and directing drilling subcontractors, logging soil profiles for borehole logs. Also completed independent field elevation surveys and groundwater sampling. Completed environmental investigation, remediation and management cost estimates for different scenarios to determine incremental costs resulting from Site occupancy.

Select Federal and Provincial Experience

- Field Engineer, PWGSC representative for monitoring access road reconstruction, asset inventory, camp drainage assessment, reservoir construction progress monitoring l Outcome Consultants (PWGSC) l Governmental Facilities, Eureka, Nunavut l June 2022

- Environmental Project Manager, Field Assessor for UST removal, DSS, Abatement Review & Compliance Monitoring l BGIS (PWGSC) l CRA Taxation & Data Centre, 875 Heron Road, Ottawa, Ontario l 2017-2019

- Environmental Project Manager, Field Assessor for Project Specific DSSs l BGIS (PWGSC) l 20 to 30 buildings in Ottawa & Gatineau l 2016-2019

- Environmental Project Manager, Field Assessor for Environmental Compliance Audit l BGIS (PWGSC) l Tunney's Pasture (select facilities), Ottawa, Ontario l 2016

- Planning Coop Student for Executive Assistant to Director of Ministry of Transportation l St. Catharines, Ontario l 2003

Education

BEng Geological Engineering, École Polytechnique de Montreal, Montreal, Quebec, 1990

MSc Geophysics, University of British Columbia, Vancouver, British Columbia, 1983

BSc Geophysics, Honours, University of British Columbia, Vancouver, British Columbia, 1980

Certifications

Registered as PMP with Project Management Institute since 2012, requalified in 2018

Qualified Person (QP) for Environmental Site Assessments with Ontario Ministry of Environment and Conservation and Parks

Professional Affiliations

Licensed as P.Eng. with the Professional Engineers of Ontario (PEO) since 1994

Licensed as Ing. with l'Ordre des ingénieurs du Québec (OIQ), 1992

Licensed as P.Eng. with NAPEG (NWT and Nunavut), since 2009.

Licensed as P.Eng with Engineers Yukon since 2018

Federal Clearance Level

Secret ID # 95251065

DON PLENDERLEITH

Senior Environmental Engineer and Project Manager

PROFESSIONAL SUMMARY

Mr. Plenderleith has been an environmental engineer for 30 years. From 1990 to 2000 he worked at specialty firms in Montreal and Ottawa where he gained field and reporting experience in site assessment and remediation of retail fuel outlets and railway yards. In 1991 and 1992 he worked on a CIDA sponsored project to assess additional water resource potential in two provinces in Indonesia. He worked for Golder for 19 years on projects in Ottawa, the North and overseas.

His expertise covers all steps in contaminated site management: Phase I, II and III environmental site assessments (ESAs), risk assessments, remedial options evaluations, remedial action plans, tender plans and specifications, remediation project oversight, long-term monitoring and project closure. He has largely concentrated on federal sites since 2002 and was Golder's initial point of contact on the Environmental Standing Offer Agreement with PSPC in the National Capital over that time.

Don led Golder's national client service team for Federal government and was responsible to Golder's management for maintaining strong relations with the federal government. Locally, he provided project management and technical direction of a variety of environmental projects from the Ottawa office. Don mentored several junior professionals. His site portfolio included: military bases, Northern sites, navigational sites, correctional facilities, research labs, commercial buildings and Canadian embassies abroad. On several multi-year projects (Kingston Penitentiary and Connaught Ranges landfill) he directed all steps of site management from initial investigations, through to site closure.

Don is equally experienced at providing strategic and portfolio-level assistance to clients as well as site-specific level work. He has written contaminated sites management plans for several federal Departments. He helped to develop components of the FCSAP project manager's tool kit and has trained federal project managers in its use. He has provided program-level assistance to the FCSAP Secretariat for funding demand forecasting and long-term strategy and risk management. For nine years he led a multi-disciplinary team that performed contaminated site liability peer reviews for the Office of the Auditor General of Canada.

Don completed his engineering degree in French and is licensed to practice in Quebec. He frequently coordinates the French language component at bilingual meetings and workshops.

PROJECT EXPERIENCE – STANDING OFFER MANAGER

Public Services and Procurement Canada, National Capital Region, Environmental Engineering Standing Offer (2002-2019).

Don managed Golder's Environmental Standing Offer Agreement (SOA) with PSPC in the National Capital Region from 2002 to 2019. He was the first point of contact with PSPC for new call-ups. He formed project teams from the approved resources and reviewed the work plans under each call-up. He was responsible and accountable for Golder's overall project performance to PSPC.

PROJECT EXPERIENCE – SENIOR PROJECT MANAGER

Phase I, II, and III and Remediation at Pittsburgh Institution and Kingston Penitentiary for PSPC/CSC near Kingston, Ontario

Environmental Site Assessment, Remediation Planning and Implementation for the Pittsburgh Institution and Kingston Penitentiary, Kingston, Ontario from 2007 to 2015 - Don was the Senior Project Manager and project reviewer for the Phase I, II and III of contaminated sites on two similar projects at these federal penitentiaries. Don performed project management and provided technical direction during the full suite of services from site assessment through to remediation. Federal project management tools, and FCSAP technical tools (GOST) were used to assist with procedural compliance. Don assisted PSPC with the tender specification for both remediation projects and performed on-site supervision during the fast-track remediation work at Pittsburgh. Don also performed senior review of the draft and final reports.

Peer Review and Liability Review of US Steel Site in Hamilton Harbour for PSPC and Transport Canada (July-August 2016)

Don was the Senior Project Manager for a Peer Review of reports pertaining to the US Steel site on Hamilton Harbour that the Hamilton Port Authority (HPA) was considering purchasing. TC requested the peer review and liability review in its oversight role over the HPA. Don brought a senior expert in at steel industry at Golder onto the project team. With his input some important gaps in the previous site assessments, management plans and liability estimates were identified to TC.

Contaminated Site Reporting and Review for Department of National Defence Ottawa, Ontario, Canada

Don has managed several projects for DND's Director General Environment, related to the financial reporting of DND's contaminated sites. He managed the EcoNet validation project in 2006, in which the systems and procedures by which site cost and liability information are input to DND's Contaminated Site database, Econet. Several of DND's major projects being run out of headquarters were reviewed in that exercise. In 2008 he assisted DND by producing the 2008 update of their Contaminated Sites Management Plan (CSMP) for Treasury Board submission. Nine divisional CSMPs were reviewed, summarized and incorporated into the departmental CSMP.

PROGRAM LEVEL WORK – FEDERAL CONTAMINATED SITES

Project Management Tools for Contaminated Sites, Ottawa, Ontario, Canada

Mr. Plenderleith developed two of the FCSAP Project Management Tools: Status Reporting and Project Risk Management. He has provided training in the tools to federal project managers country-wide. He has delivered training sessions at RPIC National Contaminated Sites workshops on several occasions on the PM Tools, the Sustainable Development Tool (SDAT), and Guidance Tool for Selection of Technologies Tools (GOST).

Assistance to FCSAP for program-level Risk Management, PWGSC/ECCC Ottawa, Ontario

Don has led a team at Golder that provided assistance to the FCSAP Secretariat from 2013 to 2019 in the areas of cost projections for funding demand estimates. He devised a method of projecting the costs of unassessed sites based on closure costs of similar sites. This tool was used to estimate the funding demand for FCSAP Phase III and past Phase III. Don assisted the Secretariat with Long-Term Strategic planning for FSCAP post 2020 when the 15-year program is due to sunset.

Secondments to Federal Departments

Mr. Plenderleith has been seconded from Golder to the Department of Foreign Affairs and International Trade (now Global Affairs Canada "GAC") on three occasions to develop their Contaminated Sites Management Plans and to fill in while GAC was staffing their full-time environmental engineer position. Through these secondments he has developed a greater understanding of the role of federal custodians in managing their programs.

PROJECT EXPERIENCE – NORTHERN SITES

DEW Line Site Monitoring, Baffin Region, DND (2015-19)

Mr. Plenderleith was the project director of Golder's DEW Line Monitoring contract with DND from four years 2015 to 2019. He was responsible for overall program quality and liaison with the client and management of Inuit subcontractors. The project was multi-disciplinary, involving geotechnical and environmental components. Mr. Plenderleith has developed a very positive working relationship with the hamlet of Qikiqtarjuaq and the Inuit staff from that community, many of whom have returned to work with Golder every year. All Inuit Participation Targets were exceeded.

Tundra Mine Remediation Monitoring PSPC/INAC (2016-2018)

Don was the Senior project director for Golder's Remediation Monitoring of Tundra Mine (NWT) for PSPC and INAC. This project is multi-disciplinary involving surface water and groundwater environmental monitoring and aquatic monitoring for the final stages of the remediation of Tundra Mine. Don has reviewed the monthly and annual monitoring reports produced for the Water Licence. His earlier experience with the RAP for Tundra has been valuable on this project.

Remedial Options Review and Remedial Action Planning Former Water Tanker Base, Inuvik Airport, NWT 2010-12

From 2010 to 2012, Mr. Plenderleith was the technical director for the Phase III ESA detailed site assessment and remediation planning of the former Water Tanker Base at the Inuvik Airport in NWT. The work included determining the contaminants of concern, delineation of contaminated soil and seasonal groundwater areas, and assessing remedial options. The remedial action plan reviewed chemical oxidation and removal & disposal options within the constraints of northern work season, and the distance to a disposal facility. Descriptions, costs, advantages and limitations were provided for several options. GNWT performed the remediation with own forces.