



# **Supplemental Phase II Environmental Site Assessment - 219 Pefferlaw Road, Pefferlaw, ON**

December 8, 2022

Prepared for:  
The Town of Georgina

Cambium Reference: 14324-004

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## Executive Summary

The Town of Georgina (Client) retained Cambium Inc. (Cambium) to complete a Supplemental Phase II Environmental Site Assessment (ESA) at 219 Pepperlaw Road, in Pepperlaw, Ontario (Site). The Site occupies the eastern and western shoreline of the Pepperlaw River, south of Pepperlaw Road, and includes a walking trail, parkland, and the Pepperlaw Dam, which was originally constructed in approximately 1828. Reportedly, the dam was constructed to supply power to a sawmill, gristmill, and woolen mill, which began operation in about 1832.

Cambium completed a Phase I ESA for the Site (Cambium Inc., 2022a), which identified on-site environmental concerns related to the importation of fill material of unknown quality, and former on-site buildings that may be associated with historic foundry operations.

Subsequently, Cambium completed a Phase II ESA (Cambium Inc, 2022b) to investigate contaminants of potential concern, including volatile organic compounds, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, and metals in soil and groundwater. The Phase II ESA included the advancement of four boreholes, three of which were completed as groundwater monitoring wells. Contaminants were reported in groundwater at concentrations greater than the applicable regulatory standards; therefore, Cambium recommended the completion of an additional investigation at the Site to further assess the identified exceedances.

The Supplemental Phase II ESA included the advancement of eleven boreholes, three of which were completed as groundwater monitoring wells. Soil and groundwater samples collected from each sampling location, and additional shallow soil samples were collected from boreholes that were drilled in the initial Phase II ESA study and were submitted for laboratory analysis of the contaminants of potential concern.

Based on the results of the work completed at the Site to date, sufficient delineation of contaminants in soil and groundwater at concentrations greater than the Table 1 SCS has been achieved for the purposes of a Risk Assessment. Presently, Cambium is conducting a Risk Assessment for the Site to provide recommendations for suitable risk-management measures with respect to the noted exceedances of the Table 1 SCS for the Site.





## Version Control

Revision	Date	Revision Description	Prepared by:
1.	2022-12-08	Revised report following the completion of six additional boreholes, one of which was completed as a bedrock groundwater monitoring well, and the sampling of the new bedrock monitoring well and two previously installed groundwater monitoring wells	Cambium Inc.



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## 1.0 Introduction

The Client retained Cambium to complete a Supplemental Phase II ESA at the Site. The Supplemental Phase II ESA was completed consistent with the *Canadian Standards Association (CSA) Standard Z769-00* (CSA, 2013), with reference to Ontario Regulation (O.Reg.) 153/04.

### 1.1 Previous Environmental Investigations

A Phase I ESA (Cambium Inc., 2022a) identified the following on-site environmental concerns.

- Importation of fill material of unknown quality and origin at the Site. The fill is expected to be associated with general lot grading and the construction of the on-site dam.
- Former on-site buildings that may be associated with former foundry operations (mills). The buildings are depicted in 1927, 1959, and 1978 aerial photographs.

A Phase II ESA (Cambium Inc, 2022b) identified contaminants at the Site present in groundwater at concentrations greater than the applicable regulatory standards that is thought to be related to the operation of historical on-site mills, and fires at the mill buildings. The Phase II ESA, included the following scope of work, and results:

- The Phase II ESA included the advancement of four boreholes in locations that overlapped with the former mill operation buildings at the Site - three of which were completed as groundwater monitoring wells
- The COPCs identified for the Site related to the environmental concerns noted in the Phase I ESA (Cambium Inc., 2022a), include petroleum hydrocarbon fractions 1 to 4 (PHC F1-F4), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals
- Seven soil samples and three groundwater samples were submitted for laboratory analysis of the identified COPCs.



- The laboratory analysis results indicated that all analysed contaminants of potential concern in the submitted soil samples met the Table 1 SCS.
- Concentrations of toluene and benzo(a)pyrene exceeded the Table 1 SCS in the groundwater samples collected from BH102, and toluene, benzo(a)pyrene, and phenanthrene exceeded the Table 1 SCS in the groundwater samples collected from BH202.
- The findings of the Phase II ESA concluded an additional investigation should be concluded at the Site to further assess the identified exceedances.

## 1.2 Scope of Work

Cambium conducted the following activities as part of the Supplemental Phase II ESA.

- Review of previous environmental reports to determine contaminants of potential concern (COPCs) and areas of potential environmental concern.
- Obtained public and private locates for identification of buried services and utilities via Ontario One Call and a private locate company.
- Developed a site-specific Health and Safety Plan (HASP) prior to commencement of the fieldwork.
- Arranged for a Ministry of the Environment, Conservation and Parks (Ministry) licensed driller to advance five boreholes and install two monitoring wells on the Site.
- Arranged for a Canadian Association of Laboratory Accreditation Inc. (CALA) accredited laboratory to supply Cambium with appropriate sample containers for the proposed soil and groundwater testing program and to undertake analytical services in accordance with standard operating protocols (MOE, 2011a).



## 2.0 Site Description

The Site is at 219 Pepperlaw Road in Pepperlaw, Ontario and consists of a 0.66 ha irregular land parcel. The Universal Transverse Mercator (UTM) coordinates for the centre of the Site are Zone 17T, 643,752 m east, 4,908,327 m north. The Site location is shown on Figure 1.

The Site occupies the eastern and western shoreline of the Pepperlaw River, south of Pepperlaw Road, and includes a walking trail and parkland, and the Pepperlaw Dam, originally constructed in approximately 1828. Reportedly, the dam was constructed to supply water to power a sawmill, gristmill, and woollen mill which began operation in 1832.

The Site is bound by Pepperlaw Road to the north, residential properties to the east and west, and the south side of the Site fronts onto the Pepperlaw River.

The Site slopes down towards the Pepperlaw River, which bisects the central portion of the Site from the south to the north, and flows from the south to the north. Regionally, surface elevation decreases to the north toward Lake Simcoe, roughly 3,350 m north of the Site. Based on the location of the nearest water bodies and regional topographic relief, the inferred groundwater flow direction is northerly.

### 2.1 Applicable Site Condition Standards

The following site characteristics were reviewed to determine the applicable site condition standards (SCS) in the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (MOE, 2011b).

- The Site is a community/parkland property in the Town of Pepperlaw.
- The Site has no potable water supply. Surrounding properties rely on dug and drilled wells for their potable water supply.
- The Site is within an area of natural significance. As such, the Site is environmentally sensitive as per Section 41 of O.Reg. 153/04.
- Laboratory results indicated soil pH for surface and subsurface soil was within the acceptable ranges of 5 to 9 and 5 to 11, respectively.



- The average overburden thickness was greater than 2 m based on observations made during the subsurface investigation; as such, Section 43.1(a) of O.Reg. 153/04 does not apply.
- The Site is within 30 m of a water body as defined in O.Reg. 153/04; as such, Section 43.1(b) of O.Reg. 153/04 applies.

Based on the review of site characteristics, the Table 1 full depth background SCS for residential/parkland/institutional/industrial/commercial/community property use, are applicable.



## **3.0 Methodology**

The following sections provide a detailed description of the investigations completed and methodologies used to conduct the Phase II ESA. The aspects of environmental concern for the Site were identified based on review of the historical and current operations at the Site and surrounding properties as described in Section 1.0.

The COPCs related to these environmental concerns are petroleum hydrocarbon fractions 1 to 4 (PHC F1-F4), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals.

### **3.1 Soil Sampling**

#### **3.1.1 June 2022 Supplemental Drilling Program**

Prior to commencing the drilling program, Cambium arranged for underground services to be located and marked for public and private utilities. Premier Locates attended the Site on June 13, 2022, to provide clearance for buried services at the proposed drilling locations. The drilling locations were clear of utilities.

On June 16, 2022, Strata Drilling advanced five boreholes (BH301 to BH305) to a maximum depth of 5.79 m below ground surface (mbgs) using a track-mounted Geoprobe 7822DT drilling rig, utilizing direct push macro-core liners.

Boreholes were advanced at the following locations (Figure 2):

- Borehole BH301 and BH302, near the northwest property line on the west side of the Pepperlaw River, in the vicinity of a former mill building location
- Borehole BH303, BH304, and BH305, on the east side of the Pepperlaw River, in the vicinity of former mill building locations

#### **3.1.2 October 2022 Supplemental Drilling Program**

Prior to a subsequent drilling event, Premier Locates attended the Site on October 26, 2022, to provide clearance for buried services at the proposed drilling locations. The drilling locations





were clear of utilities. On October 28, 2022, Strata Drilling advanced five boreholes (BH401 to BH405) to a maximum depth of 1.52 m below ground surface (mbgs). Strata drilling also completed the installation of one deep borehole in bedrock (BH102D) to a depth of 10.67 mbgs. Boreholes were installed using a track-mounted Geoprobe 7822DT drilling rig, utilizing direct push macro-core liners.

Boreholes were advanced at the following locations (Figure 2):

- Borehole BH401 and BH402, near the northeast property line on the east side of the Pepperlaw River, north of the previously installed BH201
- Borehole BH403, near the centre of the Site on the east side of the Pepperlaw River, between the previously installed BH202 and BH304
- Borehole BH404, and BH405, on the east side of the Pepperlaw River, south and east of the previously installed BH305
- Borehole BH102D, on the east side of the Pepperlaw River, adjacent to the previously installed BH102.

### 3.1.3 Soil Sampling Methodology

Samples were collected consistent with accepted industry practices and regulatory guidance. During the soil investigation program, soil samples were collected in 0.61 m sections. Each sample was handled solely by the field technician using dedicated nitrile gloves to reduce the potential for cross-contamination. Gloves were replaced after collection of each sample. Samples to be submitted for analysis of VOCs and/or PHC F1 were collected using a pre-calibrated syringe sampler and methanol preserved vials.

Olfactory and visual observations of the soil samples were documented immediately upon extraction for soil characteristics and potential indicators of environmental contamination. The samples, which were placed in plastic sample bags and sealed, were used to determine if volatile and/or organic contaminants were present in the sample headspace. An RKI Eagle 2 portable gas detector was used to screen the soil samples for concentrations of combustible soil vapour (CSV) and organic vapour (OV). The RKI was calibrated to hexane and isobutylene



standards. After agitating the sample, the peak concentration was recorded by inserting the RKI probe into the sample bag. Refer to the borehole logs in Appendix A for the measured vapour concentrations.

Soil samples were selected for laboratory analysis based on the soil screening results, visual and olfactory observation, and location of the sample with respect to an environmental concern. Thirteen soil samples were submitted to the laboratory for analysis. The soil analysis results are discussed in Section 4.3. Borehole logs are provided in Appendix A.

### **3.2 Monitoring Well Installation**

Boreholes BH301, BH304, and BH102D were instrumented with groundwater monitoring wells in accordance with Ontario Regulation 903 - Wells. The monitoring wells were constructed using 51 mm flush-threaded environmental quality PVC well pipe. Each well was constructed with a riser pipe and 3 m section of screen installed to intersect the groundwater table. Silica sand filter-pack was placed in the annular space to approximately 0.3 m above the top of the screen. Bentonite was placed in the remaining annular space to about 6 cm below ground surface to seal the well. The bentonite was hydrated using store bought distilled water. A steel flush mount protective cover was cemented in place at the ground surface to protect the well from damage. Well construction details are shown on the borehole logs in Appendix A.

### **3.3 Groundwater Sampling**

Following installation, monitoring wells were developed by purging at least three well volumes, to remove sediment from the well, stabilize and grade the filter pack, improve connectivity between the well and the formation, and restore groundwater that may have been disturbed during the drilling process. Despite indications of saturated soil while drilling, monitoring well BH301 was found to be dry, and was excluded from the groundwater monitoring program.

On June 21, 2022, and again on October 31, 2022, the depth to groundwater was measured in each monitoring well prior to purging or sampling. An interface probe, which can accurately measure the depth to groundwater and the thickness of dense and light non-aqueous phase liquids (DNAPL and LNAPL, respectively) that may be present in the monitoring wells, was



used to measure fluid levels. The probe was cleaned between wells with a mixture of Alconox™ soap and water and rinsed with distilled water to reduce the potential for cross-contamination between the monitoring wells.

Using the low-flow purging method, water quality parameters were measured using a flow-through cell and allowed to stabilize prior to sample collection, to ensure samples were representative of the surrounding groundwater aquifer. Groundwater samples were collected using a peristaltic pump, with dedicated tubing installed in each of the monitoring wells. The peristaltic pump reduces the amount of sediment entrained in the collected groundwater samples, as agitation of the water column is reduced by lowering the pumping rate and limiting the movement of the tubing in the water column. Groundwater samples submitted for analysis of metals were field filtered.

Field staff wore nitrile sample gloves while collecting the groundwater samples. Gloves were replaced between each sample location. The groundwater analysis results are discussed in Section 4.4.

### **3.4 Laboratory Testing and Analysis**

Soil and groundwater samples were maintained at a temperature less than 10°C. Select samples were transported to Bureau Veritas, a CALA accredited analytical laboratory in Mississauga, Ontario, for analysis of PHC F1-F4, VOCs, PAHs, and metals. The analysis results are discussed in Section 4.0. Copies of the original laboratory Certificates of Analysis as received from Bureau Veritas are included in Appendix B.



## **4.0 Results**

### **4.1 Stratigraphy**

Subsurface conditions at the Site generally consisted of a shallow topsoil layer, underlain by a layer consisting of brown, moist, sand and silty sand horizon, underlain by a brown-to -grey silty sand which became finer with depth, transitioning to clayey silt terminating at depths ranging between 4.26 and 5.79 mbgs on grey shale bedrock, extending to at least 10.668 mbgs.

### **4.2 Water levels and Flow Direction**

Depth to groundwater ranged from 2.97 to 4.68 mbgs on June 21, 2022. Depth to groundwater ranged from 2.08 to 5.24 mbgs on October 31, 2022. Based on the measured groundwater levels, the groundwater flow direction is northwesterly on the eastern portion of the Site (east of the Pepperlaw River). Local groundwater flow direction may be affected by sub-surface utility conduits located on-site and beneath nearby streets and neighbouring properties. Water level data obtained on October 31, 2022, was used to calculate a groundwater flow direction, as shown on Figure 4.

### **4.3 Soil Quality**

Details regarding the sample depth/location and COPC analyzed for each soil sample is included in Embedded Table 1 below:

**Embedded Table 1: Soil Analysis Summary**

Borehole ID	Depth (m)	COPC analyzed
BH102	0.30 – 0.61	PAHs
BH201	0.30 – 0.53	PAHs
BH202	0.30 – 0.61	PAHs
BH301	0.10 – 1.52	PAHs, Metals
BH301	3.50 – 3.65	VOCs, PHCs, PAHs
BH302	0.10 – 1.52	PAHs, Metals
BH302	3.05 – 3.35	VOCs, PHCs, PAHs
BH303	0.10 – 1.52	PAHs, Metals
BH303	3.05 – 3.50	VOCs, PHCs, PAHs
BH304	0.13 – 1.52	PAHs, Metals
BH304	1.52 – 2.29	VOCs, PHCs, PAHs
BH305	0.08 – 1.52	PAHs, Metals
BH305	1.52 – 3.05	VOCs, PHCs, PAHs
BH401	0.08 – 0.91	PAHs
BH402	0.08 – 1.07	PAHs
BH403	0.12 – 0.91	PAHs
BH404	0.30 – 0.91	PAHs
BH405	0.08 - 0.61	PAHs

Concentrations of the following parameters exceeded the Table 1 SCS, as depicted in Embedded Table 2 below:


**Embedded Table 2: Summary of Soil Exceedances**

Sample Location	Depth (mbgs)	Parameter	Table 1 SCS Limit (µg/g)	Reported Concentration (µg/g)
<b>BH201</b>	0.30 – 0.53	Benzo(a)anthracene	0.36	<b>0.38</b>
		Benzo(a)pyrene	0.3	<b>0.43</b>
		Benzo(b+k)fluoranthene	0.47	<b>0.59</b>
		Fluoranthene	0.56	<b>0.75</b>
		Indeno(1,2,3,-cd)pyrene	0.23	<b>0.33</b>
	0.22 – 0.61	pH	5 – 9 (surficial soil)	<b>10.5</b>
<b>BH202</b>	0.30 – 0.61	Acenaphthylene	0.093	<b>0.26</b>
		Benzo(a)anthracene	0.36	<b>1.1</b>
		Benzo(a)pyrene	0.3	<b>1.3</b>
		Benzo(b+k)fluoranthene	0.47	<b>1.6</b>
		Benzo(g,h,i)perylene	0.68	<b>0.91</b>
		Benzo(k)fluoranthene	0.48	<b>0.6</b>
		Dibenzo(a,h)anthracene	0.10	<b>0.22</b>
		Fluoranthene	0.56	<b>1.8</b>
		Indeno(1,2,3,-cd)pyrene	0.23	<b>1</b>
		Pyrene	1.00	<b>1.4</b>
<b>BH301</b>	0.10 – 1.52	Antimony	1.3	<b>1.6</b>
<b>BH305</b>	0.08 - 1.52	Acenaphthylene	0.093	<b>0.42</b>
		Anthracene	0.16	<b>0.19</b>
		Benzo(a)anthracene	0.36	<b>1.5</b>
		Benzo(a)pyrene	0.3	<b>1.9</b>
		Benzo(b+k)fluoranthene	0.47	<b>2.5</b>
		Benzo(g,h,i)perylene	0.68	<b>1.2</b>
		Benzo(k)fluoranthene	0.48	<b>0.87</b>
		Dibenzo(a,h)anthracene	0.10	<b>0.32</b>
		Fluoranthene	0.56	<b>2.4</b>
		Indeno(1,2,3,-cd)pyrene	0.23	<b>1.4</b>
<b>BH305</b>	1.52 – 3.05	PHC F3	240	<b>740</b>
		PHC F4	120	<b>9800</b>



Sample Location	Depth (mbgs)	Parameter	Table 1 SCS Limit (µg/g)	Reported Concentration (µg/g)
<b>BH401</b>	0.08 – 0.91	Acenaphthylene	0.093	<b>0.19</b>
		Benzo(a)anthracene	0.36	<b>0.85</b>
		Benzo(a)pyrene	0.3	<b>0.95</b>
		Benzo(b+k)fluoranthene	0.47	<b>1.3</b>
		Benzo(g,h,i)perylene	0.68	<b>0.69</b>
		Dibenzo(a,h)anthracene	0.10	<b>0.19</b>
		Fluoranthene	0.56	<b>1.7</b>
		Indeno(1,2,3,-cd)pyrene	0.23	<b>0.75</b>
		Pyrene	1.00	<b>1.4</b>
<b>BH404</b>	0.30 – 0.91	Acenaphthylene	0.093	<b>0.34</b>
		Anthracene	0.16	<b>0.21</b>
		Benzo(a)anthracene	0.36	<b>1.6</b>
		Benzo(a)pyrene	0.3	<b>1.9</b>
		Benzo(b+k)fluoranthene	0.47	<b>2.3</b>
		Benzo(g,h,i)perylene	0.68	<b>1.3</b>
		Benzo(k)fluoranthene	0.48	<b>0.82</b>
		Dibenzo(a,h)anthracene	0.10	<b>0.34</b>
		Fluoranthene	0.56	<b>1.9</b>
		Indeno(1,2,3,-cd)pyrene	0.23	<b>1.4</b>
		Pyrene	1.00	<b>1.7</b>
<b>BH405</b>	0.08 – 0.61	Acenaphthylene	0.093	<b>0.21</b>
		Anthracene	0.16	<b>0.22</b>
		Benzo(a)anthracene	0.36	<b>1.5</b>
		Benzo(a)pyrene	0.36	<b>1.5</b>
		Benzo(b+k)fluoranthene	0.47	<b>1.9</b>
		Benzo(g,h,i)perylene	0.68	<b>1</b>
		Benzo(k)fluoranthene	0.48	<b>0.68</b>
		Dibenzo(a,h)anthracene	0.10	<b>0.27</b>
		Fluoranthene	0.56	<b>2.4</b>
		Indeno(1,2,3,-cd)pyrene	0.23	<b>1</b>
		Pyrene	1.00	<b>1.9</b>

The soil analysis results are presented in Table 1 to Table 3 and exceedances are presented on Figure 3.

#### 4.4 Groundwater Quality

No free phase product, hydrocarbon sheen, or unusual odours or discoloration was observed in the purge water or recovered groundwater samples.



Details regarding COPC analyzed for each groundwater sample is included in Embedded Table 3 below:

**Embedded Table 3: Groundwater Analysis Summary**

Borehole ID	COPC analyzed
BH304	VOCs, PHCs, PAHs, Metals
BH102	PAHs
BH102D	PAHs
BH202	PAHs

The submitted groundwater samples obtained in October 2022 met the Table 1 SCS.

As indicated in Cambium's initial Phase II ESA (Cambium Inc, 2022b), concentrations of select PAHs were found to exceed the applicable Table 1 SCS at BH102 and BH202, in April 2022.

Subsequently, groundwater was resampled from BH102 and BH202, where results from resampling these wells indicated that groundwater met the Table 1 SCS Standard. The initial exceedances of the Table 1 SCS from April 2022 are thought to be due to sediment draw-down during borehole drilling and well installation. After additional groundwater development was completed for the noted wells, affected sediment was sufficiently removed from the wells and the subsequent groundwater samples met the Table 1 SCS. All submitted groundwater samples met the Table 1 SCS in October 2022.

In combination with the groundwater results from Cambium's initial Phase II ESA (Cambium Inc, 2022b), concentrations of the following parameters exceeded the Table 1 SCS, as depicted in Embedded Table 4 below:

**Embedded Table 4: Summary of Groundwater Exceedances**

Sample Location	Parameter	Table 1 SCS Limit (µg/g)	Reported Concentration (µg/g)
BH102	Toluene	0.8	1
BH202	Toluene	0.8	0.9

The groundwater analysis results are presented in Table 4 to Table 6 and are presented on Figure 4.





#### **4.5 Quality Assurance / Quality Control**

Bureau Veritas reported that the laboratory analytical data is within statistical control and has met quality control and method performance criteria as provided in the appended Certificates of Analysis.

Based on the laboratory and field QA/QC data, the soil and groundwater analysis results can be interpreted with confidence.



## **5.0 Discussion and Conclusions**

Conclusions regarding the current environmental conditions at the Site are based solely on the results of the Supplemental Phase II ESA. The Supplemental Phase II ESA included advancement of five boreholes, two of which were completed as groundwater monitoring wells. Eighteen soil samples and four groundwater samples, were submitted for laboratory analysis of the identified COPCs.

### **5.1 Delineation**

#### **5.1.1 Soil**

Two primary areas of soil contamination are noted at the Site. Specifically, the area around BH301 in the northwest corner of the Site (northwest soil contamination), and the area along the east side of the Pepperlaw River, which includes BH201, BH202, BH305, BH401, BH402, BH403, BH404, and BH405 (eastern soil contamination).

#### **Northwest Soil Contamination**

The antimony exceedance in soil noted in BH301 is delineated to the south by a clean sample in BH302, as well as by the Pepperlaw River to the east. Vertical delineation of the contamination is assumed to be achieved based on refusal on inferred bedrock at 3.7 mbgs. Horizontal delineation of antimony contamination to the west and north of BH302 has not yet been achieved.

#### **Eastern Soil Contamination**

PAH exceedances in BH201, BH202, BH305, BH401, BH404, and BH405 were noted in soil, in addition to limited PHC exceedances noted at depth in BH305 only, and a limited pH exceedance noted at BH202 only.

PAH contamination is generally horizontally delineated to the east by clean soil samples in BH303, BH402, BH403, and BH102; as well as to the south and west by the Pepperlaw River; however, with the soil exceedance at BH401, PAH impacts have not been delineated to the north and are inferred to extend to the north property boundary of the Site. Vertical delineation



of the PAH exceedances has been achieved at BH201 with a clean sample taken between 3.05 and 3.66 m; at BH202 with a clean sample taken between 2.13 and 3.05 mbgs; and, at BH305 with a clean sample taken between 1.52 and 3.05 mbgs.

PHC contamination in BH305 is entirely horizontally delineated by clean samples from BH202 in the north, BH102 in the east, and the Pepperlaw River to the west and south. Vertical delineation of the PHC contamination is considered to be achieved by bedrock which was interpreted to be present at 4.3 mbgs based on refusal encountered while drilling.

Overall, complete vertical delineation of all contaminants in soil, as well as horizontal delineation of PHC contamination, has been achieved in the eastern soil contamination area; but horizontal delineation of PAH contamination has not yet been achieved north of BH401.

### **5.1.2 Groundwater**

Initial exceedances of the Table 1 SCS from samples obtained in April 2022 are thought to be due to sediment draw-down during the drilling program, and after additional groundwater development from these wells, affected sediment was sufficiently removed from the wells. All submitted groundwater samples met the Table 1 SCS in October 2022.

Toluene contamination in groundwater was noted in the southeast portion of the Site within samples taken from BH102 and BH202 .

#### **BH102**

Toluene contamination in groundwater at BH102 is delineated to the north by clean groundwater sampled at BH304, as well as to the south and west by the Pepperlaw River. Horizontal delineation of toluene contamination in groundwater to the east of BH102, as well as vertically, has not yet been achieved.

#### **BH202**

Toluene contamination in groundwater at BH202 is delineated to the east by clean groundwater sampled at BH304, as well as to the south and west by the Pepperlaw River. Horizontal delineation of toluene contamination in groundwater to the north of BH202, as well as vertically, has not yet been achieved.



## 5.2 Conclusion

Based on the results of the work completed at the Site to date, sufficient delineation of contaminants at the Site in soil at concentrations greater than the Table 1 SCS has been achieved for the purposes of a Risk Assessment. Presently, Cambium is conducting a Risk Assessment for the Site to provide recommendations for suitable risk-management measures with respect to the noted soil exceedances of the Table 1 SCS for the Site.



## 6.0 Qualifications of the Assessor

This Supplemental Phase II ESA was completed under the supervision of Alex Wood, P.Eng., QP<sub>ESA</sub>. Credentials are presented in Appendix C. Information presented in this report is true and accurate to the best of the assessors' knowledge.

Respectfully submitted,

**Cambium Inc.**

Matthew Cunningham, C.E.T., T.Ag.,  
Project Coordinator

Alex Wood, P.Eng., QP<sub>ESA</sub>  
Project Manager



## 7.0 References

Cambium Inc. (2022b). *Phase II Environmental Site Assessment - 219 Pepperlaw Road, Pepperlaw, ON.*

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CSA. (2013). *CSA Standard Z769-00 Phase II Environmental Site Assessment (R2013).* Canadian Standards Association.

MOE. (2011a). *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.* Ministry of the Environment. July 1, 2011.

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Standards Development Branch - Ontario Ministry of the Environment. (2011). *Rationale for the Development of Soil and Groundwater Standards for use at Contaminated Sites in Ontario.*



## 8.0 Standard Limitations Achieved

### Limited Warranty

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### Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

Only conditions at the site and locations chosen for study by the client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the client. Any physical or other aspects of the site chosen for study by the client, or any other matter not specifically addressed in a report prepared by Cambium, are beyond the scope of the work performed by Cambium and such matters have not been investigated or addressed.

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## Appended Figures

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# SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT TOWN OF GEORGINA 219 Pefferlaw Road, Pefferlaw, Ontario

## LEGEND

- Highway
- Major Road
- Minor Road
- +— Railroad
- Watercourse
- Water Area
- Provincial Park
- Wooded Area
- Built Up Area

**Notes:**  
 - Site is approximate; boundaries were obtained from York Region online GIS database.  
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
 - Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.



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## SITE LOCATION MAP




Project No.:	14324-004	Date:	December 2022
Scale:	1:100,000	Rev.:	
Created by:	SJV	Projection:	NAD 1983 UTM Zone 17N
Checked by:	MC	Figure:	<b>1</b>





# SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT TOWN OF GEORGINA 219 Pepperlaw Road, Pepperlaw, Ontario

## LEGEND

-  Borehole
-  Monitoring Well
-  Site (approximate)

**Notes:**

- Site is approximate; boundaries were obtained from York Region online GIS database.
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
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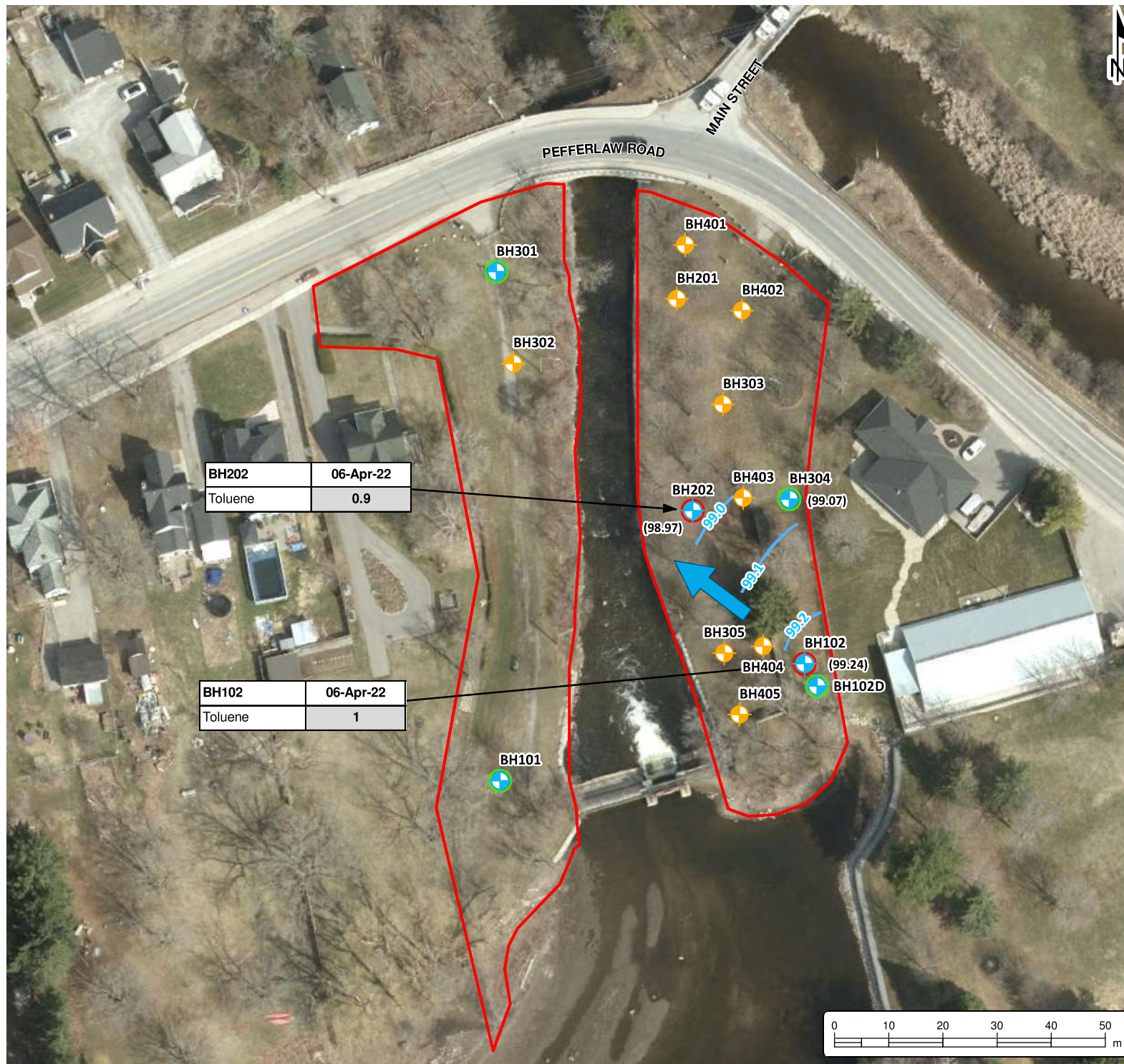
## SITE PLAN

Project No.:	14324-004	Date:	December 2022
Scale:	1:1,000	Rev.:	
Created by:	SJV	Projection:	NAD 1983 UTM Zone 17N
Checked by:	MC	Figure:	<b>2</b>









# **SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT** TOWN OF GEORGINA 219 Pepperlaw Road, Pepperlaw, Ontario

## **LEGEND**

- Borehole
- Monitoring Well
- Sample meets SCS Table 1
- Sample exceeds SCS Table 1
- Groundwater Contour (0.1m intervals)
- Site (approximate)
- Groundwater Flow Direction (October 31, 2022)

Parameter	Table 1 SCS
Toluene	0.8

Table 1 Standards - Full Depth Background Site Condition Standards - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**Notes:**

- Site is approximate; boundaries were obtained from York Region online GIS database.
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
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## **GROUNDWATER QUALITY**

Project No.: 14324-004	Date: December 2022
Scale: 1:1,000	Rev.: MC
Created by: SVJ	Checked by: MC
Figure: <b>4</b>	

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## Tables

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Table 1 - Summary of Soil Quality: VOCs &amp; PHCs

Sample Location	Units	RDL	Table 1	BH101	BH102	BH201	BH202	BH301	BH302	BH303	BH304	BH305
Sample ID				BH101-22-0.8-1.4	BH102-22-1.5-2.1	BH201_3.05-3.66	BH202_2.13-3.05	BH301_3.50-3.65	BH302_3.05-3.35	BH303_3.05-3.50	BH304_1.52-2.29	BH305_1.52-3.05
Sample Date (dd-mmm-yy)				21-Mar-22	21-Mar-22	04-Apr-22	04-Apr-22	16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22
Sample Depth (mbgs)				0.80 - 1.40	1.50 - 2.10	3.05 - 3.66	2.13 - 3.05	3.50 - 3.65	3.05 - 3.35	3.05 - 3.50	1.52 - 2.29	1.52 - 3.05
Acetone	µg/g	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.49	<0.49	<0.49	<0.49	<0.49
Benzene	µg/g	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Bromodichloromethane	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Bromoform	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Bromomethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Carbon Tetrachloride	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Chloroform	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dibromochloromethane	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorobenzene, 1,2-	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorobenzene, 1,3-	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorobenzene, 1,4-	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorodifluoromethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloroethane, 1,1-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloroethane, 1,2-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.049	<0.049	<0.049	<0.049	<0.049
Dichloroethylene, 1,1-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloroethene, cis-1,2-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloroethene, trans-1,2-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloropropane, 1,2-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloropropene, cis-1,3-	µg/g	0.02	NV	< 0.02	< 0.02	< 0.02	< 0.02	<0.030	<0.030	<0.030	<0.030	<0.030
Dichloropropene, trans-1,3-	µg/g	0.02	NV	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloropropene 1,3- cis+trans	µg/g	0.02	NV	< 0.02	< 0.02	< 0.02	< 0.02	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.010	<0.010	<0.010	<0.010	<0.010
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Hexane	µg/g	0.05	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Methyl Ethyl Ketone	µg/g	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl Isobutyl Ketone	µg/g	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl-t-butyl Ether	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Dichloromethane (Methylene Chloride)	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.049	<0.049	<0.049	<0.049	<0.049
Styrene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethane, 1,1,2,2-	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.040	<0.040	<0.040	<0.040	<0.040
Toluene	µg/g	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	<0.020	<0.020	<0.020	<0.020	<0.020
Trichloroethane, 1,1,1-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethane, 1,1,2-	µg/g	0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	µg/g	0.02	0.25	< 0.02	< 0.02	< 0.02	< 0.02	<0.040	<0.040	<0.040	<0.040	<0.040
Vinyl Chloride	µg/g	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.019	<0.019	<0.019	<0.019	<0.019
Xylene, m,p-	µg/g	0.03	NV	< 0.03	< 0.03	< 0.03	< 0.03	<0.020	<0.020	<0.020	<0.020	<0.020
Xylene, o-	µg/g	0.03	NV	< 0.03	< 0.03	< 0.03	< 0.03	<0.020	<0.020	<0.020	<0.020	<0.020
Xylene, m,p,o-	µg/g	0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	<0.020	<0.020	<0.020	<0.020	<0.020
PHC F1 (C6-C10)	µg/g	10	25	< 10	< 10	< 10	< 10	<10	<10	<10	<10	<10
PHC F1 - BTEX	µg/g	10	25	< 10	< 10	< 10	< 10	<10	<10	<10	<10	<10
PHC F2 (>C10-C16)	µg/g	5	10	< 5	< 5	< 5	< 5	<10	<10	<10	<10	<10
PHC F3 (>C16-C34)	µg/g	10	240	10	12	< 10	10	<50	<50	<50	<50	740
PHC F4 (>C34-C50)	µg/g	10	120	< 10	< 10	< 10	< 10	<50	<50	<50	<50	1900
F4 Gravimetric	µg/g	10	120	-	-	-	-	-	-	-	-	9800

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples &lt; 5x RDL.

NV - no value



Table 2 - Summary of Soil Quality: PAHs

Sample Location	Units	RDL	Table 1	BH101	BH102		BH201	
Sample ID				BH101-22-0.8-1.4	BH102-22-1.5-2.1	BH 102_0.30-0.61	BH201_3.05-3.66	BH 201_0.30-0.53
Sample Date (dd-mmm-yy)				21-Mar-22	21-Mar-22	16-Jun-22	04-Apr-22	16-Jun-22
Sample Depth (mbgs)				0.80 - 1.40	1.50 - 2.10	0.30 - 0.61	3.05 - 3.66	0.30 - 0.53
Acenaphthene	µg/g	0.05	0.072	< 0.05	< 0.05	<0.0050	< 0.05	0.0074
Acenaphthylene	µg/g	0.05	0.093	< 0.05	< 0.05	<0.0050	< 0.05	0.083
Anthracene	µg/g	0.05	0.16	< 0.05	< 0.05	<0.0050	< 0.05	0.055
Benzo(a)anthracene	µg/g	0.05	0.36	< 0.05	< 0.05	0.013	< 0.05	<b>0.38</b>
Benzo(a)pyrene	µg/g	0.05	0.3	< 0.05	< 0.05	0.015	< 0.05	<b>0.43</b>
Benzo(b)fluoranthene	µg/g	0.05	0.47	< 0.05	< 0.05	-	< 0.05	-
Benzo(b+k)fluoranthene ( <i>Benzo(b/j)fluoranthene</i> )	µg/g	0.05	0.47	< 0.05	< 0.05	0.021	< 0.05	<b>0.59</b>
Benzo(g,h,i)perylene	µg/g	0.05	0.68	< 0.05	< 0.05	0.012	< 0.05	0.3
Benzo(k)fluoranthene	µg/g	0.05	0.48	< 0.05	< 0.05	0.0073	< 0.05	0.21
Chrysene	µg/g	0.05	2.8	< 0.05	< 0.05	0.011	< 0.05	0.34
Dibenzo(a,h)anthracene	µg/g	0.05	0.1	< 0.05	< 0.05	<0.0050	< 0.05	0.075
Fluoranthene	µg/g	0.05	0.56	< 0.05	< 0.05	0.023	< 0.05	<b>0.75</b>
Fluorene	µg/g	0.05	0.12	< 0.05	< 0.05	<0.0050	< 0.05	0.016
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	0.23	< 0.05	< 0.05	0.012	< 0.05	<b>0.33</b>
Methylnaphthalene, 1-	µg/g	0.05	0.59	< 0.05	< 0.05	<0.0050	< 0.05	<0.0050
Methylnaphthalene, 2-	µg/g	0.05	0.59	< 0.05	< 0.05	<0.0050	< 0.05	<0.0050
Methylnaphthalene 2-(1-)	µg/g	0.05	0.59	< 0.05	< 0.05	-	< 0.05	-
Naphthalene	µg/g	0.05	0.09	< 0.05	< 0.05	<0.0050	< 0.05	0.0071
Phenanthrene	µg/g	0.05	0.69	< 0.05	< 0.05	0.0052	< 0.05	0.22
Pyrene	µg/g	0.05	1	< 0.05	< 0.05	0.023	< 0.05	0.61

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value



Table 2 - Summary of Soil Quality: PAHs

Sample Location	Units	RDL	Table 1	BH202		BH301		BH302	
Sample ID				BH202_2.13-3.05	BH 202_0.30-0.61	BH 301_0.1-1.52	BH 301_3.50-3.65	BH 302_0.1-1.52	BH 302_3.05-3.35
Sample Date (dd-mmm-yy)				04-Apr-22	16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22
Sample Depth (mbgs)				2.13 - 3.05	0.30 - 0.61	0.10 - 1.52	3.50 3.65	0.10 - 1.52	3.05 - 3.35
Acenaphthene	µg/g	0.05	0.072	< 0.05	0.011	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene	µg/g	0.05	0.093	< 0.05	<b>0.26</b>	0.029	<0.0050	<0.0050	<0.0050
Anthracene	µg/g	0.05	0.16	< 0.05	0.15	0.011	<0.0050	0.0074	<0.0050
Benzo(a)anthracene	µg/g	0.05	0.36	< 0.05	<b>1.1</b>	0.11	<0.0050	0.015	<0.0050
Benzo(a)pyrene	µg/g	0.05	0.3	< 0.05	<b>1.3</b>	0.14	<0.0050	0.016	<0.0050
Benzo(b)fluoranthene	µg/g	0.05	0.47	< 0.05	-	-	-	-	-
Benzo(b+k)fluoranthene ( <i>Benzo(b/j)fluoranthene</i> )	µg/g	0.05	0.47	< 0.05	<b>1.6</b>	0.18	<0.0050	0.021	<0.0050
Benzo(g,h,i)perylene	µg/g	0.05	0.68	< 0.05	<b>0.91</b>	0.088	<0.0050	0.011	<0.0050
Benzo(k)fluoranthene	µg/g	0.05	0.48	< 0.05	<b>0.6</b>	0.063	<0.0050	0.0072	<0.0050
Chrysene	µg/g	0.05	2.8	< 0.05	0.8	0.079	<0.0050	0.013	<0.0050
Dibenzo(a,h)anthracene	µg/g	0.05	0.1	< 0.05	<b>0.22</b>	0.023	<0.0050	<0.0050	<0.0050
Fluoranthene	µg/g	0.05	0.56	< 0.05	<b>1.8</b>	0.15	<0.0050	0.037	<0.0050
Fluorene	µg/g	0.05	0.12	< 0.05	0.03	<0.0050	<0.0050	<0.0050	<0.0050
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	0.23	< 0.05	<b>1</b>	0.097	<0.0050	0.011	<0.0050
Methylnaphthalene, 1-	µg/g	0.05	0.59	< 0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Methylnaphthalene, 2-	µg/g	0.05	0.59	< 0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Methylnaphthalene 2-(1-)	µg/g	0.05	0.59	< 0.05	-	-	-	-	-
Naphthalene	µg/g	0.05	0.09	< 0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Phenanthrene	µg/g	0.05	0.69	< 0.05	0.4	0.022	<0.0050	0.022	<0.0050
Pyrene	µg/g	0.05	1	< 0.05	<b>1.4</b>	0.12	<0.0050	0.032	<0.0050

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value





Table 2 - Summary of Soil Quality: PAHs

Sample Location	Units	RDL	Table 1	BH303		BH304		BH305	
Sample ID				BH 303_0.1-1.52	BH 303_3.05-3.50	BH 304_0.127-1.52	BH 304_1.52-2.29	BH 305_0.076-1.52	BH 305_1.52-3.05
Sample Date (dd-mmm-yy)				16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22	16-Jun-22
Sample Depth (mbgs)				0.10 - 1.52	3.05 - 3.50	0.127 - 1.52	1.52 - 2.29	0.076 - 1.52	1.52 - 3.05
Acenaphthene	µg/g	0.05	0.072	<0.0050	<0.0050	<0.0050	<0.0050	0.016	<0.0050
Acenaphthylene	µg/g	0.05	0.093	0.009	<0.0050	0.0052	<0.0050	<b>0.42</b>	0.033
Anthracene	µg/g	0.05	0.16	0.0064	<0.0050	<0.0050	<0.0050	<b>0.19</b>	0.017
Benzo(a)anthracene	µg/g	0.05	0.36	0.05	<0.0050	0.016	0.022	<b>1.5</b>	0.12
Benzo(a)pyrene	µg/g	0.05	0.3	0.058	<0.0050	0.021	0.026	<b>1.9</b>	0.16
Benzo(b)fluoranthene	µg/g	0.05	0.47	-	-	-	-	-	-
Benzo(b+k)fluoranthene ( <i>Benzo(b/j)fluoranthene</i> )	µg/g	0.05	0.47	0.078	<0.0050	0.027	0.034	<b>2.5</b>	0.2
Benzo(g,h,i)perylene	µg/g	0.05	0.68	0.039	<0.0050	0.015	0.017	<b>1.2</b>	0.11
Benzo(k)fluoranthene	µg/g	0.05	0.48	0.029	<0.0050	0.01	0.013	<b>0.87</b>	0.075
Chrysene	µg/g	0.05	2.8	0.044	<0.0050	0.013	0.018	1.2	0.095
Dibenzo(a,h)anthracene	µg/g	0.05	0.1	0.0094	<0.0050	<0.0050	<0.0050	<b>0.32</b>	0.026
Fluoranthene	µg/g	0.05	0.56	0.099	<0.0050	0.027	0.039	<b>2.4</b>	0.2
Fluorene	µg/g	0.05	0.12	<0.0050	<0.0050	<0.0050	<0.0050	0.043	<0.0050
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	0.23	0.042	<0.0050	0.016	0.018	<b>1.4</b>	0.12
Methylnaphthalene, 1-	µg/g	0.05	0.59	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	<0.0050
Methylnaphthalene, 2-	µg/g	0.05	0.59	<0.0050	<0.0050	<0.0050	<0.0050	0.0061	<0.0050
Methylnaphthalene 2-(1-)	µg/g	0.05	0.59	-	-	-	-	-	-
Naphthalene	µg/g	0.05	0.09	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050
Phenanthrene	µg/g	0.05	0.69	0.033	<0.0050	<0.0050	0.0083	0.52	0.051
Pyrene	µg/g	0.05	1	0.079	<0.0050	0.024	0.034	<b>1.9</b>	0.17

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value



Table 2 - Summary of Soil Quality: PAHs

Sample Location	Units	RDL	Table 1	BH401	BH402	BH403	BH404	BH405
Sample ID				BH401_0.08-0.91	BH402_0.08-1.07	BH403_0.12-0.91	BH404_0.30-0.91	BH405_0.08-0.61
Sample Date (dd-mmm-yy)				28-Oct-22	28-Oct-22	28-Oct-22	28-Oct-22	28-Oct-22
Sample Depth (mbgs)				0.08 - 0.91	0.08 - 1.07	0.12 - 0.91	0.30 - 0.91	0.08 - 0.61
Acenaphthene	µg/g	0.05	0.072	<0.050	<0.0050	<0.0050	0.0089	<0.050
Acenaphthylene	µg/g	0.05	0.093	<b>0.19</b>	<0.0050	<0.0050	<b>0.34</b>	<b>0.21</b>
Anthracene	µg/g	0.05	0.16	0.16	<0.0050	<0.0050	<b>0.21</b>	<b>0.22</b>
Benzo(a)anthracene	µg/g	0.05	0.36	<b>0.85</b>	0.012	0.022	<b>1.6</b>	<b>1.5</b>
Benzo(a)pyrene	µg/g	0.05	0.3	<b>0.95</b>	0.014	0.024	<b>1.9</b>	<b>1.5</b>
Benzo(b)fluoranthene	µg/g	0.05	0.47	-	-	-	-	-
Benzo(b+k)fluoranthene ( <i>Benzo(b/j)fluoranthene</i> )	µg/g	0.05	0.47	<b>1.3</b>	0.019	0.032	<b>2.3</b>	<b>1.9</b>
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<b>0.69</b>	0.012	0.019	<b>1.3</b>	<b>1</b>
Benzo(k)fluoranthene	µg/g	0.05	0.48	0.48	0.0067	0.011	<b>0.82</b>	<b>0.68</b>
Chrysene	µg/g	0.05	2.8	0.7	0.011	0.02	1.2	1.1
Dibenzo(a,h)anthracene	µg/g	0.05	0.1	<b>0.19</b>	<0.0050	<0.0050	<b>0.34</b>	<b>0.27</b>
Fluoranthene	µg/g	0.05	0.56	<b>1.7</b>	0.022	0.043	<b>1.9</b>	<b>2.4</b>
Fluorene	µg/g	0.05	0.12	<0.050	<0.0050	<0.0050	0.022	0.054
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	0.23	<b>0.75</b>	0.012	0.019	<b>1.4</b>	<b>1</b>
Methylnaphthalene, 1-	µg/g	0.05	0.59	<0.050	<0.0050	<0.0050	0.0056	<0.050
Methylnaphthalene, 2-	µg/g	0.05	0.59	<0.050	<0.0050	<0.0050	0.006	<0.050
Methylnaphthalene 2-(1-)	µg/g	0.05	0.59	<0.071	<0.0071	<0.0071	0.012	<0.071
Naphthalene	µg/g	0.05	0.09	<0.050	<0.0050	<0.0050	0.011	<0.050
Phenanthrene	µg/g	0.05	0.69	0.44	0.0075	0.018	0.25	0.63
Pyrene	µg/g	0.05	1	<b>1.4</b>	0.023	0.035	<b>1.7</b>	<b>1.9</b>

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value



**Table 3 - Summary of Soil Quality: Metals**

Sample Location	Units	RDL	Table 1	BH101	BH102	BH201	BH202	BH301	BH302
Sample ID				BH101-22_0.0-0.61	BH102-22_0.0-0.61	BH201_1.52-2.29	BH202_0.22-0.61	BH 301_0.1-1.52	BH 302_0.1-1.52
Sample Date (dd-mmm-yy)				04-Apr-22	04-Apr-22	04-Apr-22	04-Apr-22	16-Jun-22	16-Jun-22
Sample Depth (mbgs)				0.00 - 0.61	0.00 - 0.61	1.52 - 2.29	0.22 - 0.61	0.10 - 1.52	0.10 - 1.52
pH @25°C	N/A	-	5 – 9 (surficial soil)	7.7	7.54	7.98	<b>10.5</b>	7.53	7.62
Conductivity @25°C	mS/cm	0.001	0.57	0.144	0.175	0.181	0.298	0.14	0.14
Cyanide (Free)	µg/g	0.05	0.051	< 0.05	< 0.05	< 0.05	< 0.05	<0.01	<0.01
Sodium Adsorption Ratio	N/A	NV	2.4	0.047	0.0514	1.49	0.0924	0.25	0.26
Antimony	µg/g	0.5	1.3	< 0.5	< 0.5	< 0.5	< 0.5	<b>1.6</b>	<0.20
Arsenic	µg/g	0.5	18	1.5	1.8	1.4	1.8	1.2	2.3
Barium	µg/g	1	220	42	44	30	48	38	130
Beryllium	µg/g	0.2	2.5	0.2	0.2	0.2	0.2	0.22	0.68
Boron	µg/g	0.5	36	4	5.1	4.7	5.4	<5.0	5.4
Boron (HWS)	µg/g	0.02	NV	0.09	0.13	0.03	0.04	0.33	0.11
Cadmium	µg/g	0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	0.13	0.12
Chromium	µg/g	1	70	9	10	12	11	9.5	22
Chromium (VI)	µg/g	0.2	0.66	< 0.2	< 0.2	< 0.2	< 0.2	<0.18	<0.18
Cobalt	µg/g	1	21	3	3	3	3	2.7	6.4
Copper	µg/g	1	92	6	7	6	9	5.7	8.7
Lead	µg/g	5	120	7	38	5	26	24	7.8
Mercury	µg/g	0.005	0.27	0.025	0.023	0.007	0.016	<0.050	<0.050
Molybdenum	µg/g	1	2	< 1	< 1	< 1	< 1	1	<0.50
Nickel	µg/g	1	82	6	6	7	6	5.1	14
Selenium	µg/g	0.5	1.5	0.5	0.6	0.5	0.6	<0.50	<0.50
Silver	µg/g	0.2	0.5	< 0.2	< 0.2	< 0.2	< 0.2	<0.20	<0.20
Thallium	µg/g	0.1	1	< 0.1	< 0.1	< 0.1	< 0.1	0.054	0.12
Uranium	µg/g	0.1	2.5	0.4	0.4	0.4	0.5	0.36	0.48
Vanadium	µg/g	1	86	18	19	16	18	16	40
Zinc	µg/g	3	290	27	49	30	38	32	40

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value

"-" not analyzed



**Table 3 - Summary of Soil Quality: Metals**

Sample Location	Units	RDL	Table 1	BH303	BH304	BH305
Sample ID				BH 303_0.1-1.52	BH 304_0.127-1.52	BH 305_0.30-0.61
Sample Date (dd-mmm-yy)				16-Jun-22	16-Jun-22	16-Jun-22
Sample Depth (mbgs)				0.10 - 1.52	0.127 - 1.52	0.30 - 0.61
pH @25°C	N/A	-	5 – 9 (surficial soil)	7.68	7.84	7.39
Conductivity @25°C	mS/cm	0.001	0.57	0.15	0.094	0.15
Cyanide (Free)	µg/g	0.05	0.051	<0.01	<0.01	<0.01
Sodium Adsorption Ratio	N/A	NV	2.4	0.27	0.33	0.26
Antimony	µg/g	0.5	1.3	<0.20	<0.20	<0.20
Arsenic	µg/g	0.5	18	1.3	<1.0	1.5
Barium	µg/g	1	220	28	14	29
Beryllium	µg/g	0.2	2.5	0.21	<0.20	0.2
Boron	µg/g	0.5	36	<5.0	<5.0	<5.0
Boron (HWS)	µg/g	0.02	NV	0.1	0.055	0.12
Cadmium	µg/g	0.5	1.2	<0.10	<0.10	<0.10
Chromium	µg/g	1	70	7.7	5.5	8.5
Chromium (VI)	µg/g	0.2	0.66	<0.18	<0.18	<0.18
Cobalt	µg/g	1	21	2.6	2.1	2.8
Copper	µg/g	1	92	5.5	3.2	5.8
Lead	µg/g	5	120	14	3.2	20
Mercury	µg/g	0.005	0.27	<0.050	<0.050	<0.050
Molybdenum	µg/g	1	2	<0.50	<0.50	<0.50
Nickel	µg/g	1	82	5	3.1	5.7
Selenium	µg/g	0.5	1.5	<0.50	<0.50	<0.50
Silver	µg/g	0.2	0.5	<0.20	<0.20	<0.20
Thallium	µg/g	0.1	1	<0.050	<0.050	0.058
Uranium	µg/g	0.1	2.5	0.33	0.32	0.35
Vanadium	µg/g	1	86	16	12	18
Zinc	µg/g	3	290	38	15	42

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - All Types

Bold and shaded grey - value exceeds Table 1

Bold and underline - RDL exceeds standard

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value

"-" not analyzed



Table 4 - Summary of Water Quality: VOCs & PHCs

Sample Location	Note	Units	RDL	Table 1 Standards	BH101	BH102	BH202	BH302
Sample ID					BH101	BH102	BH202	BH302
Sample Date (dd-mmm-yy)					06-Apr-22	06-Apr-22	06-Apr-22	21-Jun-22
Acetone		µg/L	30	2700	< 30	< 30	< 30	<10
Benzene		µg/L	0.5	0.5	< 0.5	0.7	< 0.5	<0.17
Bromodichloromethane		µg/L	2	2	< 2	< 2	< 2	<0.50
Bromoform		µg/L	5	5	< 5	< 5	< 5	<1.0
Bromomethane		µg/L	0.5	0.89	< 0.5	< 0.5	< 0.5	<0.50
Carbon Tetrachloride		µg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	<0.20
Monochlorobenzene (Chlorobenzene)		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Chloroform		µg/L	1	2	< 1	< 1	< 1	<0.20
Dibromochloromethane		µg/L	2	2	< 2	< 2	< 2	<0.50
Dichlorobenzene,1,2-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Dichlorobenzene,1,3-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Dichlorobenzene,1,4-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Dichlorodifluoromethane		µg/L	2	590	< 2	< 2	< 2	<1.0
Dichloroethane,1,1-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Dichloroethane,1,2-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Dichloroethylene,1,1-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Dichloroethene, cis-1,2-		µg/L	0.5	1.6	< 0.5	< 0.5	< 0.5	<0.50
Dichloroethene, trans-1,2-		µg/L	0.5	1.6	< 0.5	< 0.5	< 0.5	<0.50
Dichloropropane,1,2-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Dichloropropene, cis-1,3-	5	µg/L	0.5	NV	< 0.5	< 0.5	< 0.5	<0.30
Dichloropropene, trans-1,3-	5	µg/L	0.5	NV	< 0.5	< 0.5	< 0.5	<0.40
Dichloropropene 1,3- cis+trans	5	µg/L	0.5	NV	< 0.5	< 0.5	< 0.5	<0.50
Ethylbenzene		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Dibromoethane,1,2- (Ethylene Dibromide)		µg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	<0.20
Hexane		µg/L	5	5	< 5	< 5	< 5	<1.0
Methyl Ethyl Ketone		µg/L	20	400	< 20	< 20	< 20	<10
Methyl Isobutyl Ketone		µg/L	20	640	< 20	< 20	< 20	<5.0
Methyl-t-butyl Ether		µg/L	2	15	< 2	< 2	< 2	<0.50
Dichloromethane (Methylene Chloride)		µg/L	5	5	< 5	< 5	< 5	<2.0
Styrene		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Tetrachloroethane,1,1,1,2-		µg/L	0.5	1.1	< 0.5	< 0.5	< 0.5	<0.50
Tetrachloroethane,1,1,2,2-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Tetrachloroethylene		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Toluene		µg/L	0.5	0.8	< 0.5	<b>1</b>	<b>0.9</b>	<0.20
Trichloroethane,1,1,1-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Trichloroethane,1,1,2-		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.50
Trichloroethylene		µg/L	0.5	0.5	< 0.5	< 0.5	< 0.5	<0.20
Trichlorofluoromethane		µg/L	5	150	< 5	< 5	< 5	<0.50
Vinyl Chloride		µg/L	0.2	0.5	< 0.2	< 0.2	< 0.2	<0.20
Xylene, m,p-	4	µg/L	1	NV	< 1.0	< 1.0	< 1.0	<0.20
Xylene, o-	4	µg/L	0.5	NV	< 0.5	< 0.5	< 0.5	<0.20
Xylene, m,p,o-	4	µg/L	1.1	72	< 1.1	< 1.1	< 1.1	<0.20
PHC F1 (C6-C10)	1	µg/L	25	420	< 25	< 25	< 25	<25
PHC F2 (>C10-C16)	2	µg/L	50	150	< 50	< 50	< 50	<100
PHC F3 (>C16-C34)	3	µg/L	400	500	< 400	< 400	< 400	<200
PHC F4 (>C34-C50)		µg/L	400	500	< 400	< 400	< 400	<200

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value

"-" not analyzed

Bold and shaded - value exceeds standard

Bold and underline - RDL exceeds standard

1 - Standard is applicable to PHC in the F1 range minus BTEX.

2 - Standard is applicable to PHC F2 minus naphthalene. If naphthalene is not analyzed, the standard is applied to F2.

3 - Standard is applicable to PHC F3 minus PAHs (other than naphthalene). If PAHs have not been measured, the standard is applied to F3.

4 - Standard is applicable to total xylenes, and m & p-xylenes and o-xylenes should be summed for comparison.

5 - Standard is applicable to 1,3-Dichloropropene, and the individual isomers (cis + trans) should be added for comparison.



Table 5 - Summary of Water Quality: PAHs

Sample Location	Note	Units	RDL	Table 1 Standards	BH101	BH102		BH102D	BH202		BH302	
Sample ID					BH101	BH102	BH102	BH102D	BH202	BH202	BH302	BH302
Sample Date (dd-mmm-yy)					06-Apr-22	06-Apr-22	31-Oct-22	31-Oct-22	06-Apr-22	31-Oct-22	21-Jun-22	21-Jun-22
Acenaphthene		µg/L	0.05	4.1	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Acenaphthylene		µg/L	0.05	1	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Anthracene		µg/L	0.05	0.1	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Benzo(a)anthracene		µg/L	0.05	0.2	< 0.05	< 0.05	<0.050	<0.050	0.06	<0.050	<0.050	<0.050
Benzo(a)pyrene		µg/L	0.01	0.01	< 0.01	<b>0.018</b>	<0.0090	<0.0090	<b>0.053</b>	<0.0090	<0.0090	<0.0090
Benzo(e)pyrene		µg/L	0.01	NV	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	2	µg/L	0.05	0.1	< 0.05	< 0.05	-	-	0.06	-	-	-
Benzo(b+k)fluoranthene	2	µg/L	0.1	0.1	< 0.1	< 0.1	<0.050	<0.050	< 0.1	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene		µg/L	0.05	0.2	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Benzo(k)fluoranthene		µg/L	0.05	0.1	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Chrysene		µg/L	0.05	0.1	< 0.05	< 0.05	<0.050	<0.050	0.1	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene		µg/L	0.05	0.2	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Fluoranthene		µg/L	0.05	0.4	< 0.05	< 0.05	<0.050	<0.050	0.08	<0.050	<0.050	<0.050
Fluorene		µg/L	0.05	120	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Indeno(1,2,3,-cd)pyrene		µg/L	0.05	0.2	< 0.05	< 0.05	<0.050	<0.050	< 0.05	<0.050	<0.050	<0.050
Methylnaphthalene, 1-	1	µg/L	0.05	2	< 0.05	0.07	<0.050	<0.050	0.06	<0.050	<0.050	<0.050
Methylnaphthalene, 2-	1	µg/L	0.05	2	< 0.05	0.06	<0.050	<0.050	0.08	<0.050	<0.050	<0.050
Methylnaphthalene 2-(1-)	1	µg/L	1	2	< 1	< 1	<0.071	<0.071	< 1	<0.071	<0.071	<0.071
Naphthalene		µg/L	0.05	7	< 0.05	0.09	<0.050	<0.050	0.08	<0.050	<0.050	<0.050
Phenanthrene		µg/L	0.05	0.1	< 0.05	< 0.05	<0.030	<0.030	<b>0.11</b>	<0.030	<0.030	<0.030
Pyrene		µg/L	0.05	0.2	< 0.05	< 0.05	<0.050	<0.050	0.12	<0.050	<0.050	<0.050
Perylene		µg/L	0.05	NV	-	-	<0.050	<0.050	-	<0.050	<0.050	<0.050

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value

"-" not analyzed

Bold and shaded - value exceeds standard

Bold and underline - RDL exceeds standard

1 - Standard is applicable to 1-methylnaphthalene and 2- methylnaphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

2 - Standard is for benzo(b)fluoranthene; however, the laboratory can not distinguish between benzo(b)fluoranthene and benzo(k)fluoranthene.



**Table 6 - Summary of Water Quality: Metals**

Sample Location	Note	Units	RDL	Table 1 Standards	BH101	BH102	BH202	BH302
Sample ID					BH101	BH102	BH202	BH302
Sample Date (dd-mmm-yy)					06-Apr-22	06-Apr-22	06-Apr-22	21-Jun-22
Antimony		µg/L	0.1	1.5	< 0.2	< 0.1	< 0.5	<0.50
Arsenic		µg/L	0.1	13	0.5	2.7	< 0.5	<1.0
Barium		µg/L	1	610	103	207	346	260
Beryllium		µg/L	0.1	0.5	< 0.2	< 0.1	< 0.5	<0.40
Boron		µg/L	5	1700	78	51	47	50
Cadmium		µg/L	0.015	0.5	< 0.028	< 0.015	< 0.070	<0.090
Chromium		µg/L	2	11	< 2	< 2	< 2	<5.0
Cobalt		µg/L	0.1	3.8	0.8	0.3	1	<0.50
Copper		µg/L	2	5	< 2	< 2	< 2	1
Lead		µg/L	0.02	1.9	0.08	0.09	0.13	<0.50
Molybdenum		µg/L	0.1	23	0.4	1.2	2.7	0.61
Nickel		µg/L	0.2	14	2	2.6	3	1.7
Selenium		µg/L	1	5	< 2	< 1	< 5	<2.0
Silver		µg/L	0.1	0.3	< 0.1	< 0.1	< 0.1	<0.090
Sodium		µg/L	0.05	490000	-	-	-	200000
Thallium		µg/L	0.05	0.5	< 0.1	< 0.05	< 0.3	<0.050
Uranium		µg/L	0.05	8.9	0.24	0.55	0.41	0.37
Vanadium		µg/L	0.1	3.9	0.7	0.4	< 0.5	<0.50
Zinc		µg/L	5	160	5	< 5	< 5	<5.0

Notes:

Table 1 Standards - Full Depth Background Site Condition Standards - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

N/A - not applicable

NC - The duplicate RPD was not calculated. One or both samples < 5x RDL.

NV - no value

"-" not analyzed

Bold and shaded - value exceeds standard

Bold and underline - RDL exceeds standard

---

## **Appendix A**

### **Borehole Logs**

---





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**Client:** Town of Georgina

**Contractor:** Strata Drilling Group

**Location:** 219 Pefferlaw Rd., Pefferlaw, ON

**Project Name:** Supplementary Phase II ESA

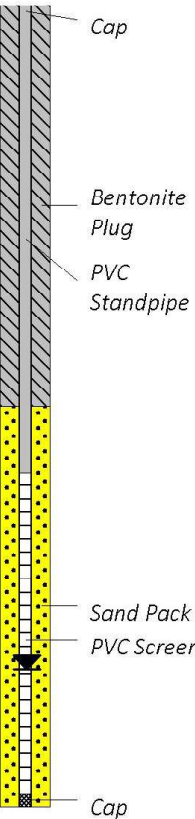
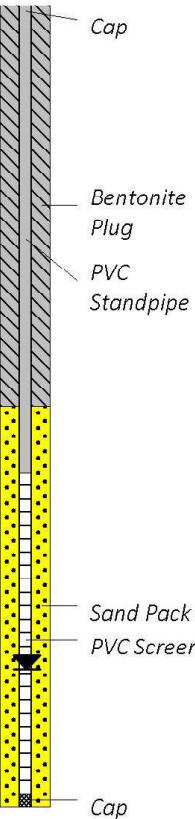
**Method:** Dual Tube

**UTM:** 17T 643731 m E, 4908366 m N

**Project No.:** 14324-004

**Date Completed:** June 16, 2022

**Elevation:** 101.45 masl

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
101		TOPSOIL: Dark brown topsoil, some organics, some rock, moist, no odour, no staining								Soil Analysis: PAHs, Metals
		FILL: Brown silty sand, moist, no odour, no staining								
		-1/2 inch of crushed quartz		1	55	DT	< 1	< 1		
		-some gravel		2		DT	< 1	< 1		
		Gravel and Sand: Brown to grey sand and gravel, moist, PHC odour, no staining		3	60	DT	< 1	< 1		
										Groundwater levels measured on June 21, 2022 as 3.03 mbgs.
				4	60	DT	25	< 1		
				5		DT	25	< 1		
		-saturated								
		Borehole terminated in sand and gravel at 3.7 mbgs.								
										Soil Analysis: VOCs, PHCs, PAHs



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Oshawa  
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Client: Town of Georgina

Contractor: Strata Drilling Group

Location: 219 Pefferlaw Rd., Pefferlaw, ON

Project Name: Supplementary Phase II ESA

Method: Dual Tube

UTM: 17T 643732 m E, 4908350 m N

Project No.: 14324-004

Date Completed: June 16, 2022

Elevation: 101.17 masl

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
101			TOPSOIL: Dark brwon topsoil, some organics, moist, no odour, no staining	1	80	DT	< 1	< 1		Soil Analysis: PAHs, Metals
	1		FILL: Brown Silty sand, trace clay, moist, no odour, no staining	2		DT	< 1	< 1		
100			Gravel and Sand: Grey to brown sand and gravel, trace silt, moist, no odour, no staining	3	65	DT	< 1	< 1		
	2			4		DT	< 1	< 1		
99				5	65	DT	320	< 1		Soil Analysis: VOCs, PHCs, PAHs
	3			6		DT	< 1	2		
98			-some gravel							
	4		Borehole terminated in sand and gravel at 3.7 mbgs (refusal).							
97										
	5									
96										
	6									
95										



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Client: Town of Georgina

Contractor: Strata Drilling Group

Location: 219 Pefferlaw Rd., Pefferlaw, ON

Project Name: Supplementary Phase II ESA

Method: Dual Tube

UTM: 17 T 643779 m E, 4908348 m N

Project No.: 14324-004

Date Completed: June 16, 2022

Elevation: 101.53 masl

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
101	1		TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining	1	55	DT	< 1	< 1		Soil Analysis: PAHs, Metals
			Fill: Brown sand, some gravel, moist, no odour, no staining							
100	2		Clay and Silt: Grey to brown silty clay, moist, no odour, no staining	2	65	DT	5	< 1		Soil Analysis: VOCs, PHCs, PAHs
99	3		-wet	3	100	DT	155	< 1		
98	4		-grey, saturated	4	100	DT	5	< 1		
97	5		Borehole terminated in silty clay at 4.3 mbgs (refusal).	5						
96	6									
95										



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## Log of Borehole:

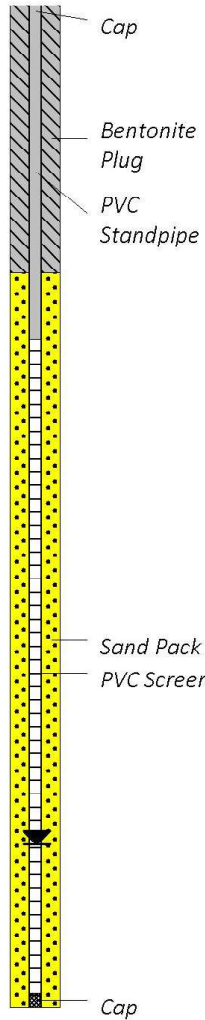
BH304

Page 1 of 1

**Client:** Town of Georgina  
**Contractor:** Strata Drilling Group  
**Location:** 219 Pefferlaw Rd., Pefferlaw, ON

**Project Name:** Supplementary Phase II ESA  
**Method:** Dual Tube  
**UTM:** 17T 643786 m E, 4908332 m N

**Project No.:** 14324-004  
**Date Completed:** June 16, 2022  
**Elevation:** 102.90 masl

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
102 101 100 99 98 97	1	TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining		1	35	DT	< 1	< 1		Soil Analysis: PAHs, Metals
	2	Fill: Brown sand, some silt, moist, no odour, no staining		2		DT	3550	1		
	3	Clayey Silt: Grey silty clay, wet, PHC odour, no staining		3	65	DT	< 1	< 1		Soil Analysis: VOCs, PHCs, PAHs
	4	-brown to grey		4	70	DT	10	< 1		
	5	-saturated		5	70	DT	290	1		Groundwater levels measured on June 21, 2022 at 3.83 mbgs.
	6	-grey								
			Borehole terminated in silty clay at 5.8 mbgs (refusal).							

Logged By: L.Wintemute

Input By: L.Wintemute



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**Client:** Town of Georgina

**Contractor:** Strata Drilling Group

**Location:** 219 Pepperlaw Rd., Pepperlaw, ON

**Project Name:** Supplementary Phase II ESA

**Method:** Dual Tube

**UTM:** 17T 643774 m E, 4908317 m N

**Project No.:** 14324-004

**Date Completed:** June 16, 2022

**Elevation:** 101.12 masl

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
101			TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no stainin							
			Fill: Grey gravel, trace clay, trace silt, saturated, no staining, no odour	1	20	DT	<1	<1		Soil Analysis: PAHs, Metals
100	1									
			Sand and Silt: Brown to grey sand and silt, trace gravel, wet, no odour, no staining	2	20	DT	<1	<1		Soil Analysis: VOCs, PHCs, PAHs
99	2									
			Clay and Silt: Brown to grey clayey silt, wet, no odour, no staining							
98	3		-half inch section of splintered wood, black and green staining							
			Gravel: Grey gravel, trace clay, trace silt, saturated, no staining, no odour	3	50	DT	<1	1		
97	4									
			Borehole terminated in gravel at 4.3 mbgs (refusal).							
96	5									
95	6									





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**Client:** The Town of Georgina

**Contractor:** Strata Drilling Group

**Location:** 219 Pefferlaw Rd., Pefferlaw, ON

**Project Name:** Supplementary Phase II ESA

**Method:** Dual Tube/Core

**UTM:** 17T 643777 m E, 4908378 m N

**Project No.:** 14324-004

**Date Completed:** 2022-10-28

**Elevation:** 102.62 masl

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
102 1 101 2 100 3 99 4 98 5 97 6 96 7 95 8 94 9 93 10 92 11			TOPSOIL: Sand and silt, organics, compact	1	20	SS	< 1	< 1	<div>Flushmount</div> <div>Cap</div> <div></div> <div>Bentonite Plug</div> <div>PVC Standpipe</div> <div></div> <div>Sand Pack</div> <div>PVC Screen</div> <div>Cap</div>	Groundwater Analysis: PAHs
			Fill: Brown sand, some gravel, dry, compact	2	10		< 1	< 1		
			Grey to brown silt and sand, some gravel, trace clay, dry to moist, loose	3	70		< 1	< 1		
			SILT AND SAND: Grey silt and sand, some clay, trace gravel, moist, compact	4	70		< 1	< 1		
				5	85		< 1	< 1		
			CLAYEY SILT: Grey clayey silt, some sand, trace gravel, moist to wet, dense	6	85	Core	< 1	< 1		Groundwater levels measured on October 31, 2022 at 5.24 mb top
			-saturated, very dense	7	20		< 1	< 1		
			Limestone: Black laminated limestone	8			-	-		
				9	100		-	-		
				10			-	-		



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Client: The Town of Georgina

Contractor: Strata Drilling Group

Location: 219 Pepperlaw Rd., Pepperlaw, ON

Project Name: Supplementary Phase II ESA



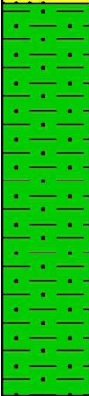

Method: Dual Tube

UTM: 17T 643777 m E, 4908378 m N

Project No.: 14324-004

Date Completed: 2022-10-28

Elevation:

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
0			TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining	1			< 1	< 1		Soil Analysis: PAHs
			Fill: Brown silty sand with some asphalt, moist, no odour, no staining	2	30	DT	30	< 1		
-1	1		Silt: Brown-grey clayey silt, moist, no odour, no staining	3			25	< 1		
			Borehole terminated in clayey silt at 1.52 mbgs.							
-2	2									



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Contractor: Strata Drilling Group

Location: 219 Pepperlaw Rd., Pepperlaw, ON

Project Name: Supplementary Phase II ESA



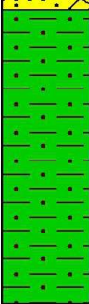
Method: Dual Tube

UTM: 17T 643784 m E, 4908367 m N

Project No.: 14324-004

Date Completed: 2022-10-28

Elevation:

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
0			TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining	1			< 1	< 1		Soil Analysis: PAHs
			FILL: Black sandy silt with trace gravel, moist, no odour, no staining	2	65	DT	20	< 1		
-1	1		Silt: Grey-brown clayey silt, trace gravel, moist, no odour, no staining	3			10	< 1		
			Borehole terminated in clayey silt at 1.52 mbgs.							
-2	2									





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Log of Borehole: BH403

**Client:** The Town of Georgina

**Contractor:** Strata Drilling Group

**Location:** 219 Pepperlaw Rd., Pepperlaw, ON

**Project Name:** Supplementary Phase II ESA


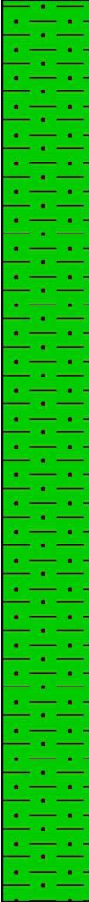
**Method:** Dual Tube

**UTM:** 17 T 643781 m E, 4908340 m N

**Project No.:** 14324-004

**Date Completed:** 2022-10-28

**Elevation:**

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
0			TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining	1			< 1	< 1		Soil Analysis: PAHs
			Silt: Brown clayey silt, moist, no odour, no staining	2			10	< 1		
			Becomes wet	3			5	< 1		
			Borehole terminated in clayey silt at 1.52 mbgs.							
-1	1				60	DT				
-2	2									



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Client: The Town of Georgina

Contractor: Strata Drilling Group

Location: 219 Pefferlaw Rd., Pefferlaw, ON

Project Name: Supplementary Phase II ESA


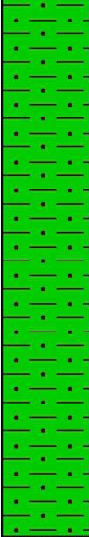
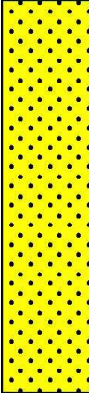
Method: Dual Tube

UTM: 17T 643782 m E, 4908306 m N

Project No.: 14324-004

Date Completed: 2022-10-28

Elevation:

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
0			TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining	1			< 1	< 1		Soil Analysis: PAHs
			Silt: Brown crushed gravel and sand, moist, no odour, no staining	2	50		15	< 1		
-1	1		Sand: Brown sand, moist, no odour, no staining	3			20	< 1		
			Borehole terminated in clayey silt at 1.52 mbgs.							
-2	2									



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Client: The Town of Georgina

Contractor: Strata Drilling Group

Location: 219 Pepperlaw Rd., Pepperlaw, ON

Project Name: Supplementary Phase II ESA



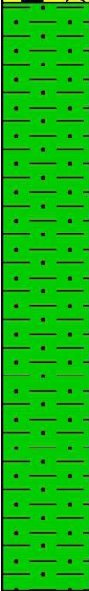

Method: Dual Tube

UTM: 17T 643779 m E, 4908291 m N

Project No.: 14324-004

Date Completed: 2022-10-28

Elevation:

SUBSURFACE PROFILE				SAMPLING INFO					Well Installation	Remarks
Elevation (m)	Depth (m)	Lithology	Description	Number	% Recovery	Type	CSV (ppm)	OV (ppm)		
0			TOPSOIL: Dark brown topsoil, some organics, moist, no odour, no staining	1			<1	<1		Soil Analysis: PAHs
			Fill: Brown silty sand with some asphalt, moist, no odour, no staining	2			15	<1		
			Silt: Brown-grey clayey silt, moist, no odour, no staining		40	DT				
			Borehole terminated in clayey silt at 1.52 mbgs.	3			35	<1		
-1	1									
-2	2									

---

## **Appendix B**

### **Laboratory Certificates of Analysis**

---



Your Project #: 14324-004  
Your C.O.C. #: 882894-01-01, 882894-02-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/06/27**  
Report #: R7188486  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2G9534**

**Received: 2022/06/20, 09:42**

Sample Matrix: Soil  
# Samples Received: 14

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Methylnaphthalene Sum	13	N/A	2022/06/27	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	5	2022/06/23	2022/06/24	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	5	N/A	2022/06/23		EPA 8260C m
Free (WAD) Cyanide	5	2022/06/22	2022/06/23	CAM SOP-00457	OMOE E3015 m
Conductivity	5	2022/06/22	2022/06/22	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	5	2022/06/22	2022/06/24	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	5	2022/06/22	2022/06/23	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	1	2022/06/24	2022/06/24	CAM SOP-00316	CCME PHC-CWS m
Acid Extractable Metals by ICPMS	5	2022/06/22	2022/06/24	CAM SOP-00447	EPA 6020B m
Moisture	14	N/A	2022/06/21	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	13	2022/06/23	2022/06/25	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	5	2022/06/23	2022/06/23	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	5	N/A	2022/06/27	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	5	N/A	2022/06/22	CAM SOP-00230	EPA 8260C 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, MELCC, EPA, APHA.

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



Your Project #: 14324-004  
Your C.O.C. #: 882894-01-01, 882894-02-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/06/27**  
Report #: R7188486  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2G9534**

**Received: 2022/06/20, 09:42**

dilution methods.

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

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

(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**

Gemarie Balatico  
Project Manager  
27 Jun 2022 17:35:11

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Gemarie Balatico, Project Manager

Email: Gemarie.Balatico@bureauveritas.com

Phone# (905)817-5787

=====

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 Signature Page.



BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

### O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SYH051	SYH052			SYH052	
Sampling Date			2022/06/16 12:44	2022/06/16 13:50			2022/06/16 13:50	
COC Number			882894-01-01	882894-01-01			882894-01-01	
	UNITS	Criteria	BH 301_0.1-1.52	BH 302_0.1-1.52	RDL	QC Batch	BH 302_0.1-1.52 Lab-Dup	QC Batch

<b>Calculated Parameters</b>								
Sodium Adsorption Ratio	N/A	2.4	0.25 (1)	0.26 (1)		8064161		
<b>Inorganics</b>								
Conductivity	mS/cm	0.57	0.14	0.14	0.002	8068212		
Available (CaCl <sub>2</sub> ) pH	pH	-	7.53	7.62		8070000	7.62	8070000
WAD Cyanide (Free)	ug/g	0.051	<0.01	<0.01	0.01	8067070		
Chromium (VI)	ug/g	0.66	<0.18	<0.18	0.18	8067562		
<b>Metals</b>								
Hot Water Ext. Boron (B)	ug/g	-	0.33	0.11	0.050	8069865		
Acid Extractable Antimony (Sb)	ug/g	1.3	1.6	<0.20	0.20	8067842		
Acid Extractable Arsenic (As)	ug/g	18	1.2	2.3	1.0	8067842		
Acid Extractable Barium (Ba)	ug/g	220	38	130	0.50	8067842		
Acid Extractable Beryllium (Be)	ug/g	2.5	0.22	0.68	0.20	8067842		
Acid Extractable Boron (B)	ug/g	36	<5.0	5.4	5.0	8067842		
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.13	0.12	0.10	8067842		
Acid Extractable Chromium (Cr)	ug/g	70	9.5	22	1.0	8067842		
Acid Extractable Cobalt (Co)	ug/g	21	2.7	6.4	0.10	8067842		
Acid Extractable Copper (Cu)	ug/g	92	5.7	8.7	0.50	8067842		
Acid Extractable Lead (Pb)	ug/g	120	24	7.8	1.0	8067842		
Acid Extractable Molybdenum (Mo)	ug/g	2	1.0	<0.50	0.50	8067842		
Acid Extractable Nickel (Ni)	ug/g	82	5.1	14	0.50	8067842		
Acid Extractable Selenium (Se)	ug/g	1.5	<0.50	<0.50	0.50	8067842		
Acid Extractable Silver (Ag)	ug/g	0.5	<0.20	<0.20	0.20	8067842		
Acid Extractable Thallium (Tl)	ug/g	1	0.054	0.12	0.050	8067842		
Acid Extractable Uranium (U)	ug/g	2.5	0.36	0.48	0.050	8067842		
Acid Extractable Vanadium (V)	ug/g	86	16	40	5.0	8067842		
Acid Extractable Zinc (Zn)	ug/g	290	32	40	5.0	8067842		
Acid Extractable Mercury (Hg)	ug/g	0.27	<0.050	<0.050	0.050	8067842		

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

(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

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

**O.REG 153 METALS & INORGANICS PKG (SOIL)**

Bureau Veritas ID			SYH090	SYH091			SYH094		
Sampling Date			2022/06/16 11:44	2022/06/16 10:15					
COC Number			882894-02-01	882894-02-01			882894-02-01		
	UNITS	Criteria	BH 303_0.1-1.52	BH 304_0.127-1.52	RDL	QC Batch	BH 305_0.30-0.61	RDL	QC Batch

Calculated Parameters									
Sodium Adsorption Ratio	N/A	2.4	0.27 (1)	0.33 (1)		8064161	0.26 (1)		8064161
Inorganics									
Conductivity	mS/cm	0.57	0.15	0.094	0.002	8068212	0.15	0.002	8068212
Moisture	%	-					14	1.0	8065407
Available (CaCl <sub>2</sub> ) pH	pH	-	7.68	7.84		8070000	7.39		8070000
WAD Cyanide (Free)	ug/g	0.051	<0.01	<0.01	0.01	8067070	<0.01	0.01	8067070
Chromium (VI)	ug/g	0.66	<0.18	<0.18	0.18	8067562	<0.18	0.18	8067562
Metals									
Hot Water Ext. Boron (B)	ug/g	-	0.10	0.055	0.050	8069865	0.12	0.050	8069865
Acid Extractable Antimony (Sb)	ug/g	1.3	<0.20	<0.20	0.20	8067842	<0.20	0.20	8067842
Acid Extractable Arsenic (As)	ug/g	18	1.3	<1.0	1.0	8067842	1.5	1.0	8067842
Acid Extractable Barium (Ba)	ug/g	220	28	14	0.50	8067842	29	0.50	8067842
Acid Extractable Beryllium (Be)	ug/g	2.5	0.21	<0.20	0.20	8067842	0.20	0.20	8067842
Acid Extractable Boron (B)	ug/g	36	<5.0	<5.0	5.0	8067842	<5.0	5.0	8067842
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	<0.10	0.10	8067842	<0.10	0.10	8067842
Acid Extractable Chromium (Cr)	ug/g	70	7.7	5.5	1.0	8067842	8.5	1.0	8067842
Acid Extractable Cobalt (Co)	ug/g	21	2.6	2.1	0.10	8067842	2.8	0.10	8067842
Acid Extractable Copper (Cu)	ug/g	92	5.5	3.2	0.50	8067842	5.8	0.50	8067842
Acid Extractable Lead (Pb)	ug/g	120	14	3.2	1.0	8067842	20	1.0	8067842
Acid Extractable Molybdenum (Mo)	ug/g	2	<0.50	<0.50	0.50	8067842	<0.50	0.50	8067842
Acid Extractable Nickel (Ni)	ug/g	82	5.0	3.1	0.50	8067842	5.7	0.50	8067842
Acid Extractable Selenium (Se)	ug/g	1.5	<0.50	<0.50	0.50	8067842	<0.50	0.50	8067842
Acid Extractable Silver (Ag)	ug/g	0.5	<0.20	<0.20	0.20	8067842	<0.20	0.20	8067842
Acid Extractable Thallium (Tl)	ug/g	1	<0.050	<0.050	0.050	8067842	0.058	0.050	8067842
Acid Extractable Uranium (U)	ug/g	2.5	0.33	0.32	0.050	8067842	0.35	0.050	8067842
Acid Extractable Vanadium (V)	ug/g	86	16	12	5.0	8067842	18	5.0	8067842
Acid Extractable Zinc (Zn)	ug/g	290	38	15	5.0	8067842	42	5.0	8067842
Acid Extractable Mercury (Hg)	ug/g	0.27	<0.050	<0.050	0.050	8067842	<0.050	0.050	8067842

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

(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

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

**O.REG 153 PAHS (SOIL)**

Bureau Veritas ID			SYH043	SYH044	SYH045	SYH046		
Sampling Date			2022/06/16 12:44	2022/06/16 13:50	2022/06/16 11:44	2022/06/16 10:15		
COC Number			882894-01-01	882894-01-01	882894-01-01	882894-01-01		
	UNITS	Criteria	BH 301_3.50-3.65	BH 302_3.05-3.35	BH 303_3.05-3.50	BH 304_1.52-2.29	RDL	QC Batch

Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/g	<b>0.59</b>	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	8064160
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	<b>0.072</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Acenaphthylene	ug/g	<b>0.093</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Anthracene	ug/g	<b>0.16</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Benzo(a)anthracene	ug/g	<b>0.36</b>	<0.0050	<0.0050	<0.0050	0.022	0.0050	8071108
Benzo(a)pyrene	ug/g	<b>0.3</b>	<0.0050	<0.0050	<0.0050	0.026	0.0050	8071108
Benzo(b/j)fluoranthene	ug/g	<b>0.47</b>	<0.0050	<0.0050	<0.0050	0.034	0.0050	8071108
Benzo(g,h,i)perylene	ug/g	<b>0.68</b>	<0.0050	<0.0050	<0.0050	0.017	0.0050	8071108
Benzo(k)fluoranthene	ug/g	<b>0.48</b>	<0.0050	<0.0050	<0.0050	0.013	0.0050	8071108
Chrysene	ug/g	<b>2.8</b>	<0.0050	<0.0050	<0.0050	0.018	0.0050	8071108
Dibenzo(a,h)anthracene	ug/g	<b>0.1</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Fluoranthene	ug/g	<b>0.56</b>	<0.0050	<0.0050	<0.0050	0.039	0.0050	8071108
Fluorene	ug/g	<b>0.12</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Indeno(1,2,3-cd)pyrene	ug/g	<b>0.23</b>	<0.0050	<0.0050	<0.0050	0.018	0.0050	8071108
1-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
2-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Naphthalene	ug/g	<b>0.09</b>	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8071108
Phenanthrene	ug/g	<b>0.69</b>	<0.0050	<0.0050	<0.0050	0.0083	0.0050	8071108
Pyrene	ug/g	<b>1</b>	<0.0050	<0.0050	<0.0050	0.034	0.0050	8071108
Surrogate Recovery (%)								
D10-Anthracene	%	-	98	95	99	95		8071108
D14-Terphenyl (FS)	%	-	88	87	90	89		8071108
D8-Acenaphthylene	%	-	79	85	87	82		8071108

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use



BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

### O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SYH047			SYH048	SYH049		
Sampling Date			2022/06/16 11:20			2022/06/16 15:30	2022/06/16 14:52		
COC Number			882894-01-01			882894-01-01	882894-01-01		
	UNITS	Criteria	BH 305_1.52-3.05	RDL	QC Batch	BH 102_0.30-0.61	BH 201_0.30-0.53	RDL	QC Batch

<b>Inorganics</b>									
Moisture	%	-				8.0	9.8	1.0	8065165
<b>Calculated Parameters</b>									
Methylnaphthalene, 2-(1-)	ug/g	<b>0.59</b>	<0.0071	0.0071	8063037	<0.0071	<0.0071	0.0071	8064160
<b>Polyaromatic Hydrocarbons</b>									
Acenaphthene	ug/g	<b>0.072</b>	<0.0050	0.0050	8071108	<0.0050	0.0074	0.0050	8071108
Acenaphthylene	ug/g	<b>0.093</b>	0.033	0.0050	8071108	<0.0050	0.083	0.0050	8071108
Anthracene	ug/g	<b>0.16</b>	0.017	0.0050	8071108	<0.0050	0.055	0.0050	8071108
Benzo(a)anthracene	ug/g	<b>0.36</b>	0.12	0.0050	8071108	0.013	<b>0.38</b>	0.0050	8071108
Benzo(a)pyrene	ug/g	<b>0.3</b>	0.16	0.0050	8071108	0.015	<b>0.43</b>	0.0050	8071108
Benzo(b/j)fluoranthene	ug/g	<b>0.47</b>	0.20	0.0050	8071108	0.021	<b>0.59</b>	0.0050	8071108
Benzo(g,h,i)perylene	ug/g	<b>0.68</b>	0.11	0.0050	8071108	0.012	0.30	0.0050	8071108
Benzo(k)fluoranthene	ug/g	<b>0.48</b>	0.075	0.0050	8071108	0.0073	0.21	0.0050	8071108
Chrysene	ug/g	<b>2.8</b>	0.095	0.0050	8071108	0.011	0.34	0.0050	8071108
Dibenzo(a,h)anthracene	ug/g	<b>0.1</b>	0.026	0.0050	8071108	<0.0050	0.075	0.0050	8071108
Fluoranthene	ug/g	<b>0.56</b>	0.20	0.0050	8071108	0.023	<b>0.75</b>	0.0050	8071108
Fluorene	ug/g	<b>0.12</b>	<0.0050	0.0050	8071108	<0.0050	0.016	0.0050	8071108
Indeno(1,2,3-cd)pyrene	ug/g	<b>0.23</b>	0.12	0.0050	8071108	0.012	<b>0.33</b>	0.0050	8071108
1-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	0.0050	8071108	<0.0050	<0.0050	0.0050	8071108
2-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	0.0050	8071108	<0.0050	<0.0050	0.0050	8071108
Naphthalene	ug/g	<b>0.09</b>	<0.0050	0.0050	8071108	<0.0050	0.0071	0.0050	8071108
Phenanthrene	ug/g	<b>0.69</b>	0.051	0.0050	8071108	0.0052	0.22	0.0050	8071108
Pyrene	ug/g	<b>1</b>	0.17	0.0050	8071108	0.023	0.61	0.0050	8071108
<b>Surrogate Recovery (%)</b>									
D10-Anthracene	%	-	94		8071108	102	90		8071108
D14-Terphenyl (FS)	%	-	85		8071108	93	81		8071108
D8-Acenaphthylene	%	-	82		8071108	89	83		8071108

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

**O.REG 153 PAHS (SOIL)**

<b>Bureau Veritas ID</b>			SYH050			SYH050		
<b>Sampling Date</b>			2022/06/16 15:18			2022/06/16 15:18		
<b>COC Number</b>			882894-01-01			882894-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH 202_0.30-0.61</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH 202_0.30-0.61 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>								
Moisture	%	-	12	1.0	8065165			
<b>Calculated Parameters</b>								
Methylnaphthalene, 2-(1-)	ug/g	<b>0.59</b>	<0.0071	0.0071	8064160			
<b>Polyaromatic Hydrocarbons</b>								
Acenaphthene	ug/g	<b>0.072</b>	0.011	0.0050	8071108	0.013	0.0050	8071108
Acenaphthylene	ug/g	<b>0.093</b>	<b>0.26</b>	0.0050	8071108	<b>0.27</b>	0.0050	8071108
Anthracene	ug/g	<b>0.16</b>	0.15	0.0050	8071108	0.15	0.0050	8071108
Benzo(a)anthracene	ug/g	<b>0.36</b>	<b>1.1</b>	0.0050	8071108	<b>0.99</b>	0.0050	8071108
Benzo(a)pyrene	ug/g	<b>0.3</b>	<b>1.3</b>	0.0050	8071108	<b>1.2</b>	0.0050	8071108
Benzo(b,j)fluoranthene	ug/g	<b>0.47</b>	<b>1.6</b>	0.0050	8071108	<b>1.6</b>	0.0050	8071108
Benzo(g,h,i)perylene	ug/g	<b>0.68</b>	<b>0.91</b>	0.0050	8071108	<b>0.88</b>	0.0050	8071108
Benzo(k)fluoranthene	ug/g	<b>0.48</b>	<b>0.60</b>	0.0050	8071108	<b>0.58</b>	0.0050	8071108
Chrysene	ug/g	<b>2.8</b>	0.80	0.0050	8071108	0.75	0.0050	8071108
Dibenzo(a,h)anthracene	ug/g	<b>0.1</b>	<b>0.22</b>	0.0050	8071108	<b>0.22</b>	0.0050	8071108
Fluoranthene	ug/g	<b>0.56</b>	<b>1.8</b>	0.0050	8071108	<b>1.6</b>	0.0050	8071108
Fluorene	ug/g	<b>0.12</b>	0.030	0.0050	8071108	0.030	0.0050	8071108
Indeno(1,2,3-cd)pyrene	ug/g	<b>0.23</b>	<b>1.0</b>	0.0050	8071108	<b>0.96</b>	0.0050	8071108
1-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	0.0050	8071108	<0.0050	0.0050	8071108
2-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	0.0050	8071108	<0.0050	0.0050	8071108
Naphthalene	ug/g	<b>0.09</b>	<0.0050	0.0050	8071108	<0.0050	0.0050	8071108
Phenanthrene	ug/g	<b>0.69</b>	0.40	0.0050	8071108	0.29	0.0050	8071108
Pyrene	ug/g	<b>1</b>	<b>1.4</b>	0.0050	8071108	<b>1.3</b>	0.0050	8071108
<b>Surrogate Recovery (%)</b>								
D10-Anthracene	%	-	90		8071108	90		8071108
D14-Terphenyl (FS)	%	-	80		8071108	82		8071108
D8-Acenaphthylene	%	-	82		8071108	83		8071108

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use



BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

### O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SYH051	SYH052		SYH090		
Sampling Date			2022/06/16 12:44	2022/06/16 13:50		2022/06/16 11:44		
COC Number			882894-01-01	882894-01-01		882894-02-01		
	UNITS	Criteria	BH 301_0.1-1.52	BH 302_0.1-1.52	QC Batch	BH 303_0.1-1.52	RDL	QC Batch
<b>Inorganics</b>								
Moisture	%	-	14	20	8065165	9.1	1.0	8065053
<b>Calculated Parameters</b>								
Methylnaphthalene, 2-(1-)	ug/g	<b>0.59</b>	<0.0071	<0.0071	8063037	<0.0071	0.0071	8064160
<b>Polyaromatic Hydrocarbons</b>								
Acenaphthene	ug/g	<b>0.072</b>	<0.0050	<0.0050	8071108	<0.0050	0.0050	8071108
Acenaphthylene	ug/g	<b>0.093</b>	0.029	<0.0050	8071108	0.0090	0.0050	8071108
Anthracene	ug/g	<b>0.16</b>	0.011	0.0074	8071108	0.0064	0.0050	8071108
Benzo(a)anthracene	ug/g	<b>0.36</b>	0.11	0.015	8071108	0.050	0.0050	8071108
Benzo(a)pyrene	ug/g	<b>0.3</b>	0.14	0.016	8071108	0.058	0.0050	8071108
Benzo(b/j)fluoranthene	ug/g	<b>0.47</b>	0.18	0.021	8071108	0.078	0.0050	8071108
Benzo(g,h,i)perylene	ug/g	<b>0.68</b>	0.088	0.011	8071108	0.039	0.0050	8071108
Benzo(k)fluoranthene	ug/g	<b>0.48</b>	0.063	0.0072	8071108	0.029	0.0050	8071108
Chrysene	ug/g	<b>2.8</b>	0.079	0.013	8071108	0.044	0.0050	8071108
Dibenzo(a,h)anthracene	ug/g	<b>0.1</b>	0.023	<0.0050	8071108	0.0094	0.0050	8071108
Fluoranthene	ug/g	<b>0.56</b>	0.15	0.037	8071108	0.099	0.0050	8071108
Fluorene	ug/g	<b>0.12</b>	<0.0050	<0.0050	8071108	<0.0050	0.0050	8071108
Indeno(1,2,3-cd)pyrene	ug/g	<b>0.23</b>	0.097	0.011	8071108	0.042	0.0050	8071108
1-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	<0.0050	8071108	<0.0050	0.0050	8071108
2-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	<0.0050	8071108	<0.0050	0.0050	8071108
Naphthalene	ug/g	<b>0.09</b>	<0.0050	<0.0050	8071108	<0.0050	0.0050	8071108
Phenanthrene	ug/g	<b>0.69</b>	0.022	0.022	8071108	0.033	0.0050	8071108
Pyrene	ug/g	<b>1</b>	0.12	0.032	8071108	0.079	0.0050	8071108
<b>Surrogate Recovery (%)</b>								
D10-Anthracene	%	-	94	95	8071108	96		8071108
D14-Terphenyl (FS)	%	-	87	86	8071108	87		8071108
D8-Acenaphthylene	%	-	85	83	8071108	85		8071108
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use								



BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

### O.REG 153 PAHS (SOIL)

<b>Bureau Veritas ID</b>			SYH091			SYH091		
<b>Sampling Date</b>			2022/06/16 10:15			2022/06/16 10:15		
<b>COC Number</b>			882894-02-01			882894-02-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH 304_0.127-1.52</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH 304_0.127-1.52 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>								
Moisture	%	-	10	1.0	8065407	10	1.0	8065407
<b>Calculated Parameters</b>								
Methylnaphthalene, 2-(1-)	ug/g	<b>0.59</b>	<0.0071	0.0071	8064160			
<b>Polyaromatic Hydrocarbons</b>								
Acenaphthene	ug/g	<b>0.072</b>	<0.0050	0.0050	8071108			
Acenaphthylene	ug/g	<b>0.093</b>	0.0052	0.0050	8071108			
Anthracene	ug/g	<b>0.16</b>	<0.0050	0.0050	8071108			
Benzo(a)anthracene	ug/g	<b>0.36</b>	0.016	0.0050	8071108			
Benzo(a)pyrene	ug/g	<b>0.3</b>	0.021	0.0050	8071108			
Benzo(b,j)fluoranthene	ug/g	<b>0.47</b>	0.027	0.0050	8071108			
Benzo(g,h,i)perylene	ug/g	<b>0.68</b>	0.015	0.0050	8071108			
Benzo(k)fluoranthene	ug/g	<b>0.48</b>	0.010	0.0050	8071108			
Chrysene	ug/g	<b>2.8</b>	0.013	0.0050	8071108			
Dibenzo(a,h)anthracene	ug/g	<b>0.1</b>	<0.0050	0.0050	8071108			
Fluoranthene	ug/g	<b>0.56</b>	0.027	0.0050	8071108			
Fluorene	ug/g	<b>0.12</b>	<0.0050	0.0050	8071108			
Indeno(1,2,3-cd)pyrene	ug/g	<b>0.23</b>	0.016	0.0050	8071108			
1-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	0.0050	8071108			
2-Methylnaphthalene	ug/g	<b>0.59</b>	<0.0050	0.0050	8071108			
Naphthalene	ug/g	<b>0.09</b>	<0.0050	0.0050	8071108			
Phenanthrene	ug/g	<b>0.69</b>	<0.0050	0.0050	8071108			
Pyrene	ug/g	<b>1</b>	0.024	0.0050	8071108			
<b>Surrogate Recovery (%)</b>								
D10-Anthracene	%	-	95		8071108			
D14-Terphenyl (FS)	%	-	86		8071108			
D8-Acenaphthylene	%	-	84		8071108			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**O.REG 153 PAHS (SOIL)**

Bureau Veritas ID			SYH092		
Sampling Date			2022/06/16 11:20		
COC Number			882894-02-01		
	UNITS	Criteria	BH 305_0.076-1.52	RDL	QC Batch
<b>Inorganics</b>					
Moisture	%	-	11	1.0	8065407
<b>Calculated Parameters</b>					
Methylnaphthalene, 2-(1-)	ug/g	<b>0.59</b>	0.013	0.0071	8064160
<b>Polyaromatic Hydrocarbons</b>					
Acenaphthene	ug/g	<b>0.072</b>	0.016	0.0050	8071108
Acenaphthylene	ug/g	<b>0.093</b>	<b>0.42</b>	0.0050	8071108
Anthracene	ug/g	<b>0.16</b>	<b>0.19</b>	0.0050	8071108
Benzo(a)anthracene	ug/g	<b>0.36</b>	<b>1.5</b>	0.0050	8071108
Benzo(a)pyrene	ug/g	<b>0.3</b>	<b>1.9</b>	0.0050	8071108
Benzo(b/j)fluoranthene	ug/g	<b>0.47</b>	<b>2.5</b>	0.0050	8071108
Benzo(g,h,i)perylene	ug/g	<b>0.68</b>	<b>1.2</b>	0.0050	8071108
Benzo(k)fluoranthene	ug/g	<b>0.48</b>	<b>0.87</b>	0.0050	8071108
Chrysene	ug/g	<b>2.8</b>	1.2	0.0050	8071108
Dibenzo(a,h)anthracene	ug/g	<b>0.1</b>	<b>0.32</b>	0.0050	8071108
Fluoranthene	ug/g	<b>0.56</b>	<b>2.4</b>	0.0050	8071108
Fluorene	ug/g	<b>0.12</b>	0.043	0.0050	8071108
Indeno(1,2,3-cd)pyrene	ug/g	<b>0.23</b>	<b>1.4</b>	0.0050	8071108
1-Methylnaphthalene	ug/g	<b>0.59</b>	0.0067	0.0050	8071108
2-Methylnaphthalene	ug/g	<b>0.59</b>	0.0061	0.0050	8071108
Naphthalene	ug/g	<b>0.09</b>	0.011	0.0050	8071108
Phenanthrene	ug/g	<b>0.69</b>	0.52	0.0050	8071108
Pyrene	ug/g	<b>1</b>	<b>1.9</b>	0.0050	8071108
<b>Surrogate Recovery (%)</b>					
D10-Anthracene	%	-	95		8071108
D14-Terphenyl (FS)	%	-	86		8071108
D8-Acenaphthylene	%	-	90		8071108
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use					



BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

### O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SYH043	SYH044		SYH045		
Sampling Date			2022/06/16 12:44	2022/06/16 13:50		2022/06/16 11:44		
COC Number			882894-01-01	882894-01-01		882894-01-01		
	UNITS	Criteria	BH 301_3.50-3.65	BH 302_3.05-3.35	QC Batch	BH 303_3.05-3.50	RDL	QC Batch

<b>Inorganics</b>								
Moisture	%	-	18	8.0	8065165	9.5	1.0	8065053
<b>Calculated Parameters</b>								
1,3-Dichloropropene (cis+trans)	ug/g	0.05	<0.050	<0.050	8063637	<0.050	0.050	8063637
<b>Volatile Organics</b>								
Acetone (2-Propanone)	ug/g	0.5	<0.49	<0.49	8065909	<0.49	0.49	8065909
Benzene	ug/g	0.02	<0.0060	<0.0060	8065909	<0.0060	0.0060	8065909
Bromodichloromethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Bromoform	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Bromomethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Carbon Tetrachloride	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Chlorobenzene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Chloroform	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Dibromochloromethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,2-Dichlorobenzene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,3-Dichlorobenzene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,4-Dichlorobenzene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Dichlorodifluoromethane (FREON 12)	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,1-Dichloroethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,2-Dichloroethane	ug/g	0.05	<0.049	<0.049	8065909	<0.049	0.049	8065909
1,1-Dichloroethylene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
cis-1,2-Dichloroethylene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
trans-1,2-Dichloroethylene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,2-Dichloropropane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
cis-1,3-Dichloropropene	ug/g	0.05	<0.030	<0.030	8065909	<0.030	0.030	8065909
trans-1,3-Dichloropropene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Ethylbenzene	ug/g	0.05	<0.010	<0.010	8065909	<0.010	0.010	8065909
Ethylene Dibromide	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Hexane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Methylene Chloride(Dichloromethane)	ug/g	0.05	<0.049	<0.049	8065909	<0.049	0.049	8065909
Methyl Ethyl Ketone (2-Butanone)	ug/g	0.5	<0.40	<0.40	8065909	<0.40	0.40	8065909

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use





BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

### O.REG 153 VOCs BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SYH043	SYH044		SYH045		
Sampling Date			2022/06/16 12:44	2022/06/16 13:50		2022/06/16 11:44		
COC Number			882894-01-01	882894-01-01		882894-01-01		
	UNITS	Criteria	BH 301_3.50-3.65	BH 302_3.05-3.35	QC Batch	BH 303_3.05-3.50	RDL	QC Batch
Methyl Isobutyl Ketone	ug/g	0.5	<0.40	<0.40	8065909	<0.40	0.40	8065909
Methyl t-butyl ether (MTBE)	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Styrene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,1,1,2-Tetrachloroethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Tetrachloroethylene	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Toluene	ug/g	0.2	<0.020	<0.020	8065909	<0.020	0.020	8065909
1,1,1-Trichloroethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
1,1,2-Trichloroethane	ug/g	0.05	<0.040	<0.040	8065909	<0.040	0.040	8065909
Trichloroethylene	ug/g	0.05	<0.010	<0.010	8065909	<0.010	0.010	8065909
Trichlorofluoromethane (FREON 11)	ug/g	0.25	<0.040	<0.040	8065909	<0.040	0.040	8065909
Vinyl Chloride	ug/g	0.02	<0.019	<0.019	8065909	<0.019	0.019	8065909
p+m-Xylene	ug/g	-	<0.020	<0.020	8065909	<0.020	0.020	8065909
o-Xylene	ug/g	-	<0.020	<0.020	8065909	<0.020	0.020	8065909
Total Xylenes	ug/g	0.05	<0.020	<0.020	8065909	<0.020	0.020	8065909
F1 (C6-C10)	ug/g	25	<10	<10	8065909	<10	10	8065909
F1 (C6-C10) - BTEX	ug/g	25	<10	<10	8065909	<10	10	8065909
<b>F2-F4 Hydrocarbons</b>								
F2 (C10-C16 Hydrocarbons)	ug/g	10	<10	<10	8068451	<10	10	8068451
F3 (C16-C34 Hydrocarbons)	ug/g	240	<50	<50	8068451	<50	50	8068451
F4 (C34-C50 Hydrocarbons)	ug/g	120	<50	<50	8068451	<50	50	8068451
Reached Baseline at C50	ug/g	-	Yes	Yes	8068451	Yes		8068451
<b>Surrogate Recovery (%)</b>								
o-Terphenyl	%	-	102	98	8068451	96		8068451
4-Bromofluorobenzene	%	-	89	91	8065909	89		8065909
D10-o-Xylene	%	-	79	80	8065909	76		8065909
D4-1,2-Dichloroethane	%	-	121	120	8065909	120		8065909
D8-Toluene	%	-	90	89	8065909	90		8065909
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use								



BUREAU  
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Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

### O.REG 153 VOCS BY HS & F1-F4 (SOIL)

<b>Bureau Veritas ID</b>			SYH046			SYH046		
<b>Sampling Date</b>			2022/06/16 10:15			2022/06/16 10:15		
<b>COC Number</b>			882894-01-01			882894-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH 304_1.52-2.29</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH 304_1.52-2.29 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>								
Moisture	%	-	13	1.0	8064954	13	1.0	8064954
<b>Calculated Parameters</b>								
1,3-Dichloropropene (cis+trans)	ug/g	0.05	<0.050	0.050	8063637			
<b>Volatile Organics</b>								
Acetone (2-Propanone)	ug/g	0.5	<0.49	0.49	8065909			
Benzene	ug/g	0.02	<0.0060	0.0060	8065909			
Bromodichloromethane	ug/g	0.05	<0.040	0.040	8065909			
Bromoform	ug/g	0.05	<0.040	0.040	8065909			
Bromomethane	ug/g	0.05	<0.040	0.040	8065909			
Carbon Tetrachloride	ug/g	0.05	<0.040	0.040	8065909			
Chlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
Chloroform	ug/g	0.05	<0.040	0.040	8065909			
Dibromochloromethane	ug/g	0.05	<0.040	0.040	8065909			
1,2-Dichlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
1,3-Dichlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
1,4-Dichlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
Dichlorodifluoromethane (FREON 12)	ug/g	0.05	<0.040	0.040	8065909			
1,1-Dichloroethane	ug/g	0.05	<0.040	0.040	8065909			
1,2-Dichloroethane	ug/g	0.05	<0.049	0.049	8065909			
1,1-Dichloroethylene	ug/g	0.05	<0.040	0.040	8065909			
cis-1,2-Dichloroethylene	ug/g	0.05	<0.040	0.040	8065909			
trans-1,2-Dichloroethylene	ug/g	0.05	<0.040	0.040	8065909			
1,2-Dichloropropane	ug/g	0.05	<0.040	0.040	8065909			
cis-1,3-Dichloropropene	ug/g	0.05	<0.030	0.030	8065909			
trans-1,3-Dichloropropene	ug/g	0.05	<0.040	0.040	8065909			
Ethylbenzene	ug/g	0.05	<0.010	0.010	8065909			
Ethylene Dibromide	ug/g	0.05	<0.040	0.040	8065909			
Hexane	ug/g	0.05	<0.040	0.040	8065909			
Methylene Chloride(Dichloromethane)	ug/g	0.05	<0.049	0.049	8065909			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**O.REG 153 VOCS BY HS & F1-F4 (SOIL)**

Bureau Veritas ID			SYH046			SYH046		
Sampling Date			2022/06/16 10:15			2022/06/16 10:15		
COC Number			882894-01-01			882894-01-01		
	UNITS	Criteria	BH 304_1.52-2.29	RDL	QC Batch	BH 304_1.52-2.29 Lab-Dup	RDL	QC Batch
Methyl Ethyl Ketone (2-Butanone)	ug/g	0.5	<0.40	0.40	8065909			
Methyl Isobutyl Ketone	ug/g	0.5	<0.40	0.40	8065909			
Methyl t-butyl ether (MTBE)	ug/g	0.05	<0.040	0.040	8065909			
Styrene	ug/g	0.05	<0.040	0.040	8065909			
1,1,1,2-Tetrachloroethane	ug/g	0.05	<0.040	0.040	8065909			
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.040	0.040	8065909			
Tetrachloroethylene	ug/g	0.05	<0.040	0.040	8065909			
Toluene	ug/g	0.2	<0.020	0.020	8065909			
1,1,1-Trichloroethane	ug/g	0.05	<0.040	0.040	8065909			
1,1,2-Trichloroethane	ug/g	0.05	<0.040	0.040	8065909			
Trichloroethylene	ug/g	0.05	<0.010	0.010	8065909			
Trichlorofluoromethane (FREON 11)	ug/g	0.25	<0.040	0.040	8065909			
Vinyl Chloride	ug/g	0.02	<0.019	0.019	8065909			
p+m-Xylene	ug/g	-	<0.020	0.020	8065909			
o-Xylene	ug/g	-	<0.020	0.020	8065909			
Total Xylenes	ug/g	0.05	<0.020	0.020	8065909			
F1 (C6-C10)	ug/g	25	<10	10	8065909			
F1 (C6-C10) - BTEX	ug/g	25	<10	10	8065909			
<b>F2-F4 Hydrocarbons</b>								
F2 (C10-C16 Hydrocarbons)	ug/g	10	<10	10	8068451			
F3 (C16-C34 Hydrocarbons)	ug/g	240	<50	50	8068451			
F4 (C34-C50 Hydrocarbons)	ug/g	120	<50	50	8068451			
Reached Baseline at C50	ug/g	-	Yes		8068451			
<b>Surrogate Recovery (%)</b>								
o-Terphenyl	%	-	101		8068451			
4-Bromofluorobenzene	%	-	90		8065909			
D10-o-Xylene	%	-	79		8065909			
D4-1,2-Dichloroethane	%	-	121		8065909			
D8-Toluene	%	-	89		8065909			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use								



BUREAU  
VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

### O.REG 153 VOCS BY HS & F1-F4 (SOIL)

<b>Bureau Veritas ID</b>			SYH047			SYH047		
<b>Sampling Date</b>			2022/06/16 11:20			2022/06/16 11:20		
<b>COC Number</b>			882894-01-01			882894-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH 305_1.52-3.05</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH 305_1.52-3.05 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>								
Moisture	%	-	18	1.0	8065165			
<b>Calculated Parameters</b>								
1,3-Dichloropropene (cis+trans)	ug/g	0.05	<0.050	0.050	8063637			
<b>Volatile Organics</b>								
Acetone (2-Propanone)	ug/g	0.5	<0.49	0.49	8065909			
Benzene	ug/g	0.02	<0.0060	0.0060	8065909			
Bromodichloromethane	ug/g	0.05	<0.040	0.040	8065909			
Bromoform	ug/g	0.05	<0.040	0.040	8065909			
Bromomethane	ug/g	0.05	<0.040	0.040	8065909			
Carbon Tetrachloride	ug/g	0.05	<0.040	0.040	8065909			
Chlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
Chloroform	ug/g	0.05	<0.040	0.040	8065909			
Dibromochloromethane	ug/g	0.05	<0.040	0.040	8065909			
1,2-Dichlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
1,3-Dichlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
1,4-Dichlorobenzene	ug/g	0.05	<0.040	0.040	8065909			
Dichlorodifluoromethane (FREON 12)	ug/g	0.05	<0.040	0.040	8065909			
1,1-Dichloroethane	ug/g	0.05	<0.040	0.040	8065909			
1,2-Dichloroethane	ug/g	0.05	<0.049	0.049	8065909			
1,1-Dichloroethylene	ug/g	0.05	<0.040	0.040	8065909			
cis-1,2-Dichloroethylene	ug/g	0.05	<0.040	0.040	8065909			
trans-1,2-Dichloroethylene	ug/g	0.05	<0.040	0.040	8065909			
1,2-Dichloropropane	ug/g	0.05	<0.040	0.040	8065909			
cis-1,3-Dichloropropene	ug/g	0.05	<0.030	0.030	8065909			
trans-1,3-Dichloropropene	ug/g	0.05	<0.040	0.040	8065909			
Ethylbenzene	ug/g	0.05	<0.010	0.010	8065909			
Ethylene Dibromide	ug/g	0.05	<0.040	0.040	8065909			
Hexane	ug/g	0.05	<0.040	0.040	8065909			
Methylene Chloride(Dichloromethane)	ug/g	0.05	<0.049	0.049	8065909			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 1: Full Depth Background Site Condition Standards

Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**O.REG 153 VOCS BY HS & F1-F4 (SOIL)**

Bureau Veritas ID			SYH047			SYH047		
Sampling Date			2022/06/16 11:20			2022/06/16 11:20		
COC Number			882894-01-01			882894-01-01		
	UNITS	Criteria	BH 305_1.52-3.05	RDL	QC Batch	BH 305_1.52-3.05 Lab-Dup	RDL	QC Batch
Methyl Ethyl Ketone (2-Butanone)	ug/g	0.5	<0.40	0.40	8065909			
Methyl Isobutyl Ketone	ug/g	0.5	<0.40	0.40	8065909			
Methyl t-butyl ether (MTBE)	ug/g	0.05	<0.040	0.040	8065909			
Styrene	ug/g	0.05	<0.040	0.040	8065909			
1,1,1,2-Tetrachloroethane	ug/g	0.05	<0.040	0.040	8065909			
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.040	0.040	8065909			
Tetrachloroethylene	ug/g	0.05	<0.040	0.040	8065909			
Toluene	ug/g	0.2	<0.020	0.020	8065909			
1,1,1-Trichloroethane	ug/g	0.05	<0.040	0.040	8065909			
1,1,2-Trichloroethane	ug/g	0.05	<0.040	0.040	8065909			
Trichloroethylene	ug/g	0.05	<0.010	0.010	8065909			
Trichlorofluoromethane (FREON 11)	ug/g	0.25	<0.040	0.040	8065909			
Vinyl Chloride	ug/g	0.02	<0.019	0.019	8065909			
p+m-Xylene	ug/g	-	<0.020	0.020	8065909			
o-Xylene	ug/g	-	<0.020	0.020	8065909			
Total Xylenes	ug/g	0.05	<0.020	0.020	8065909			
F1 (C6-C10)	ug/g	25	<10	10	8065909			
F1 (C6-C10) - BTEX	ug/g	25	<10	10	8065909			
<b>F2-F4 Hydrocarbons</b>								
F2 (C10-C16 Hydrocarbons)	ug/g	10	<10	10	8068451	<10	10	8068451
F3 (C16-C34 Hydrocarbons)	ug/g	240	740 (1)	50	8068451	170 (2)	50	8068451
F4 (C34-C50 Hydrocarbons)	ug/g	120	1900	50	8068451	170 (2)	50	8068451
Reached Baseline at C50	ug/g	-	No		8068451	No		8068451
<b>Surrogate Recovery (%)</b>								
o-Terphenyl	%	-	100		8068451	100		8068451
4-Bromofluorobenzene	%	-	89		8065909			
D10-o-Xylene	%	-	75		8065909			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use (1) F2-F4 Analysis: Duplicate results exceeded RPD acceptance criteria for flagged analytes. The sample extract was reanalyzed with the same results. This is likely due to sample heterogeneity. (2) Duplicate results exceeded RPD acceptance criteria for flagged analytes. Sample extract was reanalyzed with the same results. This is likely due to sample heterogeneity.								



### O.REG 153 VOCS BY HS & F1-F4 (SOIL)

<b>Bureau Veritas ID</b>			SYH047			SYH047		
<b>Sampling Date</b>			2022/06/16 11:20			2022/06/16 11:20		
<b>COC Number</b>			882894-01-01			882894-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH 305_1.52-3.05</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH 305_1.52-3.05 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>
D4-1,2-Dichloroethane	%	-	121		8065909			
D8-Toluene	%	-	89		8065909			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use								



### PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID			SYH047		
Sampling Date			2022/06/16 11:20		
COC Number			882894-01-01		
	UNITS	Criteria	BH 305_1.52-3.05	RDL	QC Batch
<b>F2-F4 Hydrocarbons</b>					
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	120	9800	100	8072946
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)					
Table 1: Full Depth Background Site Condition Standards					
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use					





Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

## TEST SUMMARY

**Bureau Veritas ID:** SYH043  
**Sample ID:** BH 301\_3.50-3.65  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	8063637	N/A	2022/06/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8068451	2022/06/22	2022/06/23	Austin (Guochen) Zhang
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8065909	N/A	2022/06/22	Blair Gannon

**Bureau Veritas ID:** SYH044  
**Sample ID:** BH 302\_3.05-3.35  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	8063637	N/A	2022/06/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8068451	2022/06/22	2022/06/23	Austin (Guochen) Zhang
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8065909	N/A	2022/06/22	Blair Gannon

**Bureau Veritas ID:** SYH045  
**Sample ID:** BH 303\_3.05-3.50  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	8063637	N/A	2022/06/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8068451	2022/06/22	2022/06/23	Austin (Guochen) Zhang
Moisture	BAL	8065053	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8065909	N/A	2022/06/22	Blair Gannon

**Bureau Veritas ID:** SYH046  
**Sample ID:** BH 304\_1.52-2.29  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	8063637	N/A	2022/06/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8068451	2022/06/22	2022/06/23	Austin (Guochen) Zhang
Moisture	BAL	8064954	N/A	2022/06/21	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8065909	N/A	2022/06/22	Blair Gannon



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Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

## TEST SUMMARY

**Bureau Veritas ID:** SYH046 Dup  
**Sample ID:** BH 304\_1.52-2.29  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	8064954	N/A	2022/06/21	Simrat Bhathal

**Bureau Veritas ID:** SYH047  
**Sample ID:** BH 305\_1.52-3.05  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8063037	N/A	2022/06/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	8063637	N/A	2022/06/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8068451	2022/06/22	2022/06/23	Austin (Guochen) Zhang
F4G (CCME Hydrocarbons Gravimetric)	BAL	8072946	2022/06/24	2022/06/24	Rashmi Dubey
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8065909	N/A	2022/06/22	Blair Gannon

**Bureau Veritas ID:** SYH047 Dup  
**Sample ID:** BH 305\_1.52-3.05  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8068451	2022/06/22	2022/06/23	Austin (Guochen) Zhang

**Bureau Veritas ID:** SYH048  
**Sample ID:** BH 102\_0.30-0.61  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon

**Bureau Veritas ID:** SYH049  
**Sample ID:** BH 201\_0.30-0.53  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon

**Bureau Veritas ID:** SYH050  
**Sample ID:** BH 202\_0.30-0.61  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk



Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

## TEST SUMMARY

**Bureau Veritas ID:** SYH050  
**Sample ID:** BH 202\_0.30-0.61  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon

**Bureau Veritas ID:** SYH050 Dup  
**Sample ID:** BH 202\_0.30-0.61  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon

**Bureau Veritas ID:** SYH051  
**Sample ID:** BH 301\_0.1-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8063037	N/A	2022/06/27	Automated Statchk
Hot Water Extractable Boron	ICP	8069865	2022/06/23	2022/06/24	Indira HarryPaul
Free (WAD) Cyanide	TECH	8067070	2022/06/22	2022/06/23	Nimarta Singh
Conductivity	AT	8068212	2022/06/22	2022/06/22	Roya Fathitil
Hexavalent Chromium in Soil by IC	IC/SPEC	8067562	2022/06/22	2022/06/24	Surleen Kaur Romana
Acid Extractable Metals by ICPMS	ICP/MS	8067842	2022/06/22	2022/06/24	Daniel Teclu
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
pH CaCl2 EXTRACT	AT	8070000	2022/06/23	2022/06/23	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8064161	N/A	2022/06/27	Automated Statchk

**Bureau Veritas ID:** SYH052  
**Sample ID:** BH 302\_0.1-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8063037	N/A	2022/06/27	Automated Statchk
Hot Water Extractable Boron	ICP	8069865	2022/06/23	2022/06/24	Indira HarryPaul
Free (WAD) Cyanide	TECH	8067070	2022/06/22	2022/06/23	Nimarta Singh
Conductivity	AT	8068212	2022/06/22	2022/06/22	Roya Fathitil
Hexavalent Chromium in Soil by IC	IC/SPEC	8067562	2022/06/22	2022/06/24	Surleen Kaur Romana
Acid Extractable Metals by ICPMS	ICP/MS	8067842	2022/06/22	2022/06/24	Daniel Teclu
Moisture	BAL	8065165	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
pH CaCl2 EXTRACT	AT	8070000	2022/06/23	2022/06/23	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8064161	N/A	2022/06/27	Automated Statchk



Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

## TEST SUMMARY

**Bureau Veritas ID:** SYH052 Dup  
**Sample ID:** BH 302\_0.1-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	8070000	2022/06/23	2022/06/23	Taslina Aktar

**Bureau Veritas ID:** SYH090  
**Sample ID:** BH 303\_0.1-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
Hot Water Extractable Boron	ICP	8069865	2022/06/23	2022/06/24	Indira HarryPaul
Free (WAD) Cyanide	TECH	8067070	2022/06/22	2022/06/23	Nimarta Singh
Conductivity	AT	8068212	2022/06/22	2022/06/22	Roya Fathitil
Hexavalent Chromium in Soil by IC	IC/SPEC	8067562	2022/06/22	2022/06/24	Surleen Kaur Romana
Acid Extractable Metals by ICPMS	ICP/MS	8067842	2022/06/22	2022/06/24	Daniel Teclu
Moisture	BAL	8065053	N/A	2022/06/21	Abhijot Kaur
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
pH CaCl2 EXTRACT	AT	8070000	2022/06/23	2022/06/23	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8064161	N/A	2022/06/27	Automated Statchk

**Bureau Veritas ID:** SYH091  
**Sample ID:** BH 304\_0.127-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
Hot Water Extractable Boron	ICP	8069865	2022/06/23	2022/06/24	Indira HarryPaul
Free (WAD) Cyanide	TECH	8067070	2022/06/22	2022/06/23	Nimarta Singh
Conductivity	AT	8068212	2022/06/22	2022/06/22	Roya Fathitil
Hexavalent Chromium in Soil by IC	IC/SPEC	8067562	2022/06/22	2022/06/24	Surleen Kaur Romana
Acid Extractable Metals by ICPMS	ICP/MS	8067842	2022/06/22	2022/06/24	Daniel Teclu
Moisture	BAL	8065407	N/A	2022/06/21	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon
pH CaCl2 EXTRACT	AT	8070000	2022/06/23	2022/06/23	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8064161	N/A	2022/06/27	Automated Statchk

**Bureau Veritas ID:** SYH091 Dup  
**Sample ID:** BH 304\_0.127-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	8065407	N/A	2022/06/21	Mathew Bowles



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VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

## TEST SUMMARY

**Bureau Veritas ID:** SYH092  
**Sample ID:** BH 305\_0.076-1.52  
**Matrix:** Soil

**Collected:** 2022/06/16  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8064160	N/A	2022/06/27	Automated Statchk
Moisture	BAL	8065407	N/A	2022/06/21	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8071108	2022/06/23	2022/06/25	Jonghan Yoon

**Bureau Veritas ID:** SYH094  
**Sample ID:** BH 305\_0.30-0.61  
**Matrix:** Soil

**Collected:**  
**Shipped:**  
**Received:** 2022/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	8069865	2022/06/23	2022/06/24	Indira HarryPaul
Free (WAD) Cyanide	TECH	8067070	2022/06/22	2022/06/23	Nimarta Singh
Conductivity	AT	8068212	2022/06/22	2022/06/22	Roya Fathitil
Hexavalent Chromium in Soil by IC	IC/SPEC	8067562	2022/06/22	2022/06/24	Surleen Kaur Romana
Acid Extractable Metals by ICPMS	ICP/MS	8067842	2022/06/22	2022/06/24	Daniel Teclu
Moisture	BAL	8065407	N/A	2022/06/21	Mathew Bowles
pH CaCl2 EXTRACT	AT	8070000	2022/06/23	2022/06/23	Taslina Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8064161	N/A	2022/06/27	Automated Statchk



## GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C
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Sample SYH043 [BH 301\_3.50-3.65] : VOCF1 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 SYH045 [BH 303\_3.05-3.50] : VOCF1 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 SYH046 [BH 304\_1.52-2.29] : VOCF1 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 SYH047 [BH 305\_1.52-3.05] : VOCF1 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.**

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VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

## QUALITY ASSURANCE REPORT

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8065909	4-Bromofluorobenzene	2022/06/22	100	60 - 140	101	60 - 140	90	%		
8065909	D10-o-Xylene	2022/06/22	90	60 - 130	91	60 - 130	76	%		
8065909	D4-1,2-Dichloroethane	2022/06/22	106	60 - 140	113	60 - 140	118	%		
8065909	D8-Toluene	2022/06/22	105	60 - 140	104	60 - 140	91	%		
8068451	o-Terphenyl	2022/06/22	99	60 - 130	96	60 - 130	95	%		
8071108	D10-Anthracene	2022/06/25	86	50 - 130	102	50 - 130	101	%		
8071108	D14-Terphenyl (FS)	2022/06/25	79	50 - 130	95	50 - 130	92	%		
8071108	D8-Acenaphthylene	2022/06/25	82	50 - 130	93	50 - 130	88	%		
8064954	Moisture	2022/06/21							3.1	20
8065053	Moisture	2022/06/21							2.1	20
8065165	Moisture	2022/06/21							7.0	20
8065407	Moisture	2022/06/21							1.0	20
8065909	1,1,1,2-Tetrachloroethane	2022/06/22	99	60 - 140	97	60 - 130	<0.040	ug/g		
8065909	1,1,1-Trichloroethane	2022/06/22	103	60 - 140	100	60 - 130	<0.040	ug/g		
8065909	1,1,2,2-Tetrachloroethane	2022/06/22	90	60 - 140	96	60 - 130	<0.040	ug/g		
8065909	1,1,2-Trichloroethane	2022/06/22	105	60 - 140	109	60 - 130	<0.040	ug/g		
8065909	1,1-Dichloroethane	2022/06/22	97	60 - 140	97	60 - 130	<0.040	ug/g		
8065909	1,1-Dichloroethylene	2022/06/22	100	60 - 140	96	60 - 130	<0.040	ug/g		
8065909	1,2-Dichlorobenzene	2022/06/22	90	60 - 140	89	60 - 130	<0.040	ug/g		
8065909	1,2-Dichloroethane	2022/06/22	96	60 - 140	102	60 - 130	<0.049	ug/g		
8065909	1,2-Dichloropropane	2022/06/22	98	60 - 140	101	60 - 130	<0.040	ug/g		
8065909	1,3-Dichlorobenzene	2022/06/22	91	60 - 140	88	60 - 130	<0.040	ug/g		
8065909	1,4-Dichlorobenzene	2022/06/22	98	60 - 140	95	60 - 130	<0.040	ug/g		
8065909	Acetone (2-Propanone)	2022/06/22	99	60 - 140	109	60 - 140	<0.49	ug/g		
8065909	Benzene	2022/06/22	91	60 - 140	92	60 - 130	<0.0060	ug/g	NC	50
8065909	Bromodichloromethane	2022/06/22	101	60 - 140	104	60 - 130	<0.040	ug/g		
8065909	Bromoform	2022/06/22	91	60 - 140	95	60 - 130	<0.040	ug/g		
8065909	Bromomethane	2022/06/22	93	60 - 140	93	60 - 140	<0.040	ug/g		
8065909	Carbon Tetrachloride	2022/06/22	99	60 - 140	96	60 - 130	<0.040	ug/g		
8065909	Chlorobenzene	2022/06/22	92	60 - 140	91	60 - 130	<0.040	ug/g		
8065909	Chloroform	2022/06/22	99	60 - 140	100	60 - 130	<0.040	ug/g		



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VERITAS

Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8065909	cis-1,2-Dichloroethylene	2022/06/22	101	60 - 140	102	60 - 130	<0.040	ug/g		
8065909	cis-1,3-Dichloropropene	2022/06/22	86	60 - 140	93	60 - 130	<0.030	ug/g		
8065909	Dibromochloromethane	2022/06/22	94	60 - 140	97	60 - 130	<0.040	ug/g		
8065909	Dichlorodifluoromethane (FREON 12)	2022/06/22	89	60 - 140	85	60 - 140	<0.040	ug/g		
8065909	Ethylbenzene	2022/06/22	84	60 - 140	81	60 - 130	<0.010	ug/g	NC	50
8065909	Ethylene Dibromide	2022/06/22	94	60 - 140	99	60 - 130	<0.040	ug/g		
8065909	F1 (C6-C10) - BTEX	2022/06/22					<10	ug/g	NC	30
8065909	F1 (C6-C10)	2022/06/22	84	60 - 140	91	80 - 120	<10	ug/g	NC	30
8065909	Hexane	2022/06/22	101	60 - 140	97	60 - 130	<0.040	ug/g		
8065909	Methyl Ethyl Ketone (2-Butanone)	2022/06/22	86	60 - 140	99	60 - 140	<0.40	ug/g		
8065909	Methyl Isobutyl Ketone	2022/06/22	81	60 - 140	97	60 - 130	<0.40	ug/g		
8065909	Methyl t-butyl ether (MTBE)	2022/06/22	85	60 - 140	90	60 - 130	<0.040	ug/g		
8065909	Methylene Chloride(Dichloromethane)	2022/06/22	105	60 - 140	107	60 - 130	<0.049	ug/g		
8065909	o-Xylene	2022/06/22	85	60 - 140	83	60 - 130	<0.020	ug/g	NC	50
8065909	p+m-Xylene	2022/06/22	89	60 - 140	85	60 - 130	<0.020	ug/g	NC	50
8065909	Styrene	2022/06/22	98	60 - 140	98	60 - 130	<0.040	ug/g		
8065909	Tetrachloroethylene	2022/06/22	94	60 - 140	88	60 - 130	<0.040	ug/g		
8065909	Toluene	2022/06/22	90	60 - 140	88	60 - 130	<0.020	ug/g	NC	50
8065909	Total Xylenes	2022/06/22					<0.020	ug/g	NC	50
8065909	trans-1,2-Dichloroethylene	2022/06/22	100	60 - 140	97	60 - 130	<0.040	ug/g		
8065909	trans-1,3-Dichloropropene	2022/06/22	97	60 - 140	102	60 - 130	<0.040	ug/g		
8065909	Trichloroethylene	2022/06/22	101	60 - 140	99	60 - 130	<0.010	ug/g		
8065909	Trichlorofluoromethane (FREON 11)	2022/06/22	95	60 - 140	90	60 - 130	<0.040	ug/g		
8065909	Vinyl Chloride	2022/06/22	83	60 - 140	80	60 - 130	<0.019	ug/g		
8067070	WAD Cyanide (Free)	2022/06/23	85	75 - 125	92	80 - 120	<0.01	ug/g	NC	35
8067562	Chromium (VI)	2022/06/24	43 (1)	70 - 130	91	80 - 120	<0.18	ug/g	NC	35
8067842	Acid Extractable Antimony (Sb)	2022/06/24	99	75 - 125	99	80 - 120	<0.20	ug/g	NC	30
8067842	Acid Extractable Arsenic (As)	2022/06/24	98	75 - 125	102	80 - 120	<1.0	ug/g	NC	30
8067842	Acid Extractable Barium (Ba)	2022/06/24	NC	75 - 125	99	80 - 120	<0.50	ug/g	5.6	30
8067842	Acid Extractable Beryllium (Be)	2022/06/24	99	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
8067842	Acid Extractable Boron (B)	2022/06/24	94	75 - 125	97	80 - 120	<5.0	ug/g	NC	30

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Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8067842	Acid Extractable Cadmium (Cd)	2022/06/24	99	75 - 125	100	80 - 120	<0.10	ug/g	NC	30
8067842	Acid Extractable Chromium (Cr)	2022/06/24	98	75 - 125	101	80 - 120	<1.0	ug/g	0.72	30
8067842	Acid Extractable Cobalt (Co)	2022/06/24	98	75 - 125	102	80 - 120	<0.10	ug/g	5.0	30
8067842	Acid Extractable Copper (Cu)	2022/06/24	93	75 - 125	100	80 - 120	<0.50	ug/g	0.45	30
8067842	Acid Extractable Lead (Pb)	2022/06/24	97	75 - 125	102	80 - 120	<1.0	ug/g	0.19	30
8067842	Acid Extractable Mercury (Hg)	2022/06/24	91	75 - 125	92	80 - 120	<0.050	ug/g	NC	30
8067842	Acid Extractable Molybdenum (Mo)	2022/06/24	101	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
8067842	Acid Extractable Nickel (Ni)	2022/06/24	100	75 - 125	103	80 - 120	<0.50	ug/g	7.7	30
8067842	Acid Extractable Selenium (Se)	2022/06/24	100	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
8067842	Acid Extractable Silver (Ag)	2022/06/24	100	75 - 125	103	80 - 120	<0.20	ug/g	NC	30
8067842	Acid Extractable Thallium (Tl)	2022/06/24	98	75 - 125	103	80 - 120	<0.050	ug/g	6.4	30
8067842	Acid Extractable Uranium (U)	2022/06/24	98	75 - 125	102	80 - 120	<0.050	ug/g	8.1	30
8067842	Acid Extractable Vanadium (V)	2022/06/24	95	75 - 125	103	80 - 120	<5.0	ug/g	5.3	30
8067842	Acid Extractable Zinc (Zn)	2022/06/24	98	75 - 125	96	80 - 120	<5.0	ug/g	2.7	30
8068212	Conductivity	2022/06/22			99	90 - 110	<0.002	mS/cm	1.2	10
8068451	F2 (C10-C16 Hydrocarbons)	2022/06/23	113	60 - 130	111	80 - 120	<10	ug/g	NC	30
8068451	F3 (C16-C34 Hydrocarbons)	2022/06/23	NC	60 - 130	115	80 - 120	<50	ug/g	126 (2)	30
8068451	F4 (C34-C50 Hydrocarbons)	2022/06/23	NC	60 - 130	119	80 - 120	<50	ug/g	168 (2)	30
8069865	Hot Water Ext. Boron (B)	2022/06/24	100	75 - 125	97	75 - 125	<0.050	ug/g	12	40
8070000	Available (CaCl2) pH	2022/06/23			100	97 - 103			0.056	N/A
8071108	1-Methylnaphthalene	2022/06/25	93	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8071108	2-Methylnaphthalene	2022/06/25	89	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8071108	Acenaphthene	2022/06/25	106	50 - 130	102	50 - 130	<0.0050	ug/g	19	40
8071108	Acenaphthylene	2022/06/25	NC	50 - 130	98	50 - 130	<0.0050	ug/g	4.0	40
8071108	Anthracene	2022/06/25	NC	50 - 130	109	50 - 130	<0.0050	ug/g	4.4	40
8071108	Benzo(a)anthracene	2022/06/25	NC	50 - 130	111	50 - 130	<0.0050	ug/g	6.6	40
8071108	Benzo(a)pyrene	2022/06/25	NC	50 - 130	94	50 - 130	<0.0050	ug/g	1.6	40
8071108	Benzo(b,j)fluoranthene	2022/06/25	NC	50 - 130	104	50 - 130	<0.0050	ug/g	2.3	40
8071108	Benzo(g,h,i)perylene	2022/06/25	NC	50 - 130	103	50 - 130	<0.0050	ug/g	3.5	40
8071108	Benzo(k)fluoranthene	2022/06/25	NC	50 - 130	109	50 - 130	<0.0050	ug/g	3.1	40
8071108	Chrysene	2022/06/25	NC	50 - 130	111	50 - 130	<0.0050	ug/g	7.1	40



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Bureau Veritas Job #: C2G9534

Report Date: 2022/06/27

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8071108	Dibenzo(a,h)anthracene	2022/06/25	NC	50 - 130	96	50 - 130	<0.0050	ug/g	2.7	40
8071108	Fluoranthene	2022/06/25	NC	50 - 130	109	50 - 130	<0.0050	ug/g	10	40
8071108	Fluorene	2022/06/25	170 (3)	50 - 130	99	50 - 130	<0.0050	ug/g	2.8	40
8071108	Indeno(1,2,3-cd)pyrene	2022/06/25	NC	50 - 130	103	50 - 130	<0.0050	ug/g	3.2	40
8071108	Naphthalene	2022/06/25	86	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8071108	Phenanthrene	2022/06/25	NC	50 - 130	106	50 - 130	<0.0050	ug/g	30	40
8071108	Pyrene	2022/06/25	NC	50 - 130	111	50 - 130	<0.0050	ug/g	7.3	40
8072946	F4G-sg (Grav. Heavy Hydrocarbons)	2022/06/24	84	65 - 135	102	65 - 135	<100	ug/g	3.2	50

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  $\leq 2 \times \text{RDL}$ ).

(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample. The sample was re-analyzed with the same results.

(2) Duplicate results exceeded RPD acceptance criteria for flagged analytes. Sample extract was reanalyzed with the same results. This is likely due to sample heterogeneity.

(3) The recovery was above the upper control limit. This may represent a high bias in some results for flagged analytes. For results that were not detected (ND), this potential bias has no impact.



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Bureau Veritas Job #: C2G9534  
Report Date: 2022/06/27

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB


### VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

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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 Signature Page.



Bureau Veritas  
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20-Jun-22 09:42

**Gemarie Balatico**

**C2G9534**

AJH ENV-1696

COC #:

C#882894-01-01

INVOICE TO:			REPORT TO:			PROJECT INFORMATION:		
Company Name: #17950 Cambium Environmental Inc			Company Name: <u>Cambium Environmental Inc</u>			Quotation #: C21984		
Attention: ACCOUNTS PAYABLE			Attention: <u>Matt Cunningham</u>			P.O. #: 14324-004		
Address: 194 Sophia Street PO Box 325			Address: <u>135 Bayfield St #102, Barrie, ON</u>			Project Name:		
Peterborough ON K9H 1E5			<u>L4M 3B3</u>			Site #:		
Tel: (705) 742-7900 Fax: (705) 742-7907			Tel:			Sampled By: <u>Andrew Bunn</u>		
Email: accounting@cambium-inc.com; Evan.Black@cambium-			Email: matt.cunningham@cambium-inc.com; esdat@cambium-			Project Manager: Gemarie Balatico		

**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)	Other Regulations	Special Instructions
<input checked="" type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	<input type="checkbox"/> CCME <input type="checkbox"/> Reg 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other	<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> Municipality <input type="checkbox"/> Reg 406 Table

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

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Fried Filtered (please circle): Metals / Hg / Cr VI	0 Reg 153 VOCs by HS & F1-F4 (Soil)	0 Reg 153 PAHs (Soil)	0 Reg 153 Metals & Inorganics Pig (Soil)	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	Turnaround Time (TAT) Required: Please provide advance notice for rush projects
1	BH301-3.50-3.65	2022/06/16	12:44	SOIL		X	X			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.
2	BH302-3.05-3.35	2022/06/16	13:50	SOIL		X	X			Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: Rush Confirmation Number: (call lab for #)
3	BH303-3.05-3.50	2022/06/16	11:44	SOIL		X	X			# of Bottles Comments
4	BH304-1.52-2.29	2022/06/16	10:15	SOIL		X	X			
5	BH305-1.52-3.05	2022/06/16	11:20	SOIL		X	X			
6	BH102-0.30-0.61	2022/06/16	15:30	SOIL			X			
7	BH201-0.30-0.53	2022/06/16	14:52	SOIL			X			
8	BH202-0.30-0.61	2022/06/16	15:18	SOIL			X			
9	BH301-0.1-1.52	2022/06/16	12:44	SOIL			X	X		
10	BH302-0.1-1.52	2022/06/16	13:50	SOIL			X	X		

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted	Laboratory Use Only		
<u>Andrew Bunn</u>		2022/06/16	13:00	<u>[Signature]</u>		2022/06/16	0944		Time Sensitive	Temperature (°C) on Receipt	Custody Seal Present
										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/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.

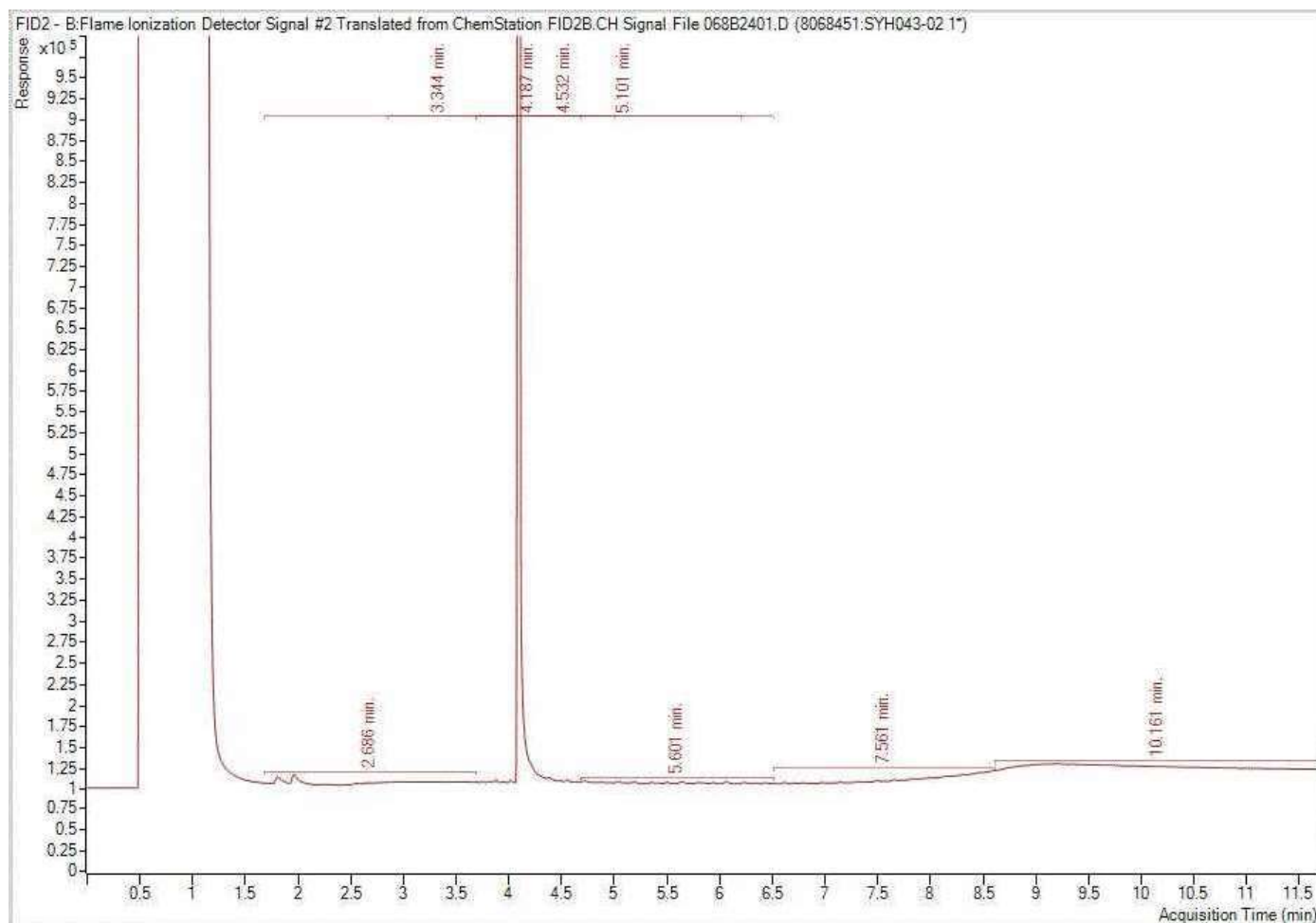
\*\* SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

White: Bureau Veritas Yellow: Client



Bureau Veritas Canada (2019) Inc.

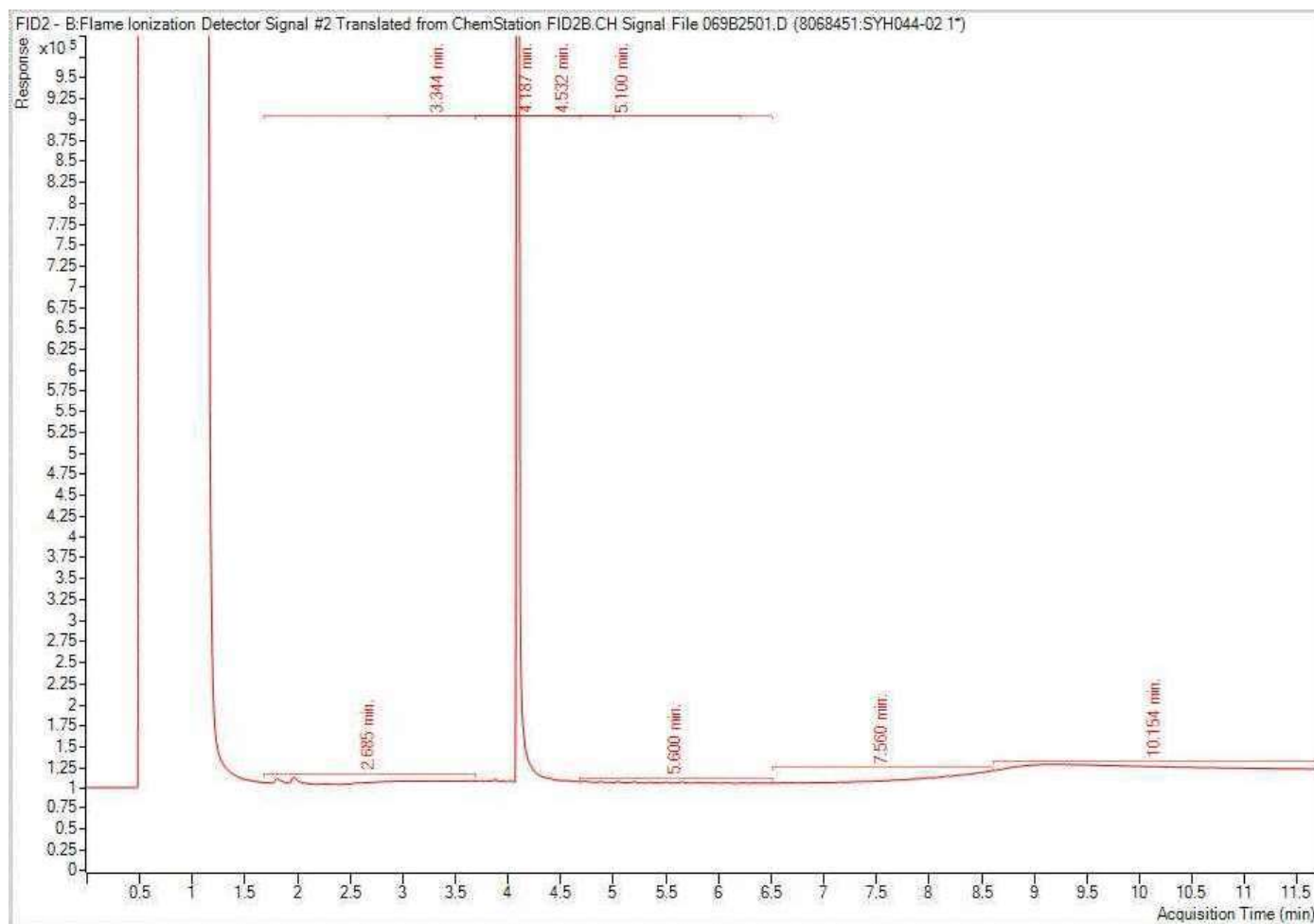
**Petroleum Hydrocarbons F2-F4 in Soil Chromatogram**



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

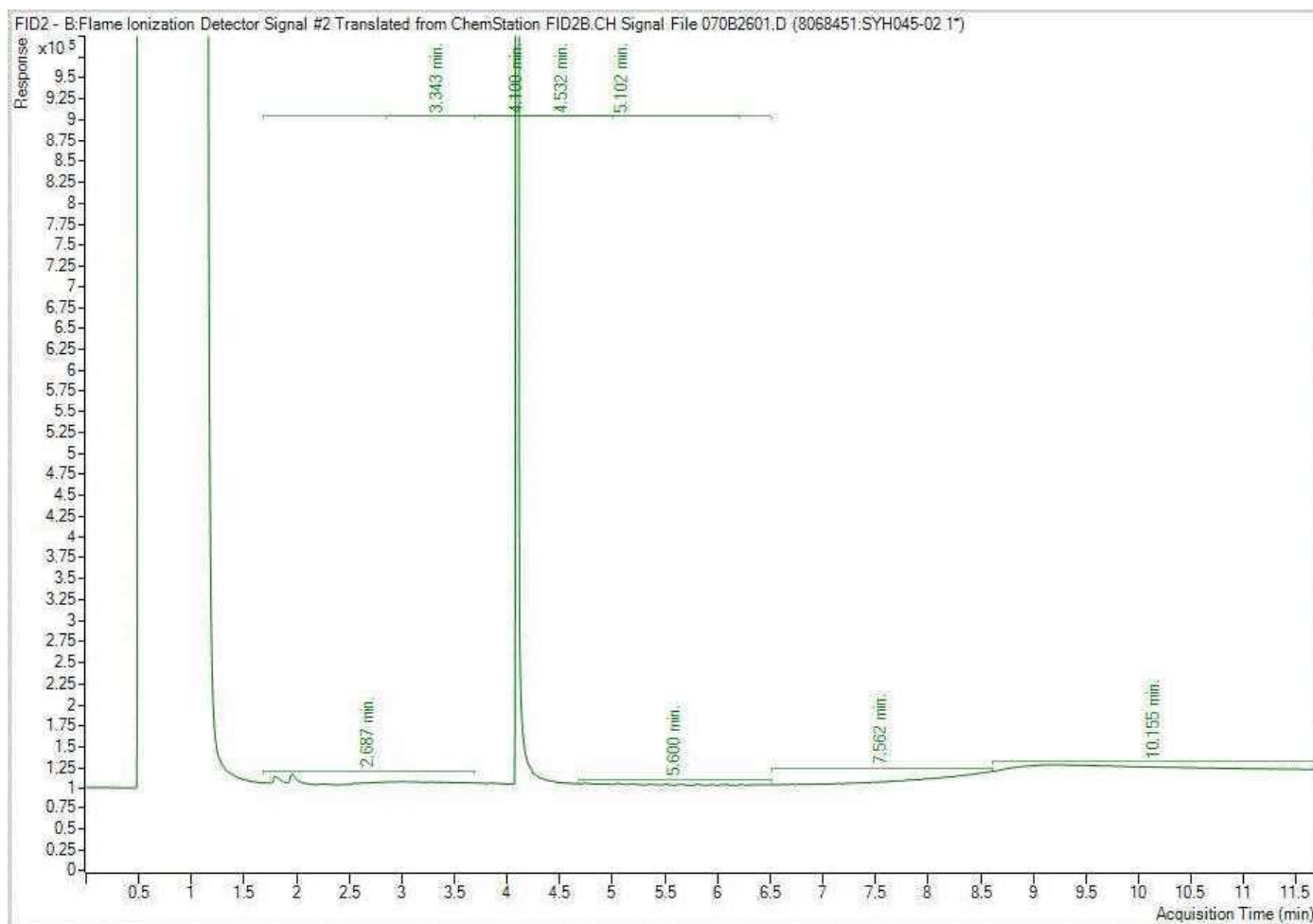


**Petroleum Hydrocarbons F2-F4 in Soil Chromatogram**



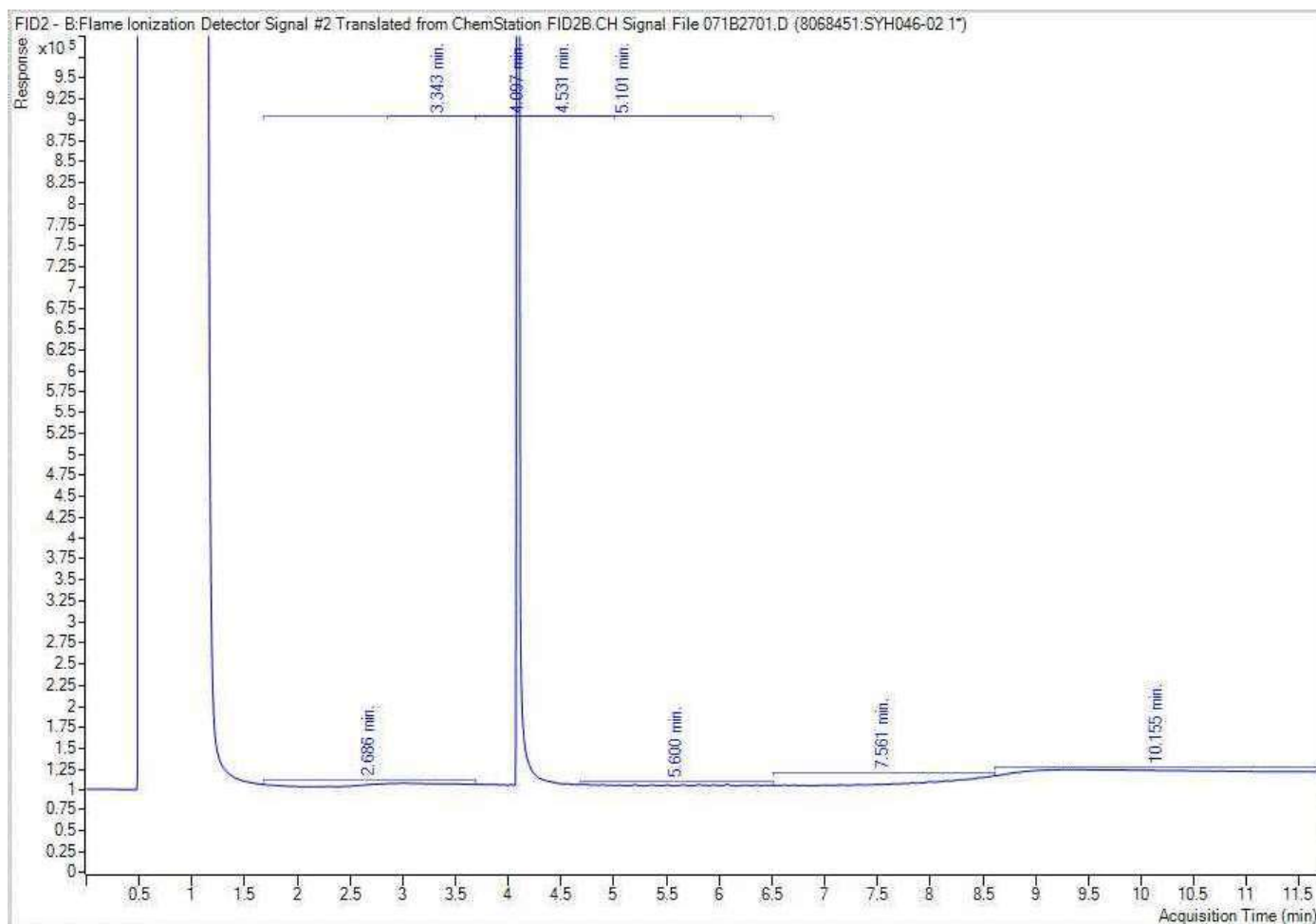
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

**Petroleum Hydrocarbons F2-F4 in Soil Chromatogram**



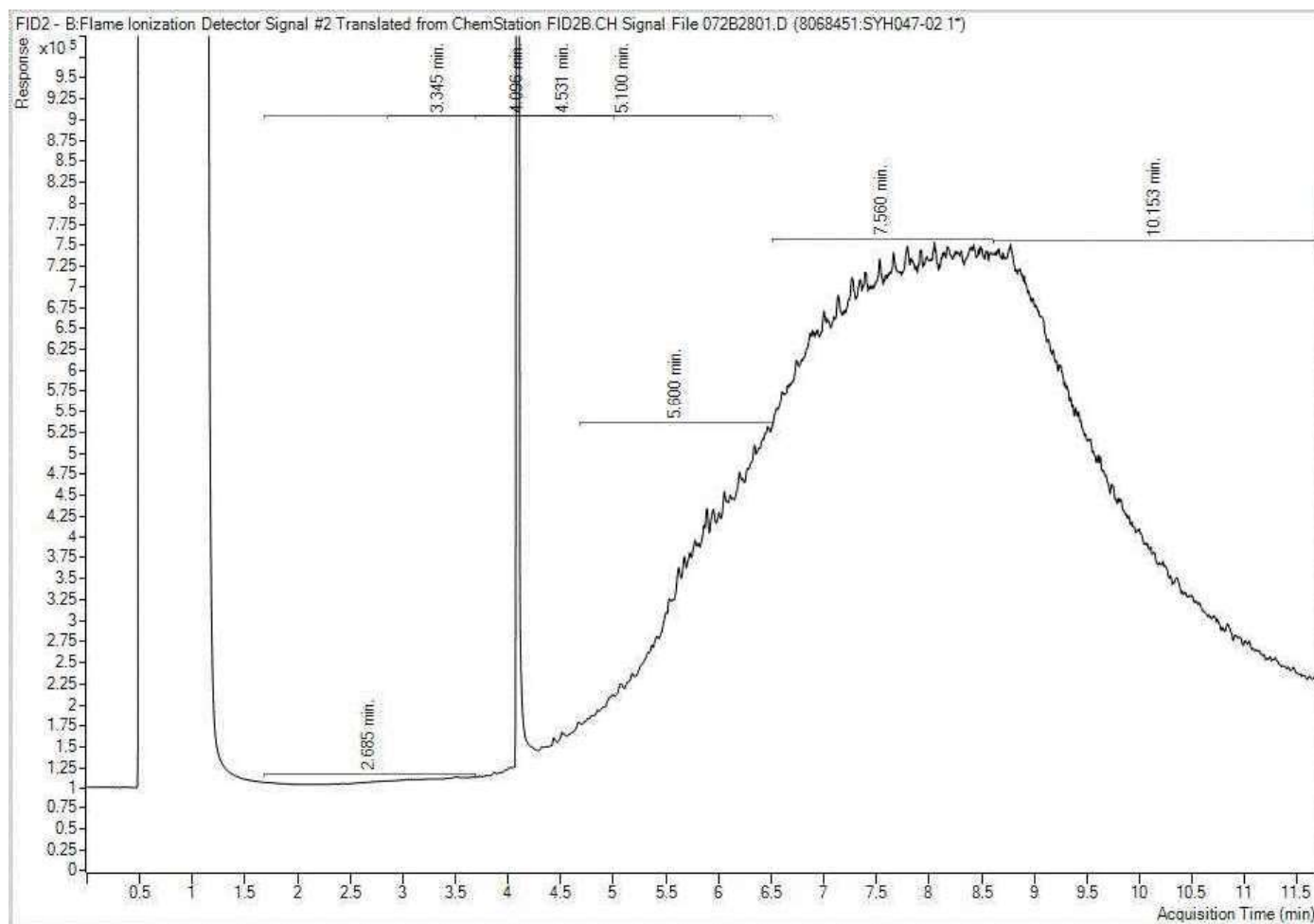
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

**Petroleum Hydrocarbons F2-F4 in Soil Chromatogram**



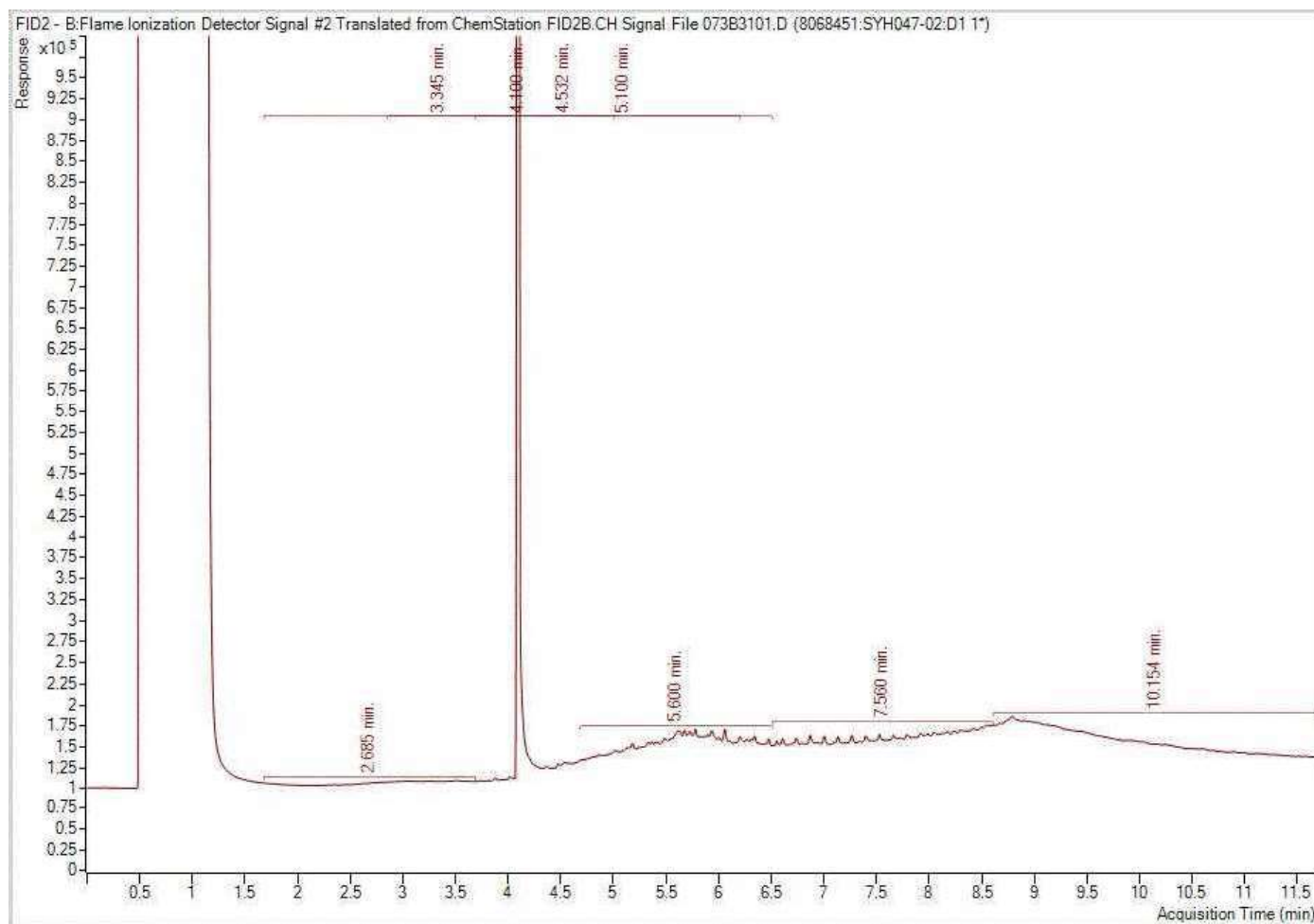
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

**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.**

**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.



### Exceedance Summary Table – Reg153/04 T1-Soil/Res

#### Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH 305_1.52-3.05	SYH047-02	F3 (C16-C34 Hydrocarbons)	240	740	50	ug/g
BH 305_1.52-3.05	SYH047-02-Lab Dup	F4 (C34-C50 Hydrocarbons)	120	170	50	ug/g
BH 305_1.52-3.05	SYH047-02	F4 (C34-C50 Hydrocarbons)	120	1900	50	ug/g
BH 305_1.52-3.05	SYH047-02	F4G-sg (Grav. Heavy Hydrocarbons)	120	9800	100	ug/g
BH 201_0.30-0.53	SYH049-01	Benzo(a)anthracene	0.36	0.38	0.0050	ug/g
BH 201_0.30-0.53	SYH049-01	Benzo(a)pyrene	0.3	0.43	0.0050	ug/g
BH 201_0.30-0.53	SYH049-01	Benzo(b/j)fluoranthene	0.47	0.59	0.0050	ug/g
BH 201_0.30-0.53	SYH049-01	Fluoranthene	0.56	0.75	0.0050	ug/g
BH 201_0.30-0.53	SYH049-01	Indeno(1,2,3-cd)pyrene	0.23	0.33	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Acenaphthylene	0.093	0.26	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Acenaphthylene	0.093	0.27	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Benzo(a)anthracene	0.36	0.99	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Benzo(a)anthracene	0.36	1.1	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Benzo(a)pyrene	0.3	1.2	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Benzo(a)pyrene	0.3	1.3	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Benzo(b/j)fluoranthene	0.47	1.6	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Benzo(b/j)fluoranthene	0.47	1.6	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Benzo(g,h,i)perylene	0.68	0.88	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Benzo(g,h,i)perylene	0.68	0.91	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Benzo(k)fluoranthene	0.48	0.58	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Benzo(k)fluoranthene	0.48	0.60	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Dibenzo(a,h)anthracene	0.1	0.22	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Dibenzo(a,h)anthracene	0.1	0.22	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Fluoranthene	0.56	1.6	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Fluoranthene	0.56	1.8	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Indeno(1,2,3-cd)pyrene	0.23	0.96	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Indeno(1,2,3-cd)pyrene	0.23	1.0	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01-Lab Dup	Pyrene	1	1.3	0.0050	ug/g
BH 202_0.30-0.61	SYH050-01	Pyrene	1	1.4	0.0050	ug/g
BH 301_0.1-1.52	SYH051-01	Acid Extractable Antimony (Sb)	1.3	1.6	0.20	ug/g
BH 305_0.076-1.52	SYH092-01	Acenaphthylene	0.093	0.42	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Anthracene	0.16	0.19	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Benzo(a)anthracene	0.36	1.5	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Benzo(a)pyrene	0.3	1.9	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Benzo(b/j)fluoranthene	0.47	2.5	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Benzo(g,h,i)perylene	0.68	1.2	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Benzo(k)fluoranthene	0.48	0.87	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Dibenzo(a,h)anthracene	0.1	0.32	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Fluoranthene	0.56	2.4	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Indeno(1,2,3-cd)pyrene	0.23	1.4	0.0050	ug/g
BH 305_0.076-1.52	SYH092-01	Pyrene	1	1.9	0.0050	ug/g

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.



Your Project #: 14324-004  
Your C.O.C. #: 882895-01-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/07/05**  
Report #: R7197960  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2H5994**

**Received: 2022/06/24, 12:23**

Sample Matrix: Water  
# Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Methylnaphthalene Sum	1	N/A	2022/07/05	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	1	N/A	2022/06/28		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2022/07/01	2022/07/05	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	N/A	2022/06/29	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM)	1	2022/07/01	2022/07/03	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	1	N/A	2022/06/28	CAM SOP-00230	EPA 8260C 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, MELCC, EPA, APHA.

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.

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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) 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





Your Project #: 14324-004  
Your C.O.C. #: 882895-01-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/07/05**  
Report #: R7197960  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2H5994**

**Received: 2022/06/24, 12:23**

reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Gemarie Balatico  
Project Manager  
05 Jul 2022 18:09:03

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Gemarie Balatico, Project Manager

Email: [Gemarie.Balatico@bureauveritas.com](mailto:Gemarie.Balatico@bureauveritas.com)

Phone# (905)817-5787

=====

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 Signature Page.

**O.REG 153 DISSOLVED ICPMS METALS (WATER)**

<b>Bureau Veritas ID</b>			SZQ107		
<b>Sampling Date</b>			2022/06/21 14:05		
<b>COC Number</b>			882895-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH304</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>					
Dissolved Antimony (Sb)	ug/L	<b>1.5</b>	<0.50	0.50	8075642
Dissolved Arsenic (As)	ug/L	<b>13</b>	<1.0	1.0	8075642
Dissolved Barium (Ba)	ug/L	<b>610</b>	260	2.0	8075642
Dissolved Beryllium (Be)	ug/L	<b>0.5</b>	<0.40	0.40	8075642
Dissolved Boron (B)	ug/L	<b>1700</b>	50	10	8075642
Dissolved Cadmium (Cd)	ug/L	<b>0.5</b>	<0.090	0.090	8075642
Dissolved Chromium (Cr)	ug/L	<b>11</b>	<5.0	5.0	8075642
Dissolved Cobalt (Co)	ug/L	<b>3.8</b>	<0.50	0.50	8075642
Dissolved Copper (Cu)	ug/L	<b>5</b>	1.0	0.90	8075642
Dissolved Lead (Pb)	ug/L	<b>1.9</b>	<0.50	0.50	8075642
Dissolved Molybdenum (Mo)	ug/L	<b>23</b>	0.61	0.50	8075642
Dissolved Nickel (Ni)	ug/L	<b>14</b>	1.7	1.0	8075642
Dissolved Selenium (Se)	ug/L	<b>5</b>	<2.0	2.0	8075642
Dissolved Silver (Ag)	ug/L	<b>0.3</b>	<0.090	0.090	8075642
Dissolved Sodium (Na)	ug/L	<b>490000</b>	200000	100	8075642
Dissolved Thallium (Tl)	ug/L	<b>0.5</b>	<0.050	0.050	8075642
Dissolved Uranium (U)	ug/L	<b>8.9</b>	0.37	0.10	8075642
Dissolved Vanadium (V)	ug/L	<b>3.9</b>	<0.50	0.50	8075642
Dissolved Zinc (Zn)	ug/L	<b>160</b>	<5.0	5.0	8075642
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)					
Table 1: Full Depth Background Site Condition Standards					
Ground Water - All Types of Property Uses					

**O.REG 153 PAHS (WATER)**

<b>Bureau Veritas ID</b>			SZQ107		
<b>Sampling Date</b>			2022/06/21 14:05		
<b>COC Number</b>			882895-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH304</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
Methylnaphthalene, 2-(1-)	ug/L	<b>2</b>	<0.071	0.071	8073474
<b>Polyaromatic Hydrocarbons</b>					
Benzo(e)pyrene	ug/L	-	<0.050	0.050	8086217
Acenaphthene	ug/L	<b>4.1</b>	<0.050	0.050	8086217
Acenaphthylene	ug/L	<b>1</b>	<0.050	0.050	8086217
Anthracene	ug/L	<b>0.1</b>	<0.050	0.050	8086217
Benzo(a)anthracene	ug/L	<b>0.2</b>	<0.050	0.050	8086217
Benzo(a)pyrene	ug/L	<b>0.01</b>	<0.0090	0.0090	8086217
Benzo(b,j)fluoranthene	ug/L	<b>0.1</b>	<0.050	0.050	8086217
Benzo(g,h,i)perylene	ug/L	<b>0.2</b>	<0.050	0.050	8086217
Benzo(k)fluoranthene	ug/L	<b>0.1</b>	<0.050	0.050	8086217
Chrysene	ug/L	<b>0.1</b>	<0.050	0.050	8086217
Dibenzo(a,h)anthracene	ug/L	<b>0.2</b>	<0.050	0.050	8086217
Fluoranthene	ug/L	<b>0.4</b>	<0.050	0.050	8086217
Fluorene	ug/L	<b>120</b>	<0.050	0.050	8086217
Indeno(1,2,3-cd)pyrene	ug/L	<b>0.2</b>	<0.050	0.050	8086217
1-Methylnaphthalene	ug/L	<b>2</b>	<0.050	0.050	8086217
2-Methylnaphthalene	ug/L	<b>2</b>	<0.050	0.050	8086217
Naphthalene	ug/L	<b>7</b>	<0.050	0.050	8086217
Phenanthrene	ug/L	<b>0.1</b>	<0.030	0.030	8086217
Pyrene	ug/L	<b>0.2</b>	<0.050	0.050	8086217
Perylene	ug/L	-	<0.050	0.050	8086217
<b>Surrogate Recovery (%)</b>					
D10-Anthracene	%	-	95		8086217
D14-Terphenyl (FS)	%	-	69		8086217
D8-Acenaphthylene	%	-	85		8086217
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Ground Water - All Types of Property Uses					

**O.REG 153 VOCs BY HS & F1-F4 (WATER)**

<b>Bureau Veritas ID</b>			SZQ107		
<b>Sampling Date</b>			2022/06/21 14:05		
<b>COC Number</b>			882895-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH304</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
1,3-Dichloropropene (cis+trans)	ug/L	<b>0.5</b>	<0.50	0.50	8073563
<b>Volatile Organics</b>					
Acetone (2-Propanone)	ug/L	<b>2700</b>	<10	10	8075664
Benzene	ug/L	<b>0.5</b>	<0.17	0.17	8075664
Bromodichloromethane	ug/L	<b>2</b>	<0.50	0.50	8075664
Bromoform	ug/L	<b>5.0</b>	<1.0	1.0	8075664
Bromomethane	ug/L	<b>0.89</b>	<0.50	0.50	8075664
Carbon Tetrachloride	ug/L	<b>0.2</b>	<0.20	0.20	8075664
Chlorobenzene	ug/L	<b>0.5</b>	<0.20	0.20	8075664
Chloroform	ug/L	<b>2</b>	<0.20	0.20	8075664
Dibromochloromethane	ug/L	<b>2</b>	<0.50	0.50	8075664
1,2-Dichlorobenzene	ug/L	<b>0.5</b>	<0.50	0.50	8075664
1,3-Dichlorobenzene	ug/L	<b>0.5</b>	<0.50	0.50	8075664
1,4-Dichlorobenzene	ug/L	<b>0.5</b>	<0.50	0.50	8075664
Dichlorodifluoromethane (FREON 12)	ug/L	<b>590</b>	<1.0	1.0	8075664
1,1-Dichloroethane	ug/L	<b>0.5</b>	<0.20	0.20	8075664
1,2-Dichloroethane	ug/L	<b>0.5</b>	<0.50	0.50	8075664
1,1-Dichloroethylene	ug/L	<b>0.5</b>	<0.20	0.20	8075664
cis-1,2-Dichloroethylene	ug/L	<b>1.6</b>	<0.50	0.50	8075664
trans-1,2-Dichloroethylene	ug/L	<b>1.6</b>	<0.50	0.50	8075664
1,2-Dichloropropane	ug/L	<b>0.5</b>	<0.20	0.20	8075664
cis-1,3-Dichloropropene	ug/L	<b>0.5</b>	<0.30	0.30	8075664
trans-1,3-Dichloropropene	ug/L	<b>0.5</b>	<0.40	0.40	8075664
Ethylbenzene	ug/L	<b>0.5</b>	<0.20	0.20	8075664
Ethylene Dibromide	ug/L	<b>0.2</b>	<0.20	0.20	8075664
Hexane	ug/L	<b>5</b>	<1.0	1.0	8075664
Methylene Chloride(Dichloromethane)	ug/L	<b>5</b>	<2.0	2.0	8075664
Methyl Ethyl Ketone (2-Butanone)	ug/L	<b>400</b>	<10	10	8075664
Methyl Isobutyl Ketone	ug/L	<b>640</b>	<5.0	5.0	8075664
Methyl t-butyl ether (MTBE)	ug/L	<b>15</b>	<0.50	0.50	8075664
Styrene	ug/L	<b>0.5</b>	<0.50	0.50	8075664
1,1,1,2-Tetrachloroethane	ug/L	<b>1.1</b>	<0.50	0.50	8075664
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)					
Table 1: Full Depth Background Site Condition Standards					
Ground Water - All Types of Property Uses					

**O.REG 153 VOCs BY HS & F1-F4 (WATER)**

<b>Bureau Veritas ID</b>			SZQ107		
<b>Sampling Date</b>			2022/06/21 14:05		
<b>COC Number</b>			882895-01-01		
	<b>UNITS</b>	<b>Criteria</b>	<b>BH304</b>	<b>RDL</b>	<b>QC Batch</b>
1,1,2,2-Tetrachloroethane	ug/L	<b>0.5</b>	<0.50	0.50	8075664
Tetrachloroethylene	ug/L	<b>0.5</b>	<0.20	0.20	8075664
Toluene	ug/L	<b>0.8</b>	<0.20	0.20	8075664
1,1,1-Trichloroethane	ug/L	<b>0.5</b>	<0.20	0.20	8075664
1,1,2-Trichloroethane	ug/L	<b>0.5</b>	<0.50	0.50	8075664
Trichloroethylene	ug/L	<b>0.5</b>	<0.20	0.20	8075664
Trichlorofluoromethane (FREON 11)	ug/L	<b>150</b>	<0.50	0.50	8075664
Vinyl Chloride	ug/L	<b>0.5</b>	<0.20	0.20	8075664
p+m-Xylene	ug/L	-	<0.20	0.20	8075664
o-Xylene	ug/L	-	<0.20	0.20	8075664
Total Xylenes	ug/L	<b>72</b>	<0.20	0.20	8075664
F1 (C6-C10)	ug/L	<b>420</b>	<25	25	8075664
F1 (C6-C10) - BTEX	ug/L	<b>420</b>	<25	25	8075664
<b>F2-F4 Hydrocarbons</b>					
F2 (C10-C16 Hydrocarbons)	ug/L	<b>150</b>	<100	100	8086222
F3 (C16-C34 Hydrocarbons)	ug/L	<b>500</b>	<200	200	8086222
F4 (C34-C50 Hydrocarbons)	ug/L	<b>500</b>	<200	200	8086222
Reached Baseline at C50	ug/L	-	Yes		8086222
<b>Surrogate Recovery (%)</b>					
o-Terphenyl	%	-	102		8086222
4-Bromofluorobenzene	%	-	95		8075664
D4-1,2-Dichloroethane	%	-	102		8075664
D8-Toluene	%	-	102		8075664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Reg. 153/04 (Amended April 15, 2011) Table 1: Full Depth Background Site Condition Standards Ground Water - All Types of Property Uses					



BUREAU  
VERITAS

Bureau Veritas Job #: C2H5994  
Report Date: 2022/07/05

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

## TEST SUMMARY

**Bureau Veritas ID:** SZQ107  
**Sample ID:** BH304  
**Matrix:** Water

**Collected:** 2022/06/21  
**Shipped:**  
**Received:** 2022/06/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8073474	N/A	2022/07/05	Automated Statchk
1,3-Dichloropropene Sum	CALC	8073563	N/A	2022/06/28	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8086222	2022/07/01	2022/07/05	Austin (Guochen) Zhang
Dissolved Metals by ICPMS	ICP/MS	8075642	N/A	2022/06/29	Prempal Bhatti
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8086217	2022/07/01	2022/07/03	Jonghan Yoon
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8075664	N/A	2022/06/28	Xueming Jiang



### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	12.3°C
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Results relate only to the items tested.



BUREAU  
VERITAS

Bureau Veritas Job #: C2H5994

Report Date: 2022/07/05

## QUALITY ASSURANCE REPORT

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8075664	4-Bromofluorobenzene	2022/06/28	96	70 - 130	96	70 - 130	95	%		
8075664	D4-1,2-Dichloroethane	2022/06/28	100	70 - 130	105	70 - 130	97	%		
8075664	D8-Toluene	2022/06/28	101	70 - 130	101	70 - 130	101	%		
8086217	D10-Anthracene	2022/07/03	NC	50 - 130	102	50 - 130	89	%		
8086217	D14-Terphenyl (FS)	2022/07/03	NC	50 - 130	85	50 - 130	71	%		
8086217	D8-Acenaphthylene	2022/07/03	NC	50 - 130	98	50 - 130	83	%		
8086222	o-Terphenyl	2022/07/05	103	60 - 130	103	60 - 130	102	%		
8075642	Dissolved Antimony (Sb)	2022/06/29	110	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
8075642	Dissolved Arsenic (As)	2022/06/29	109	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
8075642	Dissolved Barium (Ba)	2022/06/29	105	80 - 120	100	80 - 120	<2.0	ug/L	0.79	20
8075642	Dissolved Beryllium (Be)	2022/06/29	103	80 - 120	99	80 - 120	<0.40	ug/L	NC	20
8075642	Dissolved Boron (B)	2022/06/29	104	80 - 120	96	80 - 120	<10	ug/L	2.1	20
8075642	Dissolved Cadmium (Cd)	2022/06/29	107	80 - 120	100	80 - 120	<0.090	ug/L	NC	20
8075642	Dissolved Chromium (Cr)	2022/06/29	103	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
8075642	Dissolved Cobalt (Co)	2022/06/29	105	80 - 120	101	80 - 120	<0.50	ug/L	2.6	20
8075642	Dissolved Copper (Cu)	2022/06/29	104	80 - 120	98	80 - 120	<0.90	ug/L	1.1	20
8075642	Dissolved Lead (Pb)	2022/06/29	101	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
8075642	Dissolved Molybdenum (Mo)	2022/06/29	111	80 - 120	100	80 - 120	<0.50	ug/L	6.2	20
8075642	Dissolved Nickel (Ni)	2022/06/29	102	80 - 120	100	80 - 120	<1.0	ug/L	9.9	20
8075642	Dissolved Selenium (Se)	2022/06/29	105	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
8075642	Dissolved Silver (Ag)	2022/06/29	100	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
8075642	Dissolved Sodium (Na)	2022/06/29	NC	80 - 120	103	80 - 120	<100	ug/L	0.50	20
8075642	Dissolved Thallium (Tl)	2022/06/29	105	80 - 120	100	80 - 120	<0.050	ug/L	NC	20
8075642	Dissolved Uranium (U)	2022/06/29	108	80 - 120	100	80 - 120	<0.10	ug/L	2.1	20
8075642	Dissolved Vanadium (V)	2022/06/29	107	80 - 120	101	80 - 120	<0.50	ug/L	5.5	20
8075642	Dissolved Zinc (Zn)	2022/06/29	101	80 - 120	100	80 - 120	<5.0	ug/L	11	20
8075664	1,1,1,2-Tetrachloroethane	2022/06/28	76	70 - 130	80	70 - 130	<0.50	ug/L	NC	30
8075664	1,1,1-Trichloroethane	2022/06/28	90	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
8075664	1,1,2,2-Tetrachloroethane	2022/06/28	84	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8075664	1,1,2-Trichloroethane	2022/06/28	93	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
8075664	1,1-Dichloroethane	2022/06/28	86	70 - 130	94	70 - 130	<0.20	ug/L	NC	30

BUREAU  
VERITAS

Bureau Veritas Job #: C2H5994

Report Date: 2022/07/05

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8075664	1,1-Dichloroethylene	2022/06/28	92	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
8075664	1,2-Dichlorobenzene	2022/06/28	88	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8075664	1,2-Dichloroethane	2022/06/28	86	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
8075664	1,2-Dichloropropane	2022/06/28	86	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8075664	1,3-Dichlorobenzene	2022/06/28	88	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8075664	1,4-Dichlorobenzene	2022/06/28	101	70 - 130	108	70 - 130	<0.50	ug/L	NC	30
8075664	Acetone (2-Propanone)	2022/06/28	89	60 - 140	101	60 - 140	<10	ug/L	NC	30
8075664	Benzene	2022/06/28	83	70 - 130	91	70 - 130	<0.17	ug/L	NC	30
8075664	Bromodichloromethane	2022/06/28	84	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
8075664	Bromoform	2022/06/28	59 (1)	70 - 130	62 (1)	70 - 130	<1.0	ug/L	NC	30
8075664	Bromomethane	2022/06/28	82	60 - 140	86	60 - 140	<0.50	ug/L	NC	30
8075664	Carbon Tetrachloride	2022/06/28	78	70 - 130	81	70 - 130	<0.20	ug/L	NC	30
8075664	Chlorobenzene	2022/06/28	88	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8075664	Chloroform	2022/06/28	89	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
8075664	cis-1,2-Dichloroethylene	2022/06/28	87	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
8075664	cis-1,3-Dichloropropene	2022/06/28	74	70 - 130	77	70 - 130	<0.30	ug/L	NC	30
8075664	Dibromochloromethane	2022/06/28	70	70 - 130	73	70 - 130	<0.50	ug/L	NC	30
8075664	Dichlorodifluoromethane (FREON 12)	2022/06/28	80	60 - 140	87	60 - 140	<1.0	ug/L	NC	30
8075664	Ethylbenzene	2022/06/28	85	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
8075664	Ethylene Dibromide	2022/06/28	83	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
8075664	F1 (C6-C10) - BTEX	2022/06/28					<25	ug/L	NC	30
8075664	F1 (C6-C10)	2022/06/28	90	60 - 140	95	60 - 140	<25	ug/L	NC	30
8075664	Hexane	2022/06/28	86	70 - 130	100	70 - 130	<1.0	ug/L	NC	30
8075664	Methyl Ethyl Ketone (2-Butanone)	2022/06/28	90	60 - 140	104	60 - 140	<10	ug/L	NC	30
8075664	Methyl Isobutyl Ketone	2022/06/28	82	70 - 130	95	70 - 130	<5.0	ug/L	NC	30
8075664	Methyl t-butyl ether (MTBE)	2022/06/28	84	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
8075664	Methylene Chloride(Dichloromethane)	2022/06/28	92	70 - 130	101	70 - 130	<2.0	ug/L	NC	30
8075664	o-Xylene	2022/06/28	84	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
8075664	p+m-Xylene	2022/06/28	89	70 - 130	96	70 - 130	<0.20	ug/L	11	30
8075664	Styrene	2022/06/28	90	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
8075664	Tetrachloroethylene	2022/06/28	84	70 - 130	88	70 - 130	<0.20	ug/L	NC	30



**BUREAU  
VERITAS**

Bureau Veritas Job #: C2H5994

Report Date: 2022/07/05

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8075664	Toluene	2022/06/28	85	70 - 130	91	70 - 130	<0.20	ug/L	3.8	30
8075664	Total Xylenes	2022/06/28					<0.20	ug/L	11	30
8075664	trans-1,2-Dichloroethylene	2022/06/28	92	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
8075664	trans-1,3-Dichloropropene	2022/06/28	74	70 - 130	75	70 - 130	<0.40	ug/L	NC	30
8075664	Trichloroethylene	2022/06/28	92	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
8075664	Trichlorofluoromethane (FREON 11)	2022/06/28	88	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
8075664	Vinyl Chloride	2022/06/28	74	70 - 130	82	70 - 130	<0.20	ug/L	NC	30
8086217	1-Methylnaphthalene	2022/07/03	NC	50 - 130	119	50 - 130	<0.050	ug/L	2.1	30
8086217	2-Methylnaphthalene	2022/07/03	NC	50 - 130	116	50 - 130	<0.050	ug/L	2.7	30
8086217	Acenaphthene	2022/07/03	NC	50 - 130	103	50 - 130	<0.050	ug/L	2.6	30
8086217	Acenaphthylene	2022/07/03	NC	50 - 130	86	50 - 130	<0.050	ug/L	14	30
8086217	Anthracene	2022/07/03	NC	50 - 130	99	50 - 130	<0.050	ug/L	9.7	30
8086217	Benzo(a)anthracene	2022/07/03	NC	50 - 130	95	50 - 130	<0.050	ug/L	11	30
8086217	Benzo(a)pyrene	2022/07/03	NC	50 - 130	88	50 - 130	<0.0090	ug/L	17	30
8086217	Benzo(b/j)fluoranthene	2022/07/03	NC	50 - 130	93	50 - 130	<0.050	ug/L	22	30
8086217	Benzo(e)pyrene	2022/07/03	NC	50 - 130	90	50 - 130	<0.050	ug/L		
8086217	Benzo(g,h,i)perylene	2022/07/03	NC	50 - 130	66	50 - 130	<0.050	ug/L	NC	30
8086217	Benzo(k)fluoranthene	2022/07/03	NC	50 - 130	87	50 - 130	<0.050	ug/L	NC	30
8086217	Chrysene	2022/07/03	NC	50 - 130	92	50 - 130	<0.050	ug/L	11	30
8086217	Dibenzo(a,h)anthracene	2022/07/03	NC	50 - 130	71	50 - 130	<0.050	ug/L	NC	30
8086217	Fluoranthene	2022/07/03	NC	50 - 130	93	50 - 130	<0.050	ug/L	6.0	30
8086217	Fluorene	2022/07/03	NC	50 - 130	96	50 - 130	<0.050	ug/L	4.5	30
8086217	Indeno(1,2,3-cd)pyrene	2022/07/03	NC	50 - 130	71	50 - 130	<0.050	ug/L	NC	30
8086217	Naphthalene	2022/07/03	NC	50 - 130	104	50 - 130	<0.050	ug/L	1.8	30
8086217	Perylene	2022/07/03	NC	50 - 130	89	50 - 130	<0.050	ug/L		
8086217	Phenanthrene	2022/07/03	NC	50 - 130	116	50 - 130	<0.030	ug/L	5.8	30
8086217	Pyrene	2022/07/03	NC	50 - 130	94	50 - 130	<0.050	ug/L	4.8	30
8086222	F2 (C10-C16 Hydrocarbons)	2022/07/05	101	60 - 130	103	60 - 130	<100	ug/L	8.3	30
8086222	F3 (C16-C34 Hydrocarbons)	2022/07/05	101	60 - 130	104	60 - 130	<200	ug/L	NC	30



BUREAU  
VERITAS

Bureau Veritas Job #: C2H5994

Report Date: 2022/07/05

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: AB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8086222	F4 (C34-C50 Hydrocarbons)	2022/07/05	103	60 - 130	103	60 - 130	<200	ug/L	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  $\leq 2 \times \text{RDL}$ ).

(1) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.



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Bureau Veritas Job #: C2H5994  
Report Date: 2022/07/05

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

### VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

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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 Signature Page.



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

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24-Jun-22 12:23

Gemarie Balatico



C2H5994

ENV-1743

COC #:



C#82895-01-01

y:

Bottle Order #:



882895

Project Manager:

Gemarie Balatico

INVOICE TO:  
Company Name: #17950 Cambium Environmental Inc  
Attention: ACCOUNTS PAYABLE  
Address: 194 Sophia Street PO Box 325  
Peterborough ON K9H 1E5  
Tel: (705) 742-7900 Fax: (705) 742-7907  
Email: accounting@cambium-inc.com; Evan.Black@cambium-

REPORT TO:  
Company Name: Cambium Environmental Inc  
Attention: Matt Cunningham  
Address: 135 Bayfield St #102, Barrie  
ON L4M 3B3  
Tel: Fax:  
Email: matt.cunningham@cambium-inc.com; esdat@cambium-

PROJECT INFORMATION:  
Quotation #: C21984  
P.O. #:  
Project: 14324-004  
Project Name: AJH  
Site #:  
Sampled By: Andreel Bunn

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)		Other Regulations	
<input checked="" type="checkbox"/> Table 1	<input checked="" type="checkbox"/> Res/Park	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality
<input type="checkbox"/> Table	<input type="checkbox"/> For RSC	<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table
		<input type="checkbox"/> Other	

Special Instructions

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

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix
1	BH304	2022/06/21	11:05	GW
2				GW
3				GW
4				
5				
6				
7				
8				
9				
10				

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

O Reg 153 VOCs by HS & F1-F4

O Reg 153 PAHs

O Reg 153 Dissolved (CPMS Metals (Water))

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 #)

# of Bottles

Comments

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Andreel Bunn AR	2022/06/21	14:30	Raman/Ramandeep Kaur	22/06/24	12:23	

Laboratory Use Only		Custody Seal	Yes	No
Time Sensitive	Temperature (°C) on Recept	Present		
	14/10/13	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/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/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

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

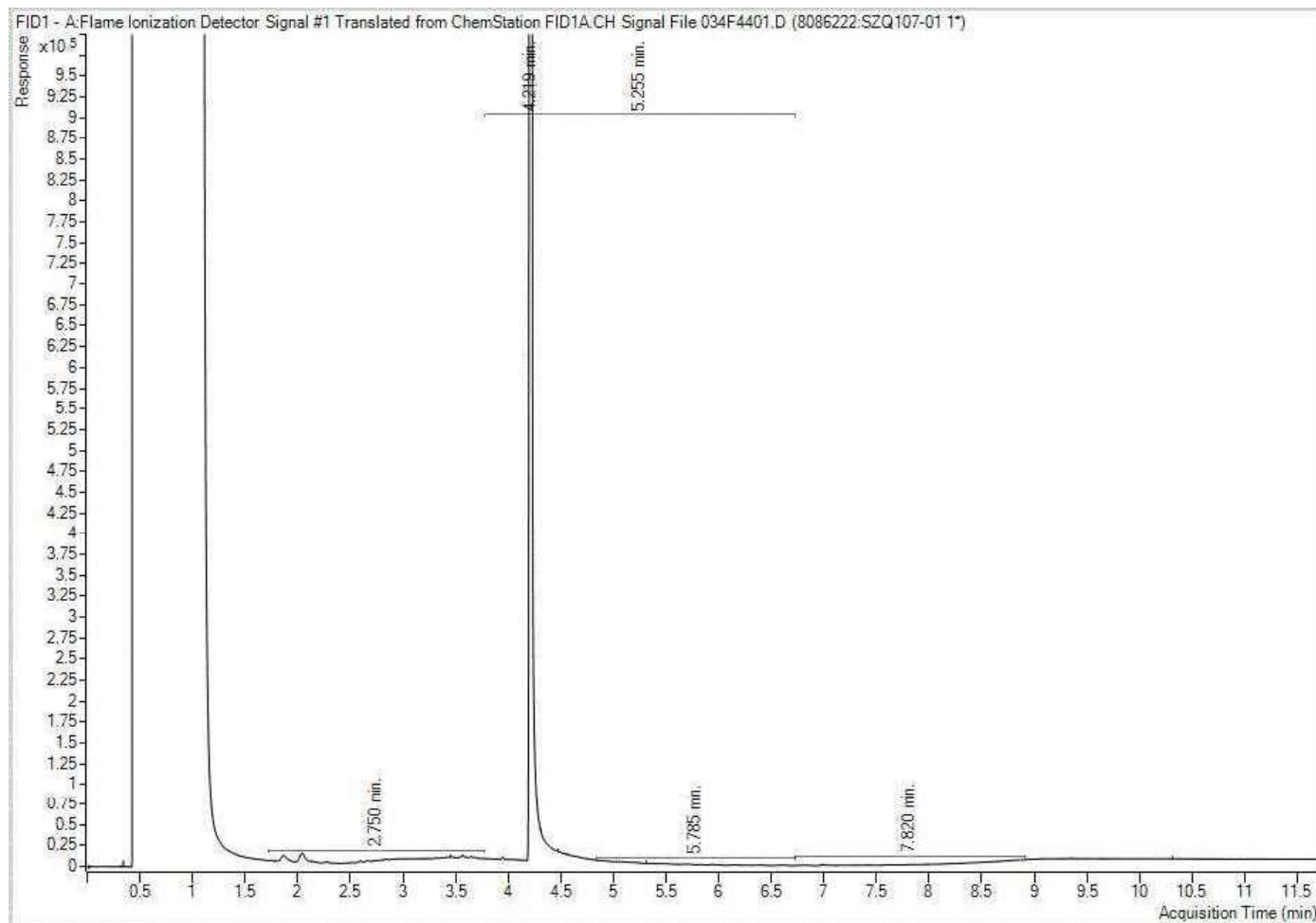
White: Bureau Veritas Yellow: Client

on file

Bureau Veritas Canada (2019) Inc.

# 583621

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

Bureau Veritas Job #: C2H5994  
Report Date: 2022/07/05

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: AB

**Exceedance Summary Table – Reg153/04 T1-GW**  
**Result Exceedances**

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: 14324-004  
Your C.O.C. #: 903649-01-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/11/10**  
Report #: R7382323  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2W0844**

**Received: 2022/11/02, 13:59**

Sample Matrix: Water  
# Samples Received: 3

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Methylnaphthalene Sum	3	N/A	2022/11/10	CAM SOP-00301	EPA 8270D m
PAH Compounds in Water by GC/MS (SIM)	3	2022/11/09	2022/11/09	CAM SOP-00318	EPA 8270D 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, MELCC, EPA, APHA.

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.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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.



Your Project #: 14324-004  
Your C.O.C. #: 903649-01-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/11/10**  
Report #: R7382323  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2W0844**

**Received: 2022/11/02, 13:59**

Encryption Key

Gemarie Balatico  
Project Manager  
10 Nov 2022 15:34:18

Please direct all questions regarding this Certificate of Analysis to:

Gemarie Balatico, Project Manager  
Email: Gemarie.Balatico@bureauveritas.com  
Phone# (905)817-5787

=====

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

Bureau Veritas Job #: C2W0844  
Report Date: 2022/11/10

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: LW

### O.REG 153 PAHS (WATER)

Bureau Veritas ID			UEN519	UEN520	UEN521		
Sampling Date			2022/10/31	2022/10/31	2022/10/31		
COC Number			903649-01-01	903649-01-01	903649-01-01		
	UNITS	Criteria	BH102D	BH102	BH202	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	2	<0.071	<0.071	<0.071	0.071	8321704
Polyaromatic Hydrocarbons							
Benzo(e)pyrene	ug/L	-	<0.050	<0.050	<0.050	0.050	8334745
Acenaphthene	ug/L	4.1	<0.050	<0.050	<0.050	0.050	8334745
Acenaphthylene	ug/L	1	<0.050	<0.050	<0.050	0.050	8334745
Anthracene	ug/L	0.1	<0.050	<0.050	<0.050	0.050	8334745
Benzo(a)anthracene	ug/L	0.2	<0.050	<0.050	<0.050	0.050	8334745
Benzo(a)pyrene	ug/L	0.01	<0.0090	<0.0090	<0.0090	0.0090	8334745
Benzo(b/j)fluoranthene	ug/L	0.1	<0.050	<0.050	<0.050	0.050	8334745
Benzo(g,h,i)perylene	ug/L	0.2	<0.050	<0.050	<0.050	0.050	8334745
Benzo(k)fluoranthene	ug/L	0.1	<0.050	<0.050	<0.050	0.050	8334745
Chrysene	ug/L	0.1	<0.050	<0.050	<0.050	0.050	8334745
Dibenzo(a,h)anthracene	ug/L	0.2	<0.050	<0.050	<0.050	0.050	8334745
Fluoranthene	ug/L	0.4	<0.050	<0.050	<0.050	0.050	8334745
Fluorene	ug/L	120	<0.050	<0.050	<0.050	0.050	8334745
Indeno(1,2,3-cd)pyrene	ug/L	0.2	<0.050	<0.050	<0.050	0.050	8334745
1-Methylnaphthalene	ug/L	2	<0.050	<0.050	<0.050	0.050	8334745
2-Methylnaphthalene	ug/L	2	<0.050	<0.050	<0.050	0.050	8334745
Naphthalene	ug/L	7	<0.050	<0.050	<0.050	0.050	8334745
Phenanthrene	ug/L	0.1	<0.030	<0.030	<0.030	0.030	8334745
Pyrene	ug/L	0.2	<0.050	<0.050	<0.050	0.050	8334745
Perylene	ug/L	-	<0.050	<0.050	<0.050	0.050	8334745
Surrogate Recovery (%)							
D10-Anthracene	%	-	108	128	99		8334745
D14-Terphenyl (FS)	%	-	105	129	101		8334745
D8-Acenaphthylene	%	-	94	113	86		8334745
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)							
Table 1: Full Depth Background Site Condition Standards							
Ground Water - All Types of Property Uses							



BUREAU  
VERITAS

Bureau Veritas Job #: C2W0844  
Report Date: 2022/11/10

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: LW

## TEST SUMMARY

**Bureau Veritas ID:** UEN519  
**Sample ID:** BH102D  
**Matrix:** Water

**Collected:** 2022/10/31  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8321704	N/A	2022/11/10	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8334745	2022/11/09	2022/11/09	Joe Paino

**Bureau Veritas ID:** UEN520  
**Sample ID:** BH102  
**Matrix:** Water

**Collected:** 2022/10/31  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8321704	N/A	2022/11/10	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8334745	2022/11/09	2022/11/09	Joe Paino

**Bureau Veritas ID:** UEN521  
**Sample ID:** BH202  
**Matrix:** Water

**Collected:** 2022/10/31  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8321704	N/A	2022/11/10	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8334745	2022/11/09	2022/11/09	Joe Paino



### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.3°C
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Results relate only to the items tested.



BUREAU  
VERITAS

Bureau Veritas Job #: C2W0844

Report Date: 2022/11/10

## QUALITY ASSURANCE REPORT

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8334745	D10-Anthracene	2022/11/09	112	50 - 130	104	50 - 130	101	%		
8334745	D14-Terphenyl (FS)	2022/11/09	110	50 - 130	102	50 - 130	102	%		
8334745	D8-Acenaphthylene	2022/11/09	94	50 - 130	93	50 - 130	88	%		
8334745	1-Methylnaphthalene	2022/11/09	92	50 - 130	87	50 - 130	<0.050	ug/L	NC	30
8334745	2-Methylnaphthalene	2022/11/09	91	50 - 130	85	50 - 130	<0.050	ug/L	NC	30
8334745	Acenaphthene	2022/11/09	99	50 - 130	95	50 - 130	<0.050	ug/L	NC	30
8334745	Acenaphthylene	2022/11/09	100	50 - 130	97	50 - 130	<0.050	ug/L	NC	30
8334745	Anthracene	2022/11/09	103	50 - 130	102	50 - 130	<0.050	ug/L	NC	30
8334745	Benzo(a)anthracene	2022/11/09	106	50 - 130	105	50 - 130	<0.050	ug/L	NC	30
8334745	Benzo(a)pyrene	2022/11/09	103	50 - 130	102	50 - 130	0.015, RDL=0.0090 (1)	ug/L	NC	30
8334745	Benzo(b/j)fluoranthene	2022/11/09	100	50 - 130	98	50 - 130	<0.050	ug/L	NC	30
8334745	Benzo(e)pyrene	2022/11/09	100	50 - 130	99	50 - 130	<0.050	ug/L		
8334745	Benzo(g,h,i)perylene	2022/11/09	101	50 - 130	102	50 - 130	<0.050	ug/L	NC	30
8334745	Benzo(k)fluoranthene	2022/11/09	104	50 - 130	102	50 - 130	<0.050	ug/L	NC	30
8334745	Chrysene	2022/11/09	104	50 - 130	103	50 - 130	<0.050	ug/L	NC	30
8334745	Dibenzo(a,h)anthracene	2022/11/09	104	50 - 130	105	50 - 130	<0.050	ug/L	NC	30
8334745	Fluoranthene	2022/11/09	105	50 - 130	104	50 - 130	<0.050	ug/L	NC	30
8334745	Fluorene	2022/11/09	102	50 - 130	100	50 - 130	<0.050	ug/L	NC	30
8334745	Indeno(1,2,3-cd)pyrene	2022/11/09	101	50 - 130	103	50 - 130	<0.050	ug/L	NC	30
8334745	Naphthalene	2022/11/09	90	50 - 130	86	50 - 130	<0.050	ug/L	NC	30
8334745	Perylene	2022/11/09	102	50 - 130	102	50 - 130	<0.050	ug/L		
8334745	Phenanthrene	2022/11/09	103	50 - 130	102	50 - 130	<0.030	ug/L	NC	30





BUREAU  
VERITAS

Bureau Veritas Job #: C2W0844

Report Date: 2022/11/10

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8334745	Pyrene	2022/11/09	104	50 - 130	104	50 - 130	<0.050	ug/L	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  $\leq 2 \times$  RDL).

(1) Analyte was detected in the method blank at a level marginally above the detection limit. Sample results have not been blank corrected. However, it has been evaluated as having no significant impact on the data reported since no positive detection in all samples..



BUREAU  
VERITAS

Bureau Veritas Job #: C2W0844  
Report Date: 2022/11/10

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: LW

## VALIDATION SIGNATURE PAGE


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

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Cristina Carriere, Senior Scientific Specialist

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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 \_\_\_\_\_

**INVOICE TO:**

Company Name: #17950 Cambium Environmental Inc

Attention: ACCOUNTS PAYABLE

Address: 194 Sophia Street PO Box 325  
Peterborough ON K9H 1E5

Tel: (705) 742-7900 Fax: (705) 742-7907

Email: accounting@cambium-inc.com; Evan.Black@cambium-

**REPORT TO:**

Company Name:

Attention: Matt Cunningham

Address:

Tel: Fax:

Email: matt.cunningham@cambium-inc.com

**PROJECT INFORMATION:**

Quotation #: C21984

P.O. #:

Project: 14324-004

Project Name:

Site #:

Sampled By: Logan Wintemute

**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)	Other Regulations	Special Instructions
<input checked="" type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	<input type="checkbox"/> CCME <input type="checkbox"/> Reg 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other	<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> Municipality <input type="checkbox"/> Reg 406 Table

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

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr-VI	Analysis Requested (Please be Specific)	Turnaround Time (TAT) Required: Please provide advance notice for rush projects
1	BH102D	22/10/31		GW	X		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 DOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.
2	BH102	22/10/31		GW	X		Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: <input type="checkbox"/>
3	BH202	22/10/31		GW	X		Rush Confirmation Number: (call lab for #)
4							# of Bottles Comments
5							
6							
7							
8							
9							
10							

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only
Logan Wintemute	22/11/21	11:00	[Signature]	22/11/21	13:19		Time Sensitive Temperature (°C) / Reel: 8.6/8 Custody Seal Present: <input checked="" type="checkbox"/> Intact: <input checked="" type="checkbox"/>

\* 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. # 61826

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

White: Bureau Veritas Yellow: Client



**BUREAU  
VERITAS**

Bureau Veritas Job #: C2W0844  
Report Date: 2022/11/10

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: LW

**Exceedance Summary Table – Reg153/04 T1-GW**  
**Result Exceedances**

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: 14324-004  
Your C.O.C. #: 903648-01-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/11/14**  
Report #: R7387581  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2W0851**

**Received: 2022/11/02, 13:59**

Sample Matrix: Soil  
# Samples Received: 5

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Methylnaphthalene Sum	1	N/A	2022/11/12	CAM SOP-00301	EPA 8270D m
Methylnaphthalene Sum	4	N/A	2022/11/14	CAM SOP-00301	EPA 8270D m
Moisture	5	N/A	2022/11/04	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	2022/11/11	2022/11/12	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	2	2022/11/11	2022/11/13	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	2	2022/11/11	2022/11/14	CAM SOP-00318	EPA 8270D 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, MELCC, EPA, APHA.

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.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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.



Your Project #: 14324-004  
Your C.O.C. #: 903648-01-01

**Attention: Matt Cunningham**

Cambium Environmental Inc  
194 Sophia Street  
PO Box 325  
Peterborough, ON  
CANADA K9H 1E5

**Report Date: 2022/11/14**  
Report #: R7387581  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C2W0851**

**Received: 2022/11/02, 13:59**

Encryption Key

Gemarie Balatico  
Project Manager  
14 Nov 2022 16:31:07

Please direct all questions regarding this Certificate of Analysis to:

Gemarie Balatico, Project Manager  
Email: Gemarie.Balatico@bureauveritas.com  
Phone# (905)817-5787

=====

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BUREAU  
VERITAS

Bureau Veritas Job #: C2W0851  
Report Date: 2022/11/14

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: LW

### O.REG 153 PAHS (SOIL)

Bureau Veritas ID			UEN547			UEN549	UEN551		
Sampling Date			2022/10/28			2022/10/28	2022/10/28		
COC Number			903648-01-01			903648-01-01	903648-01-01		
	UNITS	Criteria	BH401_0.08-0.91	RDL	QC Batch	BH402_0.08-1.07	BH403_0.12-0.91	RDL	QC Batch
Inorganics									
Moisture	%	-	9.4	1.0	8328382	24	13	1.0	8328382
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	0.59	<0.071	0.071	8322191	<0.0071	<0.0071	0.0071	8322191
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	0.072	<0.050	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Acenaphthylene	ug/g	0.093	0.19	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Anthracene	ug/g	0.16	0.16	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Benzo(a)anthracene	ug/g	0.36	0.85	0.050	8340029	0.012	0.022	0.0050	8340015
Benzo(a)pyrene	ug/g	0.3	0.95	0.050	8340029	0.014	0.024	0.0050	8340015
Benzo(b/j)fluoranthene	ug/g	0.47	1.3	0.050	8340029	0.019	0.032	0.0050	8340015
Benzo(g,h,i)perylene	ug/g	0.68	0.69	0.050	8340029	0.012	0.019	0.0050	8340015
Benzo(k)fluoranthene	ug/g	0.48	0.48	0.050	8340029	0.0067	0.011	0.0050	8340015
Chrysene	ug/g	2.8	0.70	0.050	8340029	0.011	0.020	0.0050	8340015
Dibenzo(a,h)anthracene	ug/g	0.1	0.19	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Fluoranthene	ug/g	0.56	1.7	0.050	8340029	0.022	0.043	0.0050	8340015
Fluorene	ug/g	0.12	<0.050	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Indeno(1,2,3-cd)pyrene	ug/g	0.23	0.75	0.050	8340029	0.012	0.019	0.0050	8340015
1-Methylnaphthalene	ug/g	0.59	<0.050	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
2-Methylnaphthalene	ug/g	0.59	<0.050	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Naphthalene	ug/g	0.09	<0.050	0.050	8340029	<0.0050	<0.0050	0.0050	8340015
Phenanthrene	ug/g	0.69	0.44	0.050	8340029	0.0075	0.018	0.0050	8340015
Pyrene	ug/g	1	1.4	0.050	8340029	0.023	0.035	0.0050	8340015
Surrogate Recovery (%)									
D10-Anthracene	%	-	112		8340029	92	96		8340015
D14-Terphenyl (FS)	%	-	103		8340029	90	93		8340015
D8-Acenaphthylene	%	-	93		8340029	89	90		8340015
No Fill	No Exceedance								
Grey	Exceeds 1 criteria policy/level								
Black	Exceeds both criteria/levels								
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)									
Table 1: Full Depth Background Site Condition Standards									
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use									



**O.REG 153 PAHS (SOIL)**

Bureau Veritas ID			UEN553		UEN555		
Sampling Date			2022/10/28		2022/10/28		
COC Number			903648-01-01		903648-01-01		
	UNITS	Criteria	BH404_0.30-0.91	RDL	BH405_0.08-0.61	RDL	QC Batch
Inorganics							
Moisture	%	-	12	1.0	8.4	1.0	8328382
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/g	0.59	0.012	0.0071	<0.071	0.071	8322191
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	0.072	0.0089	0.0050	<0.050	0.050	8340015
Acenaphthylene	ug/g	0.093	0.34	0.0050	0.21	0.050	8340015
Anthracene	ug/g	0.16	0.21	0.0050	0.22	0.050	8340015
Benzo(a)anthracene	ug/g	0.36	1.6	0.0050	1.5	0.050	8340015
Benzo(a)pyrene	ug/g	0.3	1.9	0.0050	1.5	0.050	8340015
Benzo(b,j)fluoranthene	ug/g	0.47	2.3	0.0050	1.9	0.050	8340015
Benzo(g,h,i)perylene	ug/g	0.68	1.3	0.0050	1.0	0.050	8340015
Benzo(k)fluoranthene	ug/g	0.48	0.82	0.0050	0.68	0.050	8340015
Chrysene	ug/g	2.8	1.2	0.0050	1.1	0.050	8340015
Dibenzo(a,h)anthracene	ug/g	0.1	0.34	0.0050	0.27	0.050	8340015
Fluoranthene	ug/g	0.56	1.9	0.0050	2.4	0.050	8340015
Fluorene	ug/g	0.12	0.022	0.0050	0.054	0.050	8340015
Indeno(1,2,3-cd)pyrene	ug/g	0.23	1.4	0.0050	1.0	0.050	8340015
1-Methylnaphthalene	ug/g	0.59	0.0056	0.0050	<0.050	0.050	8340015
2-Methylnaphthalene	ug/g	0.59	0.0060	0.0050	<0.050	0.050	8340015
Naphthalene	ug/g	0.09	0.011	0.0050	<0.050	0.050	8340015
Phenanthrene	ug/g	0.69	0.25	0.0050	0.63	0.050	8340015
Pyrene	ug/g	1	1.7	0.0050	1.9	0.050	8340015
Surrogate Recovery (%)							
D10-Anthracene	%	-	92		102		8340015
D14-Terphenyl (FS)	%	-	93		100		8340015
D8-Acenaphthylene	%	-	91		97		8340015
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)							
Table 1: Full Depth Background Site Condition Standards							
Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use							



Bureau Veritas Job #: C2W0851  
Report Date: 2022/11/14

Cambium Environmental Inc  
Client Project #: 14324-004  
Sampler Initials: LW

## TEST SUMMARY

**Bureau Veritas ID:** UEN547  
**Sample ID:** BH401\_0.08-0.91  
**Matrix:** Soil

**Collected:** 2022/10/28  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8322191	N/A	2022/11/12	Automated Statchk
Moisture	BAL	8328382	N/A	2022/11/04	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8340029	2022/11/11	2022/11/12	Jonghan Yoon

**Bureau Veritas ID:** UEN549  
**Sample ID:** BH402\_0.08-1.07  
**Matrix:** Soil

**Collected:** 2022/10/28  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8322191	N/A	2022/11/14	Automated Statchk
Moisture	BAL	8328382	N/A	2022/11/04	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8340015	2022/11/11	2022/11/13	Joe Paino

**Bureau Veritas ID:** UEN551  
**Sample ID:** BH403\_0.12-0.91  
**Matrix:** Soil

**Collected:** 2022/10/28  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8322191	N/A	2022/11/14	Automated Statchk
Moisture	BAL	8328382	N/A	2022/11/04	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8340015	2022/11/11	2022/11/13	Joe Paino

**Bureau Veritas ID:** UEN553  
**Sample ID:** BH404\_0.30-0.91  
**Matrix:** Soil

**Collected:** 2022/10/28  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8322191	N/A	2022/11/14	Automated Statchk
Moisture	BAL	8328382	N/A	2022/11/04	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8340015	2022/11/11	2022/11/14	Joe Paino

**Bureau Veritas ID:** UEN555  
**Sample ID:** BH405\_0.08-0.61  
**Matrix:** Soil

**Collected:** 2022/10/28  
**Shipped:**  
**Received:** 2022/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8322191	N/A	2022/11/14	Automated Statchk
Moisture	BAL	8328382	N/A	2022/11/04	Mathew Bowles
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8340015	2022/11/11	2022/11/14	Joe Paino



### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.0°C
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Sample UEN547 [BH401\_0.08-0.91] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample UEN555 [BH405\_0.08-0.61] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

**Results relate only to the items tested.**



**BUREAU  
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Bureau Veritas Job #: C2W0851

Report Date: 2022/11/14

## QUALITY ASSURANCE REPORT

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8340015	D10-Anthracene	2022/11/13	95	50 - 130	97	50 - 130	106	%		
8340015	D14-Terphenyl (FS)	2022/11/13	93	50 - 130	93	50 - 130	97	%		
8340015	D8-Acenaphthylene	2022/11/13	90	50 - 130	93	50 - 130	97	%		
8340029	D10-Anthracene	2022/11/11	96	50 - 130	98	50 - 130	99	%		
8340029	D14-Terphenyl (FS)	2022/11/11	95	50 - 130	101	50 - 130	99	%		
8340029	D8-Acenaphthylene	2022/11/11	85	50 - 130	89	50 - 130	86	%		
8328382	Moisture	2022/11/04							0	20
8340015	1-Methylnaphthalene	2022/11/13	99	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
8340015	2-Methylnaphthalene	2022/11/13	92	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
8340015	Acenaphthene	2022/11/13	96	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8340015	Acenaphthylene	2022/11/13	93	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
8340015	Anthracene	2022/11/13	98	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8340015	Benzo(a)anthracene	2022/11/13	97	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8340015	Benzo(a)pyrene	2022/11/13	90	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8340015	Benzo(b,j)fluoranthene	2022/11/13	91	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8340015	Benzo(g,h,i)perylene	2022/11/13	96	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
8340015	Benzo(k)fluoranthene	2022/11/13	88	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
8340015	Chrysene	2022/11/13	96	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8340015	Dibenzo(a,h)anthracene	2022/11/13	85	50 - 130	86	50 - 130	<0.0050	ug/g	NC	40
8340015	Fluoranthene	2022/11/13	94	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8340015	Fluorene	2022/11/13	94	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8340015	Indeno(1,2,3-cd)pyrene	2022/11/13	93	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8340015	Naphthalene	2022/11/13	87	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8340015	Phenanthrene	2022/11/13	96	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8340015	Pyrene	2022/11/13	94	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8340029	1-Methylnaphthalene	2022/11/11	89	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8340029	2-Methylnaphthalene	2022/11/11	82	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8340029	Acenaphthene	2022/11/11	90	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
8340029	Acenaphthylene	2022/11/11	86	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
8340029	Anthracene	2022/11/11	96	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8340029	Benzo(a)anthracene	2022/11/11	96	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40



**BUREAU  
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Bureau Veritas Job #: C2W0851

Report Date: 2022/11/14

## QUALITY ASSURANCE REPORT(CONT'D)

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8340029	Benzo(a)pyrene	2022/11/11	90	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
8340029	Benzo(b/j)fluoranthene	2022/11/11	89	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8340029	Benzo(g,h,i)perylene	2022/11/11	99	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
8340029	Benzo(k)fluoranthene	2022/11/11	91	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8340029	Chrysene	2022/11/11	93	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8340029	Dibenzo(a,h)anthracene	2022/11/11	101	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
8340029	Fluoranthene	2022/11/11	98	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
8340029	Fluorene	2022/11/11	92	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8340029	Indeno(1,2,3-cd)pyrene	2022/11/11	97	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
8340029	Naphthalene	2022/11/11	74	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
8340029	Phenanthrene	2022/11/11	94	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8340029	Pyrene	2022/11/11	98	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40

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).



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Bureau Veritas Job #: C2W0851

Report Date: 2022/11/14

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: LW

## VALIDATION SIGNATURE PAGE


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

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Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

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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 {0}, {1} responsible for {2} {3} laboratory operations.

 <p>Bureau Veritas 6740 Campbellville Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com</p>		<p>CHAIN OF CUSTODY RECORD</p> <p style="text-align: right;">Page 1 of 1</p>									
<p><b>INVOICE TO:</b></p> <p>Company Name: #17950 Cambium Environmental Inc</p> <p>Attention: ACCOUNTS PAYABLE</p> <p>Address: 194 Sophia Street PO Box 325 Peterborough ON K9H 1E5</p> <p>Tel: (705) 742-7900 Fax: (705) 742-7907</p> <p>Email: accounting@cambium-inc.com; Evan.Black@cambium-</p>		<p><b>REPORT TO:</b></p> <p>Company Name:</p> <p>Attention: Matt Cunningham</p> <p>Address:</p> <p>Tel: Fax:</p> <p>Email: matt.cunningham@cambium-inc.com</p>									
<p><b>PROJECT INFORMATION:</b></p> <p>Quotation #: C21984</p> <p>P.O. #: 14324-004</p> <p>Project: 14324-004</p> <p>Project Name:</p> <p>Site #: 14324-004</p> <p>Sampled By: Logan Winkelm...</p>		<p>02-Nov-22 13:59</p> <p>Gemarie Balatico</p> <p>C2W0851</p> <p>UK ENV-1515</p> <p>C#903648-01-01</p>									
<p><b>MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY</b></p>											
<p><b>Regulation 153 (2011)</b></p> <p><input checked="" type="checkbox"/> Table 1 <input checked="" type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine</p> <p><input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input checked="" type="checkbox"/> Coarse</p> <p><input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC</p> <p><input type="checkbox"/> Table <input type="checkbox"/> For RSC</p>		<p><b>Other Regulations</b></p> <p><input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw</p> <p><input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw</p> <p><input type="checkbox"/> MISA <input type="checkbox"/> Municipality</p> <p><input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table</p> <p><input type="checkbox"/> Other</p>									
<p><b>Special Instructions</b></p>		<p><b>ANALYSIS REQUESTED (PLEASE BE SPECIFIC)</b></p> <p>Field Filtered (please circle):</p> <p>Metals / Hg / Cr / VI</p> <p>0 Reg 153 PAHs (Sol)</p> <p>0.29 153 PAHs (Sol)</p> <p>(HOLD)</p>									
<p><b>Include Criteria on Certificate of Analysis (Y/N)?</b> <input checked="" type="checkbox"/> Y</p>		<p><b>Turnaround Time (TAT) Required:</b></p> <p>Please provide advance notice for rush projects</p> <p><b>Regular (Standard) TAT:</b></p> <p>(will be applied if Rush TAT is not specified):</p> <p>Standard TAT = 5-7 Working days for most tests.</p> <p>Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are &gt; 5 days - contact your Project Manager for details.</p> <p><b>Job Specific Rush TAT (if applies to entire submission)</b></p> <p>Date Required: Time Required:</p> <p>Rush Confirmation Number: (call lab for #)</p>									
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle):	Metals / Hg / Cr / VI	0 Reg 153 PAHs (Sol)	0.29 153 PAHs (Sol)	(HOLD)	# of Bottles	Comments
1	BH401_0.08-0.91	22/10/28		SOIL	X		X			1	
2	BH401_0.91-1.52			SOIL			X			1	
3	BH402_0.08-1.07			SOIL	X					1	
4	BH402_1.07-1.52			SOIL			X			1	
5	BH403_0.12-0.91			SOIL	X					1	
6	BH403_0.91-1.52			SOIL			X			1	
7	BH404_0.30-0.91			SOIL	X					1	
8	BH404_0.91-1.52			SOIL			X			1	
9	BH405_0.08-0.61			SOIL	X					1	
10	BH405_0.61-1.52			SOIL			X			1	
<p><b>* RELINQUISHED BY: (Signature/Print)</b></p> <p>Logan Winkelm...</p>		<p><b>Date: (YY/MM/DD)</b></p> <p>22/10/01</p>		<p><b>Time</b></p> <p>11:00</p>		<p><b>RECEIVED BY: (Signature/Print)</b></p> <p>Logan Winkelm...</p>		<p><b>Date: (YY/MM/DD)</b></p> <p>20/11/02</p>		<p><b>Time</b></p> <p>13:59</p>	
<p><b># jars used and not submitted</b></p>		<p><b>Laboratory Use Only</b></p> <p>Time Sensitive</p> <p>Temperature (°C) on Receipt</p> <p>10/10/10</p>		<p><b>Custody Seal</b></p> <p>Present</p> <p>Intact</p>		<p><b>Yes</b></p> <p><input checked="" type="checkbox"/></p>		<p><b>No</b></p> <p><input type="checkbox"/></p>		<p><b>White: Bureau Veritas Yellow: Client</b></p> <p>one</p>	
<p>* 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.</p> <p>* 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. #618116</p> <p>** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.</p>											





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Bureau Veritas Job #: C2W0851

Report Date: 2022/11/14

Cambium Environmental Inc

Client Project #: 14324-004

Sampler Initials: LW

### Exceedance Summary Table – Reg153/04 T1-Soil/Res Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH401_0.08-0.91	UEN547-01	Acenaphthylene	0.093	0.19	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Benzo(a)anthracene	0.36	0.85	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Benzo(a)pyrene	0.3	0.95	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Benzo(b/j)fluoranthene	0.47	1.3	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Benzo(g,h,i)perylene	0.68	0.69	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Dibenzo(a,h)anthracene	0.1	0.19	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Fluoranthene	0.56	1.7	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Indeno(1,2,3-cd)pyrene	0.23	0.75	0.050	ug/g
BH401_0.08-0.91	UEN547-01	Pyrene	1	1.4	0.050	ug/g
BH404_0.30-0.91	UEN553-01	Acenaphthylene	0.093	0.34	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Anthracene	0.16	0.21	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Benzo(a)anthracene	0.36	1.6	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Benzo(a)pyrene	0.3	1.9	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Benzo(b/j)fluoranthene	0.47	2.3	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Benzo(g,h,i)perylene	0.68	1.3	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Benzo(k)fluoranthene	0.48	0.82	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Dibenzo(a,h)anthracene	0.1	0.34	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Fluoranthene	0.56	1.9	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Indeno(1,2,3-cd)pyrene	0.23	1.4	0.0050	ug/g
BH404_0.30-0.91	UEN553-01	Pyrene	1	1.7	0.0050	ug/g
BH405_0.08-0.61	UEN555-01	Acenaphthylene	0.093	0.21	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Anthracene	0.16	0.22	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Benzo(a)anthracene	0.36	1.5	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Benzo(a)pyrene	0.3	1.5	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Benzo(b/j)fluoranthene	0.47	1.9	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Benzo(g,h,i)perylene	0.68	1.0	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Benzo(k)fluoranthene	0.48	0.68	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Dibenzo(a,h)anthracene	0.1	0.27	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Fluoranthene	0.56	2.4	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Indeno(1,2,3-cd)pyrene	0.23	1.0	0.050	ug/g
BH405_0.08-0.61	UEN555-01	Pyrene	1	1.9	0.050	ug/g

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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## **Appendix C**

### **Curriculum Vitae**

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## **ALEX WOOD, P. Eng., QPESA. Environmental Engineer and Project Manager**

Mr. Wood holds a Bachelor of Science in Geological Engineering from Queen's University. With six years of environmental consulting experience, Mr. Wood has provided both project management and technical support to numerous private and public Clients on various environmental projects across Canada and internationally. His expertise includes leading teams of environmental professionals in environmental site assessment, remediation, excess soils management, and due diligence works within eastern Ontario.

### **SUMMARY OF PROFESSIONAL EXPERIENCE**

- |                             |  |
|-----------------------------|--|
| June 2022 - Present         | Project Manager. Cambium<br>Kingston, Ontario, Canada<br><i>Engineering lead for O.Reg 153/04 (Record of Site Condition) and O. Reg 406/19 (Excess Soils) projects in Kingston and Eastern Ontario. Oversees environmental remediation, excess soil, record of site condition, and other environmental due diligence work.</i> |
| 2020 – 2022                 | Lead Environmental Engineer. LRL Associates<br>Ottawa, Ontario, Canada<br><i>Led a team of environmental technicians and EITs in the completion of environmental site assessments, remediations, hydrogeological assessments, O.Reg 406/19 Excess Fill characterization, and environmental compliance work.</i>                |
| 2016 - 2020                 | Environmental Consultant. Golder Associates<br>Ottawa, Ontario, Canada<br><i>Managed projects, interpreted complex data sets, maintained client relationships and acted as the lead assessor for environmental site assessment and monitoring works.</i>   |
| April 2016 – September 2016 | Alert Project Manager. Fleming College: Centre for Alternative Wastewater Treatment<br>Alert, Nunavut, Canada<br><i>Organized a field laboratory, worked with military stakeholders, and completed regular environmental sampling and analysis of wastewater at Canadian Forces Station Alert.</i>                             |

### **PROFESSIONAL ASSOCIATIONS**

- Professional Engineers Ontario, Licence Number: 100506943
- Qualified Persons Community of Ontario (QPCO)

### **EDUCATION & TRAINING**

- |      |  |
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| 2016 | Bachelor of Science in Geological Engineering. Queen's University<br>Kingston, Ontario, Canada |
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## **SELECTED EXPERTISE**

### ***ENVIRONMENTAL SITE ASSESSMENT – CANADA***

Mr. Wood has planned, prepared, and reviewed numerous Phase One and Two Environmental Site Assessment reports in support of refinancing, record of site condition and due diligence throughout Ontario, and specializing in the Ottawa area. Sites assessed have included residential, commercial, industrial, community, and institutional properties for a range of public and private sector clients, as well as international Sites in North Africa, South America, and the Caribbean.

### ***ENVIRONMENTAL REMEDIATION – EASTERN ONTARIO***

Mr. Wood has planned and supervised numerous environmental remediation projects at sites ranging from active gasoline service stations to remote train derailments. Specialties include removal “dig-and-dumps” in both eastern and northern Ontario and in-situ activated carbon injections within both overburden and shallow bedrock.

### ***EXCESS SOIL MANAGEMENT – EASTERN ONTARIO***

Since the introduction of Ontario Regulation 406/19, Mr. Wood has provided advisement and environmental management services to clients to arrange for the export and import of excess fill from various Sites in Eastern Ontario. Along with this, Mr. Wood has educated and provided presentations on the topic for industry clientele and continues to act as a QPESA preparing and submitting the required excess fill management documentation on behalf of residential, commercial, and industrial clients.

### ***ENVIRONMENTAL COMPLIANCE – EASTERN ONTARIO***

Mr. Wood has prepared various Environmental Compliance Approval (ECAs) and Environmental Activity and Sector Registries (EASRs), both new applications and amendments, in support of new developments, ongoing site operations, and long term business goals. Clients have included municipal landfills, septage receiving sites, manufacturers, residential subdivision, and constructors requiring dewatering agreements with the province of Ontario.



## **MATTHEW CUNNINGHAM, C.E.T., T.Ag.**

*Project Coordinator*

Mr. Cunningham graduated from McMaster University in 2011 with an Honours Degree in Physical Geography and Environmental Studies, and from Niagara College with a Post Graduate Diploma in Environmental Management and Assessment in 2012, and is currently employed as an Environmental Technologist with Cambium. Mr. Cunningham's professional experience includes 6 years in the environmental consulting industry, during which he has developed extensive experience completing Phase I and Phase II Environmental Site Assessments, Pre-Disturbance Soil and Vegetation Assessments, Contaminated Site Remediation projects, Environmental Monitoring for construction sites and large scale oil and gas facilities, Peatland Assessments, and he has personally overseen over 15,000 soil inspection sites.

### **SUMMARY OF PROFESSIONAL EXPERIENCE**

2015 – Present    Project Coordinator, Cambium Inc.  
Barrie, Ontario, Canada

*Mr. Cunningham's responsibilities include project support, coordination, and field work related to environmental site assessments, soil and groundwater remediation, Feed-In Tariff Land Evaluation Assessments, and environmental monitoring at construction and contaminated sites. Mr. Cunningham has extensive experience with report preparation including project costing, data compilation, interpretation, and completion of final reports.*

2012 – 2015    Project Manager, Navus Environmental.  
Edmonton, Alberta, Canada

*Mr. Cunningham's responsibilities included project coordination and field work related to Pre-Disturbance Assessments, Environmental Oilfield Site Monitoring, Site Remediation, Phase I and Phase II Environmental Site Assessments, Peatland Assessments, Vegetation Assessments, and Long-Term Plot Network Assessments in accordance with applicable provincial and federal standards. Mr. Cunningham was involved with providing project proposals and costing for all aspects of a project, the scheduling of staff and field work, arranging for required sub-contractors, hiring and training new staff, and analyzing and interpreting the field data in order to write the related reports.*

### **PROFESSIONAL ASSOCIATIONS**

- Certified Engineering Technologist (CET); Ontario Association of Certified Engineering Technicians and Technologists
- Technical Agrologist (T.Ag); Ontario Institute of Agrologists



## **EDUCATION & TRAINING**

- 2018 Class II Backpack Electrofishing Certification
- 2015 Standard First Aid Recertification  
Ground Disturbance Level II Training  
ATV Safety Training Recertification  
Wildlife Awareness Training Recertification  
Workplace Hazardous Materials Information System Training
- 2014 Wilderness First Aid Training Level III
- 2012 Post Graduate Diploma in Environmental Management and Assessment,  
Niagara College, Saint Catharines, Ontario, Canada
- 2011 Honours Bachelor of Arts in Geography and Environmental Studies,  
McMaster University, Hamilton, Ontario, Canada

## **SELECTED PROJECT EXPERIENCE**

### ***ENVIRONMENTAL SITE ASSESSMENTS – ALBERTA & ONTARIO: 2012 - 2021***

Mr. Cunningham has completed multiple Phase I and Phase II Environmental Site Assessments on Brownfield sites, existing commercial and industrial properties, vacant lands, and residential properties to evaluate environmental liability for clients. Phase I assessments typically require a desktop review of historical materials, a site walkover, personnel interviews and report preparation. Phase II assessments typically require a detailed subsurface investigation that includes the excavation of test pits or boreholes, advancement of overburden and bedrock groundwater wells, obtaining overburden soil samples and groundwater samples, and report preparation. These subsurface investigations determine the extent of contamination, if any, and to delineate both horizontally and vertically, the area of impact.

### ***IMPACTED SOIL REMEDIATION***

**Orillia, Ontario: 2017 to 2018** – Project included the remediation of 16,177 tonnes of contaminated soil impacted by petroleum hydrocarbons at an abandoned industrial yard in Orillia, Ontario. The work involved the delineation and excavating of impacted material, the removal of below-ground piping, the disposal of impacted material at a suitable landfill facility, and backfilling and contouring the excavation.

**Camrose, Alberta: 2013** – Project included the remediation of 21,678 tonnes of contaminated soil impacted by produced water and petroleum hydrocarbons at a sour-gas plant near Camrose, Alberta. The



work involved the delineation and excavating of impacted material, the removal of five underground storage tanks and associated above-ground and below-ground piping, the disposal of impacted material at a suitable landfill facility, and backfilling and contouring the excavation.

**Bonnyville, Alberta: 2012** – Project included the remediation of 40,509 tonnes of contaminated soil caused by a brackish water leak at a sand holding facility near Bonnyville, Alberta. The work involved the delineation and excavating of impacted material, the disposal of impacted material at a suitable landfill facility, and backfilling and contouring the excavation.

#### ***ENVIRONMENTAL MONITORING – ORILLIA RECREATION CENTRE – ONTARIO***

Environmental Specialist for the construction of Orillia, Ontario's Recreation Centre facility. Within this project, Mr. Cunningham's role included risk management and mitigation, PHC remediation, DNAPL air monitoring system installation and inspections, ongoing sampling for groundwater, sediment, soil vapour, air quality and surface water monitoring, and daily, monthly and annual reporting duties.

#### ***LAND EVALUATION AND SOIL STUDY – ONTARIO***

Mr. Cunningham completed the work necessary to classify a 60 hectare site for a FIT Land Evaluation Study. Within this project Mr. Cunningham's role included: planning field logistics, data and sample collection, soil database development, soil and vegetation mapping, and reporting. Using the analysis of the FIT Land Evaluation soil survey data and laboratory analysis data, a determination of soil subclasses and a final CLI class was achieved; each of the subclasses were reviewed to determine the breadth of severity of potentially limiting factors for soil productivity and crop production.

#### ***PRE-DISTURBANCE ASSESSMENTS – ALBERTA: 2012 - 2015***

Completion of detailed large-scale pre-disturbance vegetation and soil assessment projects in remote-access northern Alberta for sites up to 400 hectares in size. Within these projects Mr. Cunningham's role included the hiring and training of new staff, planning field logistics, client coordination, daily cost tracking, and billing, acting as a field lead, daily data QA/QC, data entry QA/QC, soil database development, soil and vegetation mapping, and reporting.

#### ***ENVIRONMENTAL MONITORING – STEAM ASSISTED GRAVITY DRAINAGE (SAGD) OILFIELD FACILITY – LAC LA BICHE AND COLD LAKE, ALBERTA: 2012 - 2015***

Environmental Coordinator and Environmental Site Specialist for two SAGD facilities based in the Lac La Biche and Cold Lake areas of Alberta. Within these projects Mr. Cunningham's role included training new staff, client coordination, daily cost tracking and billing, soil salvage monitoring, wildlife monitoring and





reporting, GIS technician, spill response, drilling for subsurface investigations, groundwater well sampling and characterization, soil sampling and characterization, and daily reporting duties.