



Phase Two Environmental Site Assessment 315 Mìwàte Private, West Chaudière Island, Ottawa, Ontario

Client:

Windmill Dream Zibi Ontario Inc.

6 Booth Street (Albert Island)
Ottawa, ON K1R 6K8

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Legal Notification

This report was prepared by EXP Services Inc. for the account of **Windmill Dream Zibi Ontario Inc.**

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Executive Summary

EXP Services Inc. (EXP) was retained by Windmill Dream Zibi Ontario Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 315 Miwàte Private (formerly 4 Booth Street) in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was vacant, however after remedial activities were completed on the north part of the site in 2019, it was paved and became part of the Chaudière Private right of way.

The objective of the Phase Two ESA investigation was to assess the quality of the groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. The most recent use of the property was for pulp and paper operations, which is a type of industrial property use, and the proposed future property use will be residential and commercial. Consequently, in accordance with Regulation 153/04, as amended, a Record of Site Condition (RSC) must be filed.

The most recent use of the property was industrial land use (historically, a pulp and paper mill was in operation at the site). The proposed future use of the property is residential and commercial. A new building will be constructed at the Phase Two property. The building will have one or two levels of underground parking, ground level commercial space, and upper-level residential units.

The Phase Two property is located in a former industrial area on the west side of Chaudière Island west of Booth Street. The Phase Two property is irregular in shape and has an area of approximately 0.8 hectares. The approximate centroid coordinates are NAD83 18T 443738 m E and 5029828 m N.

The municipal address of the Phase Two property is 315 Miwàte Private, Ottawa, Ontario. The property identification numbers (PIN) are: 04097-0288, 04097-0306, and 04097-0292. The legal description of PIN 04097-0288 is Part Lots 3, 4, north side Head Street, Part Lot 21, south side Chaudière Street, Plan 10, City of Ottawa. The legal description of PIN 04097-0306 is Part of Lots 2, 3, 4, 5, 20, 21, 22, 23, 24, Plan 10, City of Ottawa. The legal description of PIN 04097-0292 is Part Lot 21, south Chaudière Street, Plan 10, City of Ottawa.

Two RSC have been filed for neighbouring properties owned by the same property owner. Specifically, RSC 226108 was filed on October 21, 2019 for the property immediately adjacent to the Phase Two property to the east and south. RSC 228673 was filed on May 21, 2021 for 125 Zaida Eddy Private, which is located on East Chaudière Island.

Refer to Table EX-1 for the Site identification information.

Table EX-1: Site Identification Details

Civic Address	315 Miwàte Private, Ottawa, Ontario
Current Land Use	Industrial
Proposed Future Land Use	Residential and Commercial
Property Identification Number	04097-0288, 04097-0306, 04097-0292
UTM Coordinates	NAD83 18T 443738 m E and 5029828 m N
Site Area	0.8 hectares
Property Owner	Windmill Dream Zibi Ontario Inc.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area has a well that is being used or is intended for use as a source of potable water.

Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is a shallow soil property as defined in Section 43.1 of the regulation. It is part of Chaudière Island and is within 30 m of the Ottawa River.

Bedrock in the general area of the Phase Two property consists of limestone, dolostone, shale, arkose, and sandstone from the Shadow Lake Formation of the Middle Ordovician period. The bedrock occurs as bare tabular outcrops and includes areas thinly veneered by unconsolidated sediments. The bedrock elevation is approximately 53 metres above sea level (masl).

Soil at the Phase Two property prior to remediation generally consisted of sand and gravel fill material with trace silt and brick debris and some boulders and cobbles. The fill layer ranged in thickness from 0.2 to 1.6 metres. Limestone bedrock underlaid the fill material. All soil was removed from the Phase Two property during the remediation program. Where required, backfill materials consisted of material that was not considered to be soil, as the particle diameter was larger than 2 mm.

The Phase Two property is on Chaudière Island, which is surrounded by the Ottawa River. Groundwater elevations depend on the level of water within the river, but generally range between 42 and 45 masl. The groundwater flow direction was determined to be northeasterly.

EXP notes that groundwater levels depend on the size of the fractures that are intercepted as drilling progresses. Groundwater contour plans were not prepared for post-remediation groundwater levels because it is unlikely that the difference in groundwater elevations in the three monitoring wells is representative of the actual groundwater flow across the site as opposed to the differences in the fractures at each individual location. Groundwater levels can also be influenced by seasonal changes, the presence of subsurface structures, or fill, however based on the presence of the Ottawa River surrounding Chaudière Island, it is unlikely that any of these factors will affect the groundwater flow direction at the Phase Two property.

The hydraulic conductivity in post remedial monitoring well MW21-03 was 6.61×10^{-7} cm/s.

A summary of factors that apply to the Phase Two property is provided in Table EX-2.

Table EX-2: Site Characteristics

Characteristic	Description
Minimum Depth to Bedrock	0.2 metres below ground surface
Minimum Depth to Groundwater	50.95 masl (March 24, 2021)
Shallow Soil Property	Yes, bedrock is less than 2.0 mbgs
Proximity to water body or ANSI	Approximately 30 m – Ottawa River
Soil pH	Surface and sub-surface pH was within applicable ranges prior to remediation and all soil was removed during remediation
Soil Texture	Coarse
Current Property Use	Industrial
Future Property Use	Residential and Commercial

Proposed Future Building	Multi-storey residential, commercial on ground level, one or two levels of underground parking
Areas Containing Suspected Fill	All soil that was on the property prior to remediation was fill

Utilities, including underground hydro, natural gas, water, and sewers, are present on Chaudière Private, part of which is included in the Phase Two property. Since the water table is within the bedrock, the presence of utilities is not expected to affect possible migration of contaminants once buildings are constructed on the Phase Two property.

A multi-storey residential building with commercial at ground level and one or two levels of underground parking is planned for construction on the Phase Two property.

The following on-site potentially contaminating activities (PCA) were identified:

- PCA #9 – Coal Gasification (former coal storage area indicates use of coal as a source of coal gas, which was likely used as a source of heating and/or lighting at the Phase Two property);
- PCA #30 – Importation of fill material of unknown quality (fill material overlying bedrock throughout the Phase Two property);
- PCA # 45 – Pulp, paper and paperboard manufacturing and processing (historic use of the Phase Two property for industrial purposes related to lumber storage and pulp and paper);
- PCA #46 – Rail yards, tracks and spurs (former rail spurs shown in 1948 and 1956 FIP);
- PCA #Other – PCB storage (E.B. Eddy was listed in the PCB Inventory as a major PCB storage site, indicating that the site contained liquid PCB waste in quantities greater than or equal to 1,000 kilograms) and
- PCA #Other – Debris and rubble from fire of 1900 (a fire caused the destruction of every building in the Phase Two study area in 1900. Some of the debris related to the fire was used as backfilling material on the Phase Two property).

The following off-site PCA were identified:

- PCA #1 – Acid and alkali manufacturing, processing and bulk storage (three former acid storage tanks within sulphite mill and storage area on the eastern part of East Chaudière Island);
- PCA #6 – Battery manufacturing, recycling and bulk storage (battery storage area identified in the 1912 fire insurance plan on East Chaudière Island);
- PCA #18 – Electricity generation, transformation and power stations (former powerhouse to the northeast, Hydro Ottawa (and its predecessors) historically occupied the south part of East Chaudière Island for electricity generation, and power generation companies listed on Middle Street);
- PCA #28 – Gasoline and associated products storage in fixed tanks (three former AST on East Chaudière Island, six former AST on West Chaudière Island (east adjacent), two former UST on Albert Island, former diesel pumping station and bunker C UST to the north);
- PCA #34 – Metal fabrication (One or more foundries, manufacturing facilities where metal would be used as a raw material and/or blacksmith shops were listed on Victoria Island);
- PCA #39 – Paints manufacturing, processing and bulk storage (the former paint shop located in the east end of the south building on Albert Island);
- PCA #44 – Port activities, including operation and maintenance of wharves and docks (former wharf adjacent to the Ottawa River on East Chaudière Island);

- PCA #45 – Pulp, paper and paperboard manufacturing and processing (the presence a ground wood pulp mill, beater mill, and sulphite pulp mill on East Chaudière and of a pulp and paper/lumber facility on West Chaudière (paper mill, beater building, and pulp mill));
- PCA #46 – Rail yards, tracks and spurs (former rail spurs were present on the east adjacent property and on East Chaudière Island);
- PCA #55 – Transformer manufacturing, processing and use (five PCB-containing transformers present on East Chaudière Island); and
- PCA #58 – Waste disposal and waste management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners (the waste burner on the property to the adjacent northeast (in the 1912 FIP).

As Albert Island is separated from the Phase Two property by the Ottawa River, none of the off-site PCA identified on Albert Island (PCA # 39 (paint shop) and PCA #28 (two former UST)) resulted in APEC on the Phase Two property.

PCA identified on East Chaudière Island (PCA #1 (former acid storage tanks), PCA #6 (battery storage area), PCA #18 (former Hydro Ottawa facility), PCA #28 (three former AST), PCA #44 (former wharf), PCA #46 (spurs), and PCA #55 (five PCB-containing transformers)) were also determined not to result in APEC on the Phase Two property due to the separation distance and downgradient location from the Phase Two property.

The off-site PCA that were determined to result in APEC on the Phase Two property include PCA #18 (former powerhouse to the northeast), PCA #28 (former diesel pumping station and bunker C UST to the north), PCA #34 (foundries on Victoria Island), and PCA #58 (waste burner on the property to the adjacent northeast).

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown in Table EX-3:

Table EX-3: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase Two Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase Two property was part of a pulp and paper mill	Entire Phase Two property	#45 – Pulp, Paper and Paperboard Manufacturing and Processing	On-site and Off-Site	Volatile Organic Compounds (VOC), Petroleum Hydrocarbons (PHC), Polycyclic Aromatic Hydrocarbons (PAH), Metals, Polychlorinated Biphenyls (PCB)	Soil and groundwater
#2. Fill material is overlying bedrock throughout the Phase Two property	Entire Phase Two property	#30 – Importation of Fill Material of Unknown Quality	On-site	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), PHC, PAH, Metals	Soil
#3. Former owner, E.B. Eddy Company, was listed on the PCB inventory	Entire Phase Two property	#Other – PCB Storage	On-Site	PCB	Soil and groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase Two Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#4. A fire that occurred in 1900 destroyed all on-site buildings that existed at the time. Debris and rubble were buried on-site.	Entire Phase Two property	#Other – Debris and Rubble from Fire of 1900	On-Site	BTEX, PHC, PAH, Metals	Soil and groundwater
#5. Foundries were present on Victoria Island, east of the Phase Two property	Entire Phase Two property	#34 – Metal Fabrication	Off-Site	Metals	Soil
#6. Former rail spurs	Central part of the Phase Two property, 10 metres on each side of former rail spurs	#46 – Rail yards, tracks and spurs	On-site	VOC, PHC, PAH, Metals, PCB	Soil and groundwater
#7. Former coal storage area	Northeast corner of the Phase Two property	#9 – Coal gasification	On-Site	PAH	Soil and groundwater
#8. Former bunker C UST and diesel pumping station on the adjacent property to the north	North part of Phase Two property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHC, BTEX, PAH, Metals, PCB	Groundwater
#9. Coal fired power generation, adjacent property to the northeast	Northeast part of the Phase Two property	#18 – Electricity generation, transformation and power stations	Off-Site	VOC, PHC, PAH	Groundwater
#10. Former waste burner located south of a building to the northeast	North part of the Phase Two property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners	Off-Site	PHC, PAH, Metals, PCB	Groundwater

The site investigative activities consisted of the drilling of boreholes to facilitate the collection of soil samples for visual inspection and chemical analysis. The boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

In March 2019, the Phase Two property owner retained Tomlinson Development Corporation to install utilities (water, sewer, gas, hydro) for future development along Chaudière Private (formerly Perley Street). From March 5 to 25, 2019, EXP observed excavation activities and took soil samples for characterization of the utility trench which ran along the north boundary of the Phase Two property. Beneath the concrete sidewalk and asphalt roadway, sand and gravel fill material was present to a depth of approximately 0.6 metres below ground surface (m bgs). Bedrock was present at a depth of approximately 0.2 to 1.5 metres below ground surface (m bgs). Granular material, which was comprised of material that had particles larger than 2 mm, was present from a depth of 0.6 m bgs to bedrock. The total depth of the utility excavation was 2.4 m bgs. All excavated material was temporarily stockpiled on East Chaudière Island and was subsequently disposed of off-site in 2019. The utility trench was backfilled with material that was larger than 2 mm in diameter.

A pre-remedial drilling program was conducted to investigate the soil quality on the Phase Two property. The pre-remedial drilling program was completed March 15 and 16, 2021 by George Downing Estate Drillings (Downing), a licensed well contractor. Downing advanced five boreholes (MW21-01 to MW21-05) across the Phase Two property, using a CME-75 truck mounted drill. Boreholes were augured to refusal, then cored to depth. All of the boreholes were completed as monitoring wells.

The pre-remediation monitoring wells were decommissioned in accordance with Regulation 903. On March 26, 2021, five monitoring wells (BH/MW21-01 to BH/MW21-05) were decommissioned by using the pressure-grout method by Downing.

The 2021 remedial excavation program included excavating and stockpiling impacted soil for off-site disposal. The remedial excavation extended to the utility trench, from which all soil was removed in 2019, and extended horizontally beyond the property boundaries in all other directions and vertically to bedrock surface. With the exception of the soil at the northern property boundary, as described above, all soil was removed from the Phase Two property.

This remediation program commenced on March 29, 2021 and concluded on May 18, 2021. Excavation GTS was retained by the Phase Two property owner to complete the remedial excavation. Soil excavation and removal activities occurred over five days during this period, including March 29 to 31 and May 17 and 18. No soil was brought to the Phase Two property, as the excavation was backfilled with materials that were larger than 2 mm in diameter.

The post-remedial drilling investigation was conducted on April 28, 2021 by Downing. Downing advanced three boreholes (BH/MW21-01 to BH/MW21-03) on the Phase Two property, using a CME-75 truck mount drill. The boreholes were installed at depths between 6.1 and 6.7 mbgs. All soil was removed from the Phase Two property during the remediation program and all the boreholes were cored through bedrock. At the time of drilling, ground surface in the area of the monitoring wells consisted of bedrock surface, however $\frac{3}{4}$ inch stone was subsequently brought to the property.

Soil samples were selected for laboratory analysis based on combustible vapour measurements and visual and olfactory evidence of impacts, where observed. Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analysed for PHC fraction F1 and BTEX were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, Paracel Laboratories Ltd. (Paracel) of Ottawa, Ontario.

Ten soil samples and one field duplicate were collected from the north wall of the utilities trench in 2019 and during the pre-remedial drilling investigation in 2021 and submitted to Paracel for analysis of PHC fractions F1 to F4, VOC, PAH, PCB and inorganics. Two soil samples were submitted for analysis of pH.

Soil samples collected during the pre-remediation drilling program exceeded the Table 7 and/or Table 9 SCS for VOC, PHC, PAH, and/or inorganic parameters. All of these samples were within the Table 7 and Table 9 SCS for PCB. The pH samples

were within the applicable ranges for surface and subsurface soils. All soil (except for the soil located on the north property line) was removed from the Phase Two property, so these samples are not representative of post-remediation site conditions.

None of the soil samples collected from the north wall of the utility trench exceeded the applicable Table 7 or Table 9 SCS. With the exception of the soil along the north wall of the services excavation on Chaudière Private, all soil was removed from the Phase Two property. Therefore, no post-remedial soil analysis was required.

All groundwater samples were collected via a low flow sampling technique using a YSI 550 multi probe water quality meter. The YSI probe was calibrated using in-house reference standards. Prior to collecting the groundwater samples, water quality field parameters (turbidity, dissolved oxygen, conductivity, temperature, pH, and oxidation reduction potential) were monitored until stable readings were achieved to ensure that the samples collected were representative of actual groundwater conditions.

The groundwater samples were placed in clean coolers containing ice packs prior to and during transportation to the laboratory. The samples were transported to the laboratory within 24 hours of collection with a chain of custody.

Prior to remediation, five groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, and/or inorganic parameters. No groundwater sample was submitted for metals analysis from BH/MW21-02 as there was insufficient sample volume for analysis of all parameters.

There were no exceedances of the MECP Table 9 or Table 7 SCS for PHC, PCB, and inorganic parameter groups. However, the sample collected from BH/MW21-04 exceeded the Table 7 and Table 9 SCS for chloroform. This monitoring well was installed within the limestone bedrock. To facilitate drilling at this location, municipal water was used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. In accordance with Regulation 153/04 it is the opinion of the Qualified Person that the source of chloroform in this monitoring well, which was sampled nine days after its installation, is the municipal water. Therefore, in accordance with Section 49.1 of Regulation 153/04, chloroform is not considered to exceed the SCS.

Two post-remedial groundwater sampling events were conducted. The first event was conducted on August 23 and 31 and September 14, 2021, and the second event was conducted on December 21 and 22, 2021 and January 6, 12, 19, and February 16, 2022. Several days were required for each event because of the slow recovery of the monitoring wells and because they were covered with snow. During each event, three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, inorganic parameters. All post-remediation groundwater samples were within the applicable Table 7 and Table 9 SCS.

Prior to remediation, all soil on site was determined to be contaminated. No contaminated groundwater was encountered. Contaminants that exceeded the applicable standards included:

Soil: PHC fractions F2 to F4, benzene, ethylbenzene, xylenes, acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, 1- & 2- methyl-naphthalene, naphthalene, phenanthrene, pyrene, antimony, arsenic, barium, copper, lead, mercury, molybdenum, selenium, and thallium.

Groundwater: None.

Post-remediation, no soil or groundwater samples exceeded the Table 7 and Table 9 SCS. Maximum soil concentrations are representative of the wall samples from the utilities excavation on Chaudière Private completed in 2019. No other soil is present on the Phase Two property.

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

Prior to remediation, all soil on site was determined to be contaminated, as PHC fractions F2 to F4, BTEX, PAH, and metals exceeded the applicable Table 7 and/or Table 9 SCS. There were no pre-remediation groundwater exceedances.

A building with one or two levels of underground parking, ground floor retail, and upper floor residential use is planned to be constructed. The potential on-site human receptors include indoor and outdoor long-term workers, indoor and outdoor short-term workers, residents on upper floors (adult, teen, child, toddler and infant), property visitors (adult, teen, child, toddler and infant), and construction workers. Since all pre-remediation groundwater samples were within the Table 7 and Table 9 SCS, neither groundwater dermal contact nor groundwater ingestion were deemed to be potential exposure pathways for any of the potential on-site human receptors.

The potential on-site exposure pathways for the construction workers are incidental soil ingestion, soil particulate inhalation, soil dermal contact, ambient vapour inhalation, and vapour skin contact.

The potential on-site exposure pathways for the short-term and long-term outdoor workers (who are not exposed directly to subsurface soil and groundwater) are incidental surface soil ingestion, surface soil particulate inhalation, surface soil dermal contact, ambient air inhalation, and vapour skin contact.

The potential on-site exposure pathway for the property residents, the long-term indoor workers and visitors is indoor air inhalation.

While the footprint of the building that is being planned will occupy most of the Phase Two property, there will be a landscaped area surrounding the building. Therefore, The Phase Two property is capable of supporting some ecological receptors. Relevant ecological receptors include terrestrial vegetation (bushes, grasses and weeds); soil invertebrates (earthworms, millipedes and beetles); birds (seagulls, pigeons, sparrows and robins); and small terrestrial mammals (moles, voles, and mice). Since all pre-remediation groundwater samples were within the Table 7 and Table 9 SCS, groundwater root uptake, groundwater dermal contact, and incidental ingestion of groundwater were not deemed to be potential exposure pathways for any of the potential on-site ecological receptors.

The potential on-site exposure pathways for terrestrial vegetation are root uptake of soil and stem and foliar uptake of vapours from soil.

The potential on-site exposure pathways for soil invertebrates are soil particulate inhalation, soil dermal contact, soil ingestion, and vapour inhalation, and plant and animal tissue ingestion.

The potential on-site exposure pathways for mammals and birds are soil particulate inhalation, soil dermal contact, soil ingestion, vapour inhalation, and plant and animal tissue ingestion.

Approximately 2,431.87 tonnes of impacted soil and granular material were excavated and removed from the north part of the Phase Two property in 2019. This soil was temporarily stockpiled on East Chaudière Island and was disposed off-site in conjunction with remedial activities that occurred at 125 Zaida Eddy Private (RSC 228673). In conjunction with 2021 remedial activities, approximately 3,720.67 tonnes of impacted soil and 30.5 tonnes of impacted concrete were removed by excavation from the Phase Two property. All soil, concrete, and granular materials were disposed of as non-hazardous waste at the City of Ottawa Trail Road facility.

A building with one or two levels of underground parking, ground floor commercial, and upper-level residential units will be constructed on the Phase Two property. Services associated with future site development have been installed on the Phase Two property. All backfill material brought to the Phase Two property consisted of particles that were larger than 2 mm in diameter.

During the remediation program, all soil was removed from the Phase Two property except for soil that is still present along the north wall of a utility trench adjacent to Chaudière Private. All confirmatory groundwater samples were within the applicable Table 7 and Table 9 SCS. Therefore, there are no longer any potential human health or ecological receptors and exposure pathways. Further, no additional remedial activities are deemed to be warranted.

*Windmill Dream Zibi Ontario Inc.
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The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

This executive summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety.

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1.0 Introduction

EXP Services Inc. (EXP) was retained by Windmill Dream Zibi Ontario Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 315 Miwàte Private (formerly 4 Booth Street) in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was vacant, however after remedial activities were completed on the north part of the site in 2019, it was paved and became part of the Chaudière Private right of way.

The objective of the Phase Two ESA investigation was to assess the quality of the groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. The most recent use of the property was for pulp and paper operations, which is a type of industrial property use, and the proposed future property use will be residential and commercial. Consequently, in accordance with Regulation 153/04, as amended, a Record of Site Condition (RSC) must be filed.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

1.1 Site Description

The Phase Two property is located in a former industrial area on the west side of Chaudière Island west of Booth Street, as shown on Figure 1 in Appendix A. The Phase Two property is irregular in shape and has an area of approximately 0.8 hectares. The approximate centroid coordinates are NAD83 18T 443738 m E and 5029828 m N.

At the time of the investigation, the Phase Two property was vacant, however after remedial activities were completed on the north part of the site in 2019, it was paved and became part of the Chaudière Private right of way. The site layout is shown on Figure 2 in Appendix A.

The municipal address of the Phase Two property is 315 Miwàte Private, Ottawa, Ontario. The property identification numbers (PIN) are: 04097-0288, 04097-0306, and 04097-0292. The legal description of PIN 04097-0288 is Part Lots 3, 4, north side Head Street, Part Lot 21, south side Chaudière Street, Plan 10, City of Ottawa. The legal description of PIN 04097-0306 is Part of Lots 2, 3, 4, 5, 20, 21, 22, 23, 24, Plan 10, City of Ottawa. The legal description of PIN 04097-0292 is Part Lot 21, south Chaudière Street, Plan 10, City of Ottawa.

Two RSC have been filed for neighbouring properties owned by the same property owner. RSC 226108 was filed on October 21, 2019 for the property immediately adjacent to the Phase Two property to the east and south. RSC 228673 was filed on May 21, 2021 for 125 Zaida Eddy Private, which is located on East Chaudière Island. Refer to Table 1.1 for the Site identification information.

Table 1.1: Site Identification Details

Civic Address	315 Miwàte Private, Ottawa, Ontario
Current Land Use	Industrial
Proposed Future Land Use	Residential and Commercial
Property Identification Number	04097-0288, 04097-0306, 04097-0292
UTM Coordinates	NAD83 18T 443738 m E and 5029828 m N
Site Area	0.8 hectares
Property Owner	Windmill Dream Zibi Ontario Inc.

A survey plan of the Phase Two property was completed by Stantec Geomatics Ltd. (Stantec) in January 2022. A copy of the survey plan is provided in Appendix B.

1.2 Property Ownership

The registered owner of the Phase One property is Windmill Dream Zibi Ontario Inc., who holds title to the Phase One property as nominee/bare trustee for the beneficial owner, Windmill Dream Ontario Holdings LP. Authorization to proceed with this investigation on behalf of the property owner was provided by Ms. Taryn Glancy, Brownfields Coordinator and Mr. Justin Robitaille, Vice President. Contact information is 6 Booth Street, Ottawa, Ontario, K1R 6K8.

1.3 Current and Proposed Future Use

The most recent use of the property was industrial land use (historically, a pulp and paper mill was in operation at the site). The proposed future use of the property is residential and commercial. A new building will be constructed at the Phase Two property. The building will have one or two levels of underground parking, ground level commercial space, and upper-level residential units. Since the past use of the property was industrial land use, an RSC must be filed, per Ontario Regulation 153/04.

1.4 Applicable Site Condition Standards

Analytical results obtained for soil and groundwater samples were compared to Site Condition Standards (SCS) established under subsection 169.4(1) of the Environmental Protection Act, and presented in the document entitled *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, 2011*. This document provides tabulated background SCS (Table 1) applicable to environmentally sensitive sites and effects-based generic SCS (Tables 2 to 9) applicable to non-environmentally sensitive sites. The effects-based SCS (Tables 2 to 9) are protective of human health and the environment for different groundwater conditions (potable and non-potable), land use scenarios (residential, parkland, institutional, commercial, industrial, community and agricultural/other), soil texture (coarse or medium/fine) and restoration depth (full or stratified).

Table 1 to 9 SCS are summarized as follows:

- Table 1 – applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived
- Table 2 – applicable to sites with potable groundwater and full depth restoration
- Table 3 – applicable to sites with non-potable groundwater and full depth restoration
- Table 4 – applicable to sites with potable groundwater and stratified restoration
- Table 5 – applicable to sites with non-potable groundwater and stratified restoration
- Table 6 – applicable to sites with potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 7 – applicable to sites with non-potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 8 – applicable to sites with potable groundwater and that are within 30 m of a water body
- Table 9 – applicable to sites with non-potable groundwater and that are within 30 m of a water body

Application of the generic or background SCS to a specific site is based on a consideration of site conditions related to soil pH, thickness and extent of overburden material, and proximity to an area of environmental sensitivity or of natural significance. For some chemical parameters, consideration is also given to soil textural classification with SCS having been derived for both coarse and medium-fine textured soil conditions.

For assessment purposes, EXP selected the 2011 Table 9 SCS and Table 7 SCS in a non-potable groundwater condition for residential/parkland/institutional property use. The Table 7 SCS are applicable for properties where the depth to bedrock is less than 2 metres from ground surface, while the Table 9 SCS are applicable for properties that are within 30 metres of a surface water body. Both conditions apply to the subject property, so both sets of SCS apply.

The selection of these categories was based on the following factors:

- Bedrock is less than 2 metres below grade across the subject property;
- The Phase Two property is part of Chaudière Island, which is surrounded by the Ottawa River;
- The Phase Two property is not located within an area of natural significance, does not include nor is adjacent to an area of natural significance, and does not include land that is within 30 metres of an area of natural significance;
- Potable water for the Phase Two property is provided by the City of Ottawa through its water distribution system;
- The Phase Two property is not located in an area designated in a municipal official plan as a well-head protection area;
- The proposed building is planned for residential and commercial use; and
- It is the opinion of the Qualified Person who oversaw this work that the Phase Two property is not a sensitive site.

2.0 Background Information

2.1 Physical Setting

The Phase Two property is part of a larger property with the municipal address 315 Miwàte Private (formerly 4 Booth Street) in Ottawa, Ontario. The Phase Two property is located in a former industrial area on the west side of Chaudière Island, west of Booth Street. The Phase Two property is irregular in shape has an area of approximately 0.8 hectares. At the time of the current investigation, the property was vacant.

A site plan showing the Phase Two property is presented as Figure 2 in Appendix A.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is a shallow soil property as defined in Section 43.1 of the regulation. It is part of Chaudière Island and is within 30 m of the Ottawa River.

Bedrock in the general area of the Phase Two property consists of limestone, dolostone, shale, arkose, and sandstone from the Shadow Lake Formation of the Middle Ordovician period. The bedrock occurs as bare tabular outcrops and includes areas thinly veneered by unconsolidated sediments. The overburden at the Phase Two property consists of sand and gravel fill materials. The bedrock elevation is approximately 53 metres above sea level (masl).

The groundwater flow direction is anticipated to be northeasterly, in the same direction as the flow of the Ottawa River, which is located approximately 30 m north of the Phase Two property.

2.2 Past Investigations

EXP prepared a report entitled *Phase One Environmental Site Assessment, 315 and 303 Miwàte Private, 505 Chaudière Private, West Chaudière Island, Ottawa, Ontario*, dated April 8, 2022. The Phase One study area included the entire Phase Two property as well as property to the west and south. Based on the results of the Phase One ESA, EXP identified ten areas of potential environmental concern (APEC) within the Phase One study area. A summary is provided in Table 2.1.

Table 2.1: Findings of Phase One ESA

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase One property was part of a pulp and paper mill	Entire Phase One property	#45 – Pulp, Paper and Paperboard Manufacturing and Processing	On-site and Off-Site	Volatile Organic Compounds (VOC), Petroleum Hydrocarbons (PHC), Polycyclic Aromatic Hydrocarbons (PAH), Metals, Polychlorinated Biphenyls (PCB)	Soil and groundwater
#2. Fill material is overlying bedrock throughout the Phase One property	Entire Phase One property	#30 – Importation of Fill Material of Unknown Quality	On-site	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), PHC, PAH, Metals	Soil
#3. Former owner, E.B. Eddy Company, was listed on the PCB inventory	Entire Phase One property	#Other – PCB Storage	On-Site	PCB	Soil and groundwater
#4. A fire that occurred in 1900 destroyed all on-site buildings that existed at the time. Debris and rubble were buried on-site.	Entire Phase One property	#Other – Debris and Rubble from Fire of 1900	On-Site	BTEX, PHC, PAH, Metals	Soil and groundwater
#5. Foundries were present on Victoria Island, east of the Phase One property	Entire Phase One property	#34 – Metal Fabrication	Off-Site	Metals	Soil
#6. Former rail spurs	Central part of the Phase One property, 10 metres on each side of former rail spurs	#46 – Rail yards, tracks and spurs	On-site	VOC, PHC, PAH, Metals, PCB	Soil and groundwater
#7. Former coal storage area	Northeast corner of the Phase One property	#9 – Coal gasification	On-Site	PAH	Soil and groundwater
#8. Former bunker C UST and diesel pumping station on the adjacent property to the north	North part of Phase One property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHC, BTEX, PAH, Metals, PCB	Groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#9. Coal fired power generation, adjacent property to the northeast	Northeast part of the Phase One property	#18 – Electricity generation, transformation and power stations	Off-Site	VOC, PHC, PAH	Groundwater
#10. Former waste burner located south of a building to the northeast	North part of the Phase One property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners	Off-Site	PHC, PAH, Metals, PCB	Groundwater

The locations of the APEC are shown on Figures 2 and 3 in Appendix A.

The Phase One ESA was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices. A copy of the Phase One conceptual site model is provided as Figure 3 in Appendix A.

3.0 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the quality of soil and groundwater on the Phase Two property in conjunction with a remediation program.

The most recent use of the property was industrial land use (historically, a pulp and paper mill was in operation at the site). The proposed future use of the property is residential and commercial. Since the past use of the property was industrial land use, a Record of Site Condition (RSC) must be filed, per Ontario Regulation 153/04.

The investigation consisted of pre-remedial drilling, excavating impacted soil and disposing of it off-site and assessing soil conditions at the margins of the remedial excavation. Following the completion of the soil remediation program, a drilling program was conducted to evaluate post-remedial soil and groundwater conditions at the subject property.

3.2 Scope of Work

The scope of work for the Phase Two ESA was as follows:

- Drilling five pre-remedial boreholes on the subject property and completing all of them as monitoring wells;
- Submitting soil and groundwater samples for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), petroleum hydrocarbon (PHC) fractions F1 to F4, volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), and inorganics;
- Comparing the results of the soil and groundwater chemical analyses to applicable criteria, as set out by the Ontario Ministry of the Environment, Conservation and Parks (MECP);
- Conducting an elevation survey of the pre- and post-remediation boreholes;
- Excavating and removing impacted soil from the Phase Two property;
- Assessing post-remedial groundwater conditions by installing three post-remedial monitoring wells;
- Conducting hydraulic conductivity tests in one of the post-remedial monitoring wells;
- Monitoring groundwater levels in the new monitors to determine groundwater elevations;
- Submitting groundwater samples from each of the post-remedial monitors for laboratory analysis of the contaminants of potential concern, for two consecutive quarters, at least 90 days after the remediation is completed and with at least 90 days between sampling events; and
- Preparing a report summarizing the results of the assessment activities.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

3.3 Media Investigated

The Phase Two ESA included the investigation of soil and groundwater on the Phase Two property. There are no waterbodies on the Phase Two property, therefore sediment sampling was not required.

The contaminants of potential concern (COPC) identified in the Phase One ESA were identified as target parameters for this Phase Two ESA. The APEC and COPC identified in the Phase One ESA are outlined in Section 2.2.

3.4 Phase One Conceptual Site Model

The Phase One conceptual site model (CSM) was developed by considering the following physical characteristics and pathways. The CSM showing the topography of the site, inferred groundwater flow, general site features, APEC, and PCA is shown in Figures 2 and 3 in Appendix A.

3.4.1 Buildings and Structures

The Phase Two property was developed as an industrial pulp and paper mill and lumber facility in 1853, when William Perley and Gordon Pattee began purchasing lots on Chaudière Island. The facility ceased operations in 2006. The buildings that previously occupied the Phase Two property were demolished in early 2019.

At the time of the Phase One investigation, there were two temporary sea cans on the Phase Two property. These were no longer present when the Phase Two ESA was undertaken.

3.4.2 Water Bodies and Groundwater Flow Direction

The Phase Two property is on Chaudière Island, which is surrounded by the Ottawa River. The groundwater flow direction was determined to be northeasterly, in the same direction of flow as the Ottawa River.

3.4.3 Areas of Natural Significance

There are no ANSI within the Phase Two study area.

3.4.4 Water Wells

There are no potable water wells within the Phase Two study area.

3.4.5 Potentially Contaminating Activity

The following on-site potentially contaminating activities (PCA) were identified:

- PCA #9 – Coal Gasification (former coal storage area indicates use of coal as a source of coal gas, which was likely used as a source of heating and/or lighting at the Phase Two property);
- PCA #30 – Importation of fill material of unknown quality (fill material overlying bedrock throughout the Phase Two property);
- PCA # 45 – Pulp, paper and paperboard manufacturing and processing (historic use of the Phase Two property for industrial purposes related to lumber storage and pulp and paper);
- PCA #46 – Rail yards, tracks and spurs (former rail spurs shown in 1948 and 1956 FIP);
- PCA #Other – PCB storage (E.B. Eddy was listed in the PCB Inventory as a major PCB storage site, indicating that the site contained liquid PCB waste in quantities greater than or equal to 1,000 kilograms) and
- PCA #Other – Debris and rubble from fire of 1900 (a fire caused the destruction of every building in the Phase Two study area in 1900. Some of the debris related to the fire was used as backfilling material on the Phase Two property).

The following off-site PCA were identified:

- PCA #1 – Acid and alkali manufacturing, processing and bulk storage (three former acid storage tanks within sulphite mill and storage area on the eastern part of East Chaudière Island);
- PCA #6 – Battery manufacturing, recycling and bulk storage (battery storage area identified in the 1912 fire insurance plan on East Chaudière Island);
- PCA #18 – Electricity generation, transformation and power stations (former powerhouse to the northeast, Hydro Ottawa (and its predecessors) historically occupied the south part of East Chaudière Island for electricity generation, and power generation companies listed on Middle Street);
- PCA #28 – Gasoline and associated products storage in fixed tanks (three former AST on East Chaudière Island, six former AST on West Chaudière Island (east adjacent), two former UST on Albert Island, former diesel pumping station and bunker C UST to the north);
- PCA #34 – Metal fabrication (One or more foundries, manufacturing facilities where metal would be used as a raw material and/or blacksmith shops were listed on Victoria Island);
- PCA #39 – Paints manufacturing, processing and bulk storage (the former paint shop located in the east end of the south building on Albert Island);
- PCA #44 – Port activities, including operation and maintenance of wharves and docks (former wharf adjacent to the Ottawa River on East Chaudière Island);
- PCA #45 – Pulp, paper and paperboard manufacturing and processing (the presence a ground wood pulp mill, beater mill, and sulphite pulp mill on East Chaudière and of a pulp and paper/lumber facility on West Chaudière (paper mill, beater building, and pulp mill));
- PCA #46 – Rail yards, tracks and spurs (former rail spurs were present on the east adjacent property and on East Chaudière Island);
- PCA #55 – Transformer manufacturing, processing and use (five PCB-containing transformers present on East Chaudière Island); and
- PCA #58 – Waste disposal and waste management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners (the waste burner on the property to the adjacent northeast (in the 1912 FIP).

As Albert Island is separated from the Phase Two property by the Ottawa River, none of the off-site PCA identified on Albert Island (PCA # 39 (paint shop) and PCA #28 (two former UST)) resulted in APEC on the Phase Two property.

PCA identified on East Chaudière Island (PCA #1 (former acid storage tanks), PCA #6 (battery storage area), PCA #18 (former Hydro Ottawa facility), PCA #28 (three former AST), PCA #44 (former wharf), PCA #46 (spurs), and PCA #55 (five PCB-containing transformers)) were also determined not to result in APEC on the Phase Two property due to the separation distance and downgradient location from the Phase Two property.

The off-site PCA that were determined to result in APEC on the Phase Two property include PCA #18 (former powerhouse to the northeast), PCA #28 (former diesel pumping station and bunker C UST to the north), PCA #34 (foundries on Victoria Island), and PCA #58 (waste burner on the property to the adjacent northeast).

3.4.6 Areas of Potential Environmental Concern

The APEC identified are summarized in Table 3.1.

Table 3.1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase Two Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase Two property was part of a pulp and paper mill	Entire Phase Two property	#45 – Pulp, Paper and Paperboard Manufacturing and Processing	On-site and Off-Site	Volatile Organic Compounds (VOC), Petroleum Hydrocarbons (PHC), Polycyclic Aromatic Hydrocarbons (PAH), Metals, Polychlorinated Biphenyls (PCB)	Soil and groundwater
#2. Fill material is overlying bedrock throughout the Phase Two property	Entire Phase Two property	#30 – Importation of Fill Material of Unknown Quality	On-site	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), PHC, PAH, Metals	Soil
#3. Former owner, E.B. Eddy Company, was listed on the PCB inventory	Entire Phase Two property	#Other – PCB Storage	On-Site	PCB	Soil and groundwater
#4. A fire that occurred in 1900 destroyed all on-site buildings that existed at the time. Debris and rubble were buried on-site.	Entire Phase Two property	#Other – Debris and Rubble from Fire of 1900	On-Site	BTEX, PHC, PAH, Metals	Soil and groundwater
#5. Foundries were present on Victoria Island, east of the Phase Two property	Entire Phase Two property	#34 – Metal Fabrication	Off-Site	Metals	Soil
#6. Former rail spurs	Central part of the Phase Two property, 10 metres on each side of former rail spurs	#46 – Rail yards, tracks and spurs	On-site	VOC, PHC, PAH, Metals, PCB	Soil and groundwater
#7. Former coal storage area	Northeast corner of the Phase Two property	#9 – Coal gasification	On-Site	PAH	Soil and groundwater
#8. Former bunker C UST and diesel pumping station on the adjacent property to the north	North part of Phase Two property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHC, BTEX, PAH, Metals, PCB	Groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase Two Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#9. Coal fired power generation, adjacent property to the northeast	Northeast part of the Phase Two property	#18 – Electricity generation, transformation and power stations	Off-Site	VOC, PHC, PAH	Groundwater
#10. Former waste burner located south of a building to the northeast	North part of the Phase Two property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners	Off-Site	PHC, PAH, Metals, PCB	Groundwater

3.4.7 Underground Utilities

Utilities, including underground hydro, natural gas, water, and sewers, are present on Chaudière Private, part of which is included in the Phase Two property. Since the water table is within the bedrock, the presence of utilities is not expected to affect possible migration of contaminants once buildings are constructed on the Phase Two property.

A multi-storey residential building with commercial at ground level and one or two levels of underground parking is planned for construction on the Phase Two property. The post-remediation geology, as well as the potential building footprint, is shown in Figure 25 in Appendix A.

3.4.8 Subsurface Stratigraphy

Bedrock in the general area of the Phase Two property consists of limestone, dolostone, shale, arkose, and sandstone from the Shadow Lake Formation of the Middle Ordovician period. The bedrock occurs as bare tabular outcrops and includes areas thinly veneered by unconsolidated sediments. The bedrock elevation is approximately 53 metres above sea level (masl).

Soil at the Phase Two property prior to remediation generally consisted of sand and gravel fill material with trace silt and brick debris and some boulders and cobbles. The fill layer ranged in thickness from 0.2 to 1.6 metres. Limestone bedrock underlaid the fill material

3.4.9 Uncertainty Analysis

The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where potentially contaminating activity that occurred within the Phase Two study area may have adversely affected the Phase Two property. All information collected during this investigation, including records, interviews, and site reconnaissance, has contributed to the formulation of the CSM.

Information was assessed for consistency, however EXP has confirmed neither the completeness nor the accuracy of any of the records that were obtained or of any of the statements made by others. All reasonable inquiries to obtain accessible information were made, as required by Schedule D, Table 1, Mandatory Requirements for Phase Two Environmental Site Assessment Reports. The CSM reflects our best interpretation of the information that was available during this investigation.

3.5 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the Phase Two property, as described in Section 4.

No significant deviations from the SAAP, as provided in Appendix C, were reported that affected the sampling and data quality objectives for the Phase Two property. One pre-remediation monitoring well (MW21-02) could not be sampled for metals due to insufficient sample volume.

3.6 Impediments

No impediments were encountered during this investigation.

4.0 Investigation Method

4.1 General

The current investigation was performed following requirements given under Ontario Regulation 153/04 and in accordance with generally accepted professional practices.

4.2 Drilling and Excavating

The site investigative activities consisted of the drilling of boreholes to facilitate the collection of soil samples for visual inspection and chemical analysis. The boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

In March 2019, the Phase Two property owner retained Tomlinson Development Corporation to install utilities (water, sewer, gas, hydro) for future development along Chaudière Private (formerly Perley Street). From March 5 to 25, 2019, EXP observed excavation activities and took soil samples for characterization of the utility trench which ran along the north boundary of the Phase Two property. Beneath the concrete sidewalk and asphalt roadway, sand and gravel fill material was present to a depth of approximately 0.6 metres below ground surface (m bgs). Bedrock was present at a depth of approximately 0.2 to 1.5 metres below ground surface (m bgs). Granular material, which was comprised of material that had particles larger than 2 mm, was present from a depth of 0.6 m bgs to bedrock. The total depth of the utility excavation was 2.4 m bgs. All excavated material was temporarily stockpiled on East Chaudière Island and was subsequently disposed of off-site in 2019. The utility trench was backfilled with material that was larger than 2 mm in diameter.

The locations of the boreholes and the excavation are shown on Figure 2 in Appendix A.

4.2.1 Pre-Remedial Drilling

A pre-remedial drilling program was conducted to investigate the soil quality on the Phase Two property. The pre-remedial drilling program was completed March 15 and 16, 2021 by George Downing Estate Drillings (Downing), a licensed well contractor. Downing advanced five boreholes (MW21-01 to MW21-05) across the Phase Two property, using a CME-75 truck mounted drill. Boreholes were augured to refusal, then cored to depth. All of the boreholes were completed as monitoring wells.

Bedrock was encountered between 0.6 and 1.7 metres below ground surface (mbgs) in all boreholes. EXP staff continuously monitored the drilling activities to log the stratigraphy observed from the recovered samples, to record the depth of the samples, and to record total depths of borings. Field observations are documented on the borehole logs provided in Appendix D.

4.2.2 Pre-Remedial Monitoring Well Decommissioning

The pre-remediation monitoring wells were decommissioned in accordance with Regulation 903. On March 26, 2021, five monitoring wells (BH/MW21-01 to BH/MW21-05) were decommissioned by using the pressure-grout method by Downing.

4.2.3 Remediation

The 2021 remedial excavation program included excavating and stockpiling impacted soil for off-site disposal. The remedial excavation extended to the utility trench, from which all soil was removed in 2019, and extended horizontally beyond the

property boundaries in all other directions and vertically to bedrock surface. With the exception of the soil at the northern property boundary, as described above, all soil was removed from the Phase Two property.

This remediation program commenced on March 29, 2021 and concluded on May 18, 2021. Excavation GTS was retained by the Phase Two property owner to complete the remedial excavation. Soil excavation and removal activities occurred over five days during this period, including March 29 to 31 and May 17 and 18. No soil was brought to the Phase Two property, as the excavation was backfilled with materials that were larger than 2 mm in diameter.

Approximately 2,431.87 tonnes of impacted soil and granular material were excavated and removed from the north part of the Phase Two property in 2019. This soil was temporarily stockpiled on East Chaudière Island and was disposed off-site in conjunction with remedial activities that occurred at 125 Zaida Eddy Private (RSC 228673). In conjunction with 2021 remedial activities, approximately 3,720.67 tonnes of impacted soil and 30.5 tonnes of impacted concrete were removed by excavation from the Phase Two property. All soil, concrete, and granular materials were disposed of as non-hazardous waste at the City of Ottawa Trail Road facility.

The remediation program was completed in accordance with Regulation 153/04. As such, the outcome of the remediation program is discussed in Appendix E. A summary of soil brought to the Phase Two property is provided in Appendix F.

4.2.4 Post-Remedial Drilling

The post-remedial drilling investigation was conducted on April 28, 2021, by Downing. Downing advanced three boreholes (BH/MW21-01 to BH/MW21-03) on the Phase Two property, using a CME-75 truck mount drill. The boreholes were installed at depths between 6.1 and 6.7 mbgs. Boreholes were cored to depth and completed as monitoring wells.

The post-remedial drilling investigation was conducted on April 28, 2021 by Downing. Downing advanced three boreholes (BH/MW21-01 to BH/MW21-03) on the Phase Two property, using a CME-75 truck mount drill. The boreholes were installed at depths between 6.1 and 6.7 mbgs. All soil was removed from the Phase Two property during the remediation program and all the boreholes were cored through bedrock. At the time of drilling, ground surface in the area of the monitoring wells consisted of bedrock surface, however $\frac{3}{4}$ inch stone was subsequently brought to the property.

4.3 Soil Sampling

The soil sampling during the completion of this Phase Two ESA was undertaken in general accordance with the SAAP presented in Appendix C.

Soil samples were selected for laboratory analysis based on combustible vapour measurements and visual and olfactory evidence of impacts, where observed. Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analysed for PHC fraction F1 and BTEX were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, Paracel Laboratories Ltd. (Paracel) of Ottawa, Ontario. The samples were transported/submitted within 24 hours of collection to the laboratory following chain of custody protocols for chemical analysis. Soil samples were submitted for laboratory analysis of PHC, VOC, PAH, PCB, metals, and/or pH.

4.3.1 Pre-Remedial Soil Sampling

Soil samples for geologic characterization were collected on a continuous basis in the overburden materials using 5 cm diameter, 61 cm long, split spoon samplers advanced into the subsurface using the drill rig. A split spoon sample was collected approximately every 80 cm as drilling progressed. The split spoon samplers were decontaminated between sampling intervals by EXP staff using a potable water/phosphate-free detergent solution followed by rinses with potable water. EXP staff continuously monitored the drilling activities to log the stratigraphy observed from the recovered soil cores, to record the

depth of soil sample collection, to record total depths of borings/excavation, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix D.

4.3.2 Remedial and Post-Remedial Soil Sampling

A utilities trench was excavated along the north boundary of the Phase Two property (Chaudière Private) in 2019. All soil was removed from the Phase Two property, and no soil, per the definition of soil in Regulation 153/04, was brought to the Phase Two property. Rather, the utilities trench was backfilled with material that was larger in diameter than 2 mm in 2019 and the 2021 excavation was backfilled with gravel and cobbles.

Confirmatory soil samples were taken from the fill material along the north wall of the excavation, along the northern boundary of the Phase Two property. No samples were taken from the east or west excavation walls, as the excavation extended off the Phase Two property. No samples were taken from the south wall, as all soil south of the excavation boundary was removed from the Phase Two property as part of the 2021 remediation activities. No floor samples were taken, as the utilities trench was excavated into bedrock.

With the exception of the soil along the north wall of the services excavation on Chaudière Private, all soil was removed from the Phase Two property. Therefore, no post-remedial soil analysis was required.

4.4 Field Screening Measurements

Soil samples were placed in a sealed Ziploc plastic bag and allowed to reach ambient temperature prior to field screening with a combustible vapour meter calibrated to hexane gas prior to use. The field screening measurements were made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These 'headspace' readings provide a real-time indication of the relative concentration of combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of potential impacts and the selection of soil samples for analysis.

Readings of petroleum vapour concentrations in the soil samples collected during the drilling investigation were recorded using an RKI Eagle 2, where there was sufficient recovery. This instrument is designed to detect and measure concentrations of combustible gas in the atmosphere to within 5 parts per million by volume (ppmv) from 0 ppmv to 200 ppmv, 10 ppmv increments from 200 ppmv to 1,000 ppmv, 50 ppmv increments from 1,000 ppmv to 10,000 ppmv, and 250 ppmv increments above 10,000 ppmv. It is equipped with two ranges of measurement, reading concentrations in ppmv or in percentage lower explosive limit (% LEL). The RKI Eagle 2 instrument can determine combustible vapour concentrations in the range equivalent to 0 to 11,000 ppmv of hexane.

The instrument was configured to eliminate any response from methane for all sampling conducted at the subject property. Instrument calibration is checked on a daily basis in both the ppmv range and % LEL range using standard gases comprised of known concentrations of hexane (400 ppmv, 40% LEL) in air. If the instrument readings are within $\pm 10\%$ of the standard gas value, then the instrument is deemed to be calibrated, however if the readings are greater than $\pm 10\%$ of the standard gas value then the instrument is re-calibrated prior to use.

The field screening measurements, in parts per million by volume (ppmv), are presented in the borehole logs provided in Appendix D.

4.5 Groundwater: Monitoring Well Installation

Monitoring wells were installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 (as amended). The monitoring wells consisted of a 52 mm diameter Schedule 40 PVC screen that was no more than 3.0 m long and a 52 mm diameter Schedule 40 PVC riser pipe that was at least 0.8 m long. The annular space around the wells was backfilled with sand to an average height of 0.3 m above the top of the screen. A bentonite seal was added from the top of

the sand pack to approximately 0.3 m below ground surface. The monitoring wells were completed with monument casings. Details of the monitoring well installations are shown on the borehole logs provided in Appendix D.

Measures taken to minimize the potential for cross contamination or the introduction of contaminants during well construction included:

- The use of well pipe components (e.g. riser pipe and well screens) with factory machined threaded flush coupling joints
- Construction of wells without the use of glues or adhesives
- Removing the protective plastic wraps from well components at the time of borehole insertion to prevent contact with the ground and other surfaces
- Cleaning or disposal of drilling equipment between sampling locations

4.6 Groundwater: Field Measurement and Water Quality Parameters

Field measurement of water quality parameters is described in Section 4.7.

All measurements of petroleum vapours in the monitor riser were made with an RKI Eagle 2 in methane elimination mode. Immediately after removing the well cap, the collection tube of the Eagle was inserted into the riser and the peak instrument reading was recorded. EXP used a Heron water level tape to measure the static water level in each monitoring well. The measuring tape was cleaned with phosphate-free soap and tap water, rinsed with distilled water after each measurement.

4.7 Groundwater: Sampling

All groundwater samples were collected via a low flow sampling technique using a YSI 550 multi probe water quality meter. The YSI probe was calibrated using in-house reference standards. Prior to collecting the groundwater samples, water quality field parameters (turbidity, dissolved oxygen, conductivity, temperature, pH, and oxidation reduction potential) were monitored until stable readings were achieved to ensure that the samples collected were representative of actual groundwater conditions. These parameters are considered to be stable when three consecutive readings meet the following conditions:

- Turbidity: within 10% for values greater than 5 nephelometric turbidity units (NTU), or three values less than 5 NTU;
- Dissolved oxygen: within 10% for values greater than 0.5 mg/L, or three values less than 0.5 mg/L;
- Conductivity: within 3%;
- Temperature: $\pm 1^{\circ}\text{C}$;
- pH: ± 0.1 unit; and,
- Oxidation reduction potential: ± 10 millivolts.

When stabilization occurs, equilibrium between groundwater within a monitor and the surrounding formation water is attained. As such, samples collected when stabilization occurs are considered to be representative of formation water.

The groundwater sampling during the completion of this Phase Two ESA was undertaken in general accordance with the SAAP presented in Appendix C. The groundwater samples were placed in clean coolers containing ice packs prior to and during transportation to the laboratory. The samples were transported to the laboratory within 24 hours of collection with a chain of custody.

4.7.1 Pre-Remedial Groundwater

On March 23, 2021, groundwater samples were collected from the pre-remedial monitoring wells using the low flow sampling method described above.

Prior to remediation, five groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, and/or inorganic parameters. No groundwater sample was submitted for metals analysis from BH/MW21-02 as there was insufficient sample volume for analysis of all parameters.

4.7.2 Post-Remedial Groundwater

Two post-remedial groundwater sampling events were conducted. The first event was conducted on August 23 and 31 and September 14, 2021, and the second event was conducted on December 21 and 22, 2021 and January 6, 12, 19, and February 16, 2022. Several days were required for each event because of the slow recovery of the monitoring wells and because they were covered with snow. During each event, three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, inorganic parameters.

4.8 Sediment: Sampling

There are no waterbodies present on the Phase Two property, therefore sediment sampling was not required.

4.9 Analytical Testing

The contracted laboratory selected to perform chemical analysis on all soil samples was Parcel Laboratories Ltd (Parcel). Parcel is an accredited laboratory under the Standards Council of Canada/Canadian Association for Laboratory Accreditation in accordance with ISO/IEC 17025:1999- General Requirements for the Competence of Testing and Calibration Laboratories.

4.10 Residue Management

The soil cuttings from pre-remediation drilling activities were left on-site. They were subsequently removed in conjunction with remediation activities. Purged water from groundwater development and sampling were collected in a drum and disposed of in accordance with the Permit to Take Water for the Phase Two property.

No soil was encountered during the post-remediation drilling investigation, as all monitoring wells were drilled from bedrock surface.

Fluids from cleaning drilling equipment were disposed of by the driller at their facility.

Excavated soil from the remediation was disposed of off-site at Trail Road Landfill (4475 Trail Road, Ottawa), a MECP approved waste receiving facility (A461303).

A bulk soil sample was collected from the soil cuttings on March 16, 2021 and submitted for analyses of waste acceptance parameters (VOC, PHC fractions F1 to F4 and semi-volatile organic compounds (SVOC)) and selected O. Reg. 558 parameters and ignitability. The results of the analysis are provided Table 15 in Appendix G and the laboratory certificates of analysis are provided in Appendix H. The sample was within the Schedule 4 leachate criteria for all of the parameters that were analysed and was also non-ignitable. Based on these results, impacted soil from the subject property was classified as nonhazardous waste for off-site disposal purposes.

4.11 Elevation Surveying

An elevation survey was conducted by EXP. The top of casing and ground surface elevation of each monitoring well location were surveyed relative to a geodetic reference. The Universal Transverse Mercator (UTM) coordinates of each monitoring well were also recorded so that their locations could be plotted accurately.

4.12 Quality Assurance and Quality Control Measures

All soil and groundwater samples were placed in coolers containing ice packs prior to and during transportation to the contract laboratory, Paracel Laboratories Ltd. (Paracel). Paracel is accredited to the ISO/IEC 17025:2005 standard - *General Requirements for the Competence of Testing and Calibration Laboratories*.

A QA/QC program was also implemented to ensure that the analytical results received are accurate and dependable. A QA/QC program is a system of documented checks that validate the reliability of the data. Quality Assurance is a system that ensures that quality control procedures are correctly performed and documented. Quality Control refers to the established procedures observed both in the field and in the laboratory, designed to ensure that the resulting end data meet intended quality objectives. The QA/QC program implemented by EXP incorporated the following components:

- Collecting and analysing field duplicate samples to ensure analytical precision;
- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document field activities; and
- Using only laboratory-supplied sample containers and following prescribed sample protocols, including using proper preservation techniques, meeting sample hold times, and documenting sample transmission on chains of custody, to ensure the integrity of the samples is maintained.

Paracel's QA/QC program involved the systematic analysis of control standards for the purpose of optimizing the measuring system as well as establishing system precision and accuracy and included calibration standards, method blanks, reference standards, spiked samples, surrogates and duplicates.

5.0 Review and Evaluation

5.1 Geology

Soil at the Phase Two property prior to remediation generally consisted of sand and gravel fill material with trace silt and brick debris and some boulders and cobbles. The fill layer ranged in thickness from 0.2 to 1.6 metres. Limestone bedrock underlaid the fill material.

During the pre-remediation drilling investigation, limestone bedrock was encountered between 0.5 and 1.6 metres below ground surface (mbgs) in all of the boreholes. EXP staff continuously monitored the drilling activities to log the stratigraphy observed from the recovered samples, to record the depth of the samples, and to record total depths of borings. Field observations are documented on the borehole logs provided in Appendix D.

All soil was removed from the Phase Two property during the remediation program. Where required, backfill materials consisted of material that was not considered to be soil, as the particle diameter was larger than 2 mm.

The Phase Two property is on Chaudière Island, which is surrounded by the Ottawa River. Groundwater elevations depend on the level of water within the river, but generally range between 42 and 45 masl.

A plan view showing cross-sections is provided as Figure 5 in Appendix A, while the Phase Two property geology is depicted in cross-sections on Figure 6 in Appendix A.

5.2 Groundwater: Elevations and Flow Direction

On March 23 and 24, 2021, the five pre-remediation monitoring wells (BH/MW21-01 to BH/MW21-05) were inspected for general physical condition, groundwater depth, the presence of non-aqueous phase liquid and petroleum vapour.

Groundwater monitoring and elevation data are provided below.

Table 5.1: Pre-Remedial Monitoring and Elevation Data

Monitoring Well ID	Grade Elevation (masl)	Top of Casing Elevation (masl)	Screen Depth (mbgs)	Petroleum Vapour (ppm)	Depth to LNAPL (mbgs)	Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)
BH/MW21-01	53.71	53.60	3.0 to 6.0	ND	N/A	3.29	50.31
BH/MW21-02	53.55	53.39	3.5 to 6.5	ND	N/A	5.75	47.64
BH/MW21-03	53.36	53.29	3.0 to 6.0	ND	N/A	2.35	50.95
BH/MW21-04	53.80	53.71	3.1 to 6.1	10	N/A	5.22	48.49
BH/MW21-05	53.43	53.41	3.0 to 6.0	10	N/A	2.82	50.59

Notes: Elevations were measured to a geodetic datum
LNAPL – light non-aqueous phase liquid
ppmv – parts per million by volume
mbgs – metres below ground surface

masl – metres above sea level
mbTOC – metres below top of monitor casing
ND – non-detectable
N/A – not applicable

Based on the groundwater elevations, a groundwater contour plan was prepared. The groundwater flow direction was determined to be to the northeast. The groundwater contour plan is provided as Figure 4 in Appendix A.

On August 23, 2021, monitoring wells BH/MW21-01 to BH/MW21-03 were inspected for general physical condition, groundwater depth, the presence of non-aqueous phase liquid and petroleum vapour.

Groundwater monitoring and elevation data are provided below.

Table 5.2: Post-Remedial Monitoring and Elevation Data

Monitoring Well ID	Grade Elevation (masl)	Top of Casing Elevation (masl)	Screen Depth (mbgs)	Petroleum Vapour (ppm)	Depth to LNAPL (mbgs)	Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)
August 2021							
BH/MW21-01	53.29	53.13	3.1 to 6.1	10	N/A	5.21	48.02
BH/MW21-02	53.73	53.91	3.7 to 6.7	20	N/A	5.42	48.51
BH/MW21-03	53.48	53.40	3.1 to 6.1	ND	N/A	2.60	50.80
February 2022							
BH/MW21-01	53.29	53.13	3.1 to 6.1	55	N/A	5.44	47.69
BH/MW21-02	53.73	53.91	3.7 to 6.7	ND	N/A	4.80	49.11
BH/MW21-03	53.48	53.40	3.1 to 6.1	15	N/A	2.99	50.41

Notes: Elevations were measured to a geodetic datum
LNAPL – light non-aqueous phase liquid
ppmv – parts per million by volume
mbgs – metres below ground surface

masl – metres above sea level
mbTOC – metres below top of monitor casing
ND – non-detectable
N/A – not applicable

EXP notes that groundwater levels depend on the size of the fractures that are intercepted as drilling progresses. Groundwater contour plans were not prepared for post-remediation groundwater levels because it is unlikely that the difference in groundwater elevations in the three monitoring wells is representative of the actual groundwater flow across the site as opposed to the differences in the fractures at each individual location.

Groundwater levels can also be influenced by seasonal changes, the presence of subsurface structures, or fill, however based on the presence of the Ottawa River surrounding Chaudière Island, it is unlikely that any of these factors will affect the groundwater flow direction at the Phase Two property.

5.3 Groundwater: Hydraulic Gradients

Horizontal hydraulic gradients were estimated for the groundwater flow components identified in the bedrock aquifer based on the March 2021 groundwater elevations.

The horizontal hydraulic gradient is calculated across the using the following equation:

$$i = \Delta h / \Delta s$$

Where,

i = horizontal hydraulic gradient;

Δh (m) = groundwater elevation difference; and,

Δs (m) = separation distance.

The horizontal hydraulic gradient was calculated to be 0.22 m/m.

From August 23 to 25, 2021 a rising head test was conducted one post-remediation monitoring well (MW21-03). The rising head test requires that the static water level be measured in each monitoring well prior to the removal of groundwater. Groundwater is removed from the monitoring well using a bailer. After the water level has been sufficiently lowered, an interface probe is lowered into the monitor as quickly as possible to measure the new water level. The time at which the new water level is measured is noted as time equal zero. Water level readings are subsequently taken at frequent intervals. Both the water levels and the time they were taken are recorded.

The frequency of the time measurement is determined by the rate the water level recovers to the static water level. Measurements are taken until at least 70% recovery has been achieved or, in cases where recovery is extremely slow, until it is deemed that a sufficient amount of time has elapsed. Using the Hvorslev model, the hydraulic conductivity for the monitoring well was calculated.

All water level measurements were made with a Heron oil/water interface probe. Both the probe and the measuring tape that come into contact with liquids within a monitor are cleaned with phosphate-free soap and tap water, rinsed with distilled water and then finally rinsed with methanol after each hydraulic conductivity test is concluded.

Table 5.3: Rising Head Tests

Monitoring Well ID/ Installation ID	Horizon	Screen Depth (mbgs)	Initial Static Water Level (mbToC)	Water Level after Purging (mbToC)	Recovery to Static after Elapsed time (s)	Hydraulic Conductivity (cm/s)
MW21-03	Bedrock	3.1 to 6.1	2.60	4.87	19,1640	6.61×10^{-7}

Notes: mbTOC – metres below top of monitor casing

The hydraulic conductivity calculated in MW21-03 was 6.61×10^{-7} cm/s. The data and the calculations for the hydraulic conductivity testing are provided in Appendix I.

Because of the proximity of the Phase Two property to the Ottawa River and because all soil was removed from the Phase Two property, vertical hydraulic gradients were not calculated.

5.4 Soil: Field Screening

The methodology for the collection of soil vapour concentration measurements is described in Section 4.4.

Petroleum vapours ranged from non-detectable to 35 ppm in samples collected from the pre-remedial boreholes. Field screening data is presented in the borehole logs in Appendix D.

No field screening was performed during post-remedial drilling, as all soil had been removed from the Phase Two property.

5.5 Soil: Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes and from the north wall of the utility trench excavation. The selection of representative “worst case” soil samples from each borehole was based on field visual or olfactory evidence of impacts and/or presence of potential water bearing zones.

Ten soil samples and one field duplicate were collected from the north wall of the utilities trench in 2019 and during the pre-remedial drilling investigation in 2021 and submitted to Paracel for analysis of PHC fractions F1 to F4, VOC, PAH, PCB and inorganics. Two soil samples were submitted for analysis of pH.

Soil samples collected during the pre-remediation drilling program exceeded the Table 7 and/or Table 9 SCS for VOC, PHC, PAH, and/or inorganic parameters. All of these samples were within the Table 7 and Table 9 SCS for PCB. The pH samples were within the applicable ranges for surface and subsurface soils. The pre-remediation drilling results are provided in Tables 1 to 3 in Appendix G. They are shown in plan view on Figures 7 to 9 and on cross-sections on Figures 10 to 12 in Appendix A. All soil (except for the soil located on the north property line) was removed from the Phase Two property, so these samples are not representative of post-remediation site conditions.

None of the soil samples collected from the north wall of the utility trench exceeded the applicable Table 7 or Table 9 SCS. Analytical results are provided in Tables 4 to 6 in Appendix G. The results are shown in plan view on Figures 19 to 21 and on cross-sections on Figures 22 to 24 in Appendix A.

With the exception of the soil along the north wall of the services excavation on Chaudière Private, all soil was removed from the Phase Two property. Therefore, no post-remedial soil analysis was required.

Copies of the laboratory Certificates of Analysis are provided in Appendix H.

5.6 Groundwater: Quality

All groundwater samples were collected via a low flow sampling technique. EXP monitored several water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) in order to ensure that the samples collected were representative of actual groundwater conditions.

Following their installation, the monitoring wells were developed by purging water with an inertial pump and foot valve until it became clear. The following table provides monitoring well construction details and observations made during monitor development.

Table 5.4: Pre-Remedial Monitoring Well Construction and Purging Details

Monitoring Well ID	Length of Screen (metres)	Depth of Borehole (metres)	Date of Development	Volume Purged (litres)	Description of Purged Water at Start of Development	Description of Purged Water at End of Development
BH/MW21-01	3.0	6.0	March 19, 2021	16 L	Dark grey, silty, no odour or sheen	Clear, no odour or sheen
BH/MW21-02	3.0	6.5	March 19, 2021	11 L	Dark grey, silty, no odour or sheen	Clear, no odour or sheen
BH/MW21-03	3.0	6.0	March 19, 2021	14 L	Dark grey, silty, no odour or sheen	Slightly cloudy, no odour or sheen
BH/MW21-04	3.0	6.1	March 19, 2021	11 L	Dark grey, silty, no odour or sheen	Slightly cloudy, no odour or sheen
BH/MW21-05	3.0	6.0	March 19, 2021	14 L	Dark grey, silty, no odour or sheen	Clear, no odour or sheen

Prior to remediation, five groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, and/or inorganic parameters. No groundwater sample was submitted for metals analysis from BH/MW21-02 as there was insufficient sample volume for analysis of all parameters.

There were no exceedances of the MECP Table 9 or Table 7 SCS for PHC, PCB, and inorganic parameter groups. However, the sample collected from BH/MW21-04 exceeded the Table 7 and Table 9 SCS for chloroform. This monitoring well was installed within the limestone bedrock. To facilitate drilling at this location, municipal water was used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. In accordance with Regulation 153/04 it is the opinion of the Qualified Person that the source of chloroform in this monitoring well, which was sampled nine days after its installation, is the municipal water. Therefore, in accordance with Section 49.1 of Regulation 153/04, chloroform is not considered to exceed the SCS. Analytical results are included in Tables 7 to 9 in Appendix G and are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18 in Appendix A.

Following their installation, the post-remediation monitoring wells were developed by purging water with an inertial pump and foot valve until it became clear. The following table provides monitoring well construction details and observations made during monitor development.

Table 5.5: Post-Remedial Monitoring Well Construction and Purging Details

Monitoring Well ID	Length of Screen (metres)	Depth of Borehole (metres)	Date of Development	Volume Purged (litres)	Description of Purged Water at Start of Development	Description of Purged Water at End of Development
BH/MW21-01	3.0	6.1	April 28, 2021	15 L	Brown, no odour or sheen	Clear, no odour or sheen
BH/MW21-02	3.0	6.7	April 28, 2021	30 L	Dark grey, no odour or sheen	Clear, no odour or sheen
BH/MW21-03	3.0	6.1	April 28, 2021	30 L	Dark grey, no odour or sheen	Clear, no odour or sheen

Two post-remedial groundwater sampling events were conducted. The first event was conducted on August 23 and 31 and September 14, 2021, and the second event was conducted on December 21 and 22, 2021 and January 6, 12, 19, and February 16, 2022. Several days were required for each event because of the slow recovery of the monitoring wells and because they were covered with snow. During each event, three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, inorganic parameters. All post-remediation groundwater samples were within the applicable Table 7 and Table 9 SCS. Analytical results are included in Tables 10 to 12 in Appendix G and are shown in plan view on Figures 26 to 28 and on cross-sections on Figures 29 to 31 in Appendix A.

Copies of the laboratory Certificates of Analysis are provided in Appendix H.

5.6.1 Chemical Transformation and Contaminant Sources

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

Prior to remediation, all soil on site was determined to be contaminated, as PHC fractions F2 to F4, BTEX, PAH, and metals exceeded the applicable Table 7 and/or Table 9 SCS. There were no pre-remediation groundwater exceedances.

A building with one or two levels of underground parking, ground floor retail, and upper floor residential use is planned to be constructed. The potential on-site human receptors include indoor and outdoor long-term workers, indoor and outdoor short-term workers, residents on upper floors (adult, teen, child, toddler and infant), property visitors (adult, teen, child, toddler and infant), and construction workers. Since all pre-remediation groundwater samples were within the Table 7 and Table 9 SCS, neither groundwater dermal contact nor groundwater ingestion were deemed to be potential exposure pathways for any of the potential on-site human receptors.

The potential on-site exposure pathways for the construction workers are incidental soil ingestion, soil particulate inhalation, soil dermal contact, ambient vapour inhalation, and vapour skin contact.

The potential on-site exposure pathways for the short-term and long-term outdoor workers (who are not exposed directly to subsurface soil and groundwater) are incidental surface soil ingestion, surface soil particulate inhalation, surface soil dermal contact, ambient air inhalation, and vapour skin contact.

The potential on-site exposure pathway for the property residents, the long-term indoor workers and visitors is indoor air inhalation.

A diagram identifying the release mechanisms, contaminant transport pathway, human receptors, exposure points and routes of exposure are shown on Figure 32 in Appendix A.

While the footprint of the building that is being planned will occupy most of the Phase Two property, there will be a landscaped area surrounding the building. Therefore, The Phase Two property is capable of supporting some ecological receptors. Relevant ecological receptors include terrestrial vegetation (bushes, grasses and weeds); soil invertebrates (earthworms, millipedes and beetles); birds (seagulls, pigeons, sparrows and robins); and small terrestrial mammals (moles, voles, and mice). Since all pre-remediation groundwater samples were within the Table 7 and Table 9 SCS, groundwater root uptake, groundwater dermal contact, and incidental ingestion of groundwater were not deemed to be potential exposure pathways for any of the potential on-site ecological receptors.

The potential on-site exposure pathways for terrestrial vegetation are root uptake of soil and stem and foliar uptake of vapours from soil.

The potential on-site exposure pathways for soil invertebrates are soil particulate inhalation, soil dermal contact, soil ingestion, and vapour inhalation, and plant and animal tissue ingestion.

The potential on-site exposure pathways for mammals and birds are soil particulate inhalation, soil dermal contact, soil ingestion, vapour inhalation, and plant and animal tissue ingestion.

A diagram identifying the release mechanisms, contaminant transport pathway, ecological receptors, exposure points and routes of exposure are shown on Figure 33 in Appendix A.

During the remediation program, all soil was removed from the Phase Two property. All confirmatory groundwater samples were within the applicable Table 7 and Table 9 SCS. Therefore, there are no longer any potential human health or ecological receptors and exposure pathways.

5.6.2 Evidence of Non-Aqueous Phase Liquid

Inspection of the groundwater monitoring wells did not indicate the presence of non-aqueous phase liquid (NAPL).

5.6.3 Maximum Concentrations

Prior to remediation, all soil on site was determined to be contaminated. No contaminated groundwater was encountered. Contaminants that exceeded the applicable standards included:

Soil: PHC fractions F2 to F4, benzene, ethylbenzene, xylenes, acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, 1- & 2- methyl naphthalene, naphthalene, phenanthrene, pyrene, antimony, arsenic, barium, copper, lead, mercury, molybdenum, selenium, and thallium.

Groundwater: None.

Post-remediation, no soil or groundwater samples exceeded the Table 7 and Table 9 SCS. Maximum soil concentrations are representative of the wall samples from the utilities excavation on Chaudière Private completed in 2019. No other soil is present on the Phase Two property.

Maximum soil and groundwater concentrations are provided in Table 13 and 14 in Appendix G.

5.7 Sediment: Quality

There are no water bodies on the Phase Two property, therefore sediment sampling was not required.

5.8 Quality Assurance and Quality Control Results

Quality assurance and quality control measures were taken during the field activities to meet the objectives of the sampling and quality assurance plan to collect unbiased and representative samples to characterize existing conditions in the fill materials and groundwater at the site. QA/QC measures, included:

- Collection and analysis of blind duplicate soil and groundwater samples to ensure sample collection precision;
- Analysis of a groundwater field blank for all parameters that were analysed to assess potential impact during sampling;
- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document on-site activities; and
- Using only laboratory supplied sample containers and following prescribed sample protocols, including proper preservation, meeting sample hold times, proper chain of custody documentation, to ensure integrity of the samples.

Parcel's QA/QC program consisted of the preparation and analysis of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks and QC standards to evaluate analyte recovery, matrix spikes to evaluate matrix interferences and surrogate compound recoveries to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificates of Analysis prepared by Parcel. The QA/QC results are reported as percent recoveries for matrix spikes, spiked blanks and QC standards, relative percent difference for laboratory duplicates and analyte concentrations for method blanks.

Review of the laboratory QA/QC results reported indicated that they were mostly within acceptable control limits or below applicable alert criteria for the sampled media and analytical test groups. The exceptions are summarized in the table below.

Table 5.6: Laboratory QA/QC Results

Parcel Job#	Matrix	Test Affected	Deviation	Interpretation
2112343	Leachate	Inorganics	2-Fluorophenol surrogate recovery (22.0%) is below the acceptance criteria (40-150%)	Possible low bias of data. Since leachate sample represents soil removed from the site and since all inorganics were well below the standards, the deviation should have no material effect on the interpretation of results.
2112349	Soil	Inorganics	Spike Recovery for lead (67.0%) is less than the acceptance criteria (70-130%).	Possible low bias of data. Since all soil was removed from the Phase Two property, the deviation should have no effect on interpretation of results.
2112654	Soil	Inorganics	Spike Recovery for silver (62.3%) is less than the acceptance criteria (70-130%).	Possible low bias of data. Since all soil was removed from the Phase Two property, the deviation should have no effect on interpretation of results.
2113433 2113436	Groundwater	Metals	Spike Recovery for lead (79.4%) is less than the acceptance criteria (80-120%).	Possible low bias of data. Since results were well below Table 7 and 9 standards, the deviation should have no effect on interpretation of results.
			Spike Recovery for selenium (79.3%) is less than the acceptance criteria (80-120%).	Possible low bias of data. Since results were well below Table 7 and 9 standards, the deviation should have no effect on interpretation of results.

Parcel Job#	Matrix	Test Affected	Deviation	Interpretation
			Spike Recovery for silver (66.3%) is less than the acceptance criteria (80-120%).	Possible low bias of data. Since results were well below Table 7 and 9 standards, the deviation should have no effect on interpretation of results.
			Spike recovery for vanadium (128%) is above the acceptance criteria (80-120%)	Possible high bias of data. Since results were well below Table 7 and 9 standards, the deviation should have no effect on interpretation of results.
2135216 2135219 2135221	Groundwater Trip Blank	Metals	Spike recovery for vanadium (122%) is above the acceptance criteria (80-120%)	Possible high bias of data. Since results were well below Table 7 and 9 standards, the deviation should have no effect on interpretation of results.
2136274	Groundwater	VOC	Duplicate result exceeds RPD limits for bromodichloromethane and chloroform due to non-homogeneity between multiple samples vials.	Possible variability of data. Since both the sample and its duplicate were within the Table 7 and 9 standards, the deviation should have no effect on interpretation of results.
2204302	Groundwater	Inorganics	Spike recovery for sodium (77.2%) is below the acceptance criteria (80-120%).	Possible low bias of data. Since results were well below Table 7 and 9 standards, the deviation should have no effect on interpretation of results.

For QA/QC purposes, the analytical sample results are quantitatively evaluated by calculating the relative percent difference (RPD) between the samples and their duplicates. To accurately calculate a statistically valid RPD, the concentration of the analytes found in both the original and duplicate sample must be greater than five times the reporting detection limit (RDL).

The results of the RPD calculations are provided in Appendix G in Tables 16 to 24. All of the RPD for pre-remedial soil and pre- and post remedial groundwater were either not calculable or within the applicable alert limits.

During the first post-remediation groundwater sampling event, a field duplicate sample was submitted for analysis of PCB. The original sample (MW21-3) had a non-detectable concentration of this parameter, however the laboratory advised that the field duplicate was extracted in the same separatory funnel immediately following a highly contaminated PCB sample from another project (which was unknown at the time of extraction). A re-analysis of the sample was not possible, as the extract itself was likely contaminated. Based on the information from the laboratory and the non-detectable result in the original sample (as well as the non-detectable result obtained from this monitoring well during the second post-remediation event, it is the opinion of the Qualified Person that any detectable result in the field duplicate sample is not representative of actual groundwater conditions. Therefore, the laboratory was asked not to report the PCB result of the field duplicate sample.

Field blanks and trip blanks were prepared and submitted for laboratory analysis of all parameters tested in groundwater. The results of the field blank analyses are provided in Tables 7 to 9 (pre-remediation) and Tables 10 to 12 (post-remediation) in Appendix G. Several inorganic parameters were detected in the pre-remedial field blank including copper and sodium. As the concentrations were still below MECP Table 7 and Table 9, and there were no exceedances of the Table 7 or Table 9 SCS in the pre-remedial groundwater samples, the deviation should have no material effect on the conclusions presented in this report.

The trip blank and field blank submitted with the post-remedial groundwater samples showed detectable levels of methylene chloride. Methylene chloride is a common chemical used within laboratories. All of the samples submitted with the trip blank and field blank were non-detect for methylene chloride (and all other VOC). Therefore, it is the opinion of the Qualified Person that the presence of methylene chloride is related to laboratory error and is not related to field activities that occurred during sample collection.

The remaining parameters in the pre-remedial and post-remedial trip blanks and field blanks were non-detectable.

5.9 Phase Two Conceptual Site Model

A Conceptual Site Model (CSM) provides a narrative, graphical and tabulated description integrating information related to the Phase Two property's geologic and hydrogeological conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of contaminants of concern, contaminant fate and transport, and potential exposure pathways.

5.9.1 Introduction

EXP Services Inc. (EXP) was retained by Windmill Dream Zibi Ontario Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 315 Miwàte Private (formerly 4 Booth Street) in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was vacant, however after remedial activities were completed on the north part of the site in 2019, it was paved and became part of the Chaudière Private right of way.

The objective of the Phase Two ESA investigation was to assess the quality of the groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. The most recent use of the property was for pulp and paper operations, which is a type of industrial property use, and the proposed future property use will be residential and commercial. Consequently, in accordance with Regulation 153/04, as amended, a Record of Site Condition (RSC) must be filed.

The most recent use of the property was industrial land use (historically, a pulp and paper mill was in operation at the site). The proposed future use of the property is residential and commercial. A new building will be constructed at the Phase Two property. The building will have one or two levels of underground parking, ground level commercial space, and upper-level residential units.

5.9.2 Physical Site Description

The Phase Two property is located in a former industrial area on the west side of Chaudière Island west of Booth Street, as shown on Figure 1. The Phase Two property is irregular in shape and has an area of approximately 0.8 hectares. The approximate centroid coordinates are NAD83 18T 443738 m E and 5029828 m N.

At the time of the investigation, the Phase Two property was vacant, however after remedial activities were completed on the north part of the site in 2019, it was paved and became part of the Chaudière Private right of way. The site layout is shown on Figure 2.

The municipal address of the Phase Two property is 315 Miwàte Private, Ottawa, Ontario. The property identification numbers (PIN) are: 04097-0288, 04097-0306, and 04097-0292. The legal description of PIN 04097-0288 is Part Lots 3, 4, north side Head Street, Part Lot 21, south side Chaudière Street, Plan 10, City of Ottawa. The legal description of PIN 04097-0306 is Part of Lots 2, 3, 4, 5, 20, 21, 22, 23, 24, Plan 10, City of Ottawa. The legal description of PIN 04097-0292 is Part Lot 21, south Chaudière Street, Plan 10, City of Ottawa.

Two RSC have been filed for neighbouring properties owned by the same property owner. RSC 226108 was filed on October 21, 2019 for the property immediately adjacent to the Phase Two property to the east and south. RSC 228673 was filed on May 21, 2021 for 125 Zaida Eddy Private, which is located on East Chaudière Island. Refer to Table 5.7 for the Site identification information.

Refer to Table 5.7 for the Site identification information.

Table 5.7: Site Identification Details

Civic Address	315 Miwàte Private, Ottawa, Ontario
Current Land Use	Industrial

Proposed Future Land Use	Residential and Commercial
Property Identification Number	04097-0288, 04097-0306, 04097-0292
UTM Coordinates	NAD83 18T 443738 m E and 5029828 m N
Site Area	0.8 hectares
Property Owner	Windmill Dream Zibi Ontario Inc.

The Phase One Conceptual Site Model is provided as Figure 3.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area has a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is a shallow soil property as defined in Section 43.1 of the regulation. It is part of Chaudière Island and is within 30 m of the Ottawa River.

5.9.3 Geological and Hydrogeological

Bedrock in the general area of the Phase Two property consists of limestone, dolostone, shale, arkose, and sandstone from the Shadow Lake Formation of the Middle Ordovician period. The bedrock occurs as bare tabular outcrops and includes areas thinly veneered by unconsolidated sediments. The bedrock elevation is approximately 53 metres above sea level (masl).

Soil at the Phase Two property prior to remediation generally consisted of sand and gravel fill material with trace silt and brick debris and some boulders and cobbles. The fill layer ranged in thickness from 0.2 to 1.6 metres. Limestone bedrock underlaid the fill material.

All soil was removed from the Phase Two property during the remediation program. Where required, backfill materials consisted of material that was not considered to be soil, as the particle diameter was larger than 2 mm.

The Phase Two property is on Chaudière Island, which is surrounded by the Ottawa River. Groundwater elevations depend on the level of water within the river, but generally range between 42 and 45 masl. The groundwater flow direction was determined to be northeasterly, as shown in Figure 4.

EXP notes that groundwater levels depend on the size of the fractures that are intercepted as drilling progresses. Groundwater contour plans were not prepared for post-remediation groundwater levels because it is unlikely that the difference in groundwater elevations in the three monitoring wells is representative of the actual groundwater flow across the site as opposed to the differences in the fractures at each individual location.

Groundwater levels can also be influenced by seasonal changes, the presence of subsurface structures, or fill, however based on the presence of the Ottawa River surrounding Chaudière Island, it is unlikely that any of these factors will affect the groundwater flow direction at the Phase Two property.

The hydraulic conductivity in post remedial monitoring well MW21-03 was 6.61×10^{-7} cm/s.

A plan view showing cross-sections is provided as Figure 5, while the Phase Two property geology is depicted in cross-sections on Figure 6.

A summary of factors that apply to the Phase Two property is provided in Table 5.8.

Table 5.8: Site Characteristics

Characteristic	Description
Minimum Depth to Bedrock	0.2 metres below ground surface
Minimum Depth to Groundwater	50.95 masl (March 24, 2021)
Shallow Soil Property	Yes, bedrock is less than 2.0 mbgs
Proximity to water body or ANSI	Approximately 30 m – Ottawa River
Soil pH	Surface and sub-surface pH was within applicable ranges prior to remediation and all soil was removed during remediation
Soil Texture	Coarse
Current Property Use	Industrial
Future Property Use	Residential and Commercial
Proposed Future Building	Multi-storey residential, commercial on ground level, one or two levels of underground parking
Areas Containing Suspected Fill	All soil that was on the property prior to remediation was fill

5.9.4 Utilities and Impediments

Utilities, including underground hydro, natural gas, water, and sewers, are present on Chaudière Private, part of which is included in the Phase Two property. Since the water table is within the bedrock, the presence of utilities is not expected to affect possible migration of contaminants once buildings are constructed on the Phase Two property.

A multi-storey residential building with commercial at ground level and one or two levels of underground parking is planned for construction on the Phase Two property. The post-remediation geology, as well as the potential building footprint, is shown in Figure 25.

5.9.5 Potentially Contaminating Activities

The following on-site potentially contaminating activities (PCA) were identified:

- PCA #9 – Coal Gasification (former coal storage area indicates use of coal as a source of coal gas, which was likely used as a source of heating and/or lighting at the Phase Two property);
- PCA #30 – Importation of fill material of unknown quality (fill material overlying bedrock throughout the Phase Two property);
- PCA # 45 – Pulp, paper and paperboard manufacturing and processing (historic use of the Phase Two property for industrial purposes related to lumber storage and pulp and paper);
- PCA #46 – Rail yards, tracks and spurs (former rail spurs shown in 1948 and 1956 FIP);

- PCA #Other – PCB storage (E.B. Eddy was listed in the PCB Inventory as a major PCB storage site, indicating that the site contained liquid PCB waste in quantities greater than or equal to 1,000 kilograms) and
- PCA #Other – Debris and rubble from fire of 1900 (a fire caused the destruction of every building in the Phase Two study area in 1900. Some of the debris related to the fire was used as backfilling material on the Phase Two property).

The following off-site PCA were identified:

- PCA #1 – Acid and alkali manufacturing, processing and bulk storage (three former acid storage tanks within sulphite mill and storage area on the eastern part of East Chaudière Island);
- PCA #6 – Battery manufacturing, recycling and bulk storage (battery storage area identified in the 1912 fire insurance plan on East Chaudière Island);
- PCA #18 – Electricity generation, transformation and power stations (former powerhouse to the northeast, Hydro Ottawa (and its predecessors) historically occupied the south part of East Chaudière Island for electricity generation, and power generation companies listed on Middle Street);
- PCA #28 – Gasoline and associated products storage in fixed tanks (three former AST on East Chaudière Island, six former AST on West Chaudière Island (east adjacent), two former UST on Albert Island, former diesel pumping station and bunker C UST to the north);
- PCA #34 – Metal fabrication (One or more foundries, manufacturing facilities where metal would be used as a raw material and/or blacksmith shops were listed on Victoria Island);
- PCA #39 – Paints manufacturing, processing and bulk storage (the former paint shop located in the east end of the south building on Albert Island);
- PCA #44 – Port activities, including operation and maintenance of wharves and docks (former wharf adjacent to the Ottawa River on East Chaudière Island);
- PCA #45 – Pulp, paper and paperboard manufacturing and processing (the presence a ground wood pulp mill, beater mill, and sulphite pulp mill on East Chaudière and of a pulp and paper/lumber facility on West Chaudière (paper mill, beater building, and pulp mill));
- PCA #46 – Rail yards, tracks and spurs (former rail spurs were present on the east adjacent property and on East Chaudière Island);
- PCA #55 – Transformer manufacturing, processing and use (five PCB-containing transformers present on East Chaudière Island); and
- PCA #58 – Waste disposal and waste management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners (the waste burner on the property to the adjacent northeast (in the 1912 FIP).

As Albert Island is separated from the Phase Two property by the Ottawa River, none of the off-site PCA identified on Albert Island (PCA # 39 (paint shop) and PCA #28 (two former UST)) resulted in APEC on the Phase Two property.

PCA identified on East Chaudière Island (PCA #1 (former acid storage tanks), PCA #6 (battery storage area), PCA #18 (former Hydro Ottawa facility), PCA #28 (three former AST), PCA #44 (former wharf), PCA #46 (spurs), and PCA #55 (five PCB-containing transformers)) were also determined not to result in APEC on the Phase Two property due to the separation distance and downgradient location from the Phase Two property.

The off-site PCA that were determined to result in APEC on the Phase Two property include PCA #18 (former powerhouse to the northeast), PCA #28 (former diesel pumping station and bunker C UST to the north), PCA #34 (foundries on Victoria Island), and PCA #58 (waste burner on the property to the adjacent northeast).

5.9.6 Areas of Potential Environmental Concern/Potential Contaminates of Concern

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown on Figure 2 and Table 5.9 below:

Table 5.9: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase Two Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase Two property was part of a pulp and paper mill	Entire Phase Two property	#45 – Pulp, Paper and Paperboard Manufacturing and Processing	On-site and Off-Site	Volatile Organic Compounds (VOC), Petroleum Hydrocarbons (PHC), Polycyclic Aromatic Hydrocarbons (PAH), Metals, Polychlorinated Biphenyls (PCB)	Soil and groundwater
#2. Fill material is overlying bedrock throughout the Phase Two property	Entire Phase Two property	#30 – Importation of Fill Material of Unknown Quality	On-site	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), PHC, PAH, Metals	Soil
#3. Former owner, E.B. Eddy Company, was listed on the PCB inventory	Entire Phase Two property	#Other – PCB Storage	On-Site	PCB	Soil and groundwater
#4. A fire that occurred in 1900 destroyed all on-site buildings that existed at the time. Debris and rubble were buried on-site.	Entire Phase Two property	#Other – Debris and Rubble from Fire of 1900	On-Site	BTEX, PHC, PAH, Metals	Soil and groundwater
#5. Foundries were present on Victoria Island, east of the Phase Two property	Entire Phase Two property	#34 – Metal Fabrication	Off-Site	Metals	Soil
#6. Former rail spurs	Central part of the Phase Two property, 10 metres on each side of former rail spurs	#46 – Rail yards, tracks and spurs	On-site	VOC, PHC, PAH, Metals, PCB	Soil and groundwater
#7. Former coal storage area	Northeast corner of the Phase Two property	#9 – Coal gasification	On-Site	PAH	Soil and groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase Two Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#8. Former bunker C UST and diesel pumping station on the adjacent property to the north	North part of Phase Two property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHC, BTEX, PAH, Metals, PCB	Groundwater
#9. Coal fired power generation, adjacent property to the northeast	Northeast part of the Phase Two property	#18 – Electricity generation, transformation and power stations	Off-Site	VOC, PHC, PAH	Groundwater
#10. Former waste burner located south of a building to the northeast	North part of the Phase Two property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners	Off-Site	PHC, PAH, Metals, PCB	Groundwater

5.9.7 Investigation

The site investigative activities consisted of the drilling of boreholes to facilitate the collection of soil samples for visual inspection and chemical analysis. The boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

In March 2019, the Phase Two property owner retained Tomlinson Development Corporation to install utilities (water, sewer, gas, hydro) for future development along Chaudière Private (formerly Perley Street). From March 5 to 25, 2019, EXP observed excavation activities and took soil samples for characterization of the utility trench which ran along the north boundary of the Phase Two property. Beneath the concrete sidewalk and asphalt roadway, sand and gravel fill material was present to a depth of approximately 0.6 metres below ground surface (m bgs). Bedrock was present at a depth of approximately 0.2 to 1.5 metres below ground surface (m bgs). Granular material, which was comprised of material that had particles larger than 2 mm, was present from a depth of 0.6 m bgs to bedrock. The total depth of the utility excavation was 2.4 m bgs. All excavated material was temporarily stockpiled on East Chaudière Island and was subsequently disposed of off-site in 2019. The utility trench was backfilled with material that was larger than 2 mm in diameter.

A pre-remedial drilling program was conducted to investigate the soil quality on the Phase Two property. The pre-remedial drilling program was completed March 15 and 16, 2021 by George Downing Estate Drillings (Downing), a licensed well contractor. Downing advanced five boreholes (MW21-01 to MW21-05) across the Phase Two property, using a CME-75 truck mounted drill. Boreholes were augured to refusal, then cored to depth. All of the boreholes were completed as monitoring wells.

The pre-remediation monitoring wells were decommissioned in accordance with Regulation 903. On March 26, 2021, five monitoring wells (BH/MW21-01 to BH/MW21-05) were decommissioned by using the pressure-grout method by Downing.

The 2021 remedial excavation program included excavating and stockpiling impacted soil for off-site disposal. The remedial excavation extended to the utility trench, from which all soil was removed in 2019, and extended horizontally beyond the property boundaries in all other directions and vertically to bedrock surface. With the exception of the soil at the northern property boundary, as described above, all soil was removed from the Phase Two property.

This remediation program commenced on March 29, 2021 and concluded on May 18, 2021. Excavation GTS was retained by the Phase Two property owner to complete the remedial excavation. Soil excavation and removal activities occurred over five days during this period, including March 29 to 31 and May 17 and 18. No soil was brought to the Phase Two property, as the excavation was backfilled with materials that were larger than 2 mm in diameter.

Approximately 2,431.87 tonnes of impacted soil and granular material were excavated and removed from the north part of the Phase Two property in 2019. This soil was temporarily stockpiled on East Chaudière Island and was disposed off-site in conjunction with remedial activities that occurred at 125 Zaida Eddy Private (RSC 228673). In conjunction with 2021 remedial activities, approximately 3,720.67 tonnes of impacted soil and 30.5 tonnes of impacted concrete were removed by excavation from the Phase Two property. All soil, concrete, and granular materials were disposed of as non-hazardous waste at the City of Ottawa Trail Road facility.

The post-remedial drilling investigation was conducted on April 28, 2021 by Downing. Downing advanced three boreholes (BH/MW21-01 to BH/MW21-03) on the Phase Two property, using a CME-75 truck mount drill. The boreholes were installed at depths between 6.1 and 6.7 mbgs. All soil was removed from the Phase Two property during the remediation program and all the boreholes were cored through bedrock. At the time of drilling, ground surface in the area of the monitoring wells consisted of bedrock surface, however $\frac{3}{4}$ inch stone was subsequently brought to the property.

5.9.8 Soil Sampling

Soil samples were selected for laboratory analysis based on combustible vapour measurements and visual and olfactory evidence of impacts, where observed. Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analysed for PHC fraction F1 and BTEX were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, Paracel Laboratories Ltd. (Paracel) of Ottawa, Ontario.

Ten soil samples and one field duplicate were collected from the north wall of the utilities trench in 2019 and during the pre-remedial drilling investigation in 2021 and submitted to Paracel for analysis of PHC fractions F1 to F4, VOC, PAH, PCB and inorganics. Two soil samples were submitted for analysis of pH.

Soil samples collected during the pre-remediation drilling program exceeded the Table 7 and/or Table 9 SCS for VOC, PHC, PAH, and/or inorganic parameters. All of these samples were within the Table 7 and Table 9 SCS for PCB. The pH samples were within the applicable ranges for surface and subsurface soils. The pre-remediation drilling results are shown in plan view on Figures 7 to 9 and on cross-sections on Figures 10 to 12. All soil (except for the soil located on the north property line) was removed from the Phase Two property, so these samples are not representative of post-remediation site conditions.

None of the soil samples collected from the north wall of the utility trench exceeded the applicable Table 7 or Table 9 SCS. Analytical results are shown in plan view on Figures 19 to 21 and on cross-sections on Figures 22 to 24.

With the exception of the soil along the north wall of the services excavation on Chaudière Private, all soil was removed from the Phase Two property. Therefore, no post-remedial soil analysis was required.

5.9.9 Groundwater Sampling

All groundwater samples were collected via a low flow sampling technique using a YSI 550 multi probe water quality meter. The YSI probe was calibrated using in-house reference standards. Prior to collecting the groundwater samples, water quality

field parameters (turbidity, dissolved oxygen, conductivity, temperature, pH, and oxidation reduction potential) were monitored until stable readings were achieved to ensure that the samples collected were representative of actual groundwater conditions.

The groundwater samples were placed in clean coolers containing ice packs prior to and during transportation to the laboratory. The samples were transported to the laboratory within 24 hours of collection with a chain of custody.

Prior to remediation, five groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, and/or inorganic parameters. No groundwater sample was submitted for metals analysis from BH/MW21-02 as there was insufficient sample volume for analysis of all parameters.

There were no exceedances of the MECP Table 9 or Table 7 SCS for PHC, PCB, and inorganic parameter groups. However, the sample collected from BH/MW21-04 exceeded the Table 7 and Table 9 SCS for chloroform. This monitoring well was installed within the limestone bedrock. To facilitate drilling at this location, municipal water was used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. In accordance with Regulation 153/04 it is the opinion of the Qualified Person that the source of chloroform in this monitoring well, which was sampled nine days after its installation, is the municipal water. Therefore, in accordance with Section 49.1 of Regulation 153/04, chloroform is not considered to exceed the SCS. Analytical results are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18.

Two post-remedial groundwater sampling events were conducted. The first event was conducted on August 23 and 31 and September 14, 2021, and the second event was conducted on December 21 and 22, 2021 and January 6, 12, 19, and February 16, 2022. Several days were required for each event because of the slow recovery of the monitoring wells and because they were covered with snow. During each event, three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, VOC, PAH, PCB, inorganic parameters. All post-remediation groundwater samples were within the applicable Table 7 and Table 9 SCS. Analytical results are shown in plan view on Figures 26 to 28 and on cross-sections on Figures 29 to 31.

5.9.10 Contaminants of Concern

Prior to remediation, all soil on site was determined to be contaminated. No contaminated groundwater was encountered. Contaminants that exceeded the applicable standards included:

Soil: PHC fractions F2 to F4, benzene, ethylbenzene, xylenes, acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, 1- & 2- methyl-naphthalene, naphthalene, phenanthrene, pyrene, antimony, arsenic, barium, copper, lead, mercury, molybdenum, selenium, and thallium.

Groundwater: None.

Post-remediation, no soil or groundwater samples exceeded the Table 7 and Table 9 SCS. Maximum soil concentrations are representative of the wall samples from the utilities excavation on Chaudière Private completed in 2019. No other soil is present on the Phase Two property.

5.9.11 Contaminant Fate and Transport

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

Prior to remediation, all soil on site was determined to be contaminated, as PHC fractions F2 to F4, BTEX, PAH, and metals exceeded the applicable Table 7 and/or Table 9 SCS. There were no pre-remediation groundwater exceedances.

A building with one or two levels of underground parking, ground floor retail, and upper floor residential use is planned to be constructed. The potential on-site human receptors include indoor and outdoor long-term workers, indoor and outdoor short-term workers, residents on upper floors (adult, teen, child, toddler and infant), property visitors (adult, teen, child, toddler and infant), and construction workers. Since all pre-remediation groundwater samples were within the Table 7 and Table 9 SCS, neither groundwater dermal contact nor groundwater ingestion were deemed to be potential exposure pathways for any of the potential on-site human receptors.

The potential on-site exposure pathways for the construction workers are incidental soil ingestion, soil particulate inhalation, soil dermal contact, ambient vapour inhalation, and vapour skin contact.

The potential on-site exposure pathways for the short-term and long-term outdoor workers (who are not exposed directly to subsurface soil and groundwater) are incidental surface soil ingestion, surface soil particulate inhalation, surface soil dermal contact, ambient air inhalation, and vapour skin contact.

The potential on-site exposure pathway for the property residents, the long-term indoor workers and visitors is indoor air inhalation.

A diagram identifying the release mechanisms, contaminant transport pathway, human receptors, exposure points and routes of exposure are shown on Figure 32.

While the footprint of the building that is being planned will occupy most of the Phase Two property, there will be a landscaped area surrounding the building. Therefore, The Phase Two property is capable of supporting some ecological receptors. Relevant ecological receptors include terrestrial vegetation (bushes, grasses and weeds); soil invertebrates (earthworms, millipedes and beetles); birds (seagulls, pigeons, sparrows and robins); and small terrestrial mammals (moles, voles, and mice). Since all pre-remediation groundwater samples were within the Table 7 and Table 9 SCS, groundwater root uptake, groundwater dermal contact, and incidental ingestion of groundwater were not deemed to be potential exposure pathways for any of the potential on-site ecological receptors.

The potential on-site exposure pathways for terrestrial vegetation are root uptake of soil and stem and foliar uptake of vapours from soil.

The potential on-site exposure pathways for soil invertebrates are soil particulate inhalation, soil dermal contact, soil ingestion, and vapour inhalation, and plant and animal tissue ingestion.

The potential on-site exposure pathways for mammals and birds are soil particulate inhalation, soil dermal contact, soil ingestion, vapour inhalation, and plant and animal tissue ingestion.

A diagram identifying the release mechanisms, contaminant transport pathway, ecological receptors, exposure points and routes of exposure are shown on Figure 33.

During the remediation program, all soil was removed from the Phase Two property. All confirmatory groundwater samples were within the applicable Table 7 and Table 9 SCS. Therefore, there are no longer any potential human health or ecological receptors and exposure pathways.

6.0 Conclusion

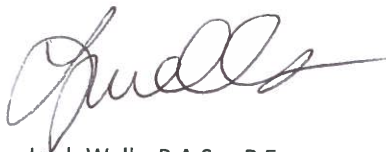
During the current investigation, the soil and groundwater quality at the Phase Two property were investigated. The investigation included a pre- and post-remedial soil and groundwater sampling program. Results were compared to Regulation 153/04 Table 7 and Table 9 standards for residential/parkland/institutional property use and coarse textured soils in a non-potable groundwater condition.

Approximately 2,431.87 tonnes of impacted soil and granular material were excavated and removed from the north part of the Phase Two property in 2019. This soil was temporarily stockpiled on East Chaudière Island and was disposed off-site in conjunction with remedial activities that occurred at 125 Zaida Eddy Private (RSC 228673). In conjunction with 2021 remedial activities, approximately 3,720.67 tonnes of impacted soil and 30.5 tonnes of impacted concrete were removed by excavation from the Phase Two property. All soil, concrete, and granular materials were disposed of as non-hazardous waste at the City of Ottawa Trail Road facility.

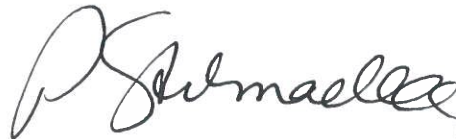
A building with one or two levels of underground parking, ground floor commercial, and upper-level residential units will be constructed on the Phase Two property. Services associated with future site development have been installed on the Phase Two property. All backfill material brought to the Phase Two property consisted of particles that were larger than 2 mm in diameter.

During the remediation program, all soil was removed from the Phase Two property except for soil that is still present along the north wall of a utility trench adjacent to Chaudière Private. All confirmatory groundwater samples were within the applicable Table 7 and Table 9 SCS. Therefore, there are no longer any potential human health or ecological receptors and exposure pathways. Further, no additional remedial activities are deemed to be warranted.

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.



Leah Wells, B.A.Sc., P.Eng.
 Environmental Engineer
 Earth and Environment



Patricia Stelmack, M.Sc., P.Eng.
 Team Lead/Senior Project Manager
 Earth and Environment



7.0 References

This study was conducted in accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives. Specific reference is made to the following documents.

- EXP Services Inc., *Phase One Environmental Site Assessment, 315 and 300 Miwàte Private and 505 Chaudière Private, Ottawa, Ontario, April 1, 2022.*
- EXP Services Inc., *Soil Sampling Program, Perley Street Excavation, Chaudière Island, 4 Booth Street, Ottawa, Ontario, June 3, 2019*
- EXP Services Inc., *Phase One Environmental Site Assessment, 125 Zaida Eddy Private, Ottawa, Ontario, November 19, 2019.*
- EXP Services Inc., *Phase Two Environmental Site Assessment, 125 Zaida Eddy Private, Ottawa, Ontario, December 11, 2020.*
- Freeze and Cherry, *Groundwater*, Prentice Hall, 1979.
- Ontario Ministry of the Environment, Conservation and Parks, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996.
- Ontario Ministry of the Environment, Conservation and Parks, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04*, June 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, July 1, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Management of Excess Soil – A Guide for Best Management Practices*, January 2014.
- Ontario Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 347, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 903, made under the *Water Resources Act*, as amended.

8.0 General Limitations

Basis of Report

This report ("Report") is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of EXP may require re-evaluation. Where special concerns exist, or Windmill Dream Zibi Ontario Inc. ("the Client") has special considerations or requirements, these should be disclosed to EXP to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

Reliance on Information Provided

The evaluation and conclusions contained in the Report are based on conditions in evidence at the time of site inspections and information provided to EXP by the Client and others. The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose as communicated by the Client. EXP has relied in good faith upon such representations, information and instructions and accepts no responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of any misstatements, omissions, misrepresentation or fraudulent acts of persons providing information. Unless specifically stated otherwise, the applicability and reliability of the findings, recommendations, suggestions or opinions expressed in the Report are only valid to the extent that there has been no material alteration to or variation from any of the information provided to exp. If new information about the environmental conditions at the Site is found, the information should be provided to EXP so that it can be reviewed and revisions to the conclusions and/or recommendations can be made, if warranted.

Standard of Care

The Report has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment form part of the Report. This material includes, but is not limited to, the terms of reference given to EXP by the Client, communications between EXP and the Client, other reports, proposals or documents prepared by EXP for the Client in connection with the site described in the Report. In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety. EXP is not responsible for use by any party of portions of the Report.

Use of Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report in whole or in part without the written consent of EXP. Any use of the Report, or any portion of the Report, by a third party are the sole responsibility of such third party. EXP is not responsible for damages suffered by any third party resulting from unauthorised use of the Report.

Report Format

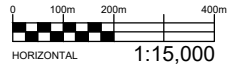
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EXP Services Inc.

*Windmill Dream Zibi Ontario Inc.
Phase Two Environmental Site Assessment
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0
April 20, 2022*

Appendix A: Figures

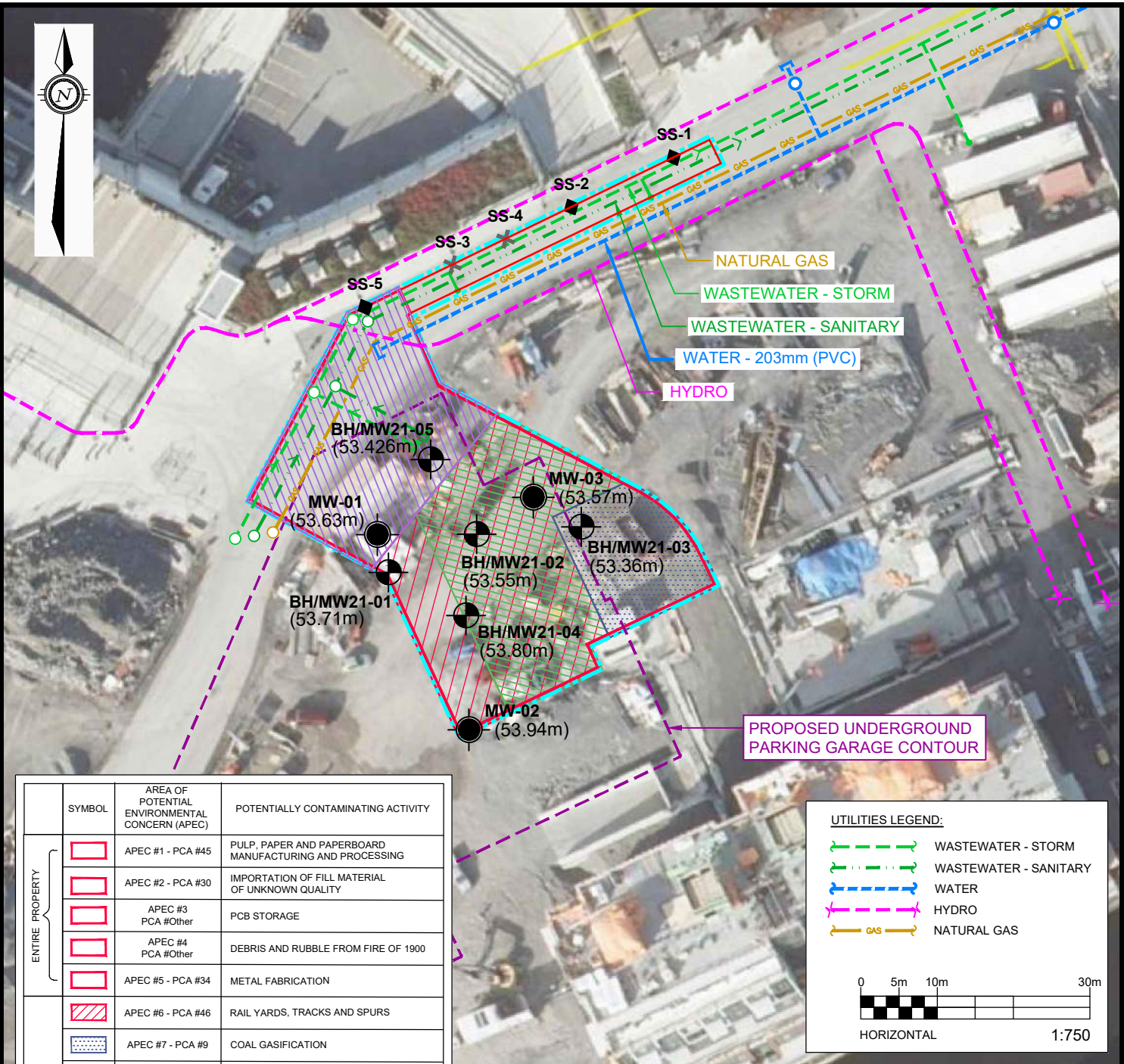
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 2650 Queensview Drive, Suite 100
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DATE APRIL 2022		CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP		project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	TITLE: SITE LOCATION PLAN		scale ~1:15,000
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	SYMBOL	AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)	POTENTIALLY CONTAMINATING ACTIVITY
ENTIRE PROPERTY		APEC #1 - PCA #45	PULP, PAPER AND PAPERBOARD MANUFACTURING AND PROCESSING
		APEC #2 - PCA #30	IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY
		APEC #3 PCA #Other	PCB STORAGE
		APEC #4 PCA #Other	DEBRIS AND RUBBLE FROM FIRE OF 1900
		APEC #5 - PCA #34	METAL FABRICATION
		APEC #6 - PCA #46	RAIL YARDS, TRACKS AND SPURS
		APEC #7 - PCA #9	COAL GASIFICATION
		APEC #8 - PCA #28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
		APEC #9 - PCA #28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
		APEC #10 - PCA #18	ELECTRICITY GENERATION, TRANSFORMATION AND POWER STATIONS
		APEC #11 - PCA #58	WASTE DISPOSAL (THERMAL TREATMENT)
		APEC #12 - PCA #28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS

UTILITIES LEGEND:

- WASTEWATER - STORM
- WASTEWATER - SANITARY
- WATER
- HYDRO
- NATURAL GAS

0 5m 10m 30m
 HORIZONTAL 1:750

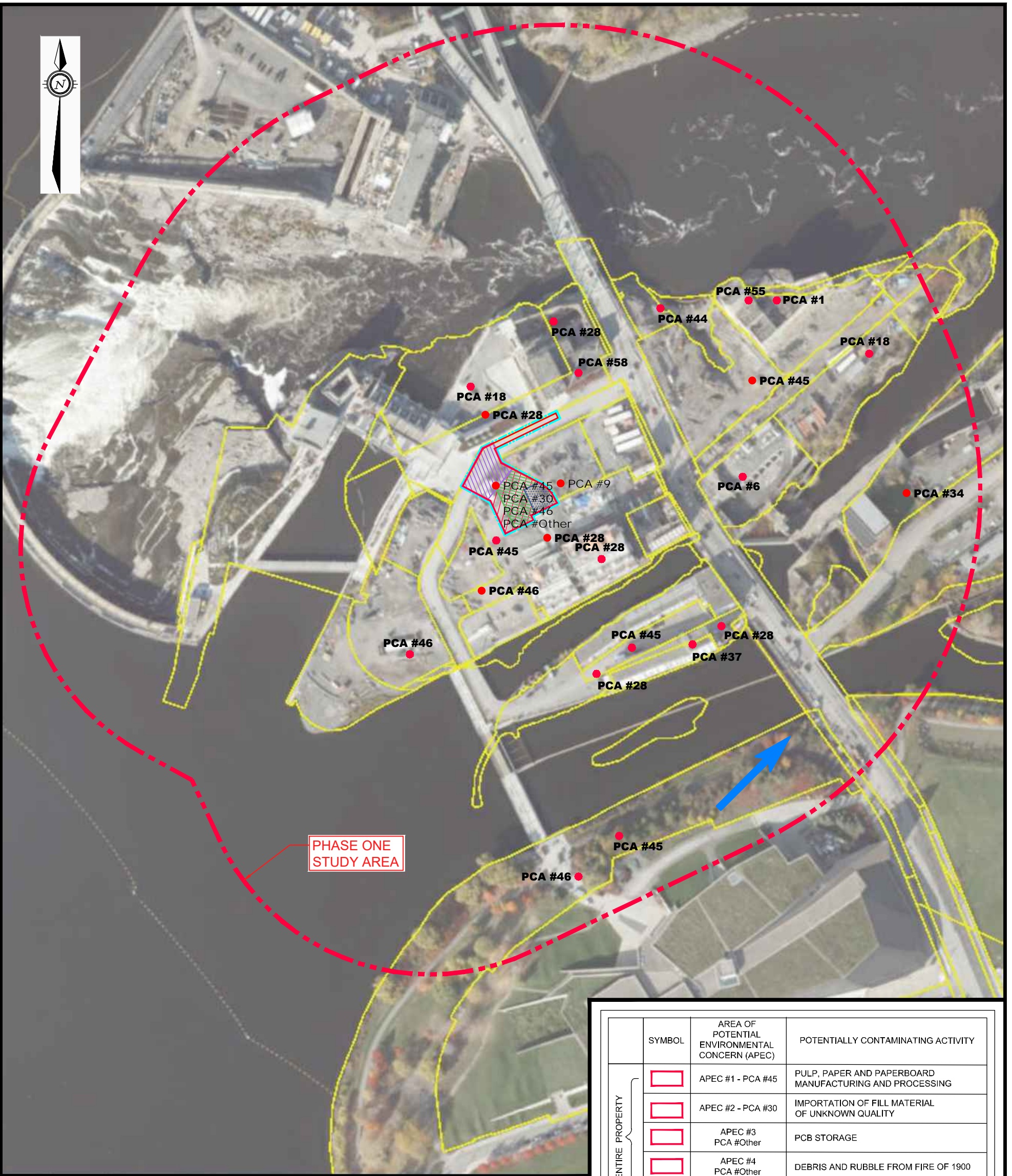
LEGEND

- PROPERTY BOUNDARY
- BH/MW21-01** (53.71m) PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- MW-01** (53.63m) POST-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- NORTH WALL EXCAVATION SAMPLES: CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED

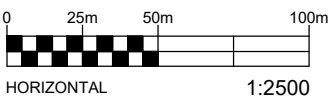


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DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SITE PLAN 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 2



PHASE ONE STUDY AREA



	SYMBOL	AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)	POTENTIALLY CONTAMINATING ACTIVITY
ENTIRE PROPERTY		APEC #1 - PCA #45	PULP, PAPER AND PAPERBOARD MANUFACTURING AND PROCESSING
		APEC #2 - PCA #30	IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY
		APEC #3 PCA #Other	PCB STORAGE
		APEC #4 PCA #Other	DEBRIS AND RUBBLE FROM FIRE OF 1900
		APEC #5 - PCA #34	METAL FABRICATION
		APEC #6 - PCA #46	RAIL YARDS, TRACKS AND SPURS
		APEC #7 - PCA #9	COAL GASIFICATION
		APEC #8 - PCA #28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
		APEC #9 - PCA #28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
		APEC #10 - PCA #18	ELECTRICITY GENERATION, TRANSFORMATION AND POWER STATIONS
		APEC #11 - PCA #58	WASTE DISPOSAL (THERMAL TREATMENT)
		APEC #12 - PCA #28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS

LEGEND

- PROPERTY BOUNDARY
- STUDY AREA (250m)
- INFERRED GROUNDWATER FLOW DIRECTION
- PCA #28
- POTENTIALLY CONTAMINATING ACTIVITY (PCA)



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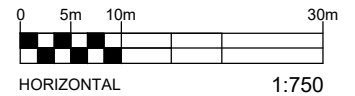
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LEGEND

- PROPERTY BOUNDARY
- INFERRED GROUNDWATER FLOW DIRECTION
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)

BH/MW21-01
(50.31m)

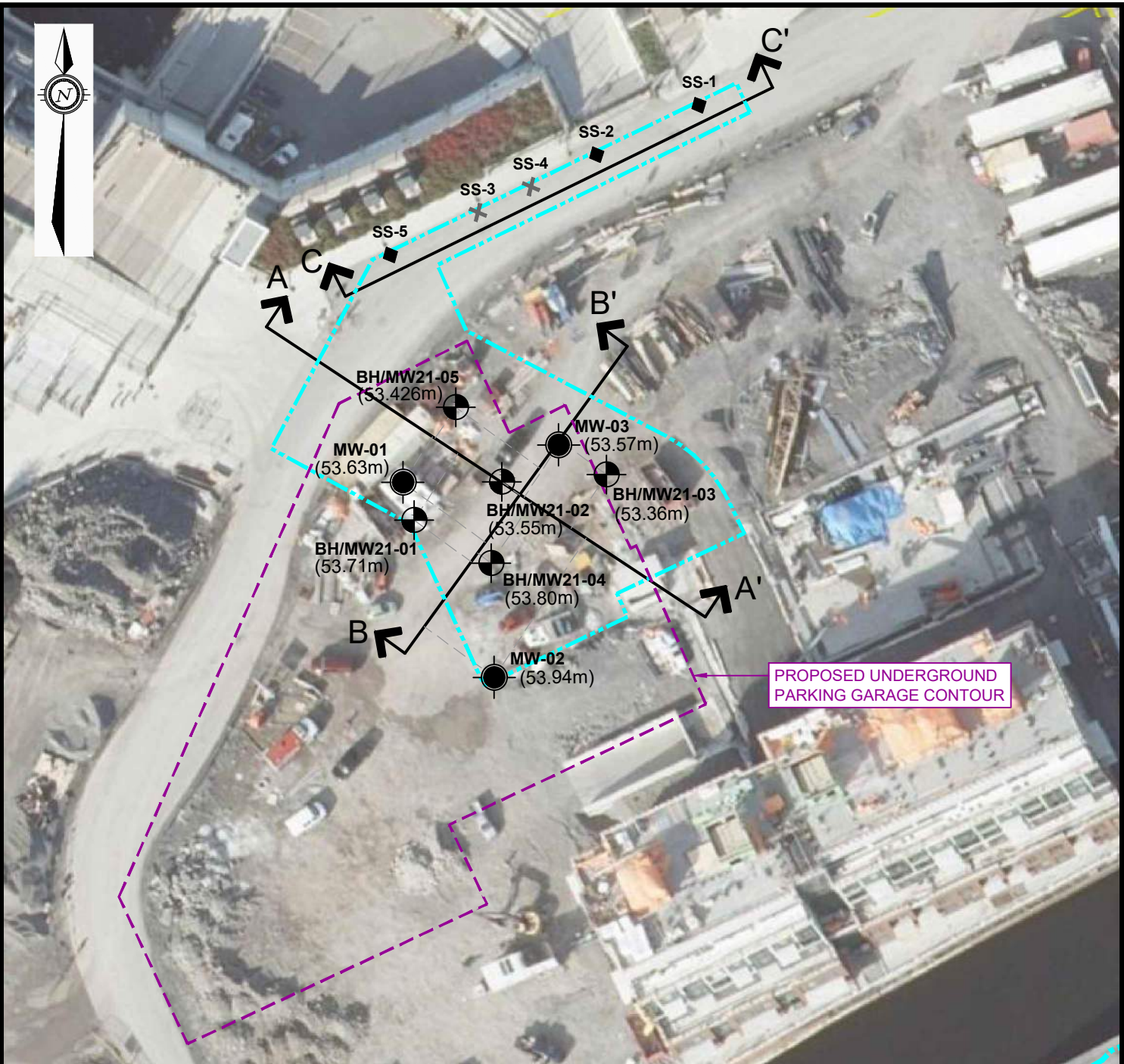


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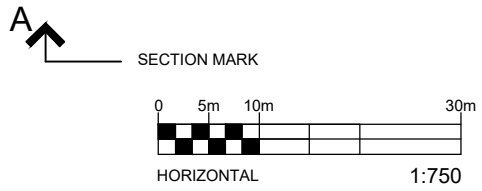
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			FIG 4

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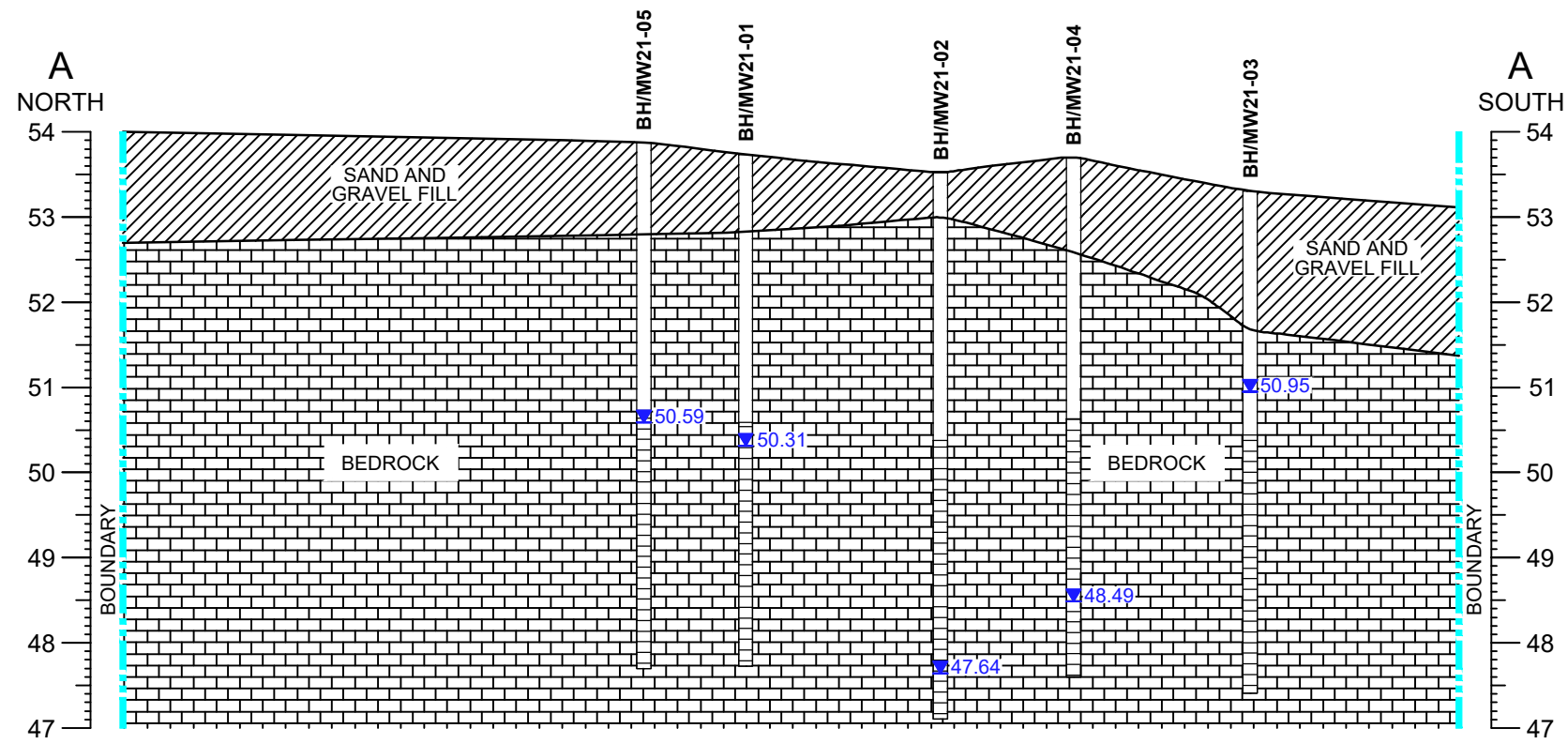
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- POST-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- NORTH WALL EXCAVATION SAMPLES: CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED



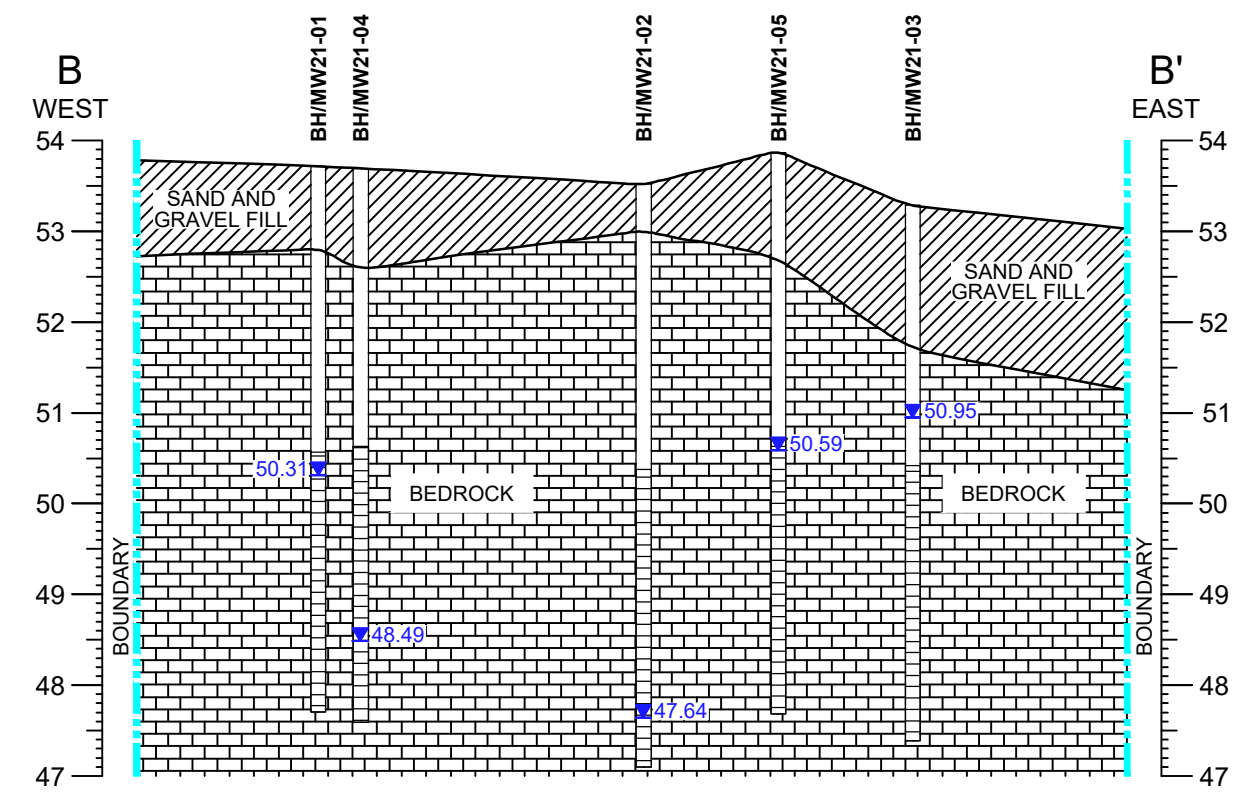
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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022		CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP		project no. OTT-00250193-P0
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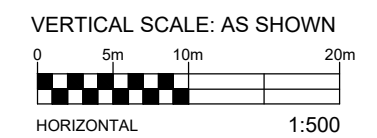
CROSS SECTION A-A'



CROSS SECTION B-B'

LEGEND

- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM MARCH 24, 2021

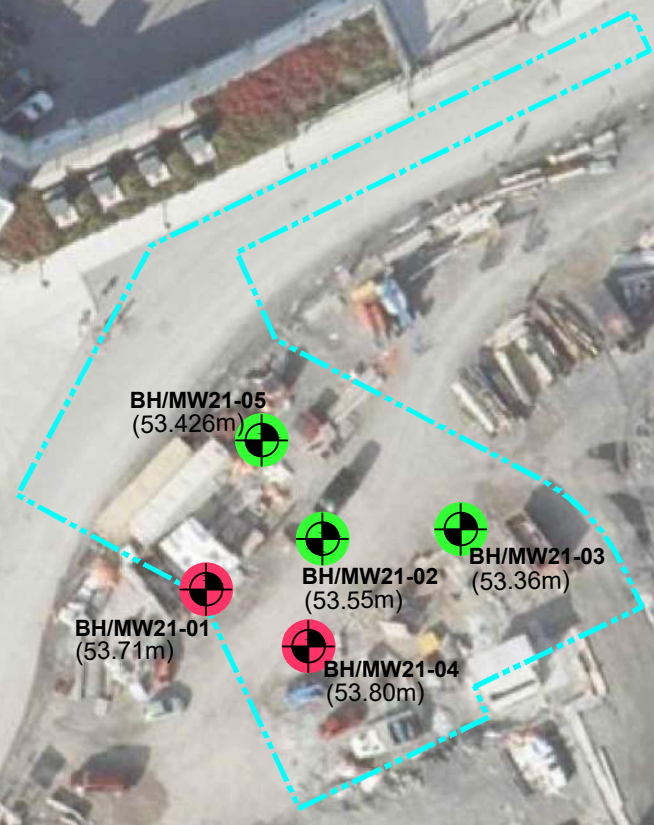


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DATE	APRIL 2022	CLIENT:	project no.
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LW	PS		scale
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TM / AS			FIG 6

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BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARD	TABLE 7 STANDARD
Benzene	B	0.02	0.21
Toluene	T	0.2	2.3
Ethylbenzene	E	0.05	2
Total Xylenes	X	0.05	3.1
F1	F1 (C6-C10)	25	55
F2	F2 (C10-C16)	10	98
F3	F3 (C16-C34)	240	300
F4	F4 (C34-C50)	120	2800
1,1-Dichloroethane	1,1-DCA	0.05	3.5
1,2-Dichloroethane	1,2-DCA	0.05	0.05
1,1-Dichloroethylene	1,1-DCE	0.05	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	0.05	3.4
Trans-1,2-Dichloroethylene	t-1,2-DCE	0.05	0.084
Styrene	ST	0.05	0.7
Tetrachloroethylene	PCE	0.05	0.28
Trichloroethylene	TCE	0.05	0.061
Vinyl Chloride	VC	0.02	0.02

BH/MW21-01	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	0.78	0.93	0.11	0.79	ND (7)	ND (4)	623	1370	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

BH/MW21-02	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	50	36	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

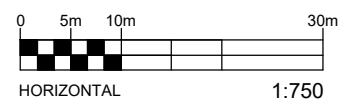
BH/MW21-03	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	46	28	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
D206 (Duplicate)	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	56	34	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
02	0.6 to 1.2	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	38	34	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

BH/MW21-04	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	121	293	746	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
02	0.6 to 0.8	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	61	315	681	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

BH/MW21-05	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	149	94	102	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

LEGEND

- PROPERTY BOUNDARY
- SOIL CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)



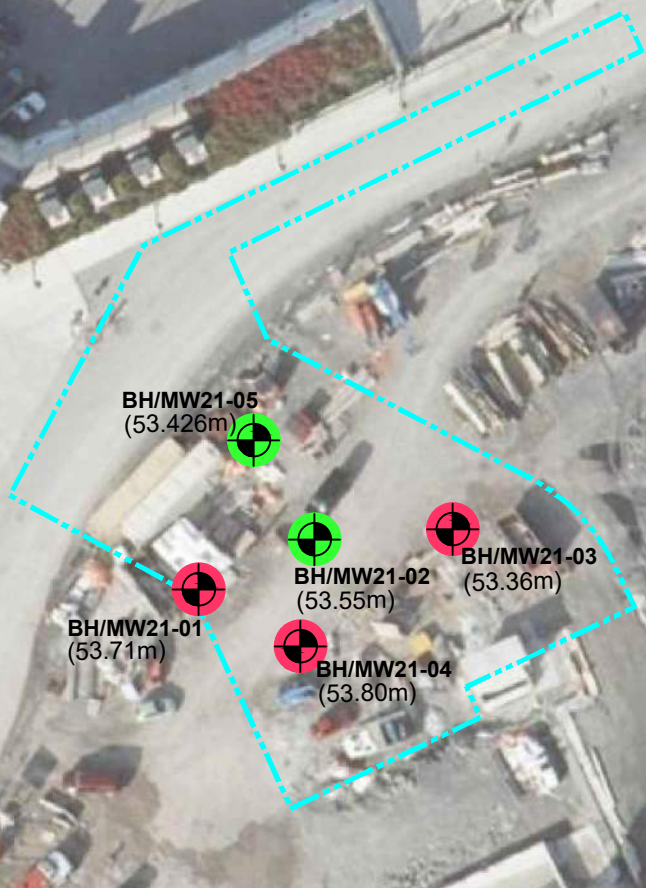
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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SOIL ANALYTICAL RESULTS - PHC & VOC (PRE-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 7

Filename: \\exp\data\OTT-00250193-NO\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:18 AM Plotted by: Severa



BOTH STREET

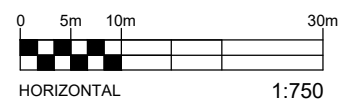


PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Acenaphthene	Ace	0.072	7.9
Acenaphthylene	AcI	0.093	0.15
Anthracene	An	0.22	0.67
Benzo(a)anthracene	B(a)A	0.36	0.5
Benzo(a)pyrene	B(a)P	0.3	0.3
Benzo(b)fluoranthene	B(b)F	0.47	0.78
Benzo(g,h,i)perylene	B(ghi)P	0.68	6.6
Benzo(k)fluoranthene	B(k)F	0.48	0.78
Chrysene	C	2.8	7
Dibenzo(a,h)anthracene	DA	0.1	0.1
Fluoranthene	Fl	0.69	0.69
Fluorene	F	0.19	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.23	0.38
Total Methylnaphthalene	T-MN	0.59	0.99
Naphthalene	N	0.09	0.6
Phenanthrene	P	0.69	6.2
Pyrene	Py	1	78
Total PCBs	PCB	0.3	0.35

BH/MW21-01	Depth (mbgs)	15-Mar-21																			
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py	PCB
01	0.0 to 0.6	0.10	0.09	0.21	0.72	0.42	0.65	0.33	0.31	0.49	0.08	0.74	0.13	0.25	2.72	4.34	7.05	1.94	1.19	0.86	ND (0.05)
BH/MW21-02	Depth (mbgs)	15-Mar-21																			
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py	PCB
01	0.0 to 0.6	ND (0.02)	ND (0.02)	ND (0.02)	0.03	0.04	0.05	0.03	0.02	0.04	ND (0.02)	0.06	ND (0.02)	0.02	0.06	0.11	0.17	0.05	0.06	0.05	ND (0.05)
BH/MW21-03	Depth (mbgs)	15-Mar-21																			
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py	PCB
01	0.0 to 0.6	0.11	0.07	0.47	1.02	0.88	0.82	0.48	0.45	0.83	0.13	1.88	0.19	0.47	0.06	0.13	0.19	0.21	1.75	1.50	0.16
D206 (Duplicate)	0.0 to 0.6	0.21	0.12	0.83	1.35	1.16	1.31	0.62	0.74	1.28	0.19	3.25	0.3	0.64	0.14	0.2	0.34	0.33	2.78	2.53	0.14
02	0.6 to 1.2	0.05	0.02	0.17	0.30	0.32	0.31	0.17	0.15	0.32	0.05	0.63	0.07	0.16	0.04	0.06	0.10	0.10	0.65	0.50	ND (0.05)
BH/MW21-04	Depth (mbgs)	15-Mar-21																			
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py	PCB
01	0.0 to 0.6	0.03	0.05	0.07	0.18	0.19	0.22	0.12	0.11	0.17	0.03	0.36	0.03	0.11	0.06	0.10	0.17	0.04	0.24	0.31	0.11
02	0.6 to 0.8	0.02	0.06	0.11	0.31	0.26	0.39	0.20	0.16	0.31	0.05	0.43	0.06	0.19	0.93	1.36	2.29	1.00	0.65	0.42	ND (0.05)
BH/MW21-05	Depth (mbgs)	15-Mar-21																			
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py	PCB
01	0.0 to 0.6	ND (0.02)	ND (0.02)	ND (0.02)	0.06	0.07	0.08	0.06	0.04	0.06	ND (0.02)	0.09	ND (0.02)	0.04	ND (0.02)	0.04	0.06	0.03	0.07	0.09	ND (0.05)

LEGEND

- PROPERTY BOUNDARY
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- SOIL CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



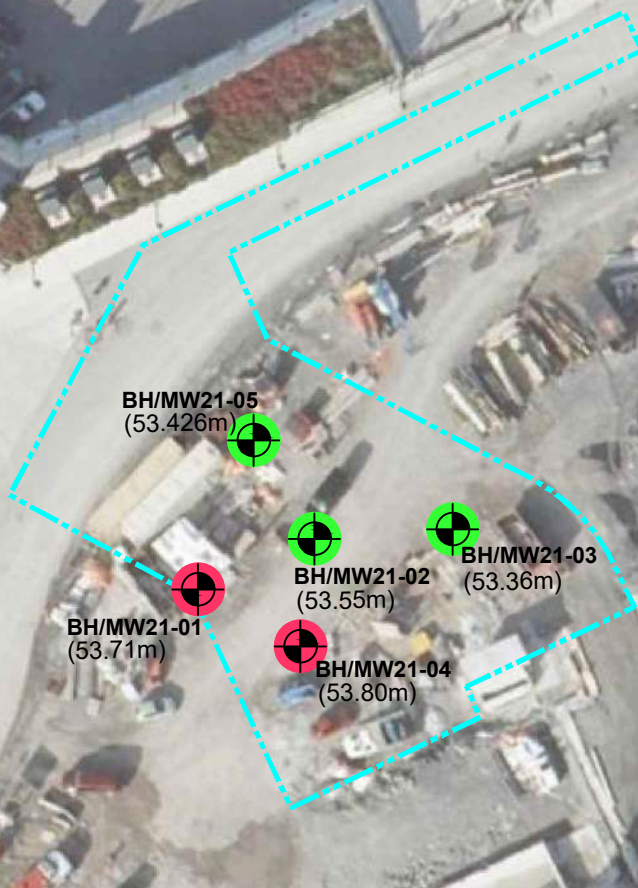
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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SOIL ANALYTICAL RESULTS - PAH & PCB (PRE-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 8

Filename: \\exp\data\OTT\OTT-00250193-NO\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:19 AM Plotted by: Severa



BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARDS	TABLE 7 STANDARDS
Antimony	Sb	1.3	7.5
Arsenic	As	18	18
Barium	Ba	220	390
Beryllium	Be	2.5	4
Boron	B	36	120
Cadmium	Cd	1.2	1.2
Chromium	Cr	70	160
Chromium VI	Cr VI	0.66	8
Cobalt	Co	22	22
Copper	Cu	92	140
Lead	Pb	120	120
Mercury	Hg	0.27	0.27
Molybdenum	Mo	2	6.9
Nickel	Ni	82	100
Selenium	Se	1.5	2.4
Silver	Ag	0.5	20
Thallium	Tl	1	1
Uranium	U	2.5	23
Vanadium	V	86	86
Zinc	Zn	290	340

BH/MW21-01	Depth (mbgs)	15-Mar-21																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
01	0.1 to 0.7	3.8	134	420	1.1	16.7	0.8	26.2	ND (0.2)	10.0	121	218	0.6	13.5	37.4	2.6	0.3	1.7	ND (1.0)	29.8	183

BH/MW21-02	Depth (mbgs)	15-Mar-21																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
01	0.0 to 0.6	ND (1.0)	4.1	137	ND (0.5)	9.2	ND (0.5)	11.1	ND (0.2)	3.6	8.0	12.5	ND (0.1)	1.9	9.5	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	ND (10.0)	25.3

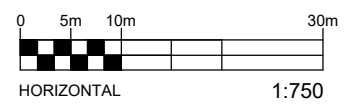
BH/MW21-03	Depth (mbgs)	15-Mar-21																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
01	0.0 to 0.6	ND (1.0)	2.9	144	ND (0.5)	10.9	ND (0.5)	15.4	ND (0.2)	3.2	18.8	18.8	0.1	1.5	14.1	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	11.6	37.7
D206 (Duplicate)	0.0 to 0.6	ND (1.0)	2.6	136	ND (0.5)	10.4	ND (0.5)	13.3	ND (0.2)	3.2	17.8	17.9	0.1	ND (1.0)	10.0	ND (0.3)	ND (1.0)	ND (1.0)	11.4	34.8	
02	0.6 to 1.2	ND (1.0)	3.2	198	0.6	17.8	ND (0.5)	17.3	ND (0.2)	5.7	10.0	15.7	ND (0.1)	ND (1.0)	14.6	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	10.4	ND (20.0)

BH/MW21-04	Depth (mbgs)	15-Mar-21																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
01	0.0 to 0.6	ND (1.0)	2.7	211	ND (0.5)	13.4	ND (0.5)	13.6	ND (0.2)	5.4	20.8	26.4	ND (0.1)	ND (1.0)	11.4	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	19.8	39.9
02	0.6 to 1.2	1.3	21.6	161	0.8	16.8	ND (0.5)	26.7	ND (0.2)	8.7	55.8	2880	0.3	3.6	24.4	1.7	ND (0.3)	ND (1.0)	ND (1.0)	22.5	148

BH/MW21-05	Depth (mbgs)	15-Mar-21																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
01	0.0 to 0.6	ND (1.0)	2.2	146	ND (0.5)	9.5	ND (0.5)	10.5	ND (0.2)	3.5	10.1	9.7	ND (0.1)	ND (1.0)	9.1	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	13.6	ND (20.0)

LEGEND

- PROPERTY BOUNDARY
- SOIL CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)



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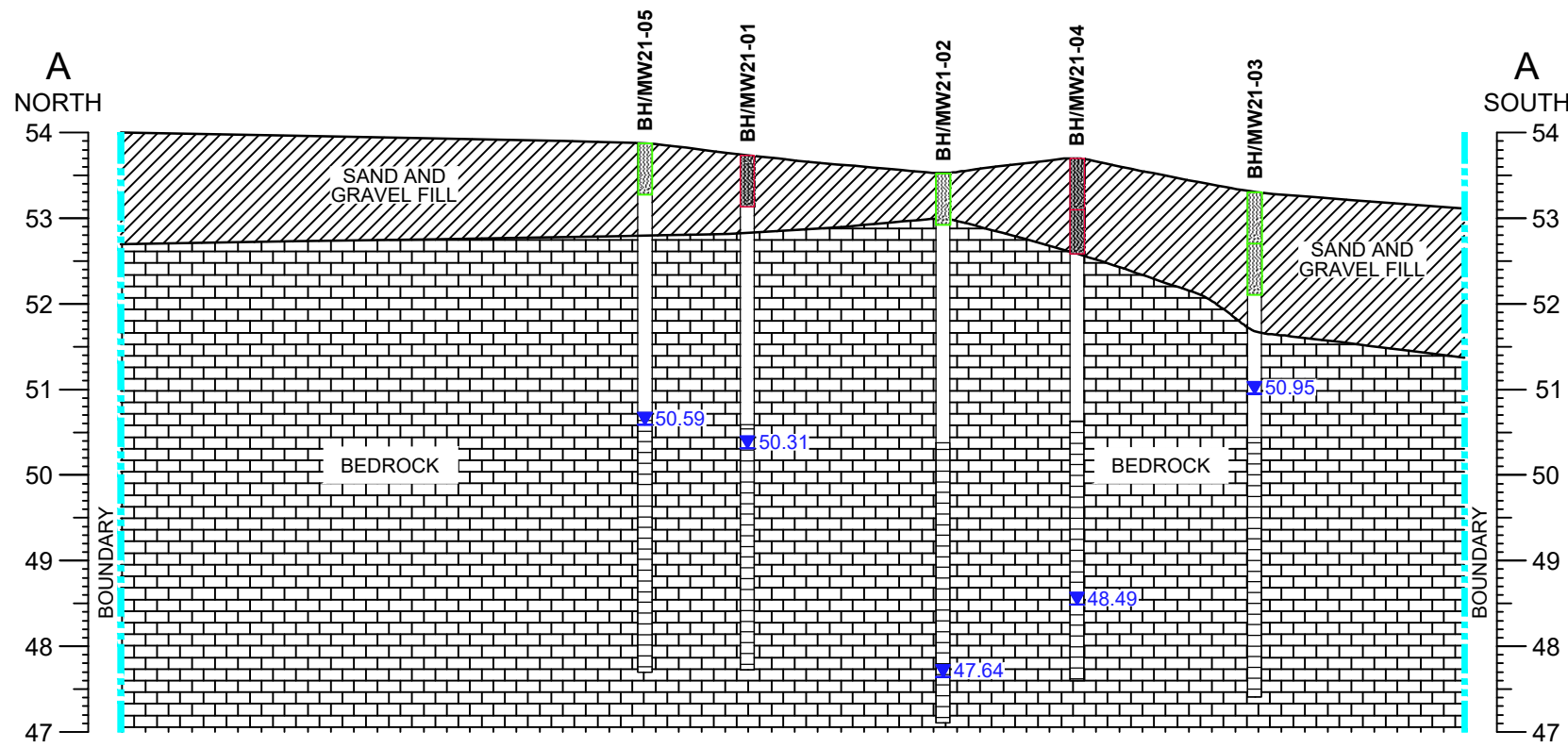
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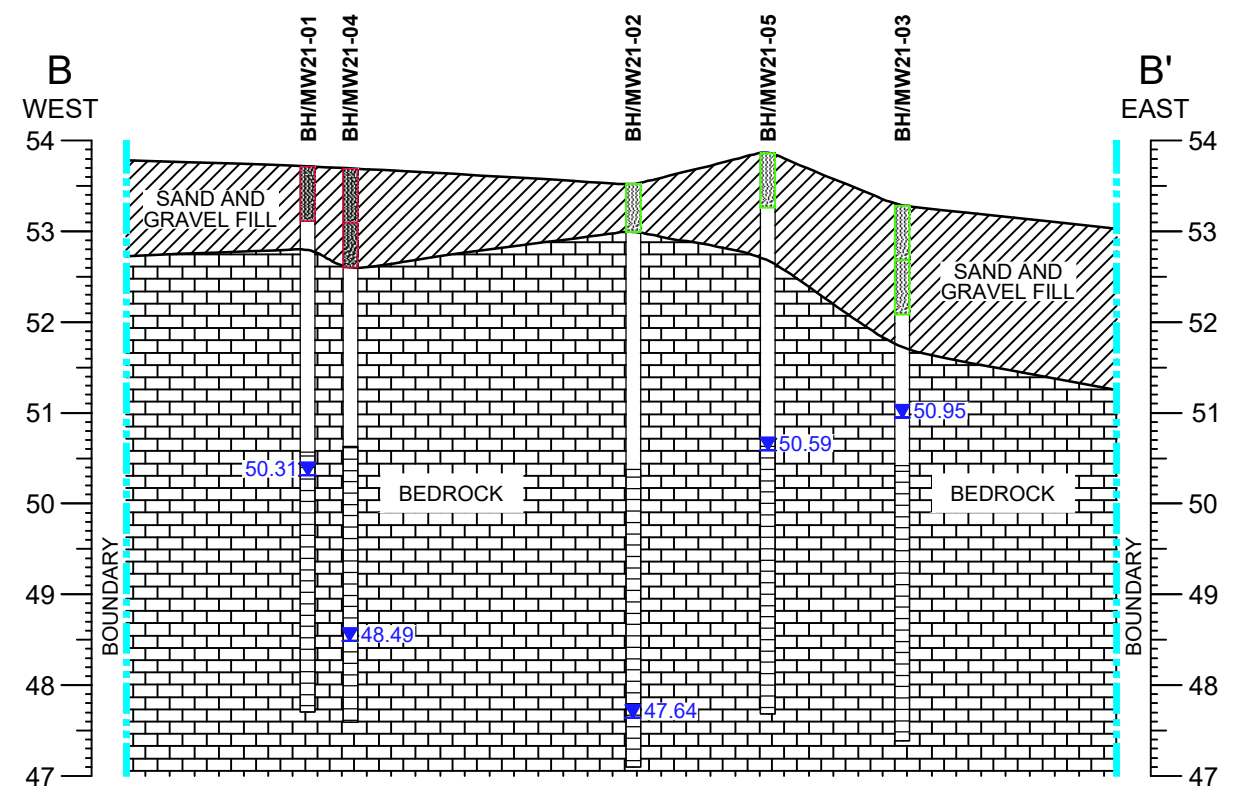
Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SOIL ANALYTICAL RESULTS - INORGANICS (PRE-REMEDICATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 9

File name: \\exp\data\OTT\OTT-00250193-ND\60_Execution\65_Drawings\250193-P0 Drawings\ph2 Sections\ph2 Sections.dwg
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CROSS SECTION A-A'



CROSS SECTION B-B'

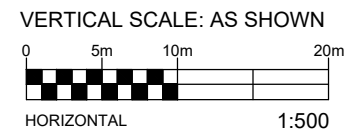
STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARD	REG 153/04 TABLE 7 STANDARD
Benzene	B	0.02	0.21
Toluene	T	0.2	2.3
Ethylbenzene	E	0.05	2
Total Xylenes	X	0.05	3.1
F1	F1 (C6-C10)	25	55
F2	F2 (C10-C16)	10	98
F3	F3 (C16-C34)	240	300
F4	F4 (C34-C50)	120	2800
1,1-Dichloroethane	1,1-DCA	0.05	3.5
1,2-Dichloroethane	1,2-DCA	0.05	0.05
1,1-Dichloroethy lene	1,1-DCE	0.05	0.05
Cis-1,2-Dichloroethy lene	c-1,2-DCE	0.05	3.4
Trans-1,2-Dichloroethy lene	t-1,2-DCE	0.05	0.084
Styrene	ST	0.05	0.7
Tetrachloroethy lene	PCE	0.05	0.28
Trichloroethy lene	TCE	0.05	0.061
Vinyl Chloride	VC	0.02	0.02

BH/MW21-01	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	0.78	0.93	0.11	0.79	ND (7)	ND (4)	623	1370	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
BH/MW21-02	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	50	36	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
BH/MW21-03	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	46	28	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
D206 (Duplicate)	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	56	34	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
02	0.6 to 1.2	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	38	34	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
BH/MW21-04	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	121	293	746	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
02	0.6 to 0.8	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	61	315	681	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
BH/MW21-05	Depth (mbgs)	15-Mar-21																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
01	0.0 to 0.6	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	149	94	102	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

LEGEND

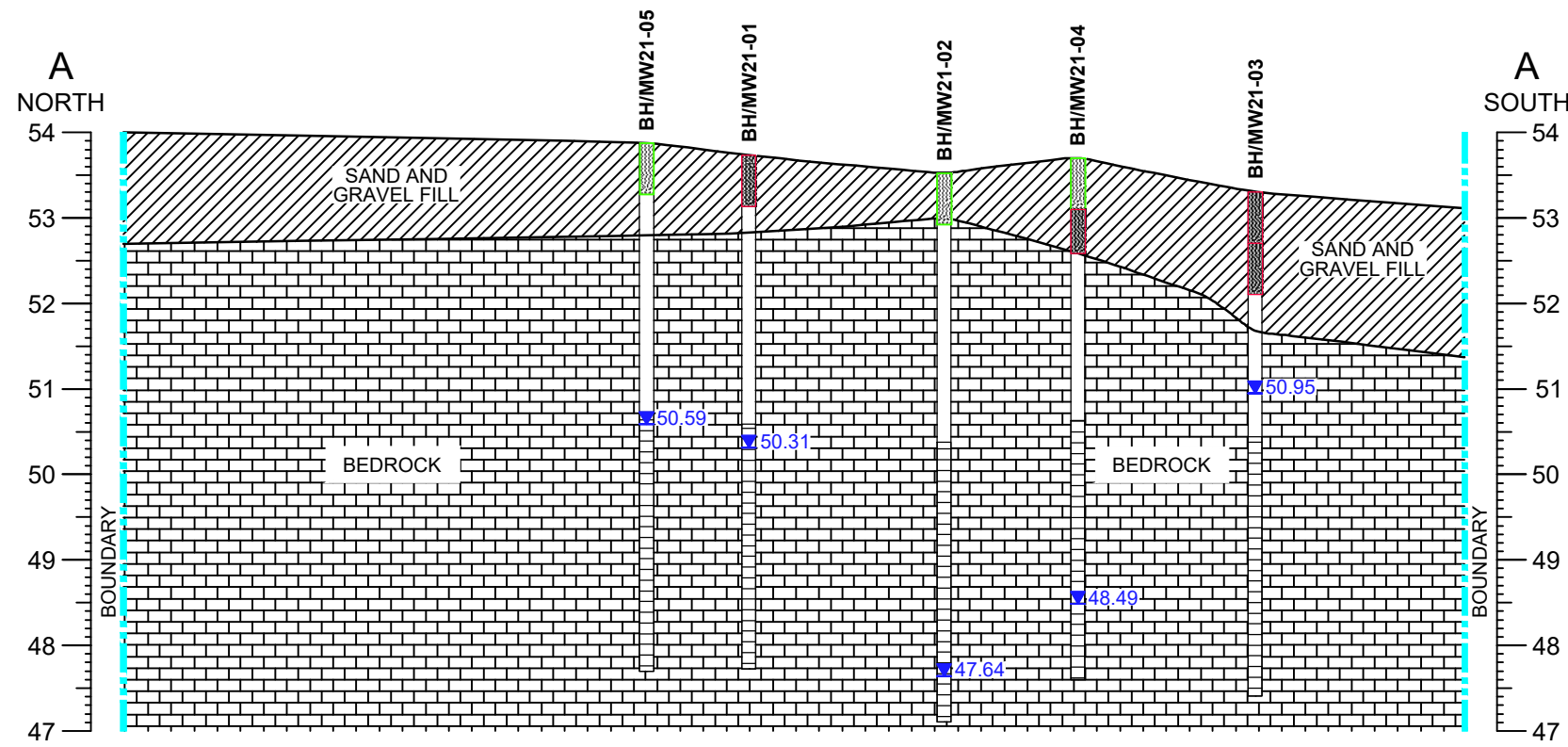
- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM MARCH 24, 2021
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- SOIL CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



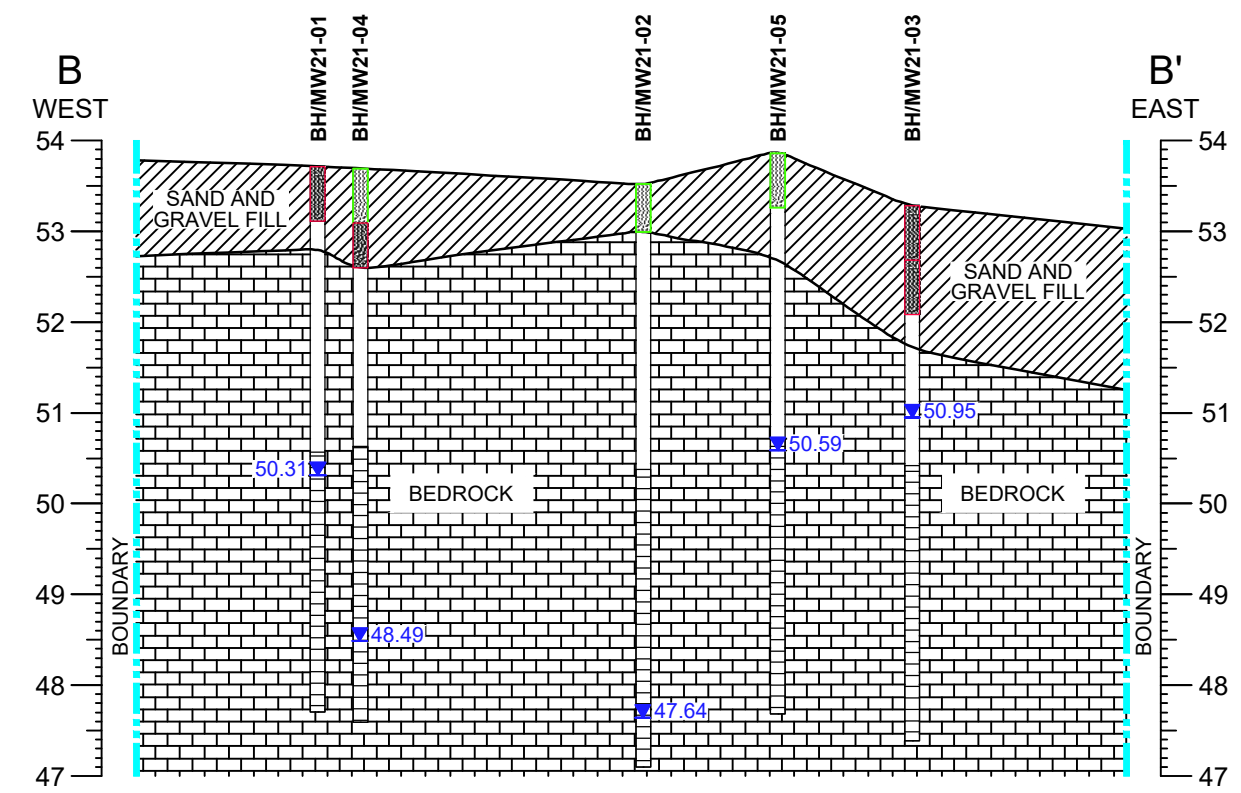
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DATE APRIL 2022	CLIENT WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:500
DRAWN BY TM / AS		TITLE SOIL CROSS SECTIONS A-A' AND B-B' - PHC & VOC (PRE-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO
		FIG 10

File name: \\exp\data\OTT\OTT-00250193-ND\60_Execution\65_Execution\250193-PO Drawings\ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:21 AM Plotted by: Severa



CROSS SECTION A-A'



CROSS SECTION B-B'

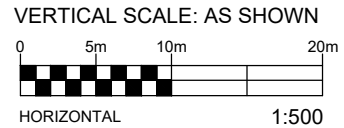
STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Acenaphthene	Ace	0.072	7.9
Acenaphthylene	AcI	0.093	0.15
Anthracene	An	0.22	0.67
Benzo(a)anthracene	B(a)A	0.36	0.5
Benzo(a)pyrene	B(a)P	0.3	0.3
Benzo(b)fluoranthene	B(b)F	0.47	0.78
Benzo(g,h,i)perylene	B(ghi)P	0.68	6.6
Benzo(k)fluoranthene	B(k)F	0.48	0.78
Chrysene	C	2.8	7
Dibenz(a,h)anthracene	DA	0.1	0.1
Fluoranthene	Fl	0.69	0.69
Fluorene	F	0.19	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.23	0.38
Total Methyl naphthalene	T-MN	0.59	0.99
Naphthalene	N	0.09	0.6
Phenanthrene	P	0.69	6.2
Pyrene	Py	1	78
Total PCBs	PCB	0.3	0.35

Borehole	Depth (mbgs)	15-Mar-21																			
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py	PCB
BH/MW21-01	01 0.0 to 0.6	0.10	0.09	0.21	0.72	0.42	0.65	0.33	0.31	0.49	0.08	0.74	0.13	0.25	2.72	4.34	7.05	1.94	1.19	0.86	ND (0.05)
BH/MW21-02	01 0.0 to 0.6	ND (0.02)	ND (0.02)	ND (0.02)	0.03	0.04	0.05	0.03	0.02	0.04	ND (0.02)	0.06	ND (0.02)	0.02	0.06	0.11	0.17	0.05	0.06	0.05	ND (0.05)
BH/MW21-03	01 0.0 to 0.6	0.11	0.07	0.47	1.02	0.88	0.82	0.48	0.45	0.83	0.13	1.88	0.19	0.47	0.06	0.13	0.19	0.21	1.75	1.50	0.16
D206 (Duplicate)	01 0.0 to 0.6	0.21	0.12	0.83	1.35	1.16	1.31	0.62	0.74	1.28	0.19	3.25	0.3	0.64	0.14	0.2	0.34	0.33	2.78	2.63	0.14
	02 0.6 to 1.2	0.05	0.02	0.17	0.30	0.32	0.31	0.17	0.15	0.32	0.05	0.63	0.07	0.16	0.04	0.06	0.10	0.10	0.65	0.50	ND (0.05)
BH/MW21-04	01 0.0 to 0.6	0.03	0.05	0.07	0.18	0.19	0.22	0.12	0.11	0.17	0.03	0.36	0.03	0.11	0.06	0.10	0.17	0.04	0.24	0.31	0.11
	02 0.6 to 0.8	0.02	0.06	0.11	0.31	0.26	0.39	0.20	0.16	0.31	0.05	0.43	0.06	0.19	0.93	1.36	2.29	1.00	0.65	0.42	ND (0.05)
BH/MW21-05	01 0.0 to 0.6	ND (0.02)	ND (0.02)	ND (0.02)	0.06	0.07	0.08	0.06	0.04	0.06	ND (0.02)	0.09	ND (0.02)	0.04	ND (0.02)	0.04	0.06	0.03	0.07	0.09	ND (0.05)

LEGEND

- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM MARCH 24, 2021
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- SOIL CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE: APRIL 2022

DESIGN: LW | CHECKED: PS

DRAWN BY: TM / AS

CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP

TITLE: SOIL CROSS SECTIONS A-A' AND B-B' – PAH & PCB (PRE-REMEDIATION)

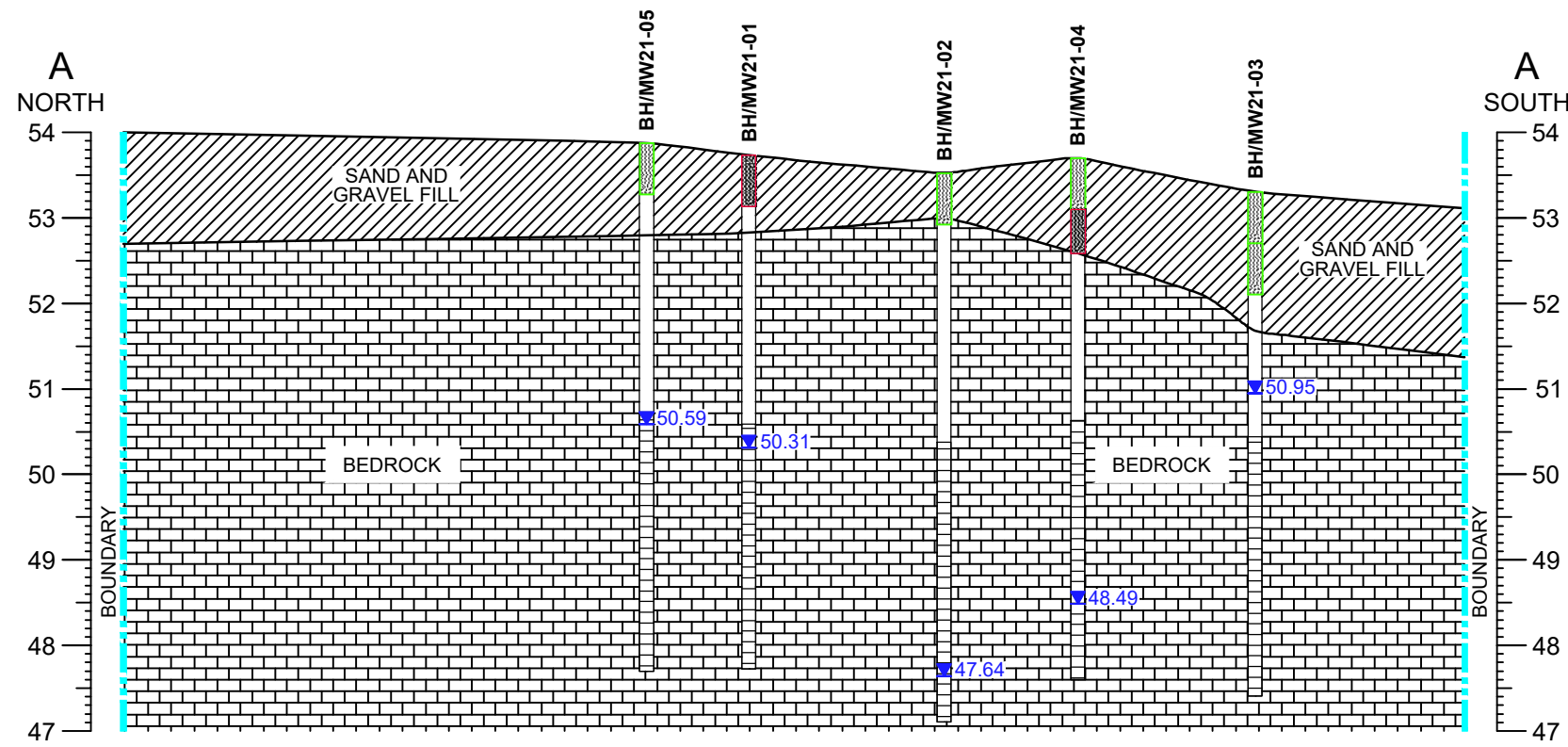
315 MIWATE PRIVATE, OTTAWA, ONTARIO

project no. OTT-00250193-PO

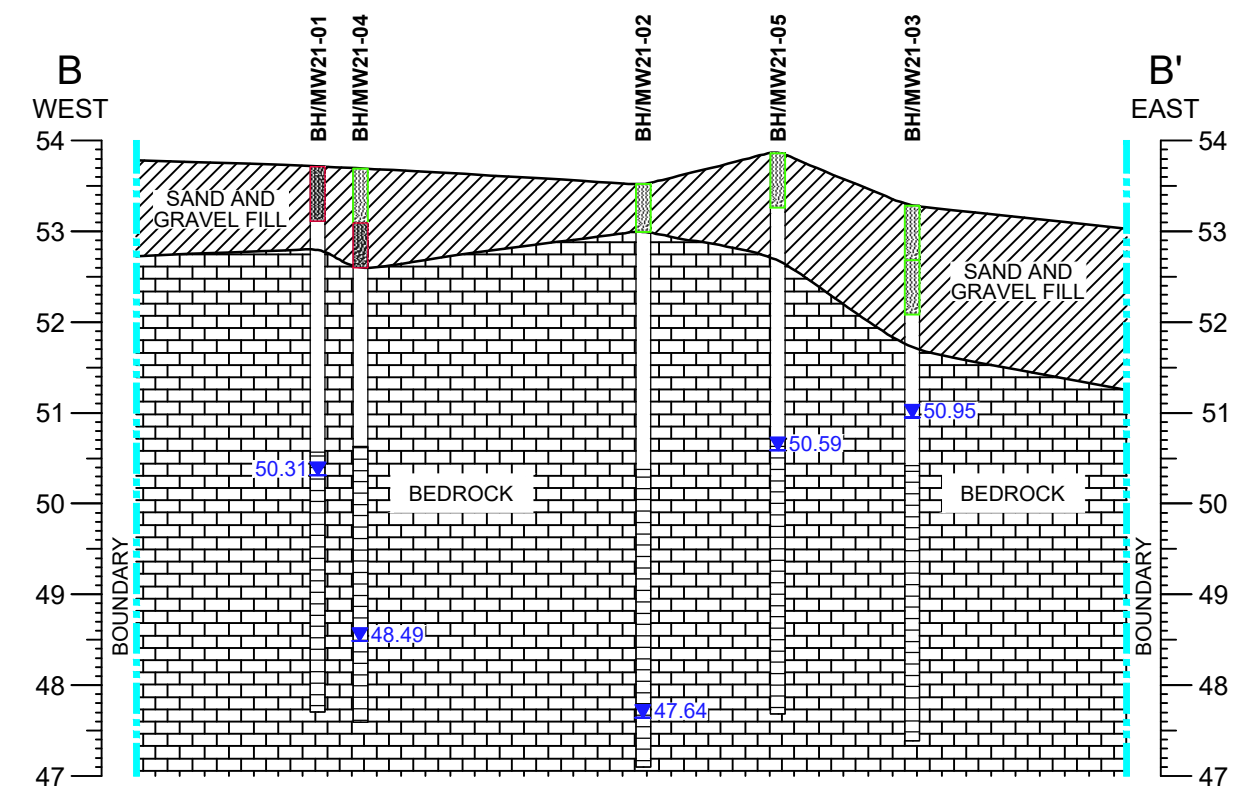
scale 1:500

FIG 11

File name: \\exp\data\011\011-00250193-ND\60_Execution\65_Execution\250193-PO Drawings\p2\250193-PO West Chaudière ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:21 AM Plotted by: Severa



CROSS SECTION A-A'



CROSS SECTION B-B'

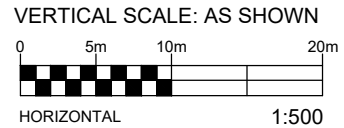
STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Antimony	Sb	1.3	7.5
Arsenic	As	18	18
Barium	Ba	220	390
Beryllium	Be	2.5	4
Boron	B	36	120
Cadmium	Cd	1.2	1.2
Chromium	Cr	70	160
Chromium VI	Cr VI	0.66	8
Cobalt	Co	22	22
Copper	Cu	92	140
Lead	Pb	120	120
Mercury	Hg	0.27	0.27
Molybdenum	Mo	2	6.9
Nickel	Ni	82	100
Selenium	Se	1.5	2.4
Silver	Ag	0.5	20
Thallium	Tl	1	1
Uranium	U	2.5	23
Vanadium	V	86	86
Zinc	Zn	290	340

BH/MW21-01	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	15-Mar-21
01	0.1 to 0.7	3.8	134	420	1.1	16.7	0.8	26.2	ND (0.2)	10.0	121	218	0.6	13.5	37.4	2.6	0.3	1.7	ND (1.0)	29.8	183	
BH/MW21-02	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	15-Mar-21
01	0.0 to 0.6	ND (1.0)	4.1	137	ND (0.5)	9.2	ND (0.5)	11.1	ND (0.2)	3.6	8.0	12.5	ND (0.1)	1.9	9.5	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	ND (10.0)	25.3	
BH/MW21-03	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	15-Mar-21
01	0.0 to 0.6	ND (1.0)	2.9	144	ND (0.5)	10.9	ND (0.5)	15.4	ND (0.2)	3.2	18.8	18.8	0.1	1.5	14.1	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	11.6	37.7	
D206 (Duplicate)	0.0 to 0.6	ND (1.0)	2.6	136	ND (0.5)	10.4	ND (0.5)	13.3	ND (0.2)	3.2	17.8	17.9	0.1	ND (1.0)	10.0	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	11.4	34.8	
02	0.6 to 1.2	ND (1.0)	3.2	198	0.6	17.8	ND (0.5)	17.3	ND (0.2)	5.7	10.0	15.7	ND (0.1)	ND (1.0)	14.6	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	10.4	ND (20.0)	
BH/MW21-04	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	15-Mar-21
01	0.0 to 0.6	ND (1.0)	2.7	211	ND (0.5)	13.4	ND (0.5)	13.6	ND (0.2)	5.4	20.8	26.4	ND (0.1)	ND (1.0)	11.4	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	19.8	39.9	
02	0.6 to 1.2	1.3	21.6	161	0.8	16.8	ND (0.5)	26.7	ND (0.2)	8.7	55.8	2880	0.3	3.6	24.4	1.7	ND (0.3)	ND (1.0)	ND (1.0)	22.5	148	
BH/MW21-05	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn	15-Mar-21
01	0.0 to 0.6	ND (1.0)	2.2	146	ND (0.5)	9.5	ND (0.5)	10.5	ND (0.2)	3.5	10.1	9.7	ND (0.1)	ND (1.0)	9.1	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	13.6	ND (20.0)	

LEGEND

- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM MARCH 24, 2021
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- SOIL CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



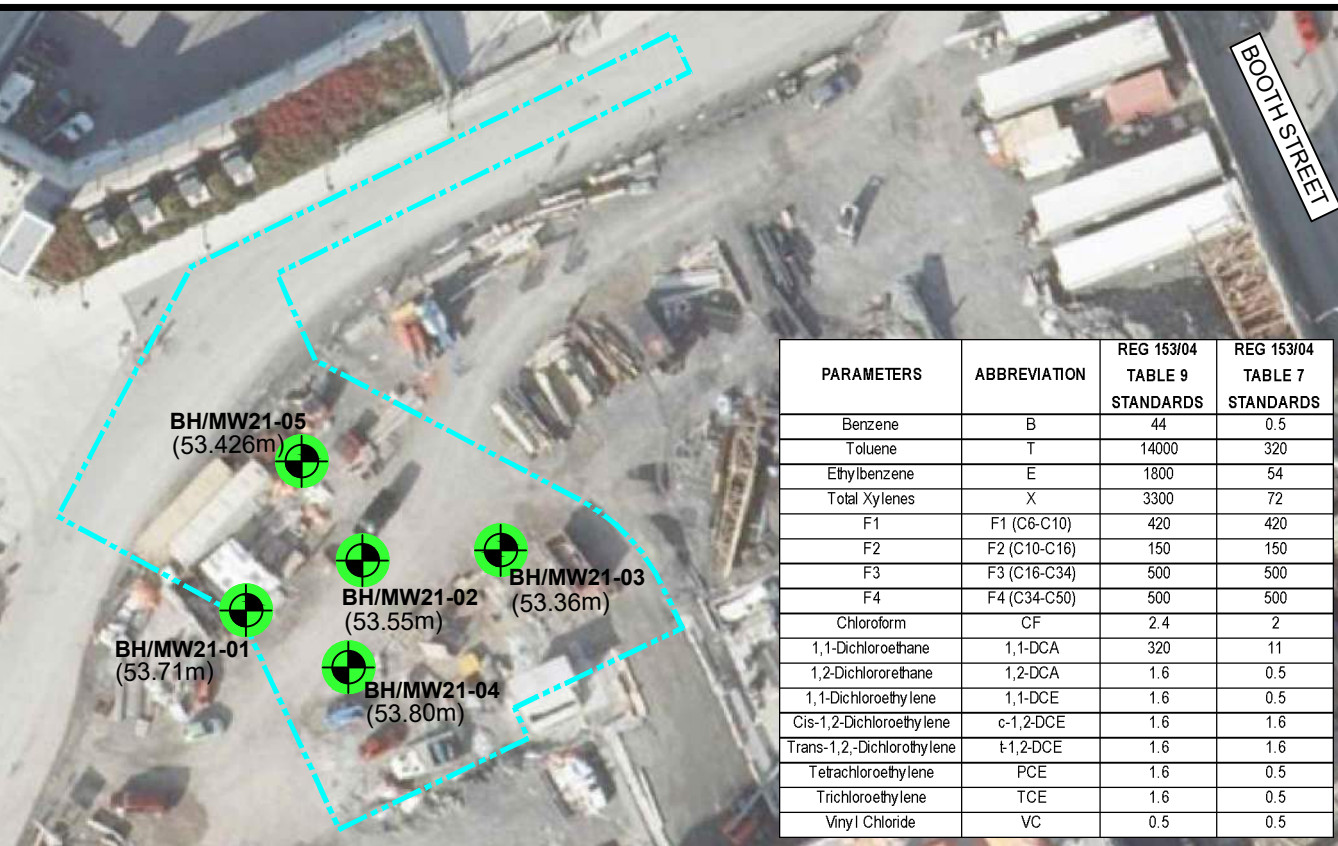
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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE	APRIL 2022	CLIENT:	project no.
DESIGN	CHECKED	WINDMILL DREAM ONTARIO HOLDINGS LP	OTT-00250193-PO
LW	PS		scale
DRAWN BY	TM / AS	SOIL CROSS SECTIONS A-A' AND B-B' - INORGANICS (PRE-REMEDIATION)	
		315 MIWATE PRIVATE, OTTAWA, ONTARIO	
			1:500
			FIG 12

Filename: \\exp\data\OTT-00250193-NO\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:19 AM Plotted by: Severa



BOTH STREET

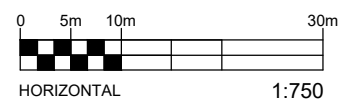


PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARDS	TABLE 7 STANDARDS
Benzene	B	44	0.5
Toluene	T	14000	320
Ethylbenzene	E	1800	54
Total Xylenes	X	3300	72
F1	F1 (C6-C10)	420	420
F2	F2 (C10-C16)	150	150
F3	F3 (C16-C34)	500	500
F4	F4 (C34-C50)	500	500
Chloroform	CF	2.4	2
1,1-Dichloroethane	1,1-DCA	320	11
1,2-Dichloroethane	1,2-DCA	1.6	0.5
1,1-Dichloroethylene	1,1-DCE	1.6	0.5
Cis-1,2-Dichloroethylene	c-1,2-DCE	1.6	1.6
Trans-1,2-Dichloroethylene	t-1,2-DCE	1.6	1.6
Tetrachloroethylene	PCE	1.6	0.5
Trichloroethylene	TCE	1.6	0.5
Vinyl Chloride	VC	0.5	0.5

BH/MW21-01		Screen Interval 3.0 to 6.0 m bgs															
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
23-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	0.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
BH/MW21-02		Screen Interval 3.5 to 6.5 m bgs															
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
24-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (177)	ND (177)	ND (177)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
BH/MW21-03		Screen Interval 3.0 to 6.0 m bgs															
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
23-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
BH/MW21-04		Screen Interval 3.1 to 6.1 m bgs															
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
24-Mar-21	ND (0.5)	1.1	ND (0.5)	1.6	ND (25)	ND (100)	ND (100)	ND (100)	3.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
BH/MW21-05		Screen Interval 3.0 to 6.0 m bgs															
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
23-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	1.9	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
23-Mar-21 (D206)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	2.0	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

LEGEND

- PROPERTY BOUNDARY
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



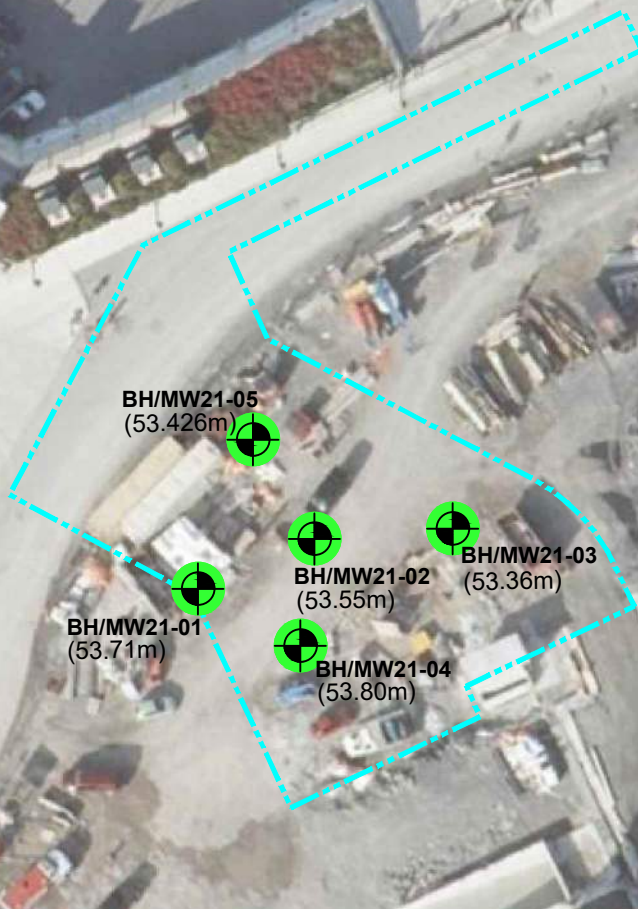
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DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: GROUNDWATER ANALYTICAL RESULTS - PHC & VOC (PRE-REMIATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 13

Filename: \\exp_data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Lost Plotted: Apr 22, 2022 10:19 AM Plotted by: Severa



BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Acenaphthene	Ace	600	17
Anthracene	An	1	1
Benzo(a)anthracene	B(a)A	1.8	1.8
Benzo(a)pyrene	B(a)P	0.81	0.81
Benzo(b)fluoranthene	B(b)F	0.75	0.75
Benzo(g,h,i)perylene	B(ghi)P	0.2	0.2
Benzo(k)fluoranthene	B(k)F	0.4	0.4
Chrysene	C	0.7	0.7
Dibenz(a,h)anthracene	DA	0.4	0.4
Fluoranthene	Fl	73	44
Fluorene	F	290	290
Indeno(1,2,3-cd)pyrene	I(123)P	0.2	0.2
Total Methyl naphthalene	T-MN	1500	1500
Naphthalene	N	1400	7
Phenanthrene	P	380	380
Pyrene	Py	5.7	5.7

BH/MW21-01																		Screen Interval 3.0 to 6.0 mbgs																	
DATE	Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py																		
23-Mar-21	ND (0.05)	ND (0.05)	0.02	0.04	0.03	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.10	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	0.09	0.12																		

BH/MW21-02																		Screen Interval 3.5 to 6.5 mbgs																	
DATE	Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py																		
24-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)																		

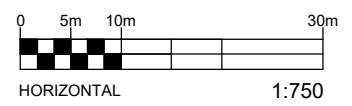
BH/MW21-03																		Screen Interval 3.0 to 6.0 mbgs																	
DATE	Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py																		
23-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.04	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.08																		

BH/MW21-04																		Screen Interval 3.1 to 6.1 mbgs																	
DATE	Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py																		
24-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)																		

BH/MW21-05																		Screen Interval 3.0 to 6.0 mbgs																	
DATE	Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py																		
23-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.02	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.05																		
23-Mar-21 (D206)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.03	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.05																		

LEGEND

- PROPERTY BOUNDARY
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



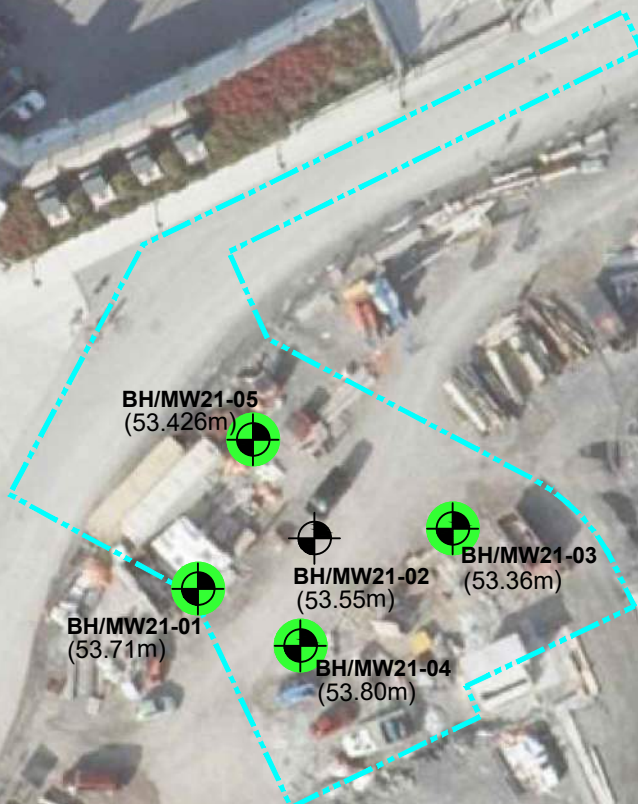
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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: GROUNDWATER ANALYTICAL RESULTS - PAH & PCB (PRE-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 14

Filename: \\exp_data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:19 AM Plotted by: SeverA



BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARDS	TABLE 7 STANDARDS
Antimony	Sb	16000	16000
Arsenic	As	1500	1500
Barium	Ba	23000	23000
Beryllium	Be	53	53
Boron	B	36000	36000
Cadmium	Cd	2.1	2.1
Chromium	Cr	640	640
Chromium (VI)	Cr IV	110	110
Cobalt	Co	52	52
Copper	Cu	69	69
Lead	Pb	20	20
Mercury	Hg	0.29	0.1
Moly bdenum	Mo	7300	7300
Nickel	Ni	390	390
Selenium	Se	50	50
Silver	Ag	1.2	1.2
Sodium	Na	1800000	1800000
Thalium	Tl	400	400
Uranium	U	890	890
Vanadium	V	200	200
Zinc	Zn	890	890

BH/MW21-01		Screen Interval 3.0 to 6.0 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Mar-21	ND (0.5)	ND (1)	350	ND (0.5)	77	ND (0.1)	ND (1)	ND (10)	3.4	1.5	0.4	ND (0.1)	5.9	11	ND (1)	ND (0.1)	884000	ND (0.1)	1.7	ND (0.5)	ND (5)

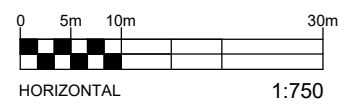
BH/MW21-03		Screen Interval 3.0 to 6.0 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Mar-21	0.9	2	161	ND (0.5)	61	ND (0.1)	ND (1)	ND (10)	1.4	0.9	0.2	ND (0.1)	17.8	23	ND (1)	ND (0.1)	181000	ND (0.1)	1.7	5.9	ND (5)

BH/MW21-04		Screen Interval 3.1 to 6.1 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
24-Mar-21	ND (0.5)	1	700	ND (0.5)	92	ND (0.1)	ND (1)	ND (10)	0.8	4.2	1.0	ND (0.1)	6.8	5	ND (1)	ND (0.1)	553000	ND (0.1)	2.6	1.2	ND (5)

BH/MW21-05		Screen Interval 3.0 to 6.0 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Mar-21	ND (0.5)	ND (1)	1200	ND (0.5)	77	ND (0.1)	ND (1)	ND (10)	3.7	2.5	ND (0.1)	ND (0.1)	1.4	6	ND (1)	ND (0.1)	617000	ND (0.1)	1.1	ND (0.5)	21
23-Mar-21 (D206)	ND (0.5)	ND (1)	1160	ND (0.5)	76	ND (0.1)	ND (1)	ND (10)	3.6	2.3	ND (0.1)	ND (0.1)	1.5	5	ND (1)	ND (0.1)	606000	0.1	1.1	ND (0.5)	21

LEGEND

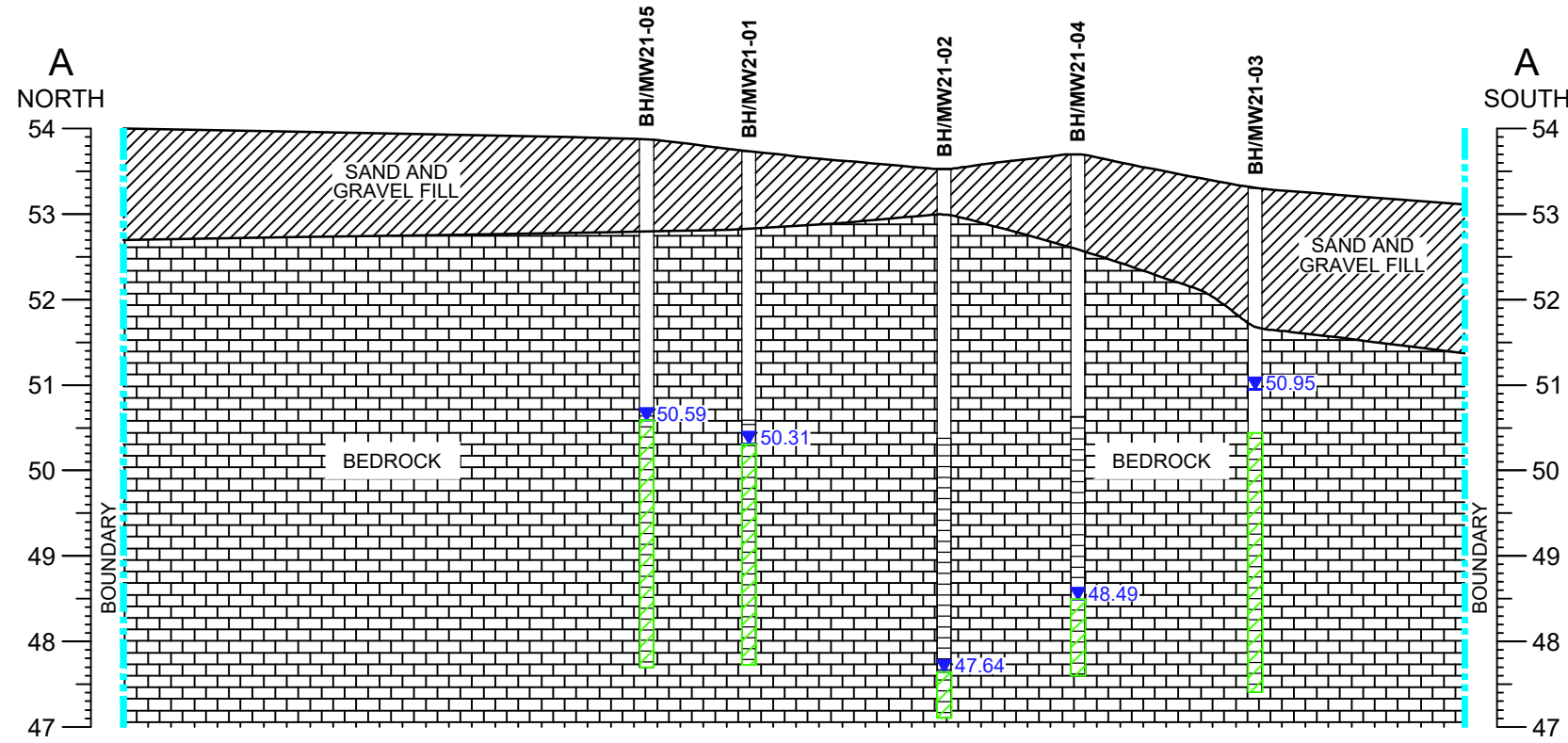
- PROPERTY BOUNDARY
- PRE-REMEDIAL MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)
- SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



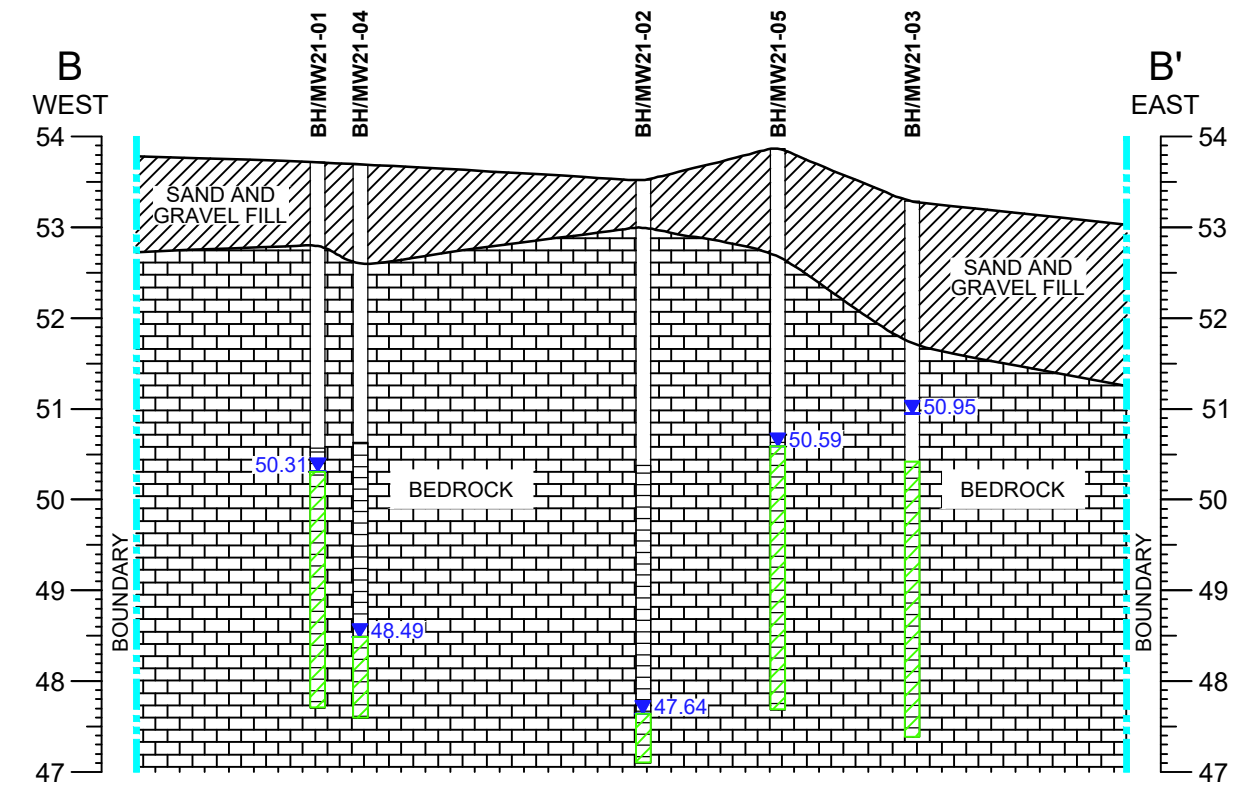
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 2650 Queensview Drive, Suite 100
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DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: GROUNDWATER ANALYTICAL RESULTS - INORGANICS (PRE-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 15

File name: \\exp\data\OTT\OTT-00250193-ND\60_Execution\65_Drawings\250193-P0 Drawings\ph2 Sections\ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:21 AM Plotted by: SeverA



CROSS SECTION A-A'



CROSS SECTION B-B'

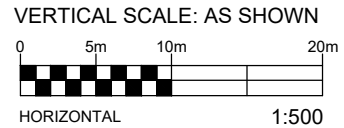
STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Benzene	B	44	0.5
Toluene	T	14000	320
Ethylbenzene	E	1800	54
Total Xylenes	X	3300	72
F1	F1 (C6-C10)	420	420
F2	F2 (C10-C16)	150	150
F3	F3 (C16-C34)	500	500
F4	F4 (C34-C50)	500	500
Chloroform	CF	2.4	2
1,1-Dichloroethane	1,1-DCA	320	11
1,2-Dichloroethane	1,2-DCA	1.6	0.5
1,1-Dichloroethylene	1,1-DCE	1.6	0.5
Cis-1,2-Dichloroethylene	c-1,2-DCE	1.6	1.6
Trans-1,2-Dichloroethylene	t-1,2-DCE	1.6	1.6
Tetrachloroethylene	PCE	1.6	0.5
Trichloroethylene	TCE	1.6	0.5
Vinyl Chloride	VC	0.5	0.5

BH/MW21-01		Screen Interval 3.0 to 6.0 m bgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
23-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	0.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	
BH/MW21-02		Screen Interval 3.5 to 6.5 m bgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
24-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (177)	ND (177)	ND (177)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	
BH/MW21-03		Screen Interval 3.0 to 6.0 m bgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
23-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	
BH/MW21-04		Screen Interval 3.1 to 6.1 m bgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
24-Mar-21	ND (0.5)	1.1	ND (0.5)	1.6	ND (25)	ND (100)	ND (100)	ND (100)	3.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	
BH/MW21-05		Screen Interval 3.0 to 6.0 m bgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
23-Mar-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	1.9	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	
23-Mar-21 (D206)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	2.0	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	

LEGEND

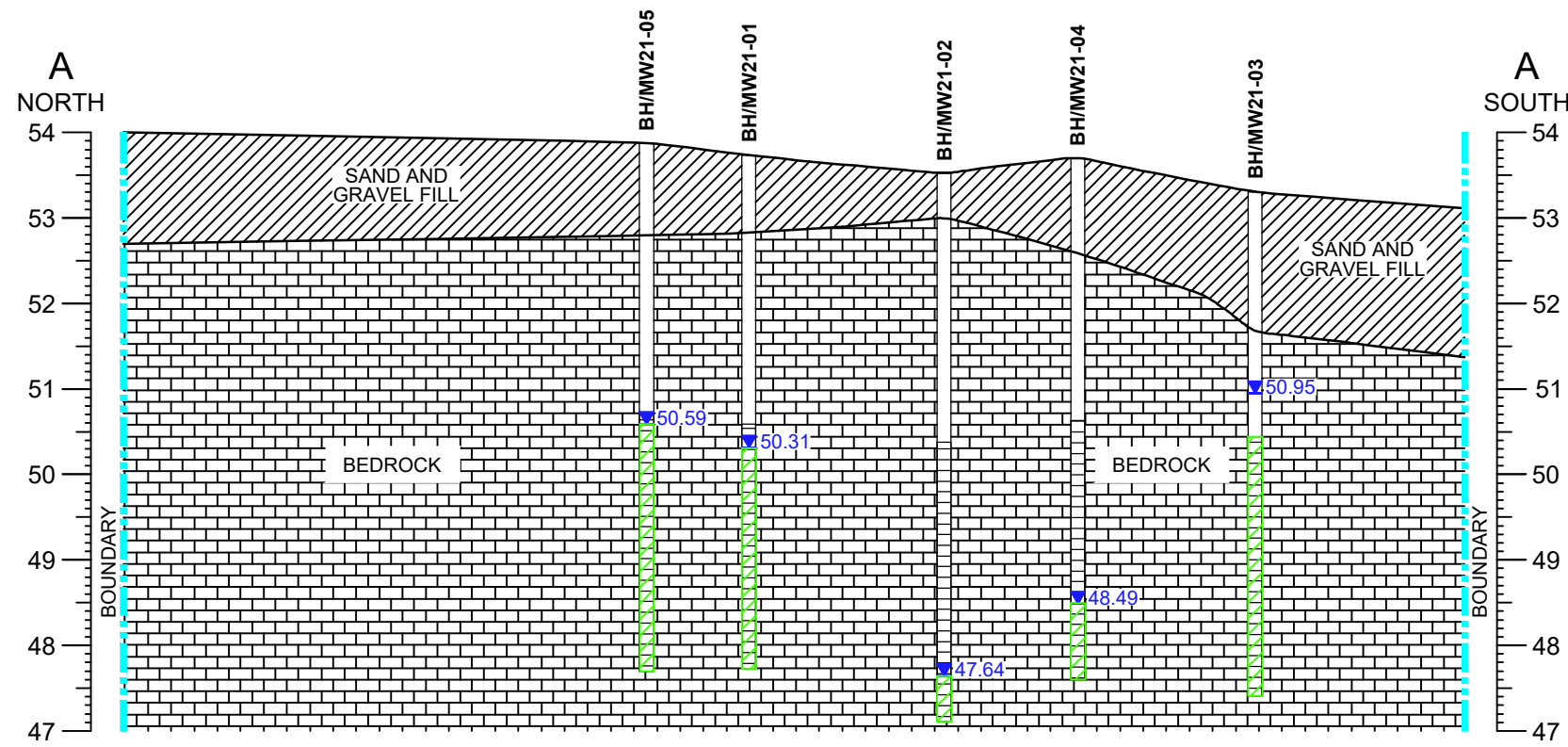
- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM JUNE 21, 2021
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



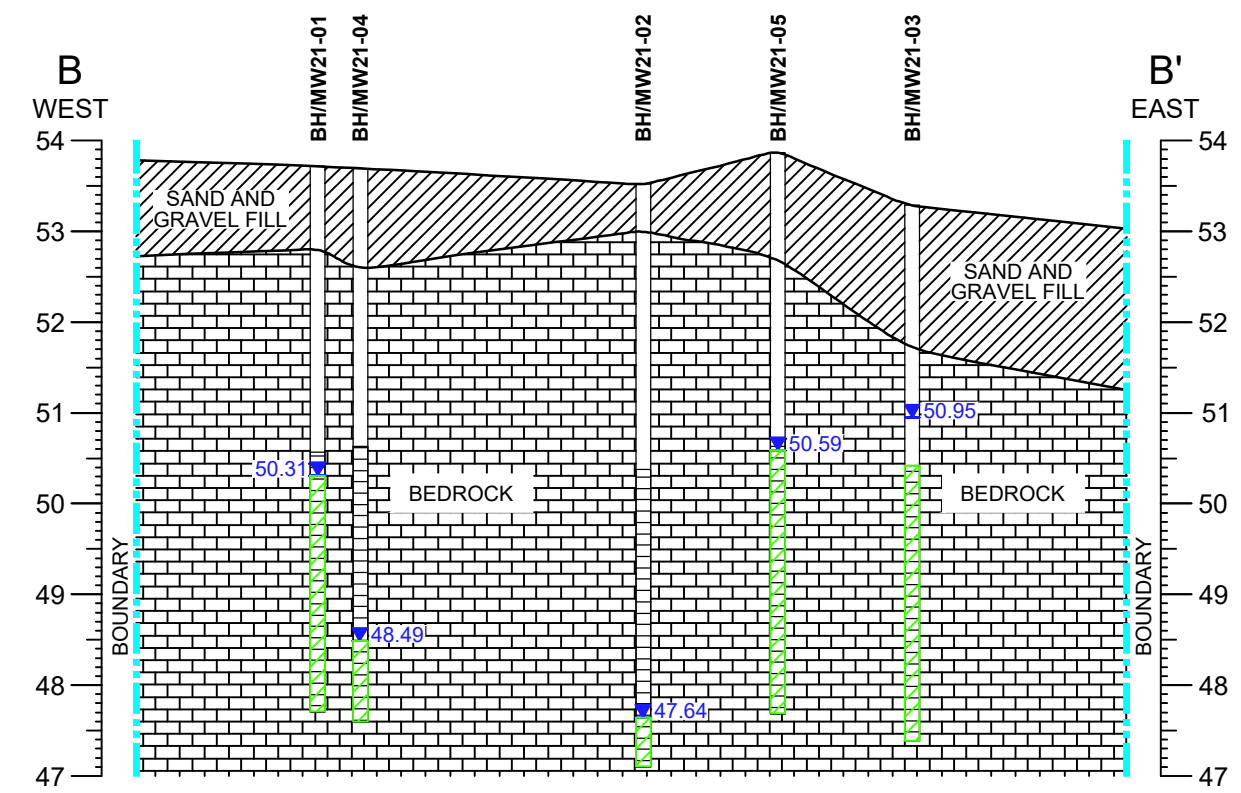
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 Ottawa, ON K2B 8H6, Canada

DATE	APRIL 2022	CLIENT:	WINDMILL DREAM ONTARIO HOLDINGS LP	project no.	OTT-00250193-P0
DESIGN	LW	CHECKED	PS	scale	1:500
DRAWN BY	TM / AS	TITLE:	GROUNDWATER CROSS SECTIONS A-A' AND B-B' - PHC & VOC (PRE-REMEDIATION)		
			315 MIWATE PRIVATE, OTTAWA, ONTARIO		
					FIG 16

File name: \\exp\data\OTT\011-00250193-ND\60_Execution\65_Drawings\250193-P0 Drawings\ph2 Sections\ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:21 AM Plotted by: Severa



CROSS SECTION A-A'



CROSS SECTION B-B'

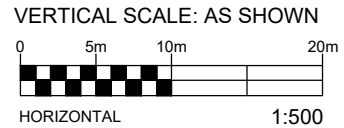
STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Acenaphthene	Ace	600	17
Anthracene	An	1	1
Benzo(a)anthracene	B(a)A	1.8	1.8
Benzo(a)pyrene	B(a)P	0.81	0.81
Benzo(b)fluoranthene	B(b)F	0.75	0.75
Benzo(g,h,i)perylene	B(ghi)P	0.2	0.2
Benzo(k)fluoranthene	B(k)F	0.4	0.4
Chrysene	C	0.7	0.7
Dibenz(a,h)anthracene	DA	0.4	0.4
Fluoranthene	Fl	73	44
Fluorene	F	290	290
Indeno(1,2,3-cd)pyrene	I(123)P	0.2	0.2
Total Methyl naphthalene	T-MN	1500	1500
Naphthalene	N	1400	7
Phenanthrene	P	380	380
Pyrene	Py	5.7	5.7

BH/MW21-01		Screen Interval 3.0 to 6.0 mbgs															
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
23-Mar-21	ND (0.05)	ND (0.05)	0.02	0.04	0.03	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.10	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	0.09	0.12
BH/MW21-02		Screen Interval 3.5 to 6.5 mbgs															
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
24-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)
BH/MW21-03		Screen Interval 3.0 to 6.0 mbgs															
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
23-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.04	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.08
BH/MW21-04		Screen Interval 3.1 to 6.1 mbgs															
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
24-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)
BH/MW21-05		Screen Interval 3.0 to 6.0 mbgs															
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
23-Mar-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.02	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.05
23-Mar-21 (D206)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.03	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.05

LEGEND

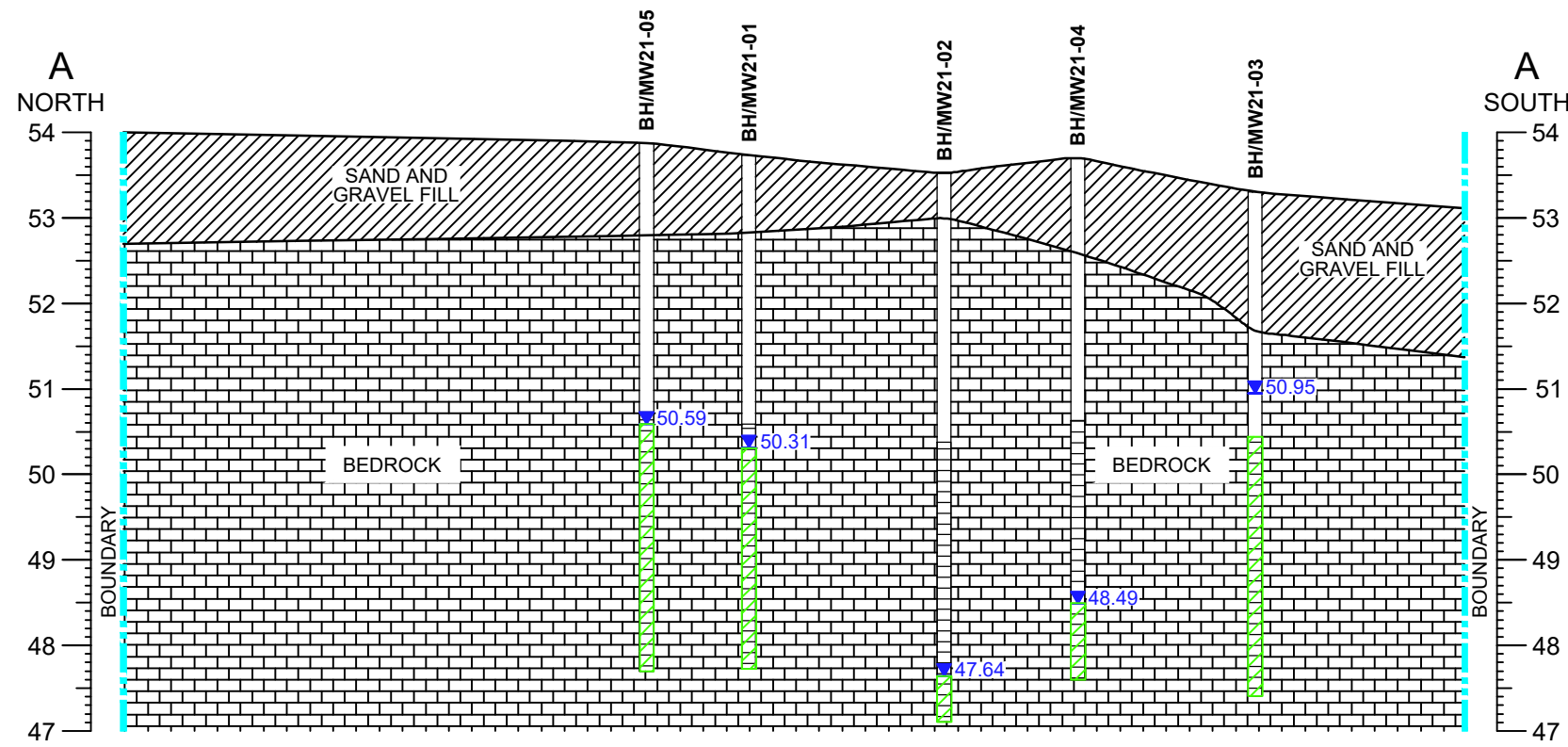
- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM JUNE 21, 2021
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



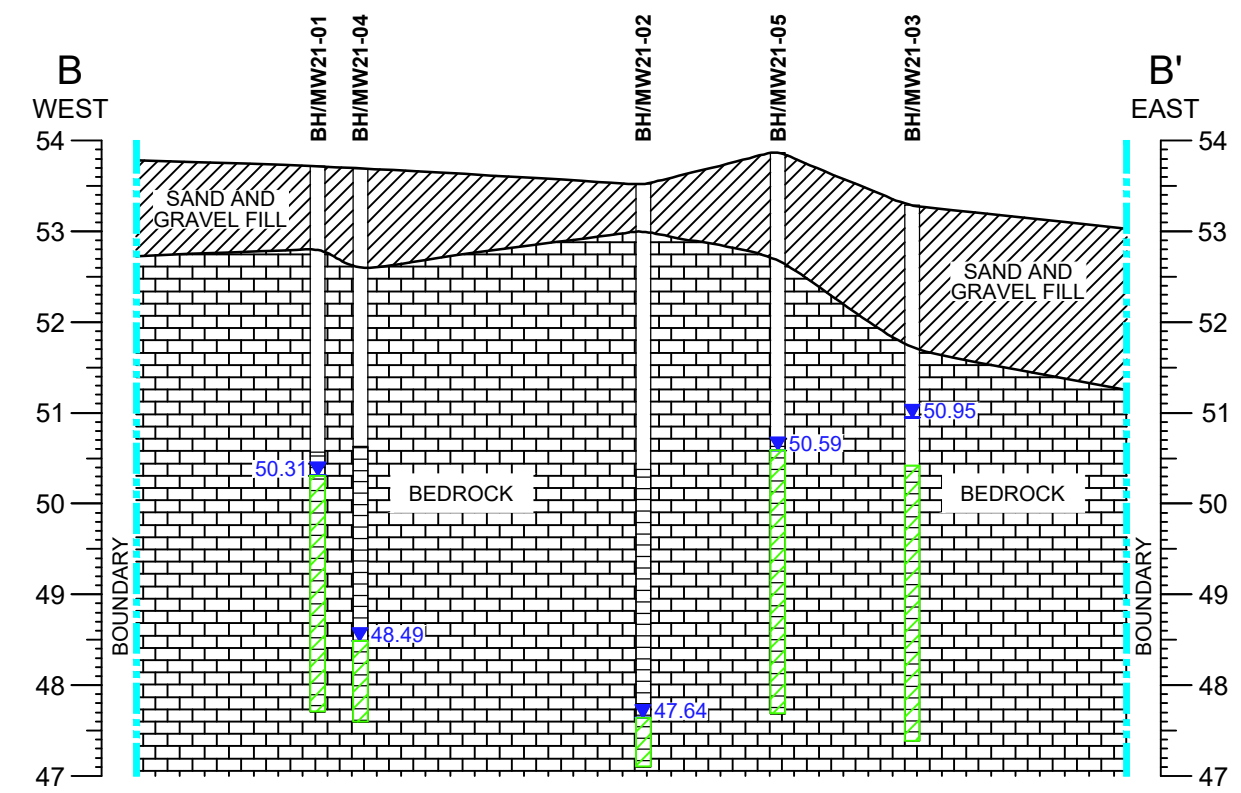
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 Ottawa, ON K2B 8H6, Canada

DATE	APRIL 2022	CLIENT:	WINDMILL DREAM ONTARIO HOLDINGS LP	project no.	OTT-00250193-P0
DESIGN	LW	CHECKED	PS	scale	1:500
DRAWN BY	TM / AS	TITLE:	GROUNDWATER CROSS SECTIONS A-A' AND B-B' - PAH & PCB (PRE-REMEDATION)		
			315 MIWATE PRIVATE, OTTAWA, ONTARIO		
					FIG 17

File name: \\exp\data\011\011-00250193-NO_60_Execution\65 Drawings\250193-P0 Drawings\ph2 Sections\ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:21 AM Plotted by: Severa



CROSS SECTION A-A'



CROSS SECTION B-B'

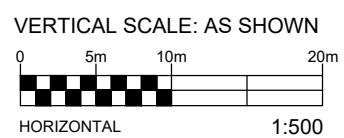
STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Antimony	Sb	16000	16000
Arsenic	As	1500	1500
Barium	Ba	23000	23000
Beryllium	Be	53	53
Boron	B	36000	36000
Cadmium	Cd	2.1	2.1
Chromium	Cr	640	640
Chromium (VI)	Cr IV	110	110
Cobalt	Co	52	52
Copper	Cu	69	69
Lead	Pb	20	20
Mercury	Hg	0.29	0.1
Molybdenum	Mo	7300	7300
Nickel	Ni	390	390
Selenium	Se	50	50
Silver	Ag	1.2	1.2
Sodium	Na	1800000	1800000
Thalium	Tl	400	400
Uranium	U	890	890
Vanadium	V	200	200
Zinc	Zn	890	890

BH/MW21-01		Screen Interval 3.0 to 6.0 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Mar-21	ND (0.5)	ND (1)	350	ND (0.5)	77	ND (0.1)	ND (1)	ND (10)	3.4	1.5	0.4	ND (0.1)	5.9	11	ND (1)	ND (0.1)	884000	ND (0.1)	1.7	ND (0.5)	ND (5)
BH/MW21-03		Screen Interval 3.0 to 6.0 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Mar-21	0.9	2	161	ND (0.5)	61	ND (0.1)	ND (1)	ND (10)	1.4	0.9	0.2	ND (0.1)	17.8	23	ND (1)	ND (0.1)	181000	ND (0.1)	1.7	5.9	ND (5)
BH/MW21-04		Screen Interval 3.1 to 6.1 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
24-Mar-21	ND (0.5)	1	700	ND (0.5)	92	ND (0.1)	ND (1)	ND (10)	0.8	4.2	1.0	ND (0.1)	6.8	5	ND (1)	ND (0.1)	553000	ND (0.1)	2.6	1.2	ND (5)
BH/MW21-05		Screen Interval 3.0 to 6.0 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Mar-21	ND (0.5)	ND (1)	1200	ND (0.5)	77	ND (0.1)	ND (1)	ND (10)	3.7	2.5	ND (0.1)	ND (0.1)	1.4	6	ND (1)	ND (0.1)	617000	ND (0.1)	1.1	ND (0.5)	21
23-Mar-21 (D206)	ND (0.5)	ND (1)	1160	ND (0.5)	76	ND (0.1)	ND (1)	ND (10)	3.6	2.3	ND (0.1)	ND (0.1)	1.5	5	ND (1)	ND (0.1)	606000	0.1	1.1	ND (0.5)	21

LEGEND

- SAND & GRAVEL FILL
- BEDROCK
- GROUNDWATER LEVEL FROM JUNE 21, 2021
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



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DATE	APRIL 2022	CLIENT:	WINDMILL DREAM ONTARIO HOLDINGS LP	project no.	OTT-00250193-P0
DESIGN	LW	CHECKED	PS	scale	1:500
DRAWN BY	TM / AS	TITLE:	GROUNDWATER CROSS SECTIONS A-A' AND B-B' - INORGANICS (PRE-REMEDATION)		
			315 MIWATE PRIVATE, OTTAWA, ONTARIO		
					FIG 18

Filename: \\exp\data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:19 AM Plotted by: Severa



PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARD	TABLE 7 STANDARD
Benzene	B	0.02	0.21
Toluene	T	0.2	2.3
Ethylbenzene	E	0.05	2
Total Xylenes	X	0.05	3.1
F1	F1 (C6-C10)	25	55
F2	F2 (C10-C16)	10	98
F3	F3 (C16-C34)	240	300
F4	F4 (C34-C50)	120	2800
1,1-Dichloroethane	1,1-DCA	0.05	3.5
1,2-Dichloroethane	1,2-DCA	0.05	0.05
1,1-Dichloroethylene	1,1-DCE	0.05	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	0.05	3.4
Trans-1,2-Dichloroethylene	t-1,2-DCE	0.05	0.084
Styrene	ST	0.05	0.7
Tetrachloroethylene	PCE	0.05	0.28
Trichloroethylene	TCE	0.05	0.061
Vinyl Chloride	VC	0.02	0.02

SS-1	Depth (mbgs)	13-Mar-19																
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC
	0.25	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	25	14	-	-	-	-	-	-	-	-	-

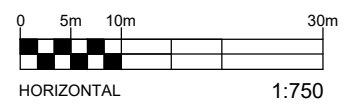
SS-2	Depth (mbgs)	18-Mar-19																
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC
	0.5	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	6	86	58	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

SS-5	Depth (mbgs)	25-Mar-19																
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC
	0.5	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	ND (8)	ND (6)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

LEGEND

- PROPERTY BOUNDARY
- NORTH WALL EXCAVATION SAMPLES:**
- CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED

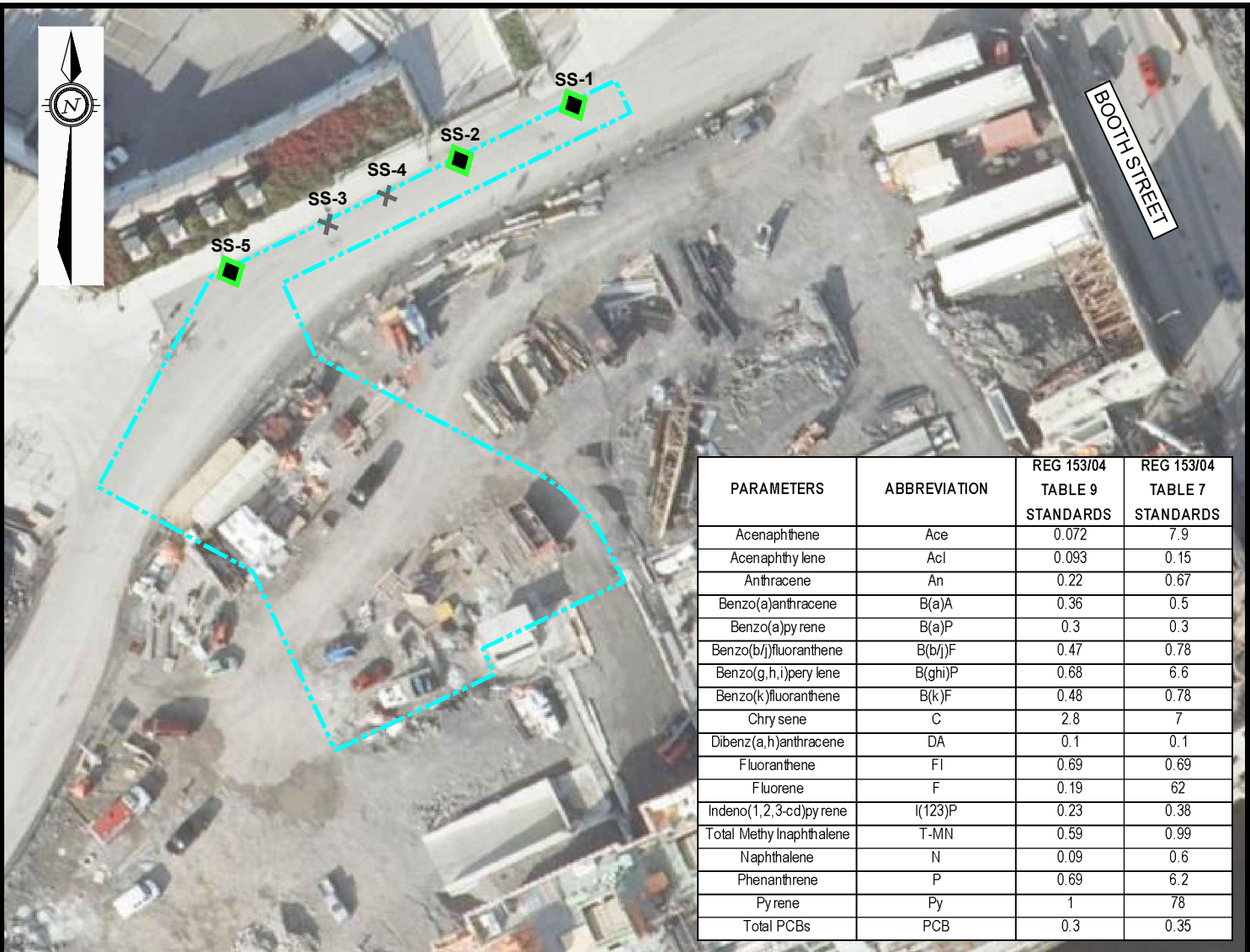
SS-1
 SOIL CONCENTRATION MEETS
 MECP TABLE 7 AND 9 SCS



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DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SOIL ANALYTICAL RESULTS - PHC & VOC (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 19

Filename: \\exp\data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:19 AM Plotted by: SeverA



PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARDS	TABLE 7 STANDARDS
Acenaphthene	Ace	0.072	7.9
Acenaphthylene	AcI	0.093	0.15
Anthracene	An	0.22	0.67
Benzo(a)anthracene	B(a)A	0.36	0.5
Benzo(a)pyrene	B(a)P	0.3	0.3
Benzo(b)fluoranthene	B(b)F	0.47	0.78
Benzo(g,h,i)perylene	B(ghi)P	0.68	6.6
Benzo(k)fluoranthene	B(k)F	0.48	0.78
Chrysene	C	2.8	7
Dibenz(a,h)anthracene	DA	0.1	0.1
Fluoranthene	Fl	0.69	0.69
Fluorene	F	0.19	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.23	0.38
Total Methylnaphthalene	T-MN	0.59	0.99
Naphthalene	N	0.09	0.6
Phenanthrene	P	0.69	6.2
Pyrene	Py	1	78
Total PCBs	PCB	0.3	0.35

SS-1	Depth (mbgs)	13-Mar-19																	
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py	PCB
	0.25	0.03	ND (0.02)	0.06	0.13	0.1	0.13	0.07	0.07	0.14	ND (0.02)	0.33	0.03	0.06	ND (0.04)	ND (0.01)	0.25	0.25	-

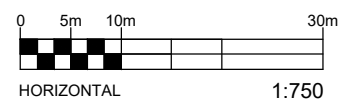
SS-2	Depth (mbgs)	18-Mar-19																	
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py	PCB
	0.5	ND (0.02)	ND (0.02)	0.03	0.04	0.04	0.06	0.04	0.03	0.04	ND (0.02)	0.12	ND (0.02)	0.03	ND (0.04)	ND (0.01)	0.09	0.09	ND (0.05)

SS-5	Depth (mbgs)	25-Mar-19																	
		Ace	AcI	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py	PCB
	0.5	ND (0.02)	ND (0.02)	ND (0.02)	0.02	ND (0.02)	0.03	ND (0.02)	ND (0.02)	0.03	ND (0.02)	0.05	ND (0.02)	ND (0.02)	ND (0.04)	ND (0.01)	0.04	0.05	ND (0.05)

LEGEND

- PROPERTY BOUNDARY
- NORTH WALL EXCAVATION SAMPLES:**
- CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED

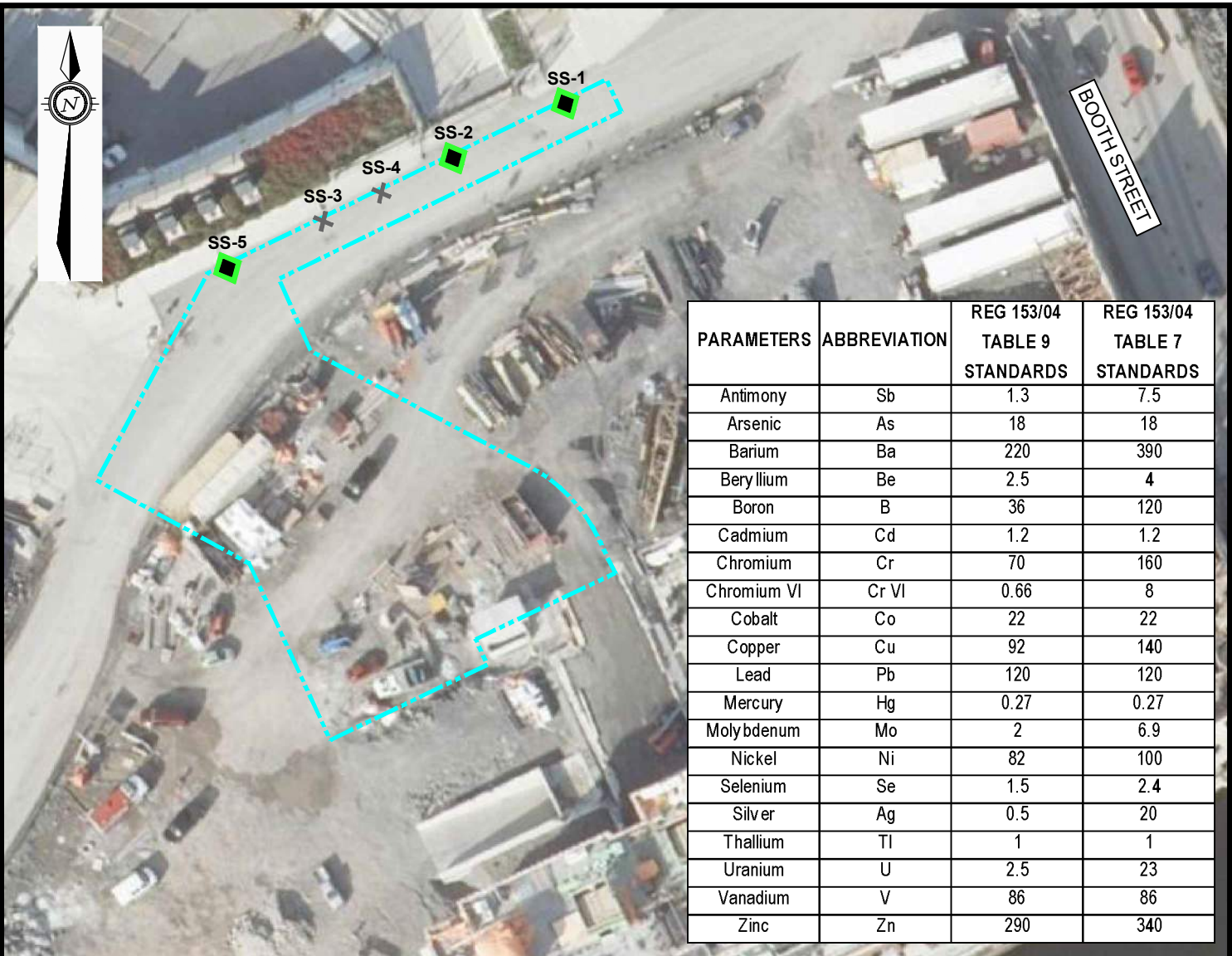
SS-1
 SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



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 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SOIL ANALYTICAL RESULTS - PAH & PCB (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 20

Filename: \\exp\data\OTT\0TT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:20 AM Plotted by: Severa



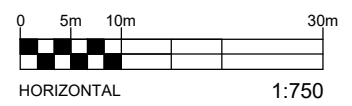
PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Antimony	Sb	1.3	7.5
Arsenic	As	18	18
Barium	Ba	220	390
Beryllium	Be	2.5	4
Boron	B	36	120
Cadmium	Cd	1.2	1.2
Chromium	Cr	70	160
Chromium VI	Cr VI	0.66	8
Cobalt	Co	22	22
Copper	Cu	92	140
Lead	Pb	120	120
Mercury	Hg	0.27	0.27
Molybdenum	Mo	2	6.9
Nickel	Ni	82	100
Selenium	Se	1.5	2.4
Silver	Ag	0.5	20
Thallium	Tl	1	1
Uranium	U	2.5	23
Vanadium	V	86	86
Zinc	Zn	290	340

Sample ID	Depth (mbgs)	13-Mar-19																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
SS-1	0.25	ND (1.0)	2.2	61.3	ND (0.5)	8.3	ND (0.5)	9.9	ND (0.2)	3.9	8.3	51.5	ND (0.1)	ND (1.0)	9.5	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	14.3	ND (20.0)
Sample ID	Depth (mbgs)	18-Mar-19																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
SS-2	0.5	ND (1.0)	2.8	156	ND (0.5)	12.5	ND (0.5)	14.6	ND (0.2)	7.0	14.1	12.6	ND (0.1)	1.3	15.2	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	10.9	22.0
Sample ID	Depth (mbgs)	25-Mar-19																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
SS-5	0.5	ND (1.0)	4.1	158	ND (0.5)	11.3	ND (0.5)	12.1	ND (0.2)	6.5	8.0	11.9	ND (0.1)	1.8	13.7	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	12.5	24.0

LEGEND

- PROPERTY BOUNDARY
- NORTH WALL EXCAVATION SAMPLES:**
- CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED

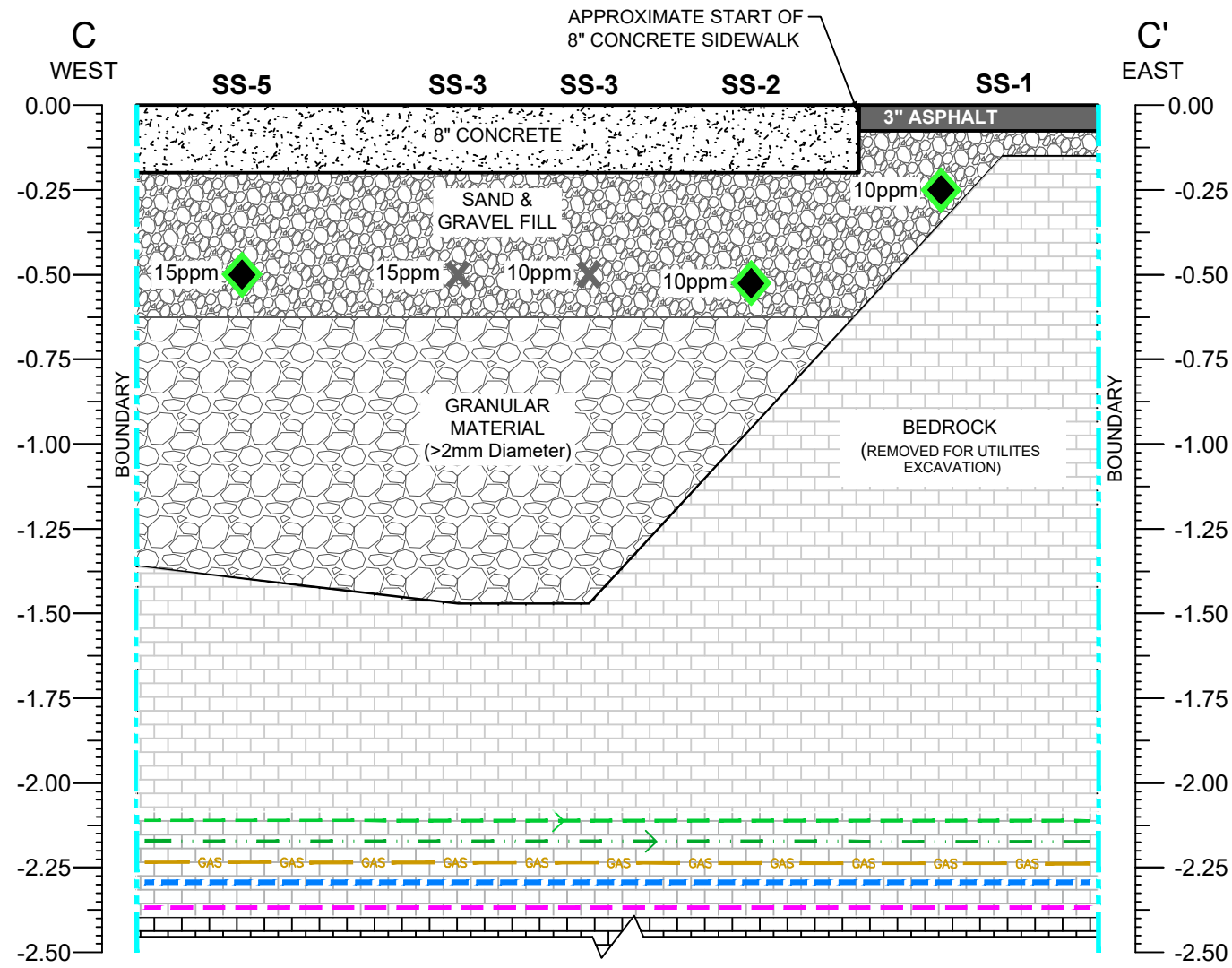
SS-1
 SOIL CONCENTRATION MEETS
 MECP TABLE 7 AND 9 SCS



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DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: SOIL ANALYTICAL RESULTS - INORGANICS (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 21

File name: \\exp\data\OTT\OTT-00250193-ND\60_Execution\65 Drawings\250193-P0 Drawings\ph2 Sections\ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:21 AM Plotted by: SeverA



CROSS SECTION C-C'

SS-1	Depth (mbgs)	13-Mar-19																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
	0.25	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	25	14	-	-	-	-	-	-	-	-	-	-
SS-2	Depth (mbgs)	18-Mar-19																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
	0.5	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	6	86	58	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)
SS-5	Depth (mbgs)	25-Mar-19																	
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	ST	PCE	TCE	VC	
	0.5	ND (0.02)	ND (0.05)	ND (0.05)	ND (0.05)	ND (7)	ND (4)	ND (8)	ND (6)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.02)

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARD	REG 153/04 TABLE 7 STANDARD
Benzene	B	0.02	0.21
Toluene	T	0.2	2.3
Ethylbenzene	E	0.05	2
Total Xylenes	X	0.05	3.1
F1	F1 (C6-C10)	25	55
F2	F2 (C10-C16)	10	98
F3	F3 (C16-C34)	240	300
F4	F4 (C34-C50)	120	2800
1,1-Dichloroethane	1,1-DCA	0.05	3.5
1,2-Dichloroethane	1,2-DCA	0.05	0.05
1,1-Dichloroethylene	1,1-DCE	0.05	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	0.05	3.4
Trans-1,2-Dichloroethylene	t-1,2-DCE	0.05	0.084
Styrene	ST	0.05	0.7
Tetrachloroethylene	PCE	0.05	0.28
Trichloroethylene	TCE	0.05	0.061
Vinyl Chloride	VC	0.02	0.02

LEGEND

- CONCRETE
- ASPHALT
- GRANULAR MATERIAL (>2mm Ø)
- SAND AND GRAVEL FILL

NORTH WALL EXCAVATION SAMPLES:

- CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED
- SS-1 SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS

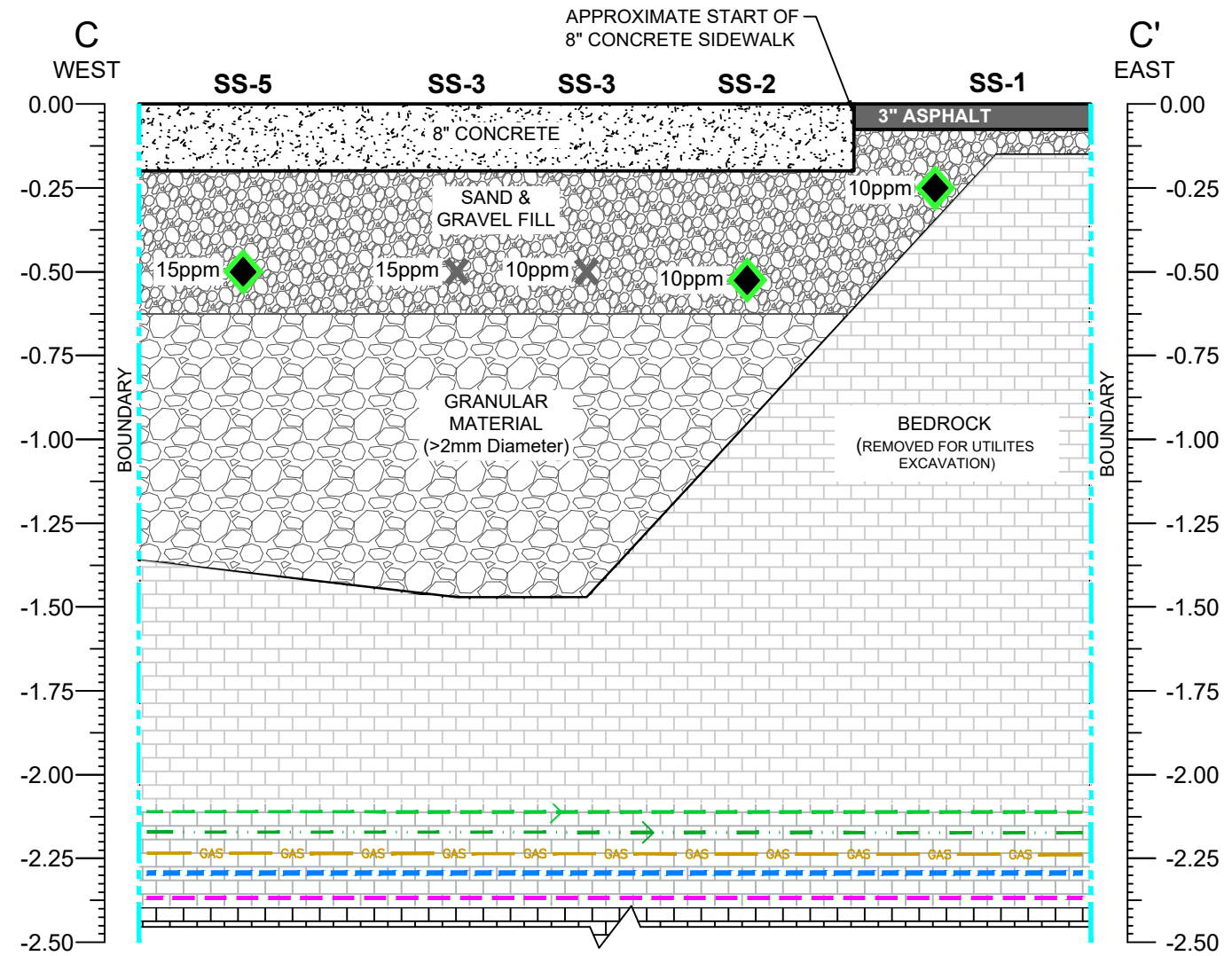


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DATE: APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no.: OTT-00250193-P0
DESIGN: LW	CHECKED: PS	scale: 1:400
DRAWN BY: TM / AS	TITLE: SOIL ANALYTICAL RESULTS CROSS SECTION C-C' - PHC & VOC (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 22

File: \\exp\data\011\011-00250193-NO\60_Execution\65 Drawings\250193-PO Drawings\ph2 Sections\ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:22 AM Plotted by: SeverA



CROSS SECTION C-C'

SS-1	Depth (mbgs)	13-Mar-19																	
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py	PCB
	0.25	0.03	ND (0.02)	0.06	0.13	0.1	0.13	0.07	0.07	0.14	ND (0.02)	0.33	0.03	0.06	ND (0.04)	ND (0.01)	0.25	0.25	-
SS-2	Depth (mbgs)	18-Mar-19																	
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py	PCB
	0.5	ND (0.02)	ND (0.02)	0.03	0.04	0.04	0.06	0.04	0.03	0.04	ND (0.02)	0.12	ND (0.02)	0.03	ND (0.04)	ND (0.01)	0.09	0.09	ND (0.05)
SS-5	Depth (mbgs)	25-Mar-19																	
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py	PCB
	0.5	ND (0.02)	ND (0.02)	ND (0.02)	0.02	ND (0.02)	0.03	ND (0.02)	ND (0.02)	0.03	ND (0.02)	0.05	ND (0.02)	ND (0.02)	ND (0.04)	ND (0.01)	0.04	0.05	ND (0.05)

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Acenaphthene	Ace	0.072	7.9
Acenaphthylene	Acl	0.093	0.15
Anthracene	An	0.22	0.67
Benzo(a)anthracene	B(a)A	0.36	0.5
Benzo(a)pyrene	B(a)P	0.3	0.3
Benzo(b)fluoranthene	B(b)F	0.47	0.78
Benzo(g,h,i)perylene	B(ghi)P	0.68	6.6
Benzo(k)fluoranthene	B(k)F	0.48	0.78
Chrysene	C	2.8	7
Dibenz(a,h)anthracene	DA	0.1	0.1
Fluoranthene	FI	0.69	0.69
Fluorene	F	0.19	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.23	0.38
Total Methylnaphthalene	T-MN	0.59	0.99
Naphthalene	N	0.09	0.6
Phenanthrene	P	0.69	6.2
Pyrene	Py	1	78
Total PCBs	PCB	0.3	0.35

LEGEND

- CONCRETE
- ASPHALT
- GRANULAR MATERIAL (>2mm Ø)
- SAND AND GRAVEL FILL

NORTH WALL EXCAVATION SAMPLES:

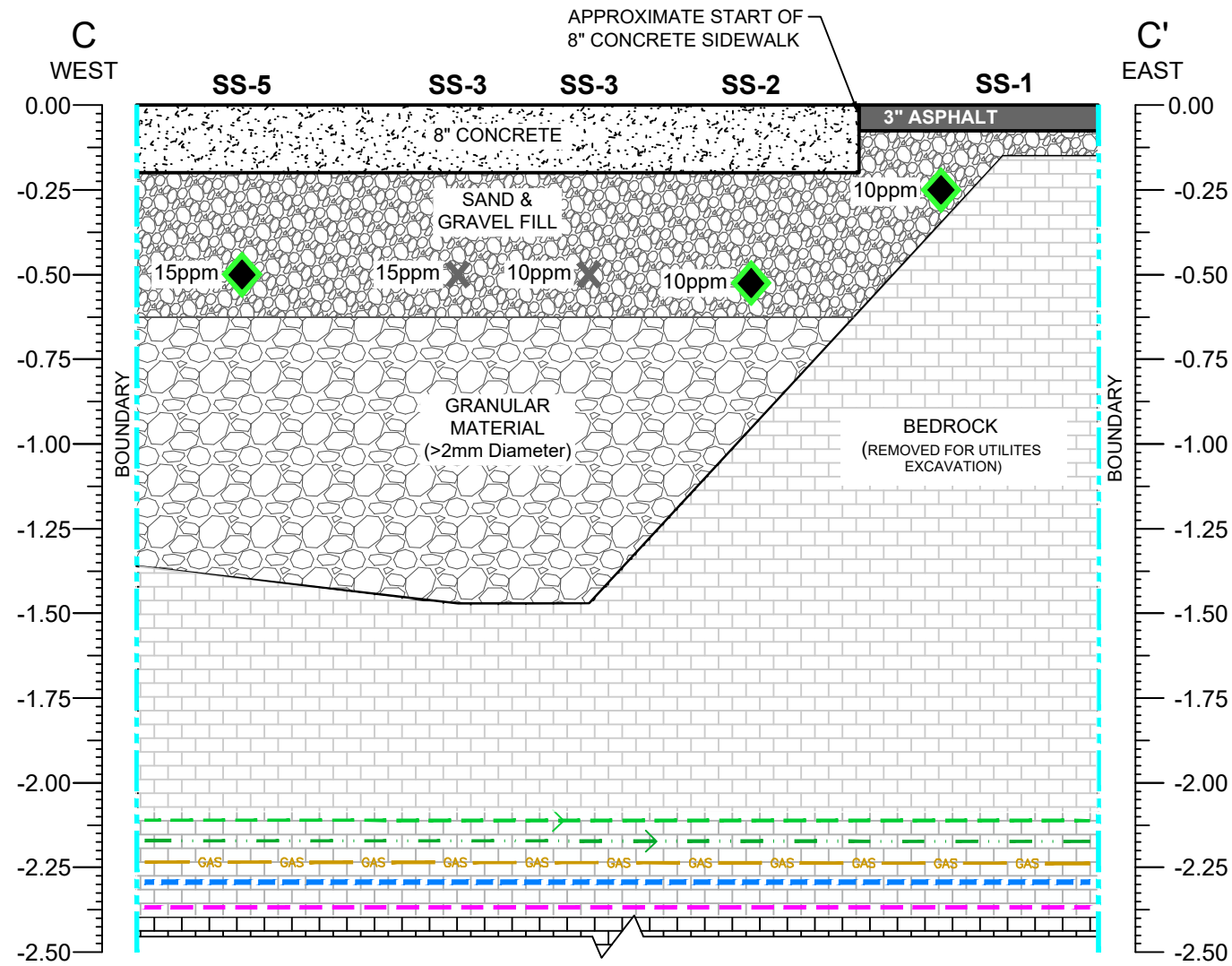
- CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED
- SS-1 SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



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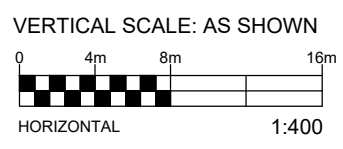
DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:400
DRAWN BY TM / AS	TITLE: SOIL ANALYTICAL RESULTS CROSS SECTION C-C' - PAH & PCB (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 23

File name: \\exp\data\OTT\OTT-00250193-ND\60_Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:22 AM Plotted by: SeverA



UTILITIES LEGEND:

- WASTEWATER - STORM
- WASTEWATER - SANITARY
- WATER
- HYDRO
- NATURAL GAS



CROSS SECTION C-C'

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Antimony	Sb	1.3	7.5
Arsenic	As	18	18
Barium	Ba	220	390
Beryllium	Be	2.5	4
Boron	B	36	120
Cadmium	Cd	1.2	1.2
Chromium	Cr	70	160
Chromium VI	Cr VI	0.66	8
Cobalt	Co	22	22
Copper	Cu	92	140
Lead	Pb	120	120
Mercury	Hg	0.27	0.27
Molybdenum	Mo	2	6.9
Nickel	Ni	82	100
Selenium	Se	1.5	2.4
Silver	Ag	0.5	20
Thallium	Tl	1	1
Uranium	U	2.5	23
Vanadium	V	86	86

SS-1	Depth (mbgs)	13-Mar-19																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.25	ND (1.0)	2.2	61.3	ND (0.5)	8.3	ND (0.5)	9.9	ND (0.2)	3.9	8.3	51.5	ND (0.1)	ND (1.0)	9.5	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	14.3	ND (20.0)
SS-2	Depth (mbgs)	18-Mar-19																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.5	ND (1.0)	2.8	156	ND (0.5)	12.5	ND (0.5)	14.6	ND (0.2)	7.0	14.1	12.6	ND (0.1)	1.3	15.2	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	10.9	22.0
SS-5	Depth (mbgs)	25-Mar-19																			
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.5	ND (1.0)	4.1	158	ND (0.5)	11.3	ND (0.5)	12.1	ND (0.2)	6.5	8.0	11.9	ND (0.1)	1.8	13.7	ND (1.0)	ND (0.3)	ND (1.0)	ND (1.0)	12.5	24.0

LEGEND

- CONCRETE
- ASPHALT
- GRANULAR MATERIAL (>2mm Ø)
- SAND AND GRAVEL FILL

NORTH WALL EXCAVATION SAMPLES:

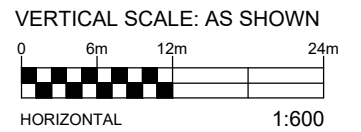
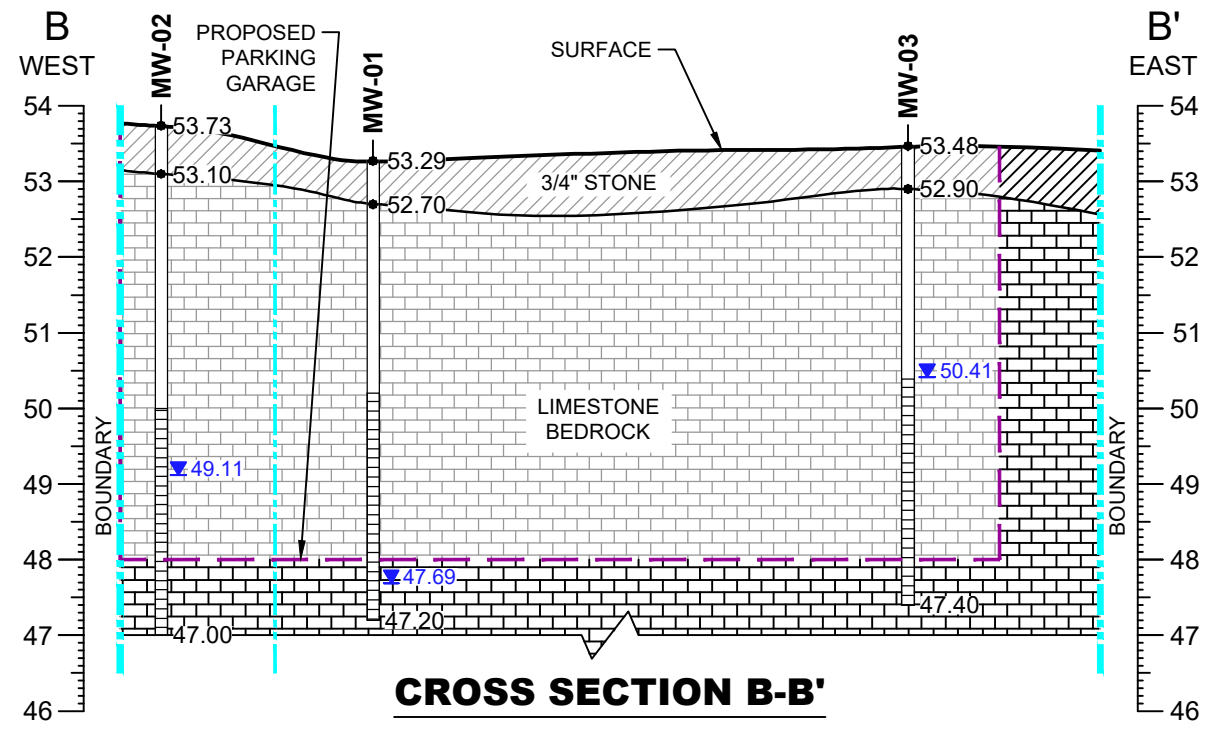
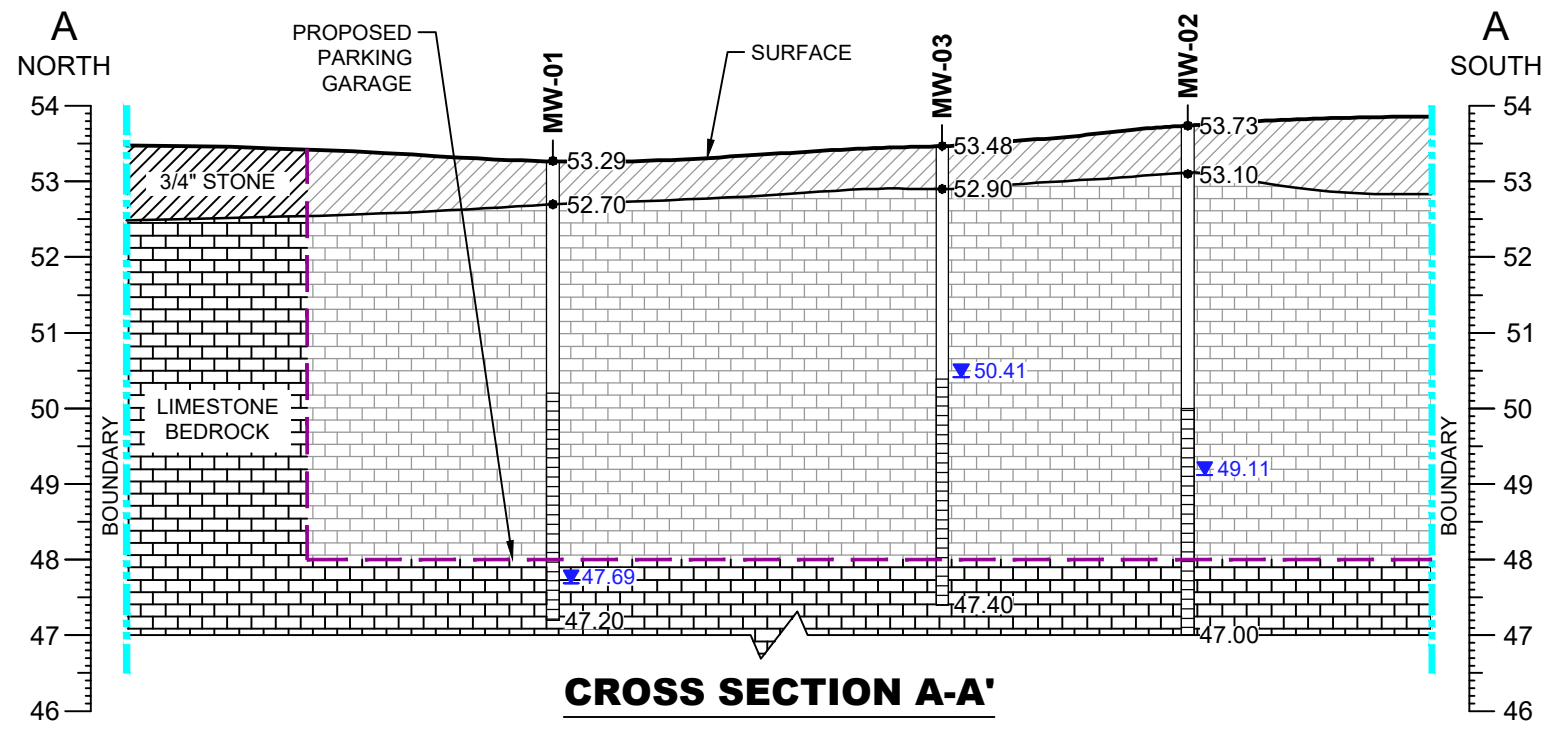
- CONFIRMATORY SOIL SAMPLE (SUBMITTED)
- SOIL SAMPLE NOT SUBMITTED
- SS-1**
 SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



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DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:400
DRAWN BY TM / AS	TITLE: SOIL ANALYTICAL RESULTS CROSS SECTION C-C' - INORGANICS (POST-REMEDIATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 24

File name: \\exp\data\OTT\011-00250193-NO\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 Last Plotted: Apr 22, 2022 10:22 AM Plotted by: SeverA



LEGEND

- 3/4" STONE
- BEDROCK
- GROUNDWATER LEVEL FROM FEBRUARY 2022

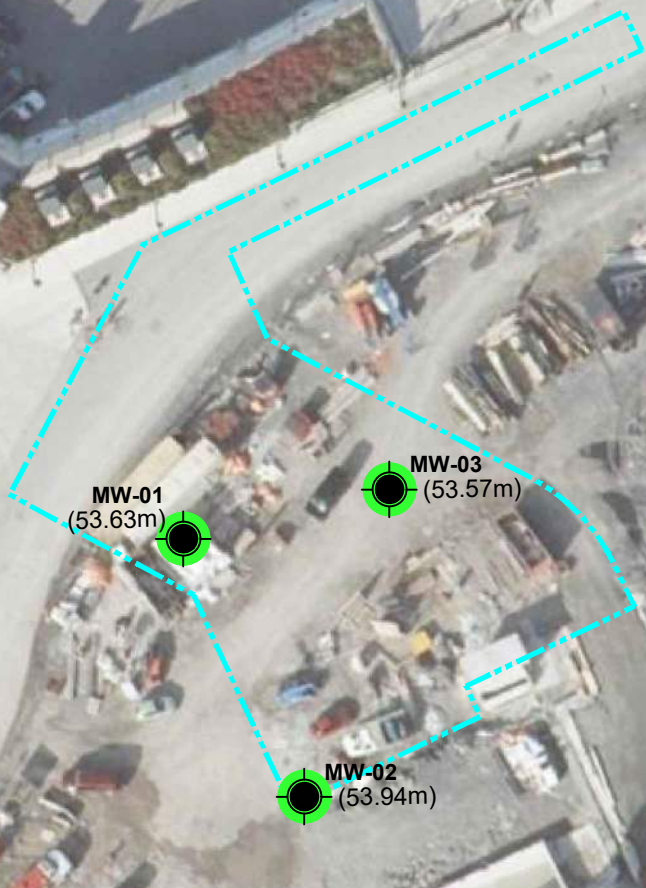
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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:600
DRAWN BY TM / AS		TITLE: CROSS SECTIONS A-A' AND B-B' (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO
		FIG 25

Filename: \\exp_data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:20 AM Plotted by: Severa



BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Benzene	B	44	0.5
Toluene	T	14000	320
Ethyl benzene	E	1800	54
Total Xylenes	X	3300	72
F1	F1 (C6-C10)	420	420
F2	F2 (C10-C16)	150	150
F3	F3 (C16-C34)	500	500
F4	F4 (C34-C50)	500	500
Chloroform	CF	2.4	2
1,1-Dichloroethane	1,1-DCA	320	11
1,2-Dichloroethane	1,2-DCA	1.6	0.5
1,1-Dichloroethylene	1,1-DCE	1.6	0.5
Cis-1,2-Dichloroethylene	c-1,2-DCE	1.6	1.6
Trans-1,2-Dichloroethylene	t-1,2-DCE	1.6	1.6
Tetrachloroethylene	PCE	1.6	0.5
Trichloroethylene	TCE	1.6	0.5
Vinyl Chloride	VC	0.5	0.5

BH/MW21-01		Screen Interval 3.0 to 6.1 mbs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
31-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
12-Jan-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

BH/MW21-02		Screen Interval 3.6 to 6.7 mbs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
23-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
6-Jan-22	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
6-Jan-22 (Dup)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

BH/MW21-03		Screen Interval 3.0 to 6.1 mbs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC	
23-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
23-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
19-Jan-22	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

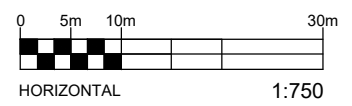
LEGEND

PROPERTY BOUNDARY

MW-01
(53.63m)

POST-REMEDIATION MONITORING
WELL NAME AND LOCATION
(GROUND ELEVATION)

SOIL CONCENTRATION MEETS
MECP TABLE 7 AND 9 SCS



EXP Services Inc. www.exp.com
 t: +1.613.688.1899 | f: +1.613.225.7337
 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: GROUNDWATER ANALYTICAL RESULTS - PHC & VOC (POST-REMEDIATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 26

Filename: \\exp_data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:20 AM Plotted By: Severa



BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04	REG 153/04
		TABLE 9 STANDARDS	TABLE 7 STANDARDS
Acenaphthene	Ace	600	17
Anthracene	An	1	1
Benzo(a)anthracene	B(a)A	1.8	1.8
Benzo(a)pyrene	B(a)P	0.81	0.81
Benzo(b)fluoranthene	B(b)F	0.75	0.75
Benzo(g,h,i)perylene	B(ghi)P	0.2	0.2
Benzo(k)fluoranthene	B(k)F	0.4	0.4
Chrysene	C	0.7	0.7
Dibenz(a,h)anthracene	DA	0.4	0.4
Fluoranthene	Fl	73	44
Fluorene	F	290	290
Indeno(1,2,3-cd)pyrene	I(123)P	0.2	0.2
Total Methylnaphthalene	T-MN	1500	1500
Naphthalene	N	1400	7
Phenanthrene	P	380	380
Pyrene	Py	5.7	5.7

BH/MW21-01																	Screen Interval 3.0 to 6.1 mbgs			
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py	PCB		
14-Sep-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.06	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.05	ND (0.05)		
16-Feb-22	ND (0.05)	ND (0.05)	0.01	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.05	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	0.05	0.05	ND (0.05)		

BH/MW21-02																	Screen Interval 3.6 to 6.7 mbgs			
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py	PCB		
23-Aug-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.10)		
12-Jan-22	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)		
12-Jan-22 (Dup)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)		

BH/MW21-03																	Screen Interval 3.0 to 6.1 mbgs			
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py	PCB		
23-Aug-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)		
23-Aug-21 (Dup)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)		
19-Jan-22	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)		

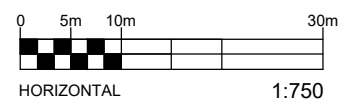
LEGEND

PROPERTY BOUNDARY

MW-01
(53.63m)

POST-REMEDIATION MONITORING WELL NAME AND LOCATION (GROUND ELEVATION)

SOIL CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS



EXP Services Inc. www.exp.com
 t: +1.613.688.1899 | f: +1.613.225.7337
 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: GROUNDWATER ANALYTICAL RESULTS - PAH & PCB (POST-REMEDIATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 27

Filename: \\exp_data\OTT\OTT-00250193-ND\60 Execution\65 Drawings\250193-P0 Drawings\ph2\250193-P0 West Chaudière ph2.dwg
 Last Saved: Apr 22, 2022 10:16 AM Last Plotted: Apr 22, 2022 10:20 AM Plotted By: Severa



BOTH STREET



PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Antimony	Sb	16000	16000
Arsenic	As	1500	1500
Barium	Ba	23000	23000
Beryllium	Be	53	53
Boron	B	36000	36000
Cadmium	Cd	2.1	2.1
Chromium	Cr	640	640
Chromium (VI)	Cr IV	110	110
Cobalt	Co	52	52
Copper	Cu	69	69
Lead	Pb	20	20
Mercury	Hg	0.29	0.1
Molybdenum	Mo	7300	7300
Nickel	Ni	390	390
Selenium	Se	50	50
Silver	Ag	1.2	1.2
Sodium	Na	1800000	1800000
Thallium	Tl	400	400
Uranium	U	330	330
Vanadium	V	200	200
Zinc	Zn	890	890

BH/MW21-01		Screen Interval 3.0 to 6.1 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
31-Aug-21	ND (0.5)	ND (1)	644	ND (0.5)	698	ND (0.1)	ND (1)	ND (10)	0.9	2.0	ND (0.1)	ND (0.1)	5.4	4	ND (1)	ND (0.1)	348000	ND (0.1)	1.0	ND (0.5)	11
21-Dec-21	ND (0.5)	ND (1)	595	ND (0.5)	747	ND (0.1)	ND (1)	ND (10)	ND (0.5)	1.2	ND (0.1)	ND (0.1)	3.5	4	ND (1)	ND (0.1)	342000	ND (0.1)	1.2	ND (0.5)	ND (5)
21-Dec-21 (Dup)	ND (0.5)	ND (1)	615	ND (0.5)	748	ND (0.1)	ND (1)	ND (10)	ND (0.5)	1.1	ND (0.1)	ND (0.1)	3.5	4	ND (1)	ND (0.1)	348000	ND (0.1)	1.2	ND (0.5)	ND (5)

BH/MW21-02		Screen Interval 3.6 to 6.7 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Aug-21	ND (0.5)	ND (1)	225	ND (0.5)	217	ND (0.1)	ND (1)	ND (10)	1.3	ND (0.5)	ND (0.1)	ND (0.1)	2.1	3	ND (1)	ND (0.1)	648000	ND (0.1)	0.3	0.7	ND (5)
22-Dec-21	ND (0.5)	ND (1)	179	ND (0.5)	222	ND (0.1)	ND (1)	ND (10)	0.5	1.2	ND (0.1)	ND (0.1)	4.9	4	ND (1)	ND (0.1)	462000	ND (0.1)	11.8	ND (0.5)	ND (5)

BH/MW21-03		Screen Interval 3.0 to 6.1 mbgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Aug-21	ND (0.5)	4	210	ND (0.5)	143	ND (0.1)	ND (1)	ND (10)	1.9	0.9	ND (0.1)	ND (0.1)	5.0	6	ND (1)	ND (0.1)	632000	ND (0.1)	9.2	1.7	7
23-Aug-21 (Dup)	ND (0.5)	ND (1)	226	ND (0.5)	213	ND (0.1)	ND (1)	ND (10)	1.2	ND (0.5)	ND (0.1)	ND (0.1)	2.1	3	ND (1)	ND (0.1)	630000	ND (0.1)	0.3	0.7	ND (5)
19-Jan-22	ND (0.5)	ND (1)	195	ND (0.5)	94	ND (0.1)	ND (1)	ND (10)	0.6	ND (0.5)	ND (0.1)	ND (0.1)	1.7	3	ND (1)	ND (0.1)	463000	ND (0.1)	3.3	0.5	ND (5)

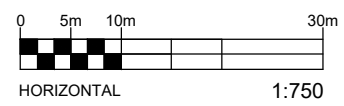
LEGEND

PROPERTY BOUNDARY

MW-01
(53.63m)

POST-REMEDIAL MONITORING
WELL NAME AND LOCATION
(GROUND ELEVATION)

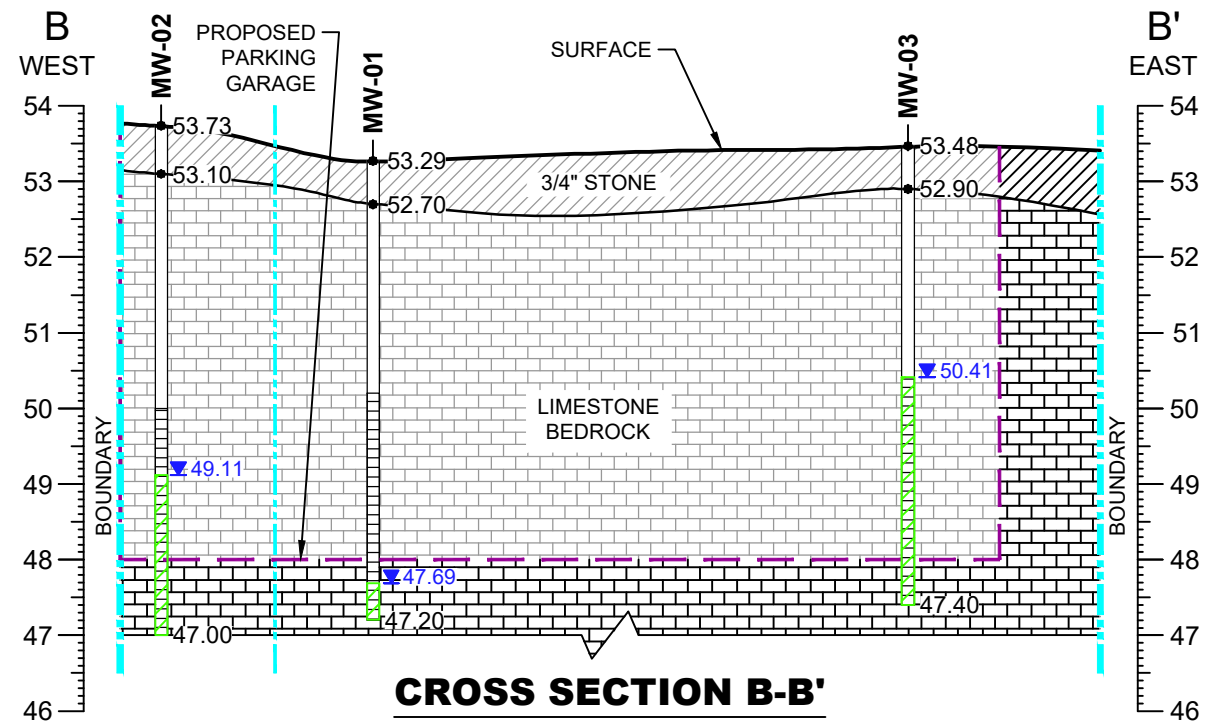
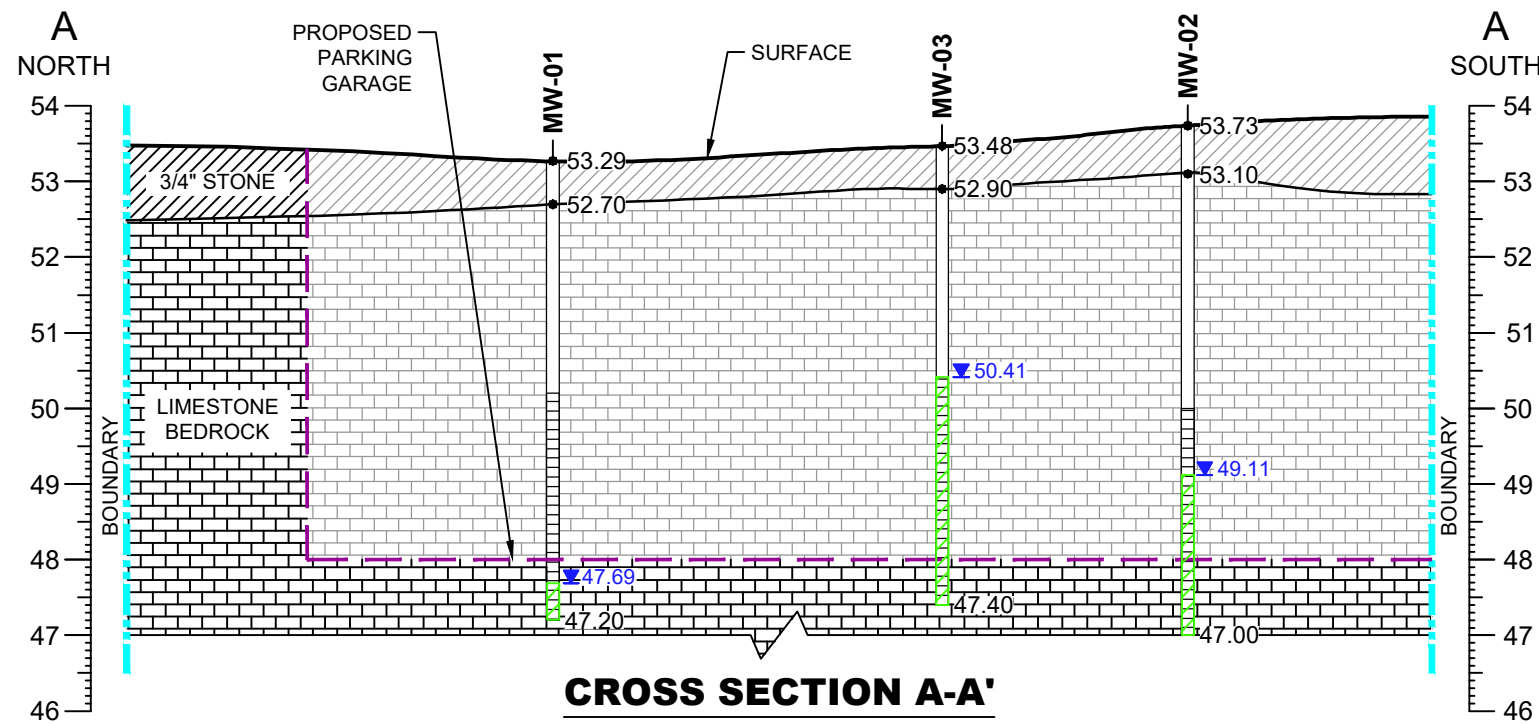
SOIL CONCENTRATION MEETS
MECP TABLE 7 AND 9 SCS



EXP Services Inc. www.exp.com
 t: +1.613.688.1899 | f: +1.613.225.7337
 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE APRIL 2022	CLIENT: WINDMILL DREAM ONTARIO HOLDINGS LP	project no. OTT-00250193-P0
DESIGN LW	CHECKED PS	scale 1:750
DRAWN BY AS	TITLE: GROUNDWATER ANALYTICAL RESULTS - INORGANICS (POST-REMEDATION) 315 MIWATE PRIVATE, OTTAWA, ONTARIO	FIG 28

File name: \\exp\data\OTT\OTT-00250193-ND\60_Execution\65 Drawings\250193-P0 Drawings\p2\250193-P0 West Chaudière ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:22 AM Plotted by: Severa



STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Benzene	B	44	0.5
Toluene	T	14000	320
Ethylbenzene	E	1800	54
Total Xylenes	X	3300	72
F1	F1 (C6-C10)	420	420
F2	F2 (C10-C16)	150	150
F3	F3 (C16-C34)	500	500
F4	F4 (C34-C50)	500	500
Chloroform	CF	2.4	2
1,1-Dichloroethane	1,1-DCA	320	11
1,2-Dichloroethane	1,2-DCA	1.6	0.5
1,1-Dichloroethylene	1,1-DCE	1.6	0.5
Cis-1,2-Dichloroethylene	c-1,2-DCE	1.6	1.6
Trans-1,2-Dichloroethylene	t-1,2-DCE	1.6	1.6
Tetrachloroethylene	PCE	1.6	0.5
Trichloroethylene	TCE	1.6	0.5
Vinyl Chloride	VC	0.5	0.5

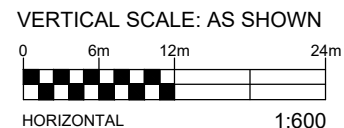
BH/MW21-01	Screen Interval 3.0 to 6.1 mbgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
31-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
12-Jan-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

BH/MW21-02	Screen Interval 3.6 to 6.7 mbgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
23-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
6-Jan-22	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
6-Jan-22 (Dup)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

BH/MW21-03	Screen Interval 3.0 to 6.1 mbgs																
DATE	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
23-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
23-Aug-21	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
19-Jan-22	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (25)	ND (100)	ND (100)	ND (100)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

LEGEND

- 3/4" STONE
- BEDROCK
- GROUNDWATER LEVEL FROM FEBRUARY 2022
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



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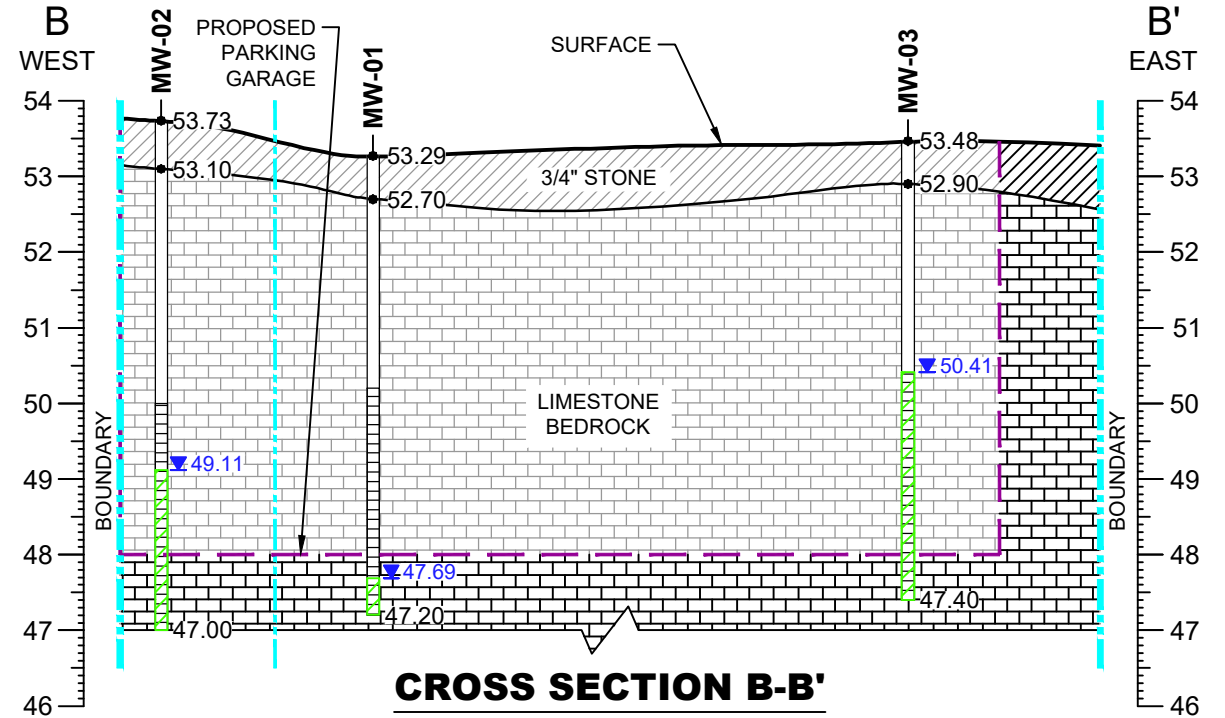
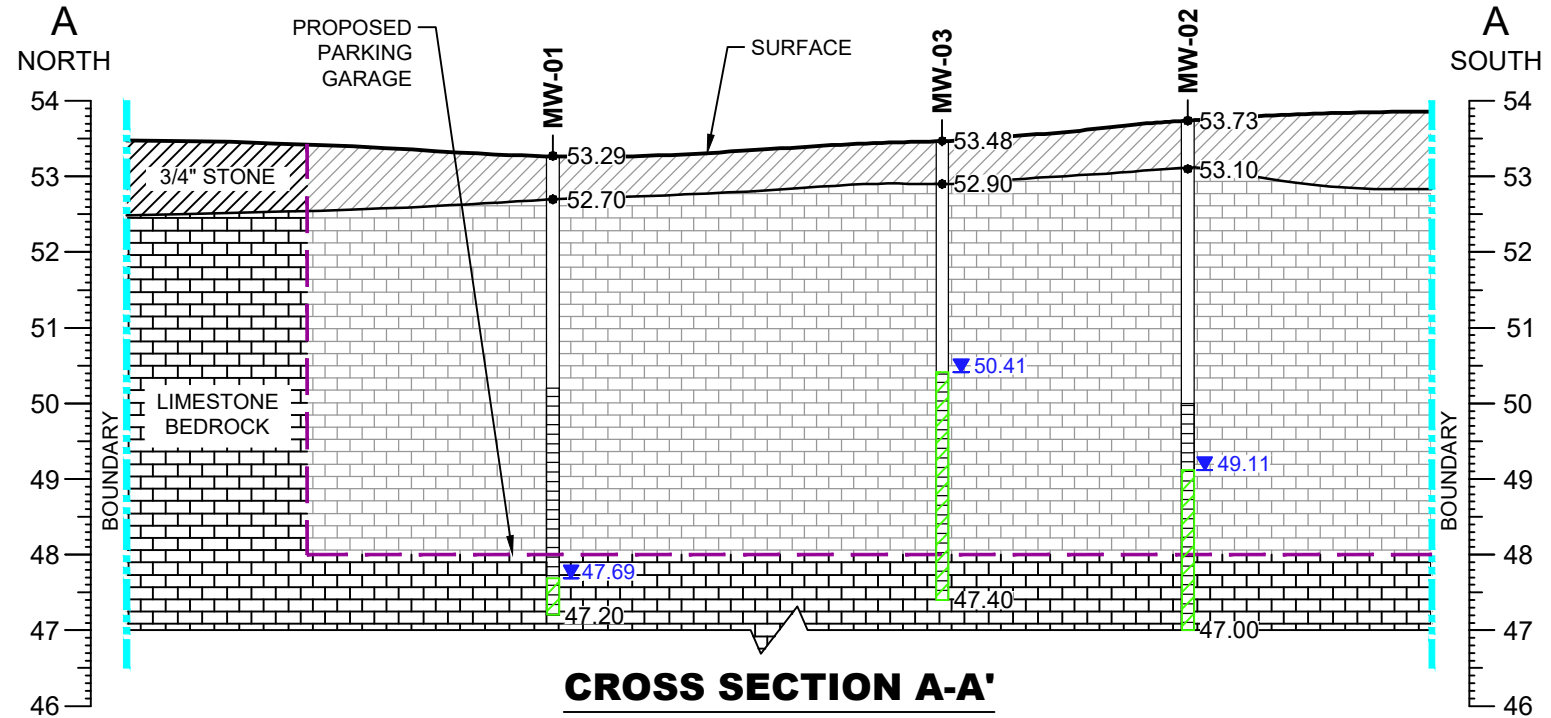
t: +1.613.688.1899 | f: +1.613.225.7337

2650 Queensview Drive, Suite 100

Ottawa, ON K2B 8H6, Canada

DATE	APRIL 2022	CLIENT:	WINDMILL DREAM ONTARIO HOLDINGS LP	project no.	OTT-00250193-P0
DESIGN	LW	CHECKED	PS	scale	1:600
DRAWN BY	TM / AS	TITLE:	GROUNDWATER CROSS SECTIONS A-A' & B-B' - PHC & VOC (POST-REMEDATION)		
			315 MIWATE PRIVATE, OTTAWA, ONTARIO		
					FIG 29

File name: \\exp\data\OTT\OTT-00250193-NO\60_Execution\65 Drawings\250193-PO Drawings\ph2 Sections\ph2 250193-PO West Chaudière ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:22 AM Plotted by: Severa



STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Acenaphthene	Ace	600	17
Anthracene	An	1	1
Benzo(a)anthracene	B(a)A	1.8	1.8
Benzo(a)pyrene	B(a)P	0.81	0.81
Benzo(b)fluoranthene	B(b)F	0.75	0.75
Benzo(g,h,i)perylene	B(ghi)P	0.2	0.2
Benzo(k)fluoranthene	B(k)F	0.4	0.4
Chrysene	C	0.7	0.7
Dibenz(a,h)anthracene	DA	0.4	0.4
Fluoranthene	FI	73	44
Fluorene	F	290	290
Indeno(1,2,3-cd)pyrene	I(123)P	0.2	0.2
Total Methyl naphthalene	T-MN	1500	1500
Naphthalene	N	1400	7
Phenanthrene	P	380	380
Pyrene	Py	5.7	5.7

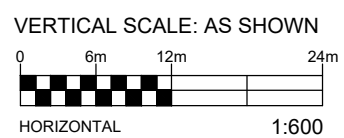
BH/MW21-01																			Screen Interval 3.0 to 6.1 mbgs									
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py	PCB										
14-Sep-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.06	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	0.05	ND (0.05)										
16-Feb-22	ND (0.05)	ND (0.05)	0.01	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.05	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	0.05	0.05	ND (0.05)										

BH/MW21-02																			Screen Interval 3.6 to 6.7 mbgs									
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py	PCB										
23-Aug-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.10)										
12-Jan-22	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)										
12-Jan-22 (Dup)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)										

BH/MW21-03																			Screen Interval 3.0 to 6.1 mbgs									
DATE	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py	PCB										
23-Aug-21	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)										
23-Aug-21 (Dup)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)										
19-Jan-22	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.01)	ND (0.05)										

LEGEND

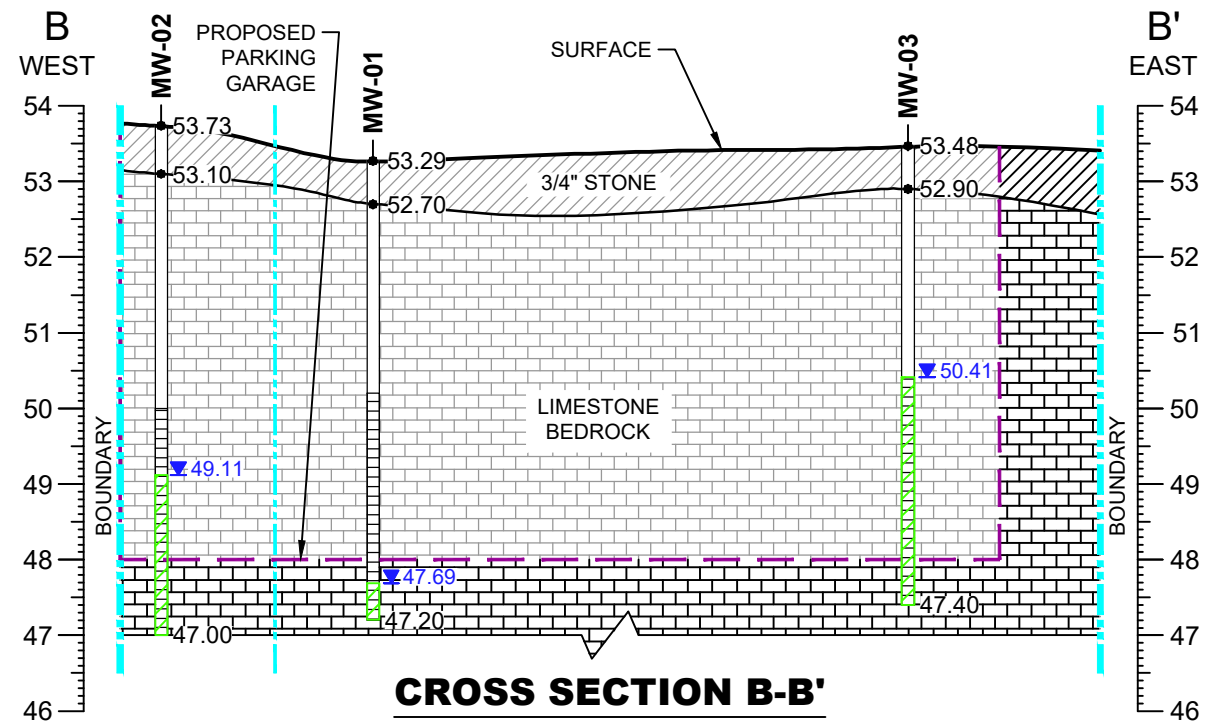
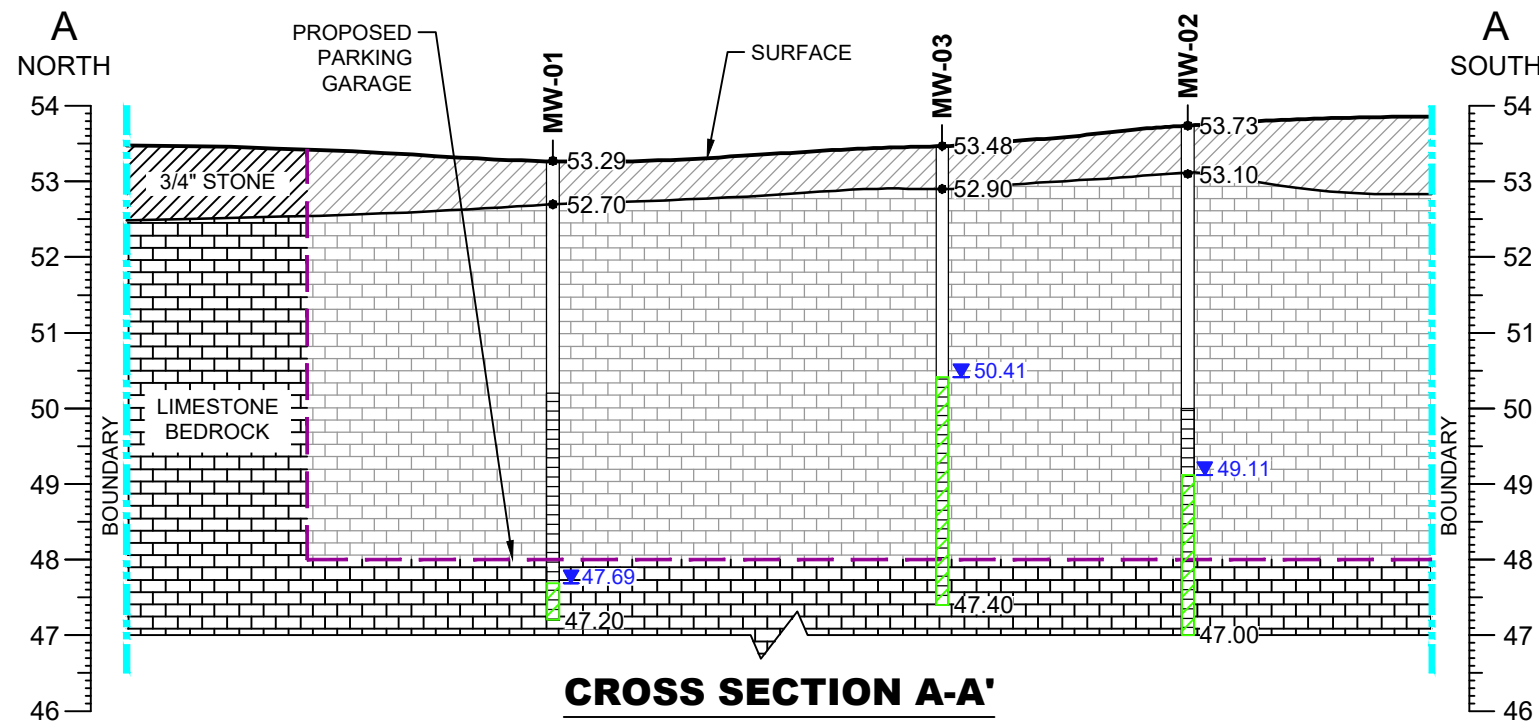
- 3/4" STONE
- BEDROCK
- GROUNDWATER LEVEL FROM FEBRUARY 2022
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



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 2650 Queensview Drive, Suite 100
 Ottawa, ON K2B 8H6, Canada

DATE	APRIL 2022	CLIENT:	WINDMILL DREAM ONTARIO HOLDINGS LP	project no.	OTT-00250193-PO
DESIGN	LW	CHECKED	PS	scale	1:600
DRAWN BY	TM / AS	GROUNDWATER CROSS SECTIONS A-A' & B-B' - PAH & PCB (POST-REMEDIATION)			FIG 30
		TITLE: 315 MIWATE PRIVATE, OTTAWA, ONTARIO			

File name: \\exp\data\OTT\OTT-00250193-NO\60_Execution\65_Drawings\250193-P0 Drawings\ph2_250193-P0 West Chaudière ph2 Sections.dwg
 Last Saved: Apr 22, 2022 10:15 AM Last Plotted: Apr 22, 2022 10:22 AM Plotted by: Severa



STANDARDS SHOWN ARE MECP TABLE 7 AND 9 FOR RESIDENTIAL PROPERTY USE AND COARSE TEXTURED SOILS

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 9 STANDARDS	REG 153/04 TABLE 7 STANDARDS
Antimony	Sb	16000	16000
Arsenic	As	1500	1500
Barium	Ba	23000	23000
Beryllium	Be	53	53
Boron	B	36000	36000
Cadmium	Cd	2.1	2.1
Chromium	Cr	640	640
Chromium (VI)	Cr IV	110	110
Cobalt	Co	52	52
Copper	Cu	69	69
Lead	Pb	20	20
Mercury	Hg	0.29	0.1
Molybdenum	Mo	7300	7300
Nickel	Ni	390	390
Selenium	Se	50	50
Silver	Ag	1.2	1.2
Sodium	Na	1800000	1800000
Thallium	Tl	400	400
Uranium	U	330	330
Vanadium	V	200	200
Zinc	Zn	890	890

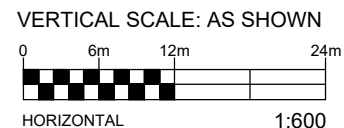
BH/MW21-01		Screen Interval 3.0 to 6.1 m bgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
31-Aug-21	ND (0.5)	ND (1)	644	ND (0.5)	698	ND (0.1)	ND (1)	ND (10)	0.9	2.0	ND (0.1)	ND (0.1)	5.4	4	ND (1)	ND (0.1)	348000	ND (0.1)	1.0	ND (0.5)	11
21-Dec-21	ND (0.5)	ND (1)	595	ND (0.5)	747	ND (0.1)	ND (1)	ND (10)	ND (0.5)	1.2	ND (0.1)	ND (0.1)	3.5	4	ND (1)	ND (0.1)	342000	ND (0.1)	1.2	ND (0.5)	ND (5)
21-Dec-21 (Dup)	ND (0.5)	ND (1)	615	ND (0.5)	748	ND (0.1)	ND (1)	ND (10)	ND (0.5)	1.1	ND (0.1)	ND (0.1)	3.5	4	ND (1)	ND (0.1)	348000	ND (0.1)	1.2	ND (0.5)	ND (5)

BH/MW21-02		Screen Interval 3.6 to 6.7 m bgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Aug-21	ND (0.5)	ND (1)	225	ND (0.5)	217	ND (0.1)	ND (1)	ND (10)	1.3	ND (0.5)	ND (0.1)	ND (0.1)	2.1	3	ND (1)	ND (0.1)	648000	ND (0.1)	0.3	0.7	ND (5)
22-Dec-21	ND (0.5)	ND (1)	179	ND (0.5)	222	ND (0.1)	ND (1)	ND (10)	0.5	1.2	ND (0.1)	ND (0.1)	4.9	4	ND (1)	ND (0.1)	462000	ND (0.1)	11.8	ND (0.5)	ND (5)

BH/MW21-03		Screen Interval 3.0 to 6.1 m bgs																			
DATE	Sb	As	Ba	Be	B	Cd	Cr	Cr IV	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
23-Aug-21	ND (0.5)	4	210	ND (0.5)	143	ND (0.1)	ND (1)	ND (10)	1.9	0.9	ND (0.1)	ND (0.1)	5.0	6	ND (1)	ND (0.1)	632000	ND (0.1)	9.2	1.7	7
23-Aug-21 (Dup)	ND (0.5)	ND (1)	226	ND (0.5)	213	ND (0.1)	ND (1)	ND (10)	1.2	ND (0.5)	ND (0.1)	ND (0.1)	2.1	3	ND (1)	ND (0.1)	630000	ND (0.1)	0.3	0.7	ND (5)
19-Jan-22	ND (0.5)	ND (1)	195	ND (0.5)	94	ND (0.1)	ND (1)	ND (10)	0.6	ND (0.5)	ND (0.1)	ND (0.1)	1.7	3	ND (1)	ND (0.1)	463000	ND (0.1)	3.3	0.5	ND (5)

LEGEND

- 3/4" STONE
- BEDROCK
- GROUNDWATER LEVEL FROM FEBRUARY 2022
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 7 AND 9 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 7 AND 9 SCS



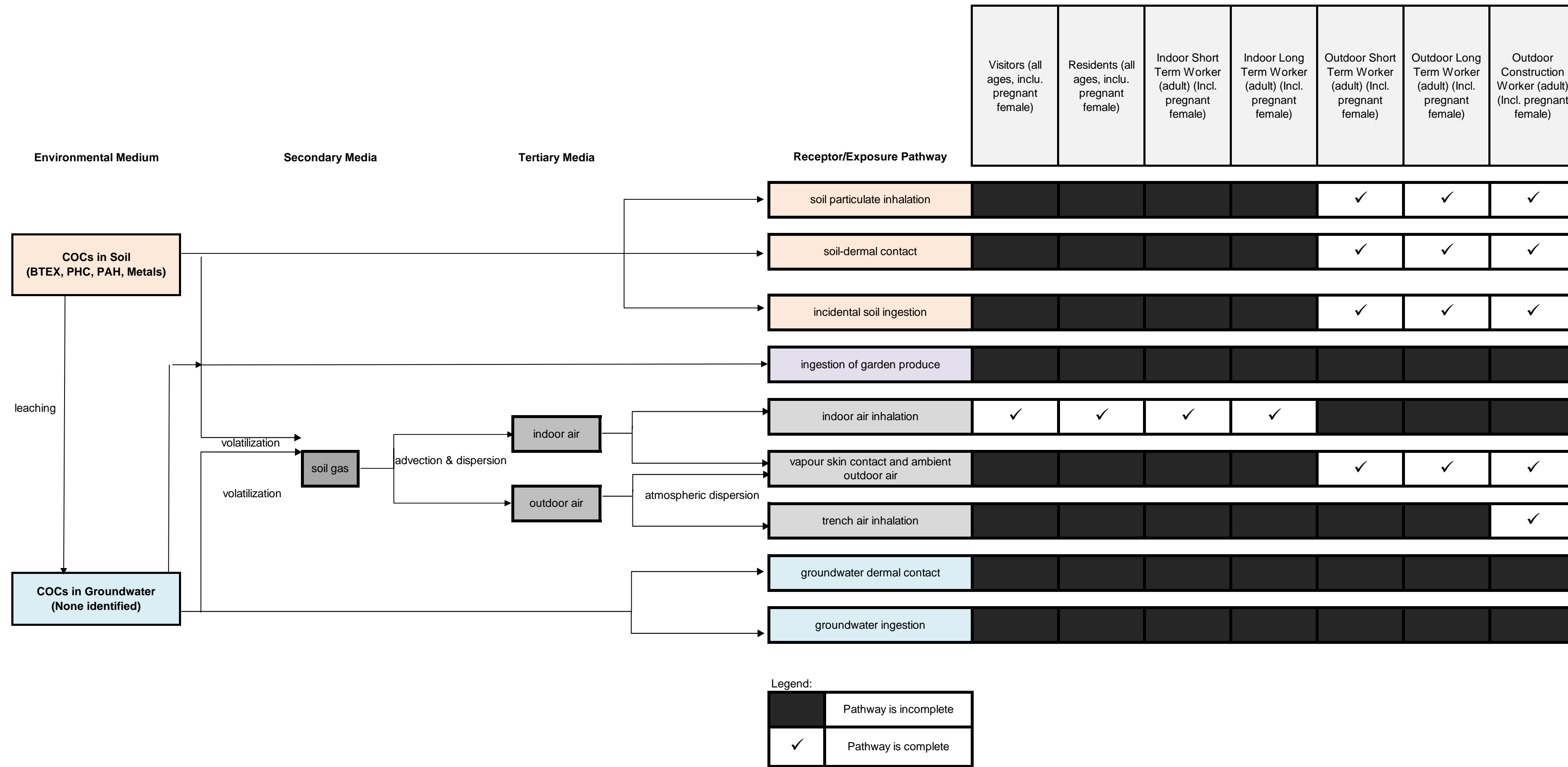
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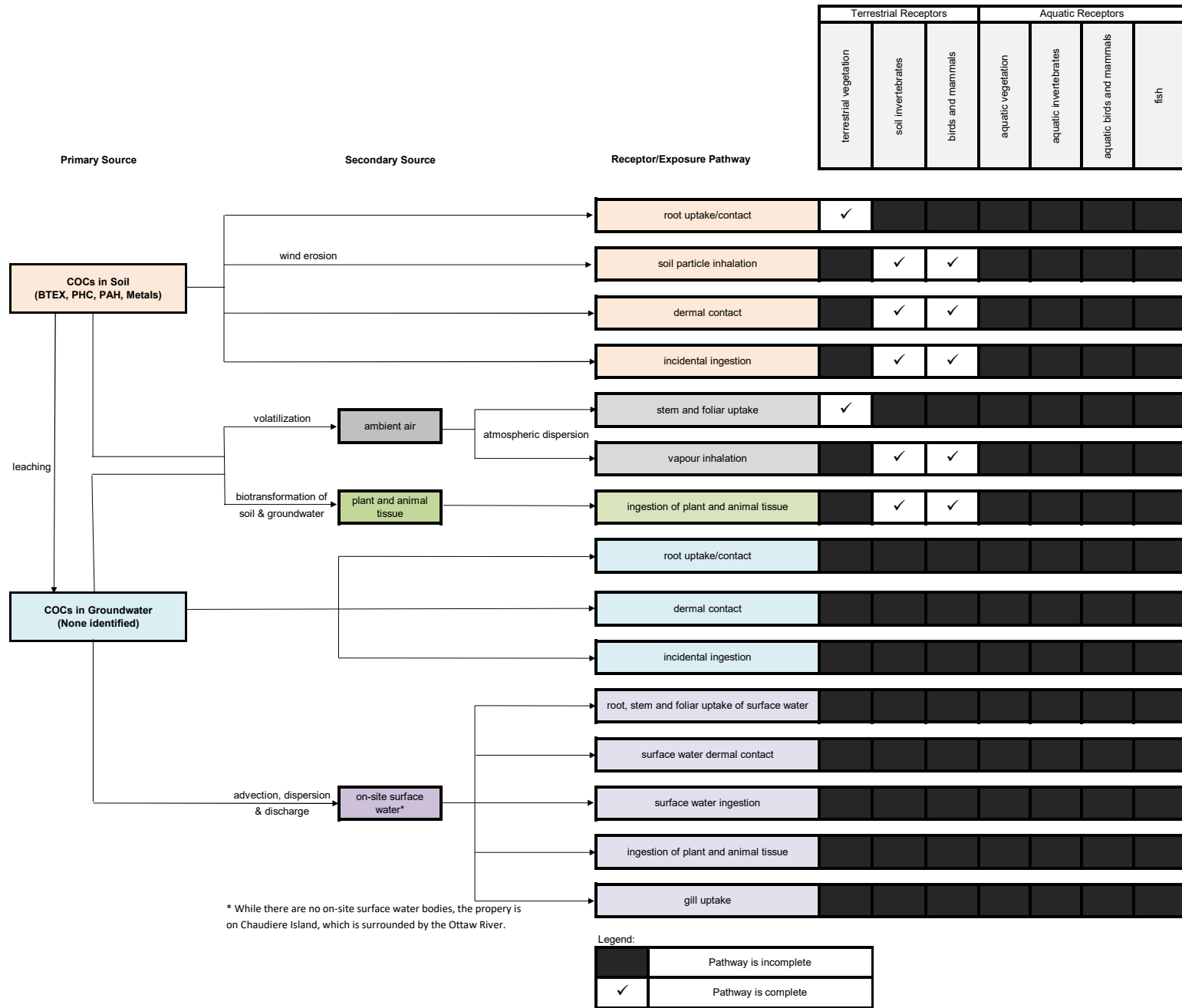
Ottawa, ON K2B 8H6, Canada

DATE	APRIL 2022	CLIENT:	WINDMILL DREAM ONTARIO HOLDINGS LP	project no.	OTT-00250193-P0
DESIGN	LW	CHECKED	PS	scale	1:600
DRAWN BY	TM / AS	TITLE:			FIG 31
GROUNDWATER CROSS SECTIONS A-A' & B-B' - INORGANICS (POST-REMEDATION)					
315 MIWATE PRIVATE, OTTAWA, ONTARIO					



Receptor/Exposure Pathway	Visitors (all ages, incl. pregnant female)	Residents (all ages, incl. pregnant female)	Indoor Short Term Worker (adult) (Incl. pregnant female)	Indoor Long Term Worker (adult) (Incl. pregnant female)	Outdoor Short Term Worker (adult) (Incl. pregnant female)	Outdoor Long Term Worker (adult) (Incl. pregnant female)	Outdoor Construction Worker (adult) (Incl. pregnant female)
---------------------------	--	---	--	---	---	--	---

soil particulate inhalation					✓	✓	✓
soil-dermal contact					✓	✓	✓
incidental soil ingestion					✓	✓	✓
ingestion of garden produce							
indoor air inhalation	✓	✓	✓	✓			
vapour skin contact and ambient outdoor air					✓	✓	✓
trench air inhalation							✓
groundwater dermal contact							
groundwater ingestion							



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Phase Two Environmental Site Assessment

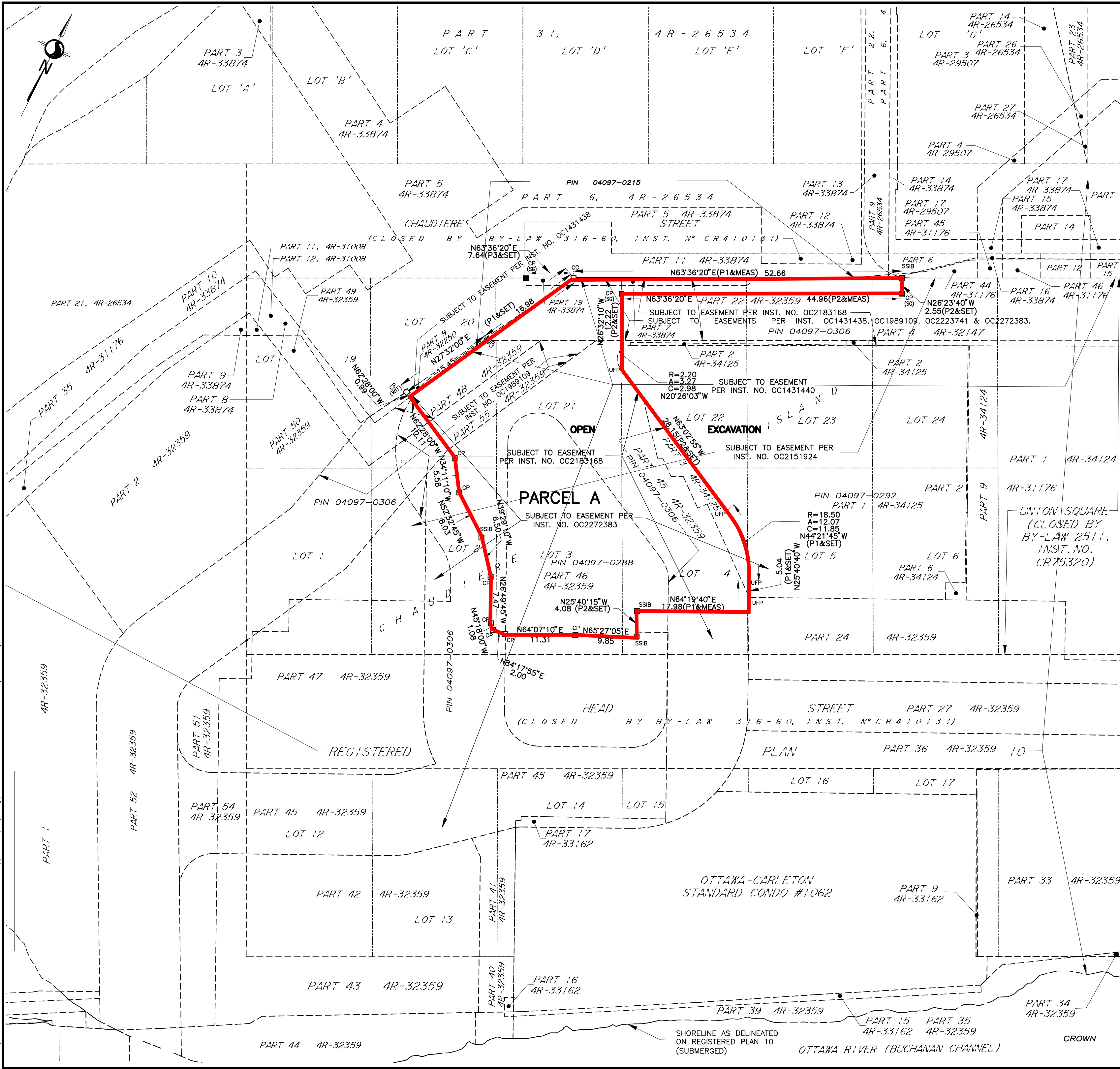
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario

OTT-00250193-P0

April 20, 2022

Appendix B: Survey Plan

18 March 2022 9:06 AM
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PLAN OF SURVEY OF
**PART OF LOTS 2, 3, 4, 5, 20, 21, 22,
23 & 24**
CHAUDIERE ISLAND
REGISTERED PLAN 10
(GEOGRAPHIC TOWNSHIP OF NEPEAN)

CITY OF OTTAWA



METRIC CONVERSION
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES
AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

GRID SCALE CONVERSION
DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING
BY THE COMBINED SCALE FACTOR OF 0.99994.

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS
ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL
MERIDIAN, 76°30' WEST LONGITUDE MTM ZONE 9, NAD83 (ORIGINAL).

19773035 N:5006060.42 E:324888.04
19680191 N:5033564.26 E:388064.94

LEGEND

SYMBOL	DENOTES	FOUND MONUMENTS
■	"	SET MONUMENTS
□	"	IRON BAR
IB	"	ROUND IRON BAR
IB*	"	STANDARD IRON BAR
SIB	"	SHORT STANDARD IRON BAR
SSIB	"	CUT CROSS
CC	"	CONCRETE PIN
CP	"	WITNESS
WIT	"	PROPERTY IDENTIFICATION NUMBER
PIN	"	MEASURED
MEAS	"	PROPORTIONED
PROP	"	ORIGIN UNKNOWN
OU	"	STANTEC GEOMATICS LTD.
SG	"	ANNIS O'SULLIVAN & VOLLBECK LTD.
ADV	"	OBSERVED REFERENCE POINT
ORP	"	UNUSABLE FOR POSTING
UPP	"	PLAN 4R-32359
P1	"	PLAN 4R-32147
P2	"	PLAN 4R-33874
P3	"	PLAN 4R-31176
P4	"	PLAN 4R-32147
P5	"	PLAN 4R-32147
P6	"	PLAN BY SG DATED OCTOBER 29, 2020.

SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS
ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE
UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 31st DAY OF JANUARY, 2022.

March 18, 2022
DATE
R.G. BENNETT
ONTARIO LAND SURVEYOR

Stantec Geomatics Ltd.
CANADA LANDS SURVEYORS
ONTARIO LAND SURVEYORS
1331 CLYDE AVENUE, SUITE 400
OTTAWA, ONTARIO, K2C 3G4
TEL. 613.722.4420 FAX. 613.722.2799
stantec.com

EXP Services Inc.

*Windmill Dream Zibi Ontario Inc.
Phase Two Environmental Site Assessment
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0
April 20, 2022*

Appendix C: Sampling and Analysis Plan

OTT-00250193-P0
Block 206, Zibi Property – Pre-Remediation

Objectives:

The objectives of this project are as follows to file a Record of Site Condition (RSC), supported by the completion of Phase One and Phase Two Environmental Site Assessment (ESA) reports, after assessment and remediation activities occur on Block 206.

Drilling:

A total of 5 BH will be drilled and MW will be installed in each. Based on site information received from client, it is anticipated that depth of drilling will be as follows:

Estimated Depths of Overburden and Rock Coring				
Location	Borehole No.	Estimated Overburden Drilling (m)	Estimated Rock Coring/Wash Boring (m)	Estimated Total Depth of Borehole (m)
Block 206	BH/MW21-01	1.5	3.0	4.5
Block 206	BH/MW21-02	1.5	3.0	4.5
Block 206	BH/MW21-03	1.5	3.0	4.5
Block 206	BH/MW21-04	1.5	3.0	4.5
Block 206	BH/MW21-05	1.5	3.0	4.5

- All monitoring wells to be screened across water table.
- Make sure that no screens straddle bedrock-soil interface. In other words, MW must be installed completely within bedrock or completely within overburden (most, if not all, will be in bedrock).
- As drilling progresses, log each sample, describing soil type, colour, staining, odour, petroleum vapour.

Soil Sampling:

- Soil samples should be submitted to Parcel as follows:

BH ID	Sample Depth	Parameters	Other
BH/MW21-01	Surficial	VOC, PHC F1 to F4, PAH, PCB, Metals by ICP, Hg, Cr(VI), free cyanide	Two soil samples <1.5 m bgs should be submitted for analysis of pH (also, if soil deeper than 1.5 m bgs is present, two soil samples from that depth should also be submitted) One field duplicate from the area that will be remediated by excavation should be submitted. One composite sample for leachate analysis collected from the area that will be remediated by excavation should be submitted.
BH/MW21-01	Worst Case		
BH/MW21-02	Surficial		
BH/MW21-02	Worst Case		
BH/MW21-03	Surficial		
BH/MW21-03	Worst Case		
BH/MW21-04	Surficial		
BH/MW21-04	Worst Case		
BH/MW21-05	Surficial		

BH/MW21-05	Worst Case		
------------	------------	--	--

- “Surficial samples” are samples that are within 0.6 metres of ground surface.
- “Worst case samples” are determined in the field, based on the following considerations: (1) presence of staining; (2) presence of odours; (3) petroleum vapour concentration. If the worst-case sample cannot be identified based on those factors, submit the sample at water table depth or the sample immediately above bedrock surface.
- Depending on the amount of overburden, there may only be one sample submitted per BH
- One composite sample for leachate analysis should be submitted, as described above. Leachate parameters include VOC, PAH, PCB, Inorganic Parameters and Ignitability.
- Samples should be submitted to Paracel within 48 hours of sample collection. In other words, two days worth of samples should be submitted at the same time.

Monitor Development:

- Develop wells at least 3 x well volumes or until clear
- Do not purge if monitor contains LNAPL. Contact Patricia Stelmack immediately if you see any.
- Purged water to be stored in a drum to be collected by CWW

Low Flow Groundwater Sampling

- Monitor all 5 monitoring wells and record petroleum vapours, depth to water, and depth to LNAPL, if any
- All groundwater samples should be submitted to Paracel as follows:
 - VOC
 - PHC F1 to F4
 - PAH
 - PCB
 - Metals by ICP
 - Hg
 - Cr (VI)
 - Free cyanide
- Be careful to sample from near top of water table and use low flow rate to avoid collecting any fine sediment
- Prior to sampling, ensure the following field parameters are stable (per the field measurement table): pH, conductivity, turbidity, DO, temperature and ORP
- EXP will survey ground elevations and top of pipe elevations, as well as UTM coordinates

OTT-00250193-P0
Block 206, Zibi Property – Post-Remediation

Objectives:

The objectives of this project are to file a Record of Site Condition (RSC), supported by the completion of Phase One and Phase Two Environmental Site Assessment (ESA) reports, after assessment and remediation activities occur on Block 206

Drilling:

A total of 3 BH will be drilled and MW will be installed in each. Based on site information received from client, it is anticipated that depth of drilling will be as follows:

Estimated Depths of Overburden and Rock Coring				
Location	Borehole No.	Estimated Overburden Drilling (m)	Estimated Rock Coring/Wash Boring (m)	Estimated Total Depth of Borehole (m)
Block 206	BH/MW21-01	N/A	6.0	6.0
Block 206	BH/MW21-02	N/A	6.0	6.0
Block 206	BH/MW21-03	N/A	6.0	6.0

- All monitoring wells to be screened across water table.
- As drilling progresses, log each sample, describing soil type, colour, staining, odour, petroleum vapour.

Soil Sampling:

- All soil has been removed from the site.

Monitor Development:

- Develop wells at least 3 x well volumes or until clear
- Do not purge if monitor contains LNAPL. Contact Patricia Stelmack immediately if you see any.

Low Flow Groundwater Sampling

- Monitor all 3 monitoring wells and record petroleum vapours, depth to water, and depth to LNAPL, if any
- All groundwater samples should be submitted to Paracel as follows:

MW ID	Parameters	Other
BH/MW21-01	VOC, PHC F1 to F4, PAH, PCB, Metals by ICP, Hg, Cr(VI), pH	One field duplicate shall be submitted.
BH/MW21-02	VOC, PHC F1 to F4, PAH, PCB, Metals by ICP, Hg, Cr(VI), pH	
BH/MW21-03	VOC, PHC F1 to F4, PAH, PCB, Metals by ICP, Hg, Cr(VI), pH	

- Be careful to sample from near top of water table and use low flow rate to avoid collecting any fine sediment
- Prior to sampling, ensure the following field parameters are stable (per the field measurement table): pH, conductivity, turbidity, DO, temperature and ORP

EXP Services Inc.

Windmill Dream Zibi Ontario Inc.

Phase Two Environmental Site Assessment

315 Miwàte Private, West Chaudière Island, Ottawa, Ontario

OTT-00250193-P0

April 20, 2022

Appendix D: Borehole Logs

Explanation of Terms Used on Borehole Records

SOIL DESCRIPTION

Terminology describing common soil genesis:

Topsoil: mixture of soil and humus capable of supporting good vegetative growth.

Peat: fibrous fragments of visible and invisible decayed organic matter.

Fill: where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc.; none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.

Till: the term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

Terminology describing soil structure:

Desiccated: having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.

Stratified: alternating layers of varying material or color with the layers greater than 6 mm thick.

Laminated: alternating layers of varying material or color with the layers less than 6 mm thick.

Fissured: material breaks along plane of fracture.

Varved: composed of regular alternating layers of silt and clay.

Slickensided: fracture planes appear polished or glossy, sometimes striated.

Blocky: cohesive soil that can be broken down into small angular lumps which resist further breakdown.

Lensed: inclusion of small pockets of different soil, such as small lenses of sand scattered through a mass of clay; not thickness.

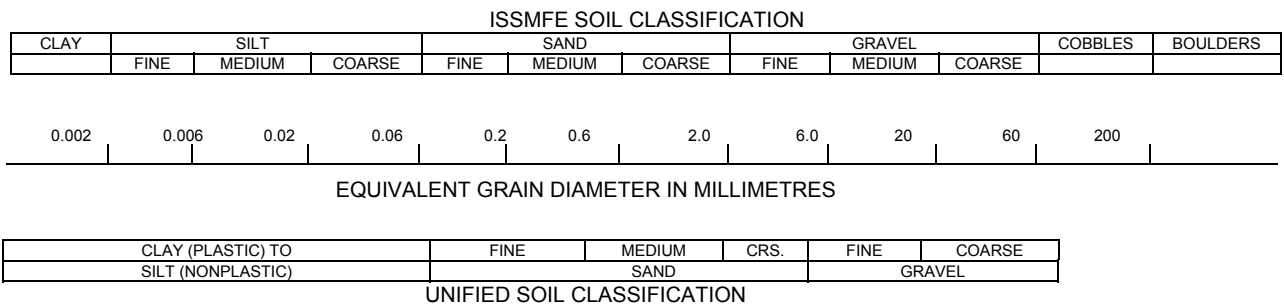
Seam: a thin, confined layer of soil having different particle size, texture, or color from materials above and below.

Homogeneous: same color and appearance throughout.

Well Graded: having wide range in grain sized and substantial amounts of all predominantly on grain size.

Uniformly Graded: predominantly on grain size.

All soil sample descriptions included in this report follow the ASTM D2487-11 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System). The system divides soils into three major categories: (1) coarse grained, (2) fine-grained, and (3) highly organic. The soil is then subdivided based on either gradation or plasticity characteristics. The system provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification. The classification excludes particles larger than 76 mm. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually in accordance with ASTM D2488-09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems. Others may use different classification systems; one such system is the ISSMFE Soil Classification.



Terminology describing materials outside the USCS, (e.g. particles larger than 76 mm, visible organic matter, construction debris) is based upon the proportion of these materials present and as described below in accordance with Note 16 in ASTM D2488-09a:

Table a: Percent or Proportion of Soil, Pp

	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	$5 \leq Pp \leq 10\%$
Little	$15 \leq Pp \leq 25\%$
Some	$30 \leq Pp \leq 45\%$
Mostly	$50 \leq Pp \leq 100\%$

The standard terminology to describe cohesionless soils includes the compactness as determined by the Standard Penetration Test 'N' value:

Table b: Apparent Density of Cohesionless Soil

	'N' Value (blows/0.3 m)
Very Loose	$N < 5$
Loose	$5 \leq N < 10$
Compact	$10 \leq N < 30$
Dense	$30 \leq N < 50$
Very Dense	$50 \leq N$

The standard terminology to describe cohesive soils includes consistency, which is based on undrained shear strength as measured by insitu vane tests, penetrometer tests, unconfined compression tests or similar field and laboratory analysis, Standard Penetration Test 'N' values can also be used to provide an approximate indication of the consistency and shear strength of fine grained, cohesive soils:

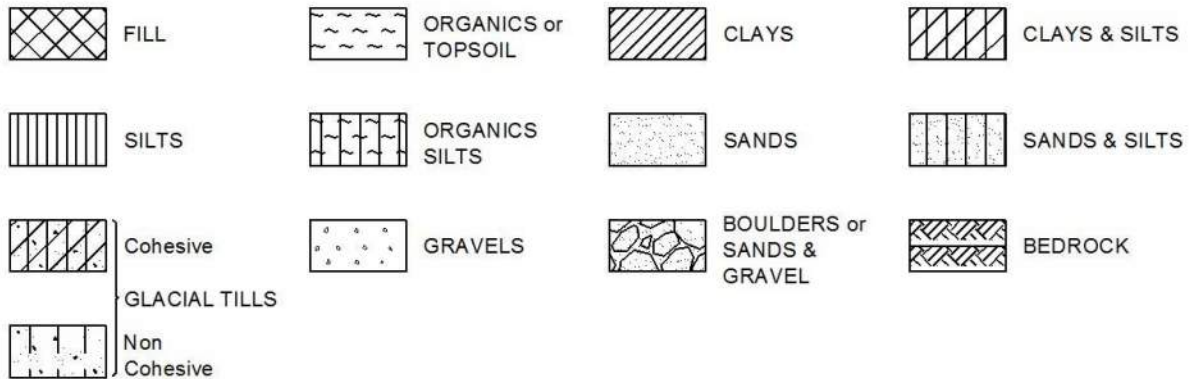
Table c: Consistency of Cohesive Soil

Consistency	Vane Shear Measurement (kPa)	'N' Value
Very Soft	<12.5	<2
Soft	12.5-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very Stiff	100-200	15-30
Hard	>200	>30

Note: 'N' Value - The Standard Penetration Test records the number of blows of a 140 pound (64kg) hammer falling 30 inches (760mm), required to drive a 2 inch (50.8mm) O.D. split spoon sampler 1 foot (305mm). For split spoon samples where full penetration is not achieved, the number of blows is reported over the sampler penetration in meters (e.g. 50/0.15).

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols:



WATER LEVEL MEASUREMENT



Open Borehole or Test Pit



Monitoring Well, Piezometer or Standpipe

Log of Borehole BH/MW21-01



Project No: OTT-00250193-P0
 Project: Phase II Environmental Site Assessment
 Location: 4 Booth Street, Ottawa, ON
 Date Drilled: March 15th and 16th, 2021
 Drill Type: CME Truck Mount
 Datum: Geodetic
 Logged by: JE Checked by: PS

Figure No. 4
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

G W L	S O B Y L	SOIL DESCRIPTION	Geodetic m	D e p t h	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			S O I L T E S T L I M I T S	Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content %				
					20	40	60	80	250	500	750		
		SAND AND GRAVEL FILL Brown, dry, slight odour	53.712	0									
		WOOD Brown, dry, no odours or staining	53.1										
		LIMESTONE BEDROCK	52.8	1									
				2									
				3									
				4									
				5									
		Borehole Terminated at 6.0 m Depth	47.7	6									

LOG OF BOREHOLE BH LOGS - ZIBI.GPJ TROW OTTAWA GDT 4/1/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - A 37mm PVC monitoring well was installed upon completion.
 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
March 23rd, 2021	3.3	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-02



Project No: OTT-00250193-P0
 Project: Phase II Environmental Site Assessment
 Location: 4 Booth Street, Ottawa, ON
 Date Drilled: March 15th and 16th, 2021
 Drill Type: CME Truck Mount
 Datum: Geodetic
 Logged by: JE Checked by: PS

Figure No. 4
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL LOG	SOIL DESCRIPTION	Geodetic m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength kPa				250	500	750	
					20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)			
50	100	150	200	20	40	60						
		SAND AND GRAVEL FILL Grey, dry, no odours or staining	53.552	0								
		LIMESTONE BEDROCK	53.0	1								
				2								
				3								
				4								
				5								
				6								
		Borehole Terminated at 6.5 m Depth	47.1									

LOG OF BOREHOLE BH LOGS - ZIBI.GPJ TROW/OTTAWA.GDT 4/1/21

- NOTES:
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 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
March 23rd, 2021	5.8	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-03



Project No: OTT-00250193-P0

Figure No. 4

Project: Phase II Environmental Site Assessment

Page. 1 of 1

Location: 4 Booth Street, Ottawa, ON

Date Drilled: March 15th and 16th, 2021

Split Spoon Sample

Combustible Vapour Reading

Drill Type: CME Truck Mount

Auger Sample

Natural Moisture Content

SPT (N) Value

Atterberg Limits

Datum: Geodetic

Dynamic Cone Test

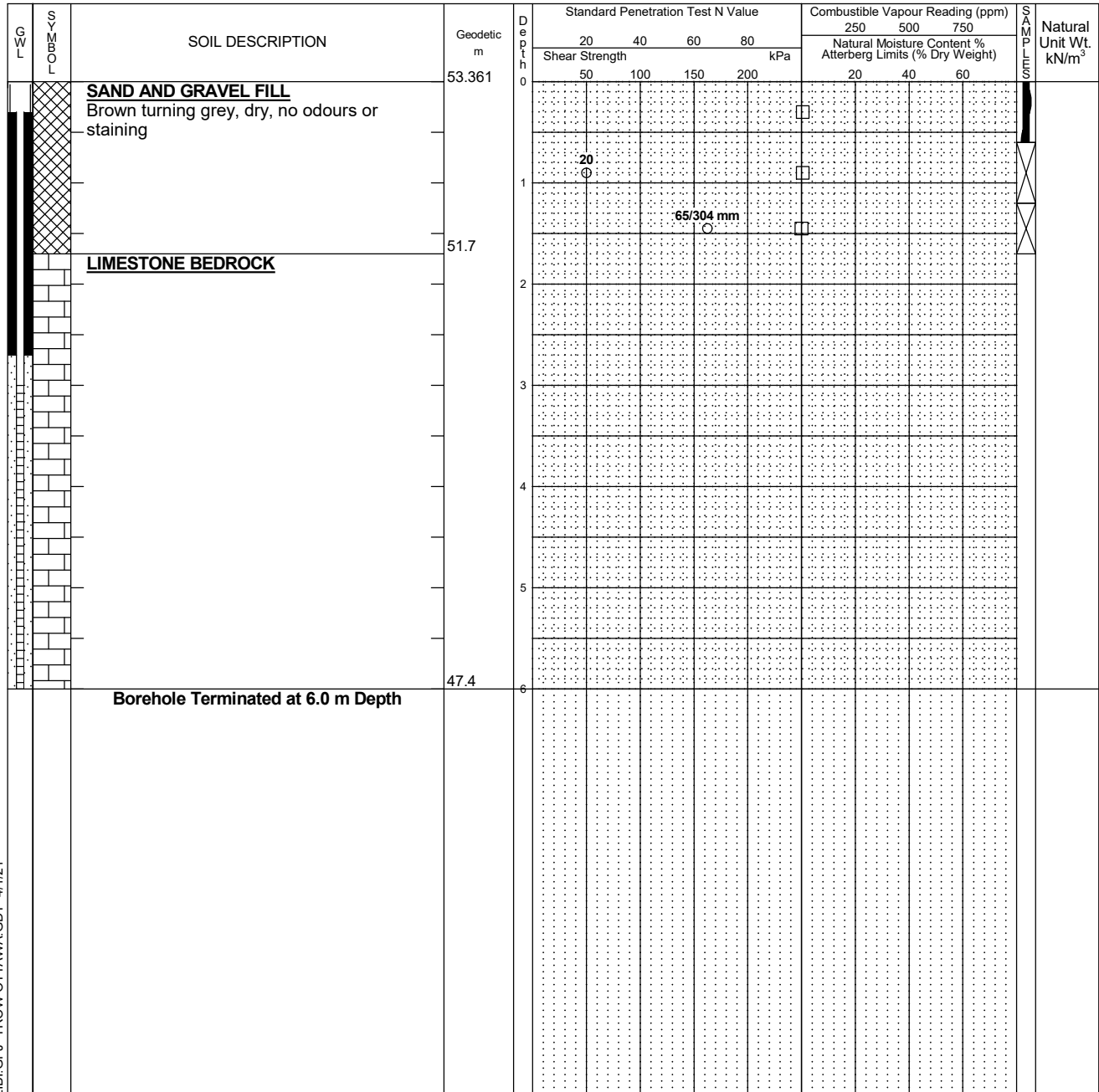
Undrained Triaxial at % Strain at Failure

Shelby Tube

Shear Strength by Penetrometer Test

Logged by: JE Checked by: PS

Shear Strength by Vane Test



LOG OF BOREHOLE BH LOGS - ZIBI.GPJ TROW/OTTAWA.GDT 4/1/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
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 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
March 23rd, 2021	2.3	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-04



Project No: OTT-00250193-P0
 Project: Phase II Environmental Site Assessment
 Location: 4 Booth Street, Ottawa, ON
 Date Drilled: March 15th and 16th, 2021
 Drill Type: CME Truck Mount
 Datum: Geodetic
 Logged by: JE Checked by: PS

Figure No. 4
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL DESCRIPTION	Geodetic m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				Natural Moisture Content %			
				20	40	60	80	250	500	750	
	SAND AND GRAVEL FILL Brown, dry, no odours or staining	53.712	0								
	CLAYEY SAND AND GRAVEL Grey, moist, some odour	53.1									
	SAND AND GRAVEL Some crushed bedrock, grey, dry, no odours or staining	52.8									
	LIMESTONE BEDROCK	52.6									
			1								
			2								
			3								
			4								
			5								
			6								
	Borehole Terminated at 6.1 m Depth	47.6									

LOG OF BOREHOLE BH LOGS - ZIBI.GPJ TROW OTTAWA GDT 4/1/21

- NOTES:
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 - A 37mm PVC monitoring well was installed upon completion.
 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
March 23rd, 2021	5.2	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-05



Project No: OTT-00250193-P0

Figure No. 4

Project: Phase II Environmental Site Assessment

Page. 1 of 1

Location: 4 Booth Street, Ottawa, ON

Date Drilled: March 17th, 2021

Split Spoon Sample

Combustible Vapour Reading

Drill Type: CME Truck Mount

Auger Sample

Natural Moisture Content

SPT (N) Value

Atterberg Limits

Datum: Geodetic

Dynamic Cone Test

Undrained Triaxial at

Shelby Tube

% Strain at Failure

Logged by: JE Checked by: PS

Shear Strength by Vane Test

Shear Strength by Penetrometer Test

G W L	S O B O L	SOIL DESCRIPTION	Geodetic m	D e p t h	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			S O I L T E M P E R A T U R E	Natural Unit Wt. kN/m ³	
					Shear Strength kPa				250	500	750			
					20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)					
50	100	150	200	20	40	60								
		SAND AND GRAVEL FILL Brown, dry, no odours or staining	53.414	0										
		SILTY SAND AND GRAVEL Brown, moist, no odours or staining	52.8											
		LIMESTONE BEDROCK	52.5	1										
				2										
				3										
				4										
				5										
			47.4	6										
		Borehole Terminated at 6.0 m Depth												

LOG OF BOREHOLE BH LOGS - ZIBI.GPJ TROW OTTAWA GDT 4/1/21

- NOTES:
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 - A 37mm PVC monitoring well was installed upon completion.
 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
March 23rd, 2021	2.8	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-01



Project No: OTT-00250193-P0

Figure No. 4

Project: Phase II Environmental Site Assessment

Page. 1 of 1

Location: 4 Booth Street, Ottawa, ON

Date Drilled: April 28th, 2021

Split Spoon Sample

Combustible Vapour Reading

Drill Type: CME Truck Mount

Auger Sample

Natural Moisture Content

SPT (N) Value

Atterberg Limits

Datum: Geodetic

Dynamic Cone Test

Undrained Triaxial at % Strain at Failure

Shelby Tube

Shear Strength by Penetrometer Test

Logged by: JE Checked by: PS

Shear Strength by Vane Test

GWL	SOIL LOG	SOIL DESCRIPTION	Geodetic m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³	
					Shear Strength kPa				250	500	750		
					20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		SAND AND GRAVEL FILL Brown, dry, no odours or staining	53.287	0									
		LIMESTONE AND SHALE BEDROCK	52.7	1									
				2									
				3									
				4									
				5									
				6									
		Borehole Terminated at 6.1 m Depth	47.2	6									

LOG OF BOREHOLE BH LOGS - BLOCK 206 POST REMEDIATION GPJ TROW OTTAWA.GDT 1/31/22

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - A 37mm PVC monitoring well was installed upon completion.
 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-02



Project No: OTT-00250193-P0

Figure No. 4

Project: Phase II Environmental Site Assessment

Page. 1 of 1

Location: 4 Booth Street, Ottawa, ON

Date Drilled: April 28th, 2021

Split Spoon Sample

Combustible Vapour Reading

Drill Type: CME Truck Mount

Auger Sample

Natural Moisture Content

SPT (N) Value

Atterberg Limits

Datum: Geodetic

Dynamic Cone Test

Undrained Triaxial at % Strain at Failure

Shelby Tube

Shear Strength by Penetrometer Test

Logged by: JE Checked by: PS

Shear Strength by Vane Test

GWL	SOIL LOG	SOIL DESCRIPTION	Geodetic m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³	
					Shear Strength kPa				250	500	750		
					20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		SAND AND GRAVEL FILL Brown, dry, no odours or staining	53.732	0									
		LIMESTONE AND SHALE BEDROCK	53.1	0									
				1									
				2									
				3									
				4									
				5									
				6									
		Borehole Terminated at 6.7 m Depth	47.0										

LOG OF BOREHOLE BH LOGS - BLOCK 206 POST REMEDIATION GPJ TROW OTTAWA.GDT 1/31/22

- NOTES:
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 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH/MW21-03



Project No: OTT-00250193-P0
 Project: Phase II Environmental Site Assessment
 Location: 4 Booth Street, Ottawa, ON
 Date Drilled: April 28th, 2021
 Drill Type: CME Truck Mount
 Datum: Geodetic
 Logged by: JE Checked by: PS

Figure No. 4
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL LOG	SOIL DESCRIPTION	Geodetic m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³	
					Shear Strength kPa				250	500	750		
					20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		SAND AND GRAVEL FILL Brown, dry, no odours or staining	53.477	0									
		LIMESTONE AND SHALE BEDROCK	52.9	1									
				2									
				3									
				4									
				5									
				6									
		Borehole Terminated at 6.1 m Depth	47.4										

LOG OF BOREHOLE BH LOGS - BLOCK 206 POST REMEDIATION GPJ TROW OTTAWA.GDT 1/31/22

- NOTES:
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 - Field work was supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00250193-P0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

EXP Services Inc.

*Windmill Dream Zibi Ontario Inc.
Phase Two Environmental Site Assessment
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0
April 20, 2022*

Appendix E: Remediation

E.1 Where any Action has been Taken to Reduce the Concentration of Contaminants on, in or under a Phase II Property

The Remediation Program was performed following requirements given under Ontario Regulation 153/04, as amended, (Regulation 153/04) and in accordance with generally accepted professional practices.

E.2 Remedial Actions

The remediation consisted of the excavation and removal of all overburden soils at 315 Miwàte Private. For the purposes of the remediation and environmental assessment program, the contaminants of potential concern (COPC) were based on the findings of the Phase One Environmental Site Assessment that was conducted for the RSC property. The COPC were VOC, PHC F1 to F4, PAH, PCB, and inorganic parameters.

In March 2019, the Phase Two property owner retained Tomlinson Development Corporation to install utilities (water, sewer, gas, hydro) for future development along Chaudière Private (formerly Perley Street). From March 5 to 25, 2019, EXP observed excavation activities and took soil samples for characterization of the utility trench which ran along the north boundary of the Phase Two property. Beneath the concrete sidewalk and asphalt roadway, sand and gravel fill material was present to a depth of approximately 0.6 metres below ground surface (m bgs). Bedrock was present at a depth of approximately 0.2 to 1.5 metres below ground surface (m bgs). Granular material, which was comprised of material that had particles larger than 2 mm, was present from a depth of 0.6 m bgs to bedrock. The total depth of the utility excavation was 2.4 m bgs. All excavated material was temporarily stockpiled on East Chaudière Island and was subsequently disposed of off-site in 2019. The utility trench was backfilled with material that was larger than 2 mm in diameter.

The 2021 remedial excavation program included excavating and stockpiling impacted soil for off-site disposal. The remedial excavation extended to the utility trench, from which all soil was removed in 2019, and extended horizontally beyond the property boundaries in all other directions and vertically to bedrock surface. With the exception of the soil at the northern property boundary, as described above, all soil was removed from the Phase Two property.

This remediation program commenced on March 29, 2021 and concluded on May 18, 2021. Excavation GTS was retained by the Phase Two property owner to complete the remedial excavation. Soil excavation and removal activities occurred over five days during this period, including March 29 to 31 and May 17 and 18. No soil was brought to the Phase Two property, as the excavation was backfilled with materials that were larger than 2 mm in diameter.

Approximately 2,431.87 tonnes of impacted soil and granular material were excavated and removed from the north part of the Phase Two property in 2019. This soil was temporarily stockpiled on East Chaudière Island and was disposed off-site in conjunction with remedial activities that occurred at 125 Zaida Eddy Private (RSC 228673). In conjunction with 2021 remedial activities, approximately 3,720.67 tonnes of impacted soil and 30.5 tonnes of impacted concrete were removed by excavation from the Phase Two property. All soil, concrete, and granular materials were disposed of as non-hazardous waste at the City of Ottawa Trail Road facility.

Over the course of the remediation program, no contaminants were created or introduced to the subject property.

No groundwater treatment was required for the remedial excavation program.

No dewatering of the excavation was required. Ground water was neither treated on site nor removed from the subject property during the remediation program.

Following completion of the remedial excavation, three boreholes were drilled within the boundaries of the subject property and monitoring wells were installed for the purpose of assessing post-remedial groundwater quality at the subject property.

The method of borehole advancement is described in Section 4.2 of the report. The monitoring and sampling of the post-remedial monitoring wells is discussed in section 4.6 and 4.7 of the report.

E.3 Free Flowing Product

No free-flowing liquid petroleum was observed during the investigation.

E.4 Confirmation Sampling and Analysis

All soil was removed from the Phase Two property, with the exception of the north wall of the utility trench beneath Chaudière Private. The excavation extended off-site along three property boundaries and the floor of the excavation consisted of limestone bedrock. Therefore, no confirmatory soil sampling was required in these locations. Confirmatory samples were collected from the north wall of the utilities trench excavated along the north boundary of the Phase Two property. Soil analytical results for the confirmatory samples are presented in Tables 4 to 6, and on Figures 19 to 24.

The results of laboratory analysis of confirmation ground water samples collected during two quarterly, post-remedial groundwater sampling events are provided in Tables 10 to 12 and on Figures 26 to 31 of the report. A discussion of the results is provided in Section 5.6 of the report. Construction details, elevations of the monitors, and results of water level measurements taken during the post-remedial sampling events are provided in Sections 4. And 4.6 of the report.

All confirmation samples were placed into sealed laboratory prepared glass bottles and vials, labelled, and transported to the laboratory stored in a cooler with ice at less than 10° C. All laboratory analyses were completed by Paracel Laboratories Ltd. (Paracel), a Standards Council of Canada (SCC) accredited laboratory. Paracel performed the work following formal written methods and procedures. Copies of the laboratory Certificates of Analysis are provided in Appendix G.

- The results of analyses for all confirmation ground water samples
- Delineation of the lateral and vertical extent of contaminants in ground water
- Sampling points, sample identification numbers, sampling depth intervals
- Concentrations of contaminants
- Stratigraphy from ground surface to the deepest aquifer or aquitard investigated

Post-remedial soil and ground water maximum concentration data for all parameters analyzed are provided in Tables 13 and 14.

E.5 Conclusions

Approximately 2,431.87 tonnes of impacted soil and granular material were excavated and removed from the north part of the Phase Two property in 2019. This soil was temporarily stockpiled on East Chaudière Island and was disposed off-site in conjunction with remedial activities that occurred at 125 Zaida Eddy Private (RSC 228673). In conjunction with 2021 remedial activities, approximately 3720.67 tonnes of impacted soil and 30.5 tonnes of impacted concrete were removed by excavation from the Phase Two property. All soil, concrete, and granular materials were disposed of as non-hazardous waste at the City of Ottawa Trail Road facility.

Confirmatory samples collected from the north wall of the utility trench beneath Chaudière Private were within the applicable Table 7 and Table 9 SCS for all parameters that were analyzed. No additional post-remedial soil sampling was required as all soil was removed from the RSC property. All imported fill consisted of granular material. All post-remedial groundwater samples were within the applicable Table 7 and Table 9 SCS for all parameters that were analyzed.

EXP Services Inc.

*Windmill Dream Zibi Ontario Inc.
Phase Two Environmental Site Assessment
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0
April 20, 2022*

Appendix F: Soil Excavated at or Brought to the Phase Two Property



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 7-Jun-19

EXP Project #: OTT-00250193-P0

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T103	AP52736	Triaxle	7:37	7:40	20.53	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T105	AP52740	Triaxle	7:43	7:47	23.32	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	Tomlinson	T101	AP852734	Triaxle	7:50	7:51	22.78	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	PMG	16-16	AL20947	Triaxle	8:00	8:15	22.63	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	Tomlinson	NA	D289982	Triaxle	8:50	9:08	25.98	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	T105	AP52740	Triaxle	9:37	9:40	20.71	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T101	AP852734	Triaxle	9:48	9:51	20.47	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	PMG	16-16	AL20947	Triaxle	9:52	9:55	22.57	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	Tomlinson	T103	AP52736	Triaxle	9:58	10:03	23.86	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	Tomlinson	T105	AP52740	Triaxle	11:04	11:06	22.95	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Tomlinson	T101	AP852734	Triaxle	1:06	11:09	26.37	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	NA	D289982	Triaxle	11:13	11:17	21.84	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	PMG	16-16	AL20947	Triaxle	11:11	11:20	20.82	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	Tomlinson	T103	AP52736	Triaxle	11:26	11:30	25.89	Stockpiled on Block 211, removed in conjunction with RSC #228673
15	Tomlinson	T105	AP52740	Triaxle	12:44	12:54	21.58	Stockpiled on Block 211, removed in conjunction with RSC #228673
16	Tomlinson	T101	AP852734	Triaxle	1:00	1:02	18.98	Stockpiled on Block 211, removed in conjunction with RSC #228673
17	Tomlinson	NA	D289982	Triaxle	1:02	1:04	19.75	Stockpiled on Block 211, removed in conjunction with RSC #228673
18	PMG	16-16	AL20947	Triaxle	1:04	1:10	20.35	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 10-Jun-19

EXP Project #: OTT-00250193-P0

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T103	AP52736	Triaxle	7:05	7:10	19.18	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T101	AP852734	Triaxle	7:25	7:30	19.61	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	PMG	16-16	AL20947	Triaxle	7:30	7:33	19.04	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	Tomlinson	T105	AP52740	Triaxle	7:37	7:45	20.94	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	Tomlinson	NA	D289982	Triaxle	8:00	8:10	17.9	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	T103	AP52736	Triaxle	9:05	9:14	18.93	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T101	AP852734	Triaxle	9:19	9:20	19.13	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	PMG	16-16	AL20947	Triaxle	9:25	9:30	20.45	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	Tomlinson	T105	AP52740	Triaxle	9:30	9:35	18.87	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	Tomlinson	NA	D289982	Triaxle	10:13	10:16	19.47	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Tomlinson	T103	AP52736	Triaxle	11:03	11:06	19.9	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	T101	AP852734	Triaxle	11:15	11:18	16.97	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	PMG	16-16	AL20947	Triaxle	11:25	11:30	18.32	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	Tomlinson	T105	AP52740	Triaxle	11:46	11:49	16.22	Stockpiled on Block 211, removed in conjunction with RSC #228673
15	Tomlinson	NA	D289982	Triaxle	12:41	12:45	17.74	Stockpiled on Block 211, removed in conjunction with RSC #228673
16	Tomlinson	T103	AP52736	Triaxle	1:10	1:13	16.68	Stockpiled on Block 211, removed in conjunction with RSC #228673
17	Tomlinson	T101	AP852734	Triaxle	1:19	1:22	18.66	Stockpiled on Block 211, removed in conjunction with RSC #228673
18	PMG	16-16	AL20947	Triaxle	1:30	1:34	18.07	Stockpiled on Block 211, removed in conjunction with RSC #228673
19	Tomlinson	T105	AP52740	Triaxle	2:11	2:14	19.2	Stockpiled on Block 211, removed in conjunction with RSC #228673
20	Tomlinson	NA	D289982	Triaxle	3:10	3:15	24.71	Stockpiled on Block 211, removed in conjunction with RSC #228673
21	Tomlinson	T103	AP52736	Triaxle	3:22	3:26	26.5	Stockpiled on Block 211, removed in conjunction with RSC #228673
22	Tomlinson	T101	AP852734	Triaxle	3:35	3:40	26.47	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 11-Jun-19

EXP Project #: OTT-00250193-P0

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T103	AP52736	Triaxle	7:00	7:07	20.72	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T105	AP52740	Triaxle	7:08	7:12	17.65	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	PMG	16-16	AL20947	Triaxle	7:10	7:20	19.53	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	Tomlinson	T101	AP85273	Triaxle	7:20	7:23	17.23	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	Tomlinson	NA	D289982	Triaxle	7:41	7:45	18.8	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	T103	AP52736	Triaxle	8:42	8:42	19.89	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T105	AP52740	Triaxle	8:55	8:58	19.47	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	PMG	16-16	AL20947	Triaxle	8:59	9:02	18.55	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	Tomlinson	T101	AP85273	Triaxle	9:23	9:26	17.71	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	Tomlinson	NA	D289982	Triaxle	9:49	9:56	18.58	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Tomlinson	T103	AP52736	Triaxle	10:02	10:05	18.57	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	T105	AP52740	Triaxle	10:15	10:20	18.18	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	PMG	16-16	AL20947	Triaxle	10:21	10:25	18.35	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	Tomlinson	T101	AP85273	Triaxle	11:25	11:00	19.23	Stockpiled on Block 211, removed in conjunction with RSC #228673
15	PMG	16-16	AL20947	Triaxle	11:30	11:33	20.95	Stockpiled on Block 211, removed in conjunction with RSC #228673
16	Tomlinson	T101	AP85273	Triaxle	11:34	11:38	19.12	Stockpiled on Block 211, removed in conjunction with RSC #228673
17	Tomlinson	NA	D289982	Triaxle	11:45	11:48	18.69	Stockpiled on Block 211, removed in conjunction with RSC #228673
18	Tomlinson	T103	AP52736	Triaxle	12:48	12:52	19.81	Stockpiled on Block 211, removed in conjunction with RSC #228673
19	Tomlinson	T105	AP52740	Triaxle	1:00	1:06	23.77	Stockpiled on Block 211, removed in conjunction with RSC #228673
20	PMG	16-16	AL20947	Triaxle	1:07	1:08	18.31	Stockpiled on Block 211, removed in conjunction with RSC #228673
21	Tomlinson	T101	AP85273	Triaxle	1:09	1:11	17.99	Stockpiled on Block 211, removed in conjunction with RSC #228673
22	PMG	16-16	AL20947	Triaxle	1:16	1:17	17.85	Stockpiled on Block 211, removed in conjunction with RSC #228673
23	Tomlinson	T101	AP85273	Triaxle	2:18	2:20	19.42	Stockpiled on Block 211, removed in conjunction with RSC #228673
24	PMG	16-16	AL20947	Triaxle	2:22	2:25	18.25	Stockpiled on Block 211, removed in conjunction with RSC #228673
25	Tomlinson	T101	AP85273	Triaxle	2:32	2:40	17.65	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 12-Jun-19

EXP Project #: OTT-00250193-P0

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T103	AP52736	Triaxle	7:10	7:23	17.59	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T105	AP52740	Triaxle	7:23	7:27	19.74	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	PMG	16-16	AL20947	Triaxle	7:29	7:33	18.89	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	Tomlinson	T101	AP85273	Triaxle	7:43	7:48	16.92	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	Tomlinson	NA	D289982	Triaxle	8:59	9:04	18.95	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	T103	AP52736	Triaxle	9:06	9:10	18	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T105	AP52740	Triaxle	9:08	9:14	16.73	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	PMG	16-16	AL20947	Triaxle	9:26	9:30	17.86	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	Tomlinson	T101	AP85273	Triaxle	9:08	10:21	19.36	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	Tomlinson	NA	D289982	Triaxle	9:26	10:31	18.6	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Tomlinson	T103	AP52736	Triaxle	10:16	10:35	18.19	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	T105	AP52740	Triaxle	10:26	11:02	20.34	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	PMG	16-16	AL20947	Triaxle	10:31	11:41	20.04	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	Tomlinson	T101	AP85273	Triaxle	10:56	11:49	18.2	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 13-Jun-19

EXP Project #: OTT-00250193-PO

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T105	AP52740	Triaxle	7:10	7:15	17.37	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T103	AP52736	Triaxle	7:15	7:17	17.28	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	PMG	16-16	AL20947	Triaxle	7:17	7:21	16.46	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	Tomlinson	T101	AP85273	Triaxle	7:21	7:28	15.84	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	Benoit	90	AK56550	Triaxle	7:21	7:25	17.7	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	NA	D289982	Triaxle	7:46	7:50	15.33	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T105	AP52740	Triaxle	8:49	8:53	18.41	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	Tomlinson	T103	AP52736	Triaxle	8:51	8:56	15.99	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	PMG	16-16	AL20947	Triaxle	8:57	9:01	17.84	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	Tomlinson	T101	AP85273	Triaxle	9:03	9:07	18.19	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Benoit	90	AK56550	Triaxle	9:07	9:15	20.66	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	NA	D289982	Triaxle	9:25	9:26	22.57	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	Tomlinson	T105	AP52740	Triaxle	10:20	10:24	20.35	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	Tomlinson	T103	AP52736	Triaxle	10:22	10:27	20.32	Stockpiled on Block 211, removed in conjunction with RSC #228673
15	PMG	16-16	AL20947	Triaxle	10:26	10:31	19.55	Stockpiled on Block 211, removed in conjunction with RSC #228673
16	Tomlinson	T101	AP85273	Triaxle	10:31	10:34	19.76	Stockpiled on Block 211, removed in conjunction with RSC #228673
17	Benoit	90	AK56550	Triaxle	10:36	10:40	19.87	Stockpiled on Block 211, removed in conjunction with RSC #228673
18	Tomlinson	NA	D289982	Triaxle	11:13	11:17	18.71	Stockpiled on Block 211, removed in conjunction with RSC #228673
19	Tomlinson	T105	AP52740	Triaxle	11:37	11:41	19.64	Stockpiled on Block 211, removed in conjunction with RSC #228673
20	Tomlinson	T103	AP52736	Triaxle	11:41	11:43	19.63	Stockpiled on Block 211, removed in conjunction with RSC #228673
21	PMG	16-16	AL20947	Triaxle	11:55	11:58	18.65	Stockpiled on Block 211, removed in conjunction with RSC #228673
22	Tomlinson	T101	AP85273	Triaxle	11:57	12:02	20.06	Stockpiled on Block 211, removed in conjunction with RSC #228673
23	Benoit	90	AK56550	Triaxle	12:02	12:05	18.47	Stockpiled on Block 211, removed in conjunction with RSC #228673
24	Tomlinson	NA	D289982	Triaxle	12:45	12:50	20.09	Stockpiled on Block 211, removed in conjunction with RSC #228673
25	Tomlinson	T105	AP52740	Triaxle	12:50	12:55	17.81	Stockpiled on Block 211, removed in conjunction with RSC #228673
26	Tomlinson	T103	AP52736	Triaxle	1:06	1:10	18.41	Stockpiled on Block 211, removed in conjunction with RSC #228673
27	PMG	16-16	AL20947	Triaxle	1:14	1:17	20.39	Stockpiled on Block 211, removed in conjunction with RSC #228673

28	Tomlinson	T101	AP852734	Triaxle	1:19	1:23	20.21	Stockpiled on Block 211, removed in conjunction with RSC #228673
29	Benoit	90	AK56550	Triaxle	1:34	1:48	21.89	Stockpiled on Block 211, removed in conjunction with RSC #228673
30	Tomlinson	NA	D289982	Triaxle	2:08	2:12	23.77	Stockpiled on Block 211, removed in conjunction with RSC #228673
31	Tomlinson	T105	AP52740	Triaxle	2:23	2:27	20.05	Stockpiled on Block 211, removed in conjunction with RSC #228673
32	Tomlinson	T103	AP52736	Triaxle	2:27	2:31	19.54	Stockpiled on Block 211, removed in conjunction with RSC #228673
33	PMG	16-16	AL20947	Triaxle	2:39	2:42	17.48	Stockpiled on Block 211, removed in conjunction with RSC #228673
34	Tomlinson	T101	AP852734	Triaxle	2:43	2:47	18.02	Stockpiled on Block 211, removed in conjunction with RSC #228673
35	Benoit	90	AK56550	Triaxle	3:04	3:08	19.36	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 14-Jun-19

EXP Project #: OTT-00250193-PO

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T101	AP852734	Triaxle	7:02	7:05	16.73	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T228	AT93768	Triaxle	7:05	7:07	15.29	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	Tomlinson	T105	AP52740	Triaxle	7:05	7:10	19.42	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	Tomlinson	T103	AP52736	Triaxle	7:07	7:15	19.13	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	PMG	16-16	AL20947	Triaxle	7:12	7:20	16.79	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	T101	AP852734	Triaxle	7:22	7:26	19.94	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T228	AT93768	Triaxle	7:34	7:36	19.47	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	Tomlinson	T105	AP52740	Triaxle	8:28	8:30	19.08	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	Tomlinson	T103	AP52736	Triaxle	8:29	8:33	19.84	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	PMG	16-16	AL20947	Triaxle	8:35	8:38	20.65	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Tomlinson	T103	AP52736	Triaxle	8:37	8:42	18.31	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	T105	AP52740	Triaxle	8:47	8:50	32.06	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	PMG	16-16	AL20947	Triaxle	9:02	9:06	20.52	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	Tomlinson	T101	AP852734	Triaxle	9:08	9:13	23.13	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Perley Street

Date: 17-Jun-19

EXP Project #: OTT-00250193-P0

Contractor: Tomlinson

EXP Field Supervisor: Mark Devlin

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Tomlinson	T103	AP52736	Triaxle	7:00	7:07	19.8	Stockpiled on Block 211, removed in conjunction with RSC #228673
2	Tomlinson	T101	AP852734	Triaxle	7:08	7:12	19.68	Stockpiled on Block 211, removed in conjunction with RSC #228673
3	PMG	16-16	AL20947	Triaxle	7:10	7:20	21.54	Stockpiled on Block 211, removed in conjunction with RSC #228673
4	Tomlinson	T105	AP52740	Triaxle	7:20	7:23	21.93	Stockpiled on Block 211, removed in conjunction with RSC #228673
5	Benoit	90	AK56550	Triaxle	7:41	7:45	22.78	Stockpiled on Block 211, removed in conjunction with RSC #228673
6	Tomlinson	T103	AP52736	Triaxle	8:42	8:42	23.16	Stockpiled on Block 211, removed in conjunction with RSC #228673
7	Tomlinson	T105	AP52740	Triaxle	8:55	8:58	19.98	Stockpiled on Block 211, removed in conjunction with RSC #228673
8	PMG	16-16	AL20947	Triaxle	8:59	9:02	19.76	Stockpiled on Block 211, removed in conjunction with RSC #228673
9	Tomlinson	T101	AP852734	Triaxle	9:23	9:26	21.12	Stockpiled on Block 211, removed in conjunction with RSC #228673
10	Tomlinson	NA	D289982	Triaxle	9:49	9:56	23.54	Stockpiled on Block 211, removed in conjunction with RSC #228673
11	Tomlinson	T103	AP52736	Triaxle	10:02	10:05	22.98	Stockpiled on Block 211, removed in conjunction with RSC #228673
12	Tomlinson	T103	AP52736	Triaxle	10:15	10:20	19.27	Stockpiled on Block 211, removed in conjunction with RSC #228673
13	Tomlinson	T101	AP852734	Triaxle	10:21	10:25	20.86	Stockpiled on Block 211, removed in conjunction with RSC #228673
14	PMG	16-16	AL20947	Triaxle	11:25	11:00	21.1	Stockpiled on Block 211, removed in conjunction with RSC #228673
15	Tomlinson	T105	AP52740	Triaxle	11:30	11:33	21.7	Stockpiled on Block 211, removed in conjunction with RSC #228673



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 29-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Jeremy Eckert

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Gauvreau	20-02	L848044	Triaxle	7:00	7:07	20	
2	Gauvreau	19-33	L683060	Triaxle	7:00	7:13	18.14	
3	Gauvreau	14-17	L711973	Triaxle	7:00	7:20	21.77	
4	Gauvreau	19-11	L619965	Triaxle	7:00	7:25	19.46	
5	Gauvreau	20-04	L808876	Semi	7:00	7:35	30.48	
6	Gauvreau	20-04	L711950	Triaxle	7:15	7:40	21.03	
7	Gauvreau	19-23	L712145	Semi	7:40	7:45	20.18	
8	Gauvreau	20-02	L848044	Triaxle	8:15	8:20	20.39	
9	Gauvreau	19-33	L683060	Triaxle	8:27	8:30	22.92	
10	Gauvreau	14-17	L711973	Triaxle	8:30	8:35	21.6	
11	Gauvreau	19-11	L619965	Triaxle	8:33	8:40	21.78	
12	Gauvreau	20-04	L808876	Semi	8:45	8:50	26.9	
13	Gauvreau	21-16	L771658	Triaxle	8:50	8:56	22.89	
14	Gauvreau	19-23	L712145	Semi	8:59	9:10	23.05	
15	Gauvreau	20-02	L848044	Triaxle	9:25	9:30	22.76	
16	Gauvreau	19.33	L683060	Triaxle	9:33	9:37	22.36	
17	Gauvreau	14-17	L711973	Triaxle	9:39	9:42	22.3	
18	Gauvreau	19-11	L619965	Triaxle	9:45	9:50	22.66	
19	Gauvreau	12-28	L711950	Triaxle	9:47	9:53	20.5	
20	Gauvreau	20-04	L808876	Semi	10:00	10:07	27.31	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 29-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Jeremy Eckert

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
21	Gauvreau	19-23	L712145	Semi	10:21	10:30	24.27	
22	Gauvreau	20-02	L848044	Triaxle	10:35	10:40	21.54	
23	Gauvreau	21-16	L771658	Triaxle	10:37	10:42	17.82	
24	Gauvreau	19-33	L683060	Triaxle	10:40	10:45	18.9	
25	Gauvreau	14-17	L711973	Triaxle	10:49	10:54	25.54	
26	Gauvreau	19-11	L619965	Triaxle	10:56	11:02	20.7	
27	Gauvreau	19-23	L712145	Semi	11:38	11:45	29.96	
28	Gauvreau	19-31	L711981	Triaxle	11:45	11:48	18.73	
29	Gauvreau	20-02	L848044	Triaxle	11:45	11:51	17.83	
30	Gauvreau	21-16	L771658	Triaxle	11:48	11:54	23.47	
31	Gauvreau	19-33	L683060	Triaxle	11:51	11:58	20.16	
32	Gauvreau	14-17	L711973	Triaxle	11:58	12:01	21.6	
33	Gauvreau	12-28	L711950	Triaxle	12:04	12:36	18.31	
34	Gauvreau	19-11	L619965	Triaxle	12:12	12:38	18.81	
35	Gauvreau	20-04	L808876	Semi	12:57	13:03	26.55	
36	Gauvreau	19-23	L712145	Semi	12:59	13:08	21.9	
37	Gauvreau	19-31	L711981	Triaxle	13:06	13:12	15.77	
38	Gauvreau	20-02	L848044	Triaxle	13:10	13:14	19.13	
39	Gauvreau	21-16	L771658	Triaxle	13:10	13:17	18.25	
40	Gauvreau	19-33	L683060	Triaxle	13:14	13:20	17.22	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 29-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Jeremy Eckert

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
41	Gauvreau	14-17	L711973	Triaxle	13:15	13:24	18.42	
42	Gauvreau	12-28	L711950	Triaxle	13:44	13:48	19.35	
43	Gauvreau	19-11	L619965	Triaxle	13:45	13:53	13.17	
44	Gauvreau	20-04	L808876	Semi	14:25	14:28	24.5	
45	Gauvreau	19-23	L712145	Semi	14:30	14:35	25.8	
46	Gauvreau	19-31	L711981	Triaxle	14:30	14:39	17.86	
47	Gauvreau	20-02	L848044	Triaxle	14:35	14:40	18.25	
48	Gauvreau	21-16	L771658	Triaxle	14:38	14:44	21.72	
49	Gauvreau	14-17	L711973	Triaxle	14:38	14:48	18.54	
50	Gauvreau	19-33	L683060	Triaxle	14:41	14:52	22.93	
51	Gauvreau	12-28	L711950	Triaxle	14:50	14:55	18.56	
52	Gauvreau	19-11	L619965	Triaxle	14:56	14:59	19.67	
53	Gauvreau	20-04	L808864	Semi	15:40	15:43	22.76	
54	Gauvreau	19-23	L712145	Semi	15:45	15:50	24.69	
55	Gauvreau	19-31	L711981	Triaxle	15:52	15:54	17.02	
56	Gauvreau	20-02	L848044	Triaxle	15:53	15:57	19.86	
57	Gauvreau	21-16	L771658	Triaxle	15:55	16:01	18.98	
58	Gauvreau	19-33	L683060	Triaxle	15:57	16:03	18.52	
59	Gauvreau	12-28	L711950	Triaxle	15:58	16:07	17.39	
60	Gauvreau	19-11	L619965	Triaxle	16:04	16:10	18.23	
61	Gauvreau	14-17	L711973	Triaxle	16:12	16:15	22.08	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 30-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Philip Oliveira

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Gauvreau	19-11	L619965	Triaxle	7:00	7:02	17.26	
2	Gauvreau	19-33	L683060	Triaxle	7:02	7:06	17.62	
3	Gauvreau	20-02	L848044	Triaxle	7:06	7:09	18.68	
4	Gauvreau	14-17	L711973	Triaxle	7:09	7:11	18.09	
5	Gauvreau	20-04	L808876	Semi	7:15	7:19	22.12	
6	Gauvreau	19-23	L712145	Semi	7:21	7:25	22.85	
7	Gauvreau	20-05	L848045	Triaxle	7:56	7:58	16.94	
8	Gauvreau	19-31	L711981	Triaxle	8:17	8:20	19.41	
9	Gauvreau	19-33	L683060	Triaxle	8:21	8:23	21.55	
10	Gauvreau	19-11	L619965	Triaxle	8:28	8:30	17.97	
11	Gauvreau	14-17	L711973	Triaxle	8:31	8:33	19.1	
12	Gauvreau	20-02	L848044	Triaxle	8:33	8:36	19.67	
13	Gauvreau	20-04	L808876	Semi	8:37	8:41	24.48	
14	Gauvreau	19-23	L712145	Semi	8:43	8:48	22.04	
15	Gauvreau	20-05	L848045	Triaxle	9:15	9:18	21.21	
16	Gauvreau	19-31	L711981	Triaxle	9:26	9:29	20.16	
17	Gauvreau	19-33	L683060	Triaxle	9:30	9:34	20.84	
18	Gauvreau	19-11	L619965	Triaxle	9:38	9:40	16.32	
19	Gauvreau	14-17	L711973	Triaxle	9:40	9:43	18.23	
20	Gauvreau	20-02	L848044	Triaxle	9:43	9:48	18.75	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 30-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Philip Oliveira

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
21	Gauvreau	20-04	L808876	Semi	9:56	10:00	26.13	
22	Gauvreau	19-23	L712145	Semi	10:13	10:17	24.04	
23	Gauvreau	20-05	L848045	Triaxle	10:29	10:32	16.51	
24	Gauvreau	19-31	L711981	Triaxle	10:34	10:37	17.23	
25	Gauvreau	19-33	L683060	Triaxle	10:38	10:41	20.92	
26	Gauvreau	19-11	L619965	Triaxle	10:52	10:56	17.5	
27	Gauvreau	14-17	L711973	Triaxle	10:57	11:02	15.73	
28	Gauvreau	20-02	L848044	Triaxle	11:03	11:07	20.29	
29	Gauvreau	20-04	L808876	Semi	11:14	11:19	25.9	
30	Gauvreau	19-23	L712145	Semi	11:39	11:43	28.11	
31	Gauvreau	19-31	L711981	Triaxle	11:46	11:49	15.8	
32	Gauvreau	20-05	L848045	Triaxle	11:50	11:52	18.43	
33	Gauvreau	19-33	L683060	Triaxle	11:53	11:57	19.73	
34	Gauvreau	19-11	L619965	Triaxle	12:32	12:36	19.39	
35	Gauvreau	14-17	L711973	Triaxle	12:36	12:39	17.8	
36	Gauvreau	20-02	L848044	Triaxle	12:39	12:44	18.78	
37	Gauvreau	20-04	L808876	Semi	12:47	12:54	22.03	
38	Gauvreau	19-33	L683060	Triaxle	12:57	13:07	17.52	
39	Gauvreau	19-31	L711981	Triaxle	13:09	13:17	18.24	
40	Gauvreau	19-23	L712145	Semi	13:20	13:25	17.18	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 30-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Philip Oliveira

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
41	Gauvreau	20-05	L848045	Triaxle	13:27	13:31	15.22	
42	Gauvreau	19-11	L619965	Triaxle	13:48	13:51	13.25	
43	Gauvreau	14-17	L711973	Triaxle	13:53	13:55	14.93	
44	Gauvreau	20-02	L848044	Triaxle	13:55	14:00	18.54	
45	Gauvreau	20-04	L808876	Semi	14:12	14:17	22.03	
46	Gauvreau	19-33	L683060	Triaxle	14:18	14:22	17.95	
47	Gauvreau	19-31	L711981	Triaxle	14:40	14:44	17.19	
48	Gauvreau	19-23	L712145	Semi	14:51	14:57	21.39	
49	Gauvreau	20-05	L848045	Triaxle	14:57	15:00	19.41	
50	Gauvreau	14-17	L711973	Triaxle	15:01	15:05	17.06	
51	Gauvreau	19-11	L619965	Triaxle	15:07	15:11	18.14	
52	Gauvreau	20-02	L848044	Triaxle	15:13	15:15	19.9	
53	Gauvreau	19-33	L683060	Triaxle	15:28	15:31	19.75	
54	Gauvreau	20-04	L808876	Semi	15:33	15:37	20.41	
55	Gauvreau	19-31	L711981	Triaxle	16:00	16:04	14.08	
56	Gauvreau	14-17	L711973	Triaxle	16:25	16:28	14.72	
57	Gauvreau	19-11	L619965	Triaxle	16:28	16:32	14.65	
58	Gauvreau	20-05	L848045	Triaxle	16:34	16:38	14.71	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 31-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Philip Oliveira

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Gauvreau	20-02	L848044	Triaxle	7:17	7:22	18.92	
2	Gauvreau	19-23	L712145	Semi	7:23	7:28	21.38	
3	Gauvreau	14-17	L711973	Triaxle	7:42	7:45	17.17	
4	Gauvreau	19-33	L683060	Triaxle	7:46	7:51	19.34	
5	Gauvreau	19-11	L619965	Triaxle	7:52	7:57	17	
6	Gauvreau	20-02	L848044	Triaxle	8:41	8:55	19.45	
7	Gauvreau	19-23	L712145	Semi	8:55	9:08	24.47	
8	Gauvreau	14-17	L711973	Triaxle	9:10	9:25	20.06	
9	Gauvreau	19-33	L683060	Triaxle	9:26	9:34	20.38	
10	Gauvreau	19-31	L711981	Triaxle	9:36	9:55	18.99	
11	Gauvreau	21-16	L771658	Triaxle	9:56	10:04	19.33	
12	Gauvreau	19-11	L619965	Triaxle	11:12	11:18	18.52	
13	Gauvreau	20-04	L808876	Semi	11:18	11:24	26.88	
14	Gauvreau	20-02	L848044	Triaxle	11:25	11:34	20.49	
15	Gauvreau	19-31	L711981	Triaxle	11:35	11:45	23.32	
16	Gauvreau	19-11	L619965	Triaxle	12:30	12:39	21.14	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 31-Mar-21

EXP Project #: OTT-00250193-P0

Contractor: Excavation GTS

EXP Field Supervisor: Philip Oliveira

Soil Disposal Location: Demolition Piche, Gatineau

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	Gauvreau	21-16	L771658	Triaxle	8:10	8:19	15.5	Concrete
2	Gauvreau	20-04	L808876	Semi	8:20	8:32	15	Concrete



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 17-May-21

EXP Project #: OTT-00250193-P0

Contractor: Akman

EXP Field Supervisor: Jeremy Eckert

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	McCune	17-03	BA72564	Triaxle	7:15	7:20	24	
2	Swaby	767-1	BC88525	Triaxle	7:20	7:25	25.51	
3	Akman	14	BE35699	Triaxle	7:30	7:32	23.31	
4	Lesway	710	BD27125	Triaxle	9:20	9:25	21.79	
5	Lesway	710	BD27125	Triaxle	11:35	11:45	22.13	
6	Akman	14	BE35699	Triaxle	11:40	11:51	20.96	
7	Swaby	767-1	BC88525	Triaxle	11:53	12:00	22.48	
8	McCune	17-03	BA72564	Triaxle	12:35	12:41	22.73	
9	Swaby	767-1	BC88525	Triaxle	13:24	13:30	23.09	
10	Akman	14	BE35699	Triaxle	13:33	13:39	25.4	
11	McCune	17-03	BA72564	Triaxle	14:07	14:13	23.12	
12	Swaby	767-1	BC88525	Triaxle	14:54	15:00	24.21	
13	Akman	14	BE35699	Triaxle	15:00	15:07	24.98	
14	McCune	17-03	BA72564	Triaxle	15:38	15:45	24.19	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 18-May-21

EXP Project #: OTT-00250193-P0

Contractor: Akman

EXP Field Supervisor: Jeremy Eckert

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	McCune	17-03	BA72564	Triaxle	7:05	7:07	22.65	
2	Swaby	767-1	BC88525	Triaxle	7:05	7:10	22.26	
3	Pavetech	551	BE21569	Triaxle	7:05	7:13	21.64	
4	Akman	14	BE35699	Triaxle	7:28	7:32	23.46	
5	Lesway	710	BD72125	Triaxle	7:32	7:34	22.44	
6	McCune	17-03	BA72564	Triaxle	8:30	8:35	24.31	
7	Pavetech	551	BE21569	Triaxle	8:38	8:41	27.28	
8	Swaby	767-1	BC88525	Triaxle	8:45	8:50	25.11	
9	Akman	14	BE35699	Triaxle	8:50	8:55	23.64	
10	Lesway	710	BD72125	Triaxle	9:03	9:07	21.99	
11	Pavetech	551	BE21569	Triaxle	10:05	10:10	25.7	
12	Swaby	767-1	BC88525	Triaxle	10:15	10:20	25.11	
13	Lesway	710	BD72125	Triaxle	10:33	10:40	18.92	
14	Akman	14	BE35699	Triaxle	10:38	10:50	24.43	
15	Pavetech	551	BE21569	Triaxle	11:29	11:35	28.99	
16	Swaby	767-1	BC88525	Triaxle	11:39	11:45	23.77	
17	Akman	14	BE35699	Triaxle	11:56	12:10	24.45	
18	Pavetech	551	BE21569	Triaxle	13:00	13:10	24.92	
19	Lesway	710	BD72125	Triaxle	13:09	13:15	24.7	
20	Akman	14	BE35699	Triaxle	13:45	14:00	24.73	
21	Swaby	767-1	BC88525	Triaxle	13:45	14:15	22.14	
22	Pavetech	551	BE21569	Triaxle	14:35	14:45	26.88	
23	Swaby	767-1	BC88525	Triaxle	15:18	15:25	23.19	
24	Swaby	767-1	BC88525	Triaxle	16:35	16:40	19.59	



Table E1 - SOIL DISPOSAL TRACKING SHEET (SDTS)

Site Location: Zibi Block 206

Date: 19-May-21

EXP Project #: OTT-00250193-P0

Contractor: Akman

EXP Field Supervisor: Philip Oliveira

Soil Disposal Location: Trail Road Landfill

Load Number	Soil Hauler Information				Arrival Time	Departure Time	Quantity of Soil or Material Disposed (tonnes)	Notes
	Company	Truck Vehicle ID	License Plate	Truck Type				
1	McCune	17-03	BA72564	Triaxle	7:14	7:18	22.26	
2	Akman	14	BE35699	Triaxle	7:26	7:29	24.28	
3	Swaby	767	AY86401	Triaxle	8:40	8:43	22.97	
4	McCune	17-03	BA72564	Triaxle	8:52	8:56	20.72	
5	Akman	14	BE35699	Triaxle	9:00	9:06	16.28	

EXP Services Inc.

*Windmill Dream Zibi Ontario Inc.
Phase Two Environmental Site Assessment
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0
April 20, 2022*

Appendix G: Analytical Summary Tables

Table 1 - Pre-Remediation Analytical Results in Soil - PHC and VOC
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	BH/MW21-01-01	BH/MW21-02-01	BH/MW21-03-01	D206 (Duplicate BH/MW21-03-01)	BH/MW21-03-02	BH/MW21-04-01	BH/MW21-04-02	BH/MW21-05-01
				15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021
Sampling Date				0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.6 to 1.2	0.0 to 0.6	0.6 to 0.8	0.0 to 0.6
Sample Depth (mbgs)				0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.6 to 1.2	0.0 to 0.6	0.6 to 0.8	0.0 to 0.6
Parcel ID		Bold	Orange	2112349-01	2112349-02	2112349-03	2112349-04	2112349-05	2112349-06	2112349-07	2112654-01
Analysis Date				18-Mar-21	18-Mar-21	18-Mar-21	18-Mar-21	18-Mar-21	18-Mar-21	18-Mar-21	18-Mar-21
Parcel Certificate of Analysis				2112349	2112349	2112349	2112349	2112349	2112349	2112349	2112349
Volatiles Organic Compounds											
Acetone	ug/g dry	0.5	16	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Benzene	ug/g dry	0.02	0.21	0.78	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Bromodichloromethane	ug/g dry	0.05	13	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Bromoform	ug/g dry	0.05	0.27	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Bromomethane	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Carbon Tetrachloride	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Chlorobenzene	ug/g dry	0.05	2.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Chloroform	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Dibromochloromethane	ug/g dry	0.05	9.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Dichlorodifluoromethane	ug/g dry	0.05	16	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,2-Dichlorobenzene	ug/g dry	0.05	3.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,3-Dichlorobenzene	ug/g dry	0.05	4.8	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,4-Dichlorobenzene	ug/g dry	0.05	0.083	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1-Dichloroethane	ug/g dry	0.05	3.5	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,2-Dichloroethane	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1-Dichloroethylene	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
cis-1,2-Dichloroethylene	ug/g dry	0.05	3.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
trans-1,2-Dichloroethylene	ug/g dry	0.05	0.084	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,2-Dichloropropane	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
cis-1,3-Dichloropropylene	ug/g dry	NV	NV	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
trans-1,3-Dichloropropylene	ug/g dry	NV	NV	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,3-Dichloropropene, total	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Ethylbenzene	ug/g dry	0.05	2	0.11	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Ethylene dibromide (dibromoethane, 1,2-)	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Hexane	ug/g dry	0.05	2.8	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.5	16	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methyl Isobutyl Ketone	ug/g dry	0.5	1.7	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	ug/g dry	0.05	0.75	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Methylene Chloride	ug/g dry	0.05	0.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Styrene	ug/g dry	0.05	0.7	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	0.058	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	0.5	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Tetrachloroethylene	ug/g dry	0.05	0.28	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Toluene	ug/g dry	0.2	2.3	0.93	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1,1-Trichloroethane	ug/g dry	0.05	0.38	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1,2-Trichloroethane	ug/g dry	0.05	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Trichloroethylene	ug/g dry	0.05	0.061	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Trichlorofluoromethane	ug/g dry	0.25	4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Vinyl Chloride	ug/g dry	0.02	0.02	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
m/p-Xylene	ug/g dry	NV	NV	0.57	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
o-Xylene	ug/g dry	NV	NV	0.21	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Xylenes, total	ug/g dry	0.05	3.1	0.79	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Petroleum Hydrocarbons											
F1 PHC (C6 - C10) - BTEX*	ug/g dry	25	55	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)
F2 PHC (C10-C16)	ug/g dry	10	98	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	121	61	ND (4)
F3 PHC (C16-C34)	ug/g dry	240	300	623	52	46	56	38	293	315	94
F4 PHC (C34-C50)**	ug/g dry	120	2800	1370	36	28	34	34	746	681	102

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- * F1 fraction does not include BTEX.
- ** In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Bold** Indicates soil exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Orange** Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 4 - Post-Remediation Analytical Results in Soil - PHC and VOC
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	SS-1	SS-2	SS-5	TB-0314	TB-0319	TB0326
				13-Mar-2019	18-Mar-2019	25-Mar-2019	13-Mar-2019	25-Mar-2019	25-Mar-2019
Sampling Date				13-Mar-2019	18-Mar-2019	25-Mar-2019	13-Mar-2019	25-Mar-2019	25-Mar-2019
Sample Depth (mbgs)				0.25	0.5	0.5	N/A	N/A	N/A
Parcel ID		Bold	Orange	1911439-01	1912284-01	1913226-01	1911439-02	1912284-02	1913226-02
Analysis Date				18-Mar-19	23-Mar-19	29-Mar-19	18-Mar-19	23-Mar-19	29-Mar-19
Parcel Certificate of Analysis				1911439	1912284	1913226	1911439	1912284	191322
Volatile Organic Compounds									
Acetone	ug/g dry	0.5	16	-	ND (0.50)	ND (0.50)	-	ND (0.50)	ND (0.50)
Benzene	ug/g dry	0.02	0.21	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Bromodichloromethane	ug/g dry	0.05	13	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Bromoform	ug/g dry	0.05	0.27	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Bromomethane	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Carbon Tetrachloride	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Chlorobenzene	ug/g dry	0.05	2.4	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Chloroform	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Dibromochloromethane	ug/g dry	0.05	9.4	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Dichlorodifluoromethane	ug/g dry	0.05	16	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,2-Dichlorobenzene	ug/g dry	0.05	3.4	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,3-Dichlorobenzene	ug/g dry	0.05	4.8	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,4-Dichlorobenzene	ug/g dry	0.05	0.083	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,1-Dichloroethane	ug/g dry	0.05	3.5	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,2-Dichloroethane	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,1-Dichloroethylene	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
cis-1,2-Dichloroethylene	ug/g dry	0.05	3.4	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
trans-1,2-Dichloroethylene	ug/g dry	0.05	0.084	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,2-Dichloropropane	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
cis-1,3-Dichloropropylene	ug/g dry	NV	NV	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
trans-1,3-Dichloropropylene	ug/g dry	NV	NV	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,3-Dichloropropene, total	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Ethylbenzene	ug/g dry	0.05	2	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Ethylene dibromide (dibromoethane, 1,2-)	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Hexane	ug/g dry	0.05	2.8	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.5	16	-	ND (0.50)	ND (0.50)	-	ND (0.50)	ND (0.50)
Methyl Isobutyl Ketone	ug/g dry	0.5	1.7	-	ND (0.50)	ND (0.50)	-	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	ug/g dry	0.05	0.75	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Methylene Chloride	ug/g dry	0.05	0.1	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Styrene	ug/g dry	0.05	0.7	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	0.058	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	0.5	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Tetrachloroethylene	ug/g dry	0.05	0.28	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Toluene	ug/g dry	0.2	2.3	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1,1-Trichloroethane	ug/g dry	0.05	0.38	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
1,1,2-Trichloroethane	ug/g dry	0.05	0.05	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Trichloroethylene	ug/g dry	0.05	0.061	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Trichlorofluoromethane	ug/g dry	0.25	4	-	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)
Vinyl Chloride	ug/g dry	0.02	0.02	-	ND (0.02)	ND (0.02)	-	ND (0.02)	ND (0.02)
m/p-Xylene	ug/g dry	NV	NV	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
o-Xylene	ug/g dry	NV	NV	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Xylenes, total	ug/g dry	0.05	3.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Petroleum Hydrocarbons									
F1 PHC (C6 - C10) - BTEX*	ug/g dry	25	55	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)
F2 PHC (C10-C16)	ug/g dry	10	98	ND (4)	6	ND (4)	-	-	-
F3 PHC (C16-C34)	ug/g dry	240	300	25	86	ND (8)	-	-	-
F4 PHC (C34-C50)**	ug/g dry	120	2800	14	58	ND (6)	-	-	-

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- * F1 fraction does not include BTEX.
- ** In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Bold** Indicates soil exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Orange** Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 5 - Post-Remediation Analytical Results in Soil - PAH and PCB
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	SS-1	SS-2	SS-5
Sampling Date				13-Mar-2019	18-Mar-2019	25-Mar-2019
Sample Depth (mbgs)				0.25	0.5	0.5
Parcel ID		Bold	Orange	1911439-01	1912284-01	1913226-01
Analysis Date				18-Mar-19	21-Mar-19	1-Apr-19
Parcel Certificate of Analysis				1911439	1912284	1913226
Semi-Volatiles						
Acenaphthene	ug/g dry	0.072	7.9	0.03	ND (0.02)	ND (0.02)
Acenaphthylene	ug/g dry	0.093	0.15	ND (0.02)	ND (0.02)	ND (0.02)
Anthracene	ug/g dry	0.22	0.67	0.06	0.03	ND (0.02)
Benzo[a]anthracene	ug/g dry	0.36	0.5	0.13	0.04	0.02
Benzo[a]pyrene	ug/g dry	0.3	0.3	0.1	0.04	ND (0.02)
Benzo[b]fluoranthene	ug/g dry	0.47	0.78	0.13	0.06	0.03
Benzo[g,h,i]perylene	ug/g dry	0.68	6.6	0.07	0.04	ND (0.02)
Benzo[k]fluoranthene	ug/g dry	0.48	0.78	0.07	0.03	ND (0.02)
Chrysene	ug/g dry	2.8	7	0.14	0.04	0.03
Dibenzo[a,h]anthracene	ug/g dry	0.1	0.1	ND (0.02)	ND (0.02)	ND (0.02)
Fluoranthene	ug/g dry	0.69	0.69	0.33	0.12	0.05
Fluorene	ug/g dry	0.19	62	0.03	ND (0.02)	ND (0.02)
Indeno[1,2,3-cd]pyrene	ug/g dry	0.23	0.38	0.06	0.03	ND (0.02)
1-Methylnaphthalene	ug/g dry	0.59	0.99	ND (0.02)	ND (0.02)	ND (0.02)
2-Methylnaphthalene	ug/g dry	0.59	0.99	ND (0.02)	ND (0.02)	ND (0.02)
Methylnaphthalene (1&2)	ug/g dry	0.59	0.99	ND (0.04)	ND (0.04)	ND (0.04)
Naphthalene	ug/g dry	0.09	0.6	ND (0.01)	ND (0.01)	ND (0.01)
Phenanthrene	ug/g dry	0.69	6.2	0.25	0.09	0.04
Pyrene	ug/g dry	1	78	0.25	0.09	0.05
PCBs						
PCBs Total	ug/g dry	0.3	0.35	-	ND (0.05)	ND (0.05)

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 6 - Post-Remediation Analytical Results in Soil - Metals
 315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	SS-1	SS-2	SS-5
Sampling Date				13-Mar-2019	18-Mar-2019	25-Mar-2019
Sample Depth (mbgs)				0.25	0.5	0.5
Parcel ID		Bold	Orange	1911439-01	1912284-01	1913226-01
Analysis Date				18-Mar-19	21-Mar-19	29-Mar-19
Parcel Certificate of Analysis				1911439	1912284	1913226
Metals						
Antimony	ug/g dry	1.3	7.5	ND (1.0)	ND (1.0)	ND (1.0)
Arsenic	ug/g dry	18	18	2.2	2.8	4.1
Barium	ug/g dry	220	390	61.3	156	158
Beryllium	ug/g dry	2.5	4	ND (0.5)	ND (0.5)	ND (0.5)
Boron	ug/g dry	36	120	8.3	12.5	11.3
Boron, Hot Water Soluble	ug/g dry	1.5	1.5	-	0.5	ND (0.5)
Cadmium	ug/g dry	1.2	1.2	ND (0.5)	ND (0.5)	ND (0.5)
Chromium	ug/g dry	70	160	9.9	14.6	12.1
Chromium (VI)	ug/g dry	0.66	8	ND (0.2)	ND (0.2)	ND (0.2)
Cobalt	ug/g dry	22	22	3.9	7.0	6.5
Copper	ug/g dry	92	140	8.3	14.1	8.0
Lead	ug/g dry	120	120	51.5	12.6	11.9
Mercury	ug/g dry	0.27	0.27	ND (0.1)	ND (0.1)	ND (0.1)
Molybdenum	ug/g dry	2	6.9	ND (1.0)	1.3	1.8
Nickel	ug/g dry	82	100	9.5	15.2	13.7
Selenium	ug/g dry	1.5	2.4	ND (1.0)	ND (1.0)	ND (1.0)
Silver	ug/g dry	0.5	20	ND (0.3)	ND (0.3)	ND (0.3)
Thallium	ug/g dry	1	1	ND (1.0)	ND (1.0)	ND (1.0)
Uranium	ug/g dry	2.5	23	ND (1.0)	ND (1.0)	ND (1.0)
Vanadium	ug/g dry	86	86	14.3	10.9	12.5
Zinc	ug/g dry	290	340	ND (20.0)	22.0	24.0
Inorganics						
Conductivity	uS/cm	700	700	-	330	-
SAR	NV	5	5	-	1.95	-

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 7 - Pre-Remediation Analytical Results in Groundwater - PHC and VOC
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	BH/MW21-01	BH/MW21-02	BH/MW21-03	BH/MW21-04	BH/MW21-05	D206 (Duplicate BH/MW21-05)	FB24	Trip Blank
Sampling Date				23-Mar-2021	24-Mar-2021	23-Mar-2021	24-Mar-2021	23-Mar-2021	23-Mar-2021	25-Mar-2021	19-Mar-2021
Screen Depth (mbgs)				3.0 to 6.0	3.5 to 6.5	3.0 to 6.0	3.1 to 6.1	3.0 to 6.0	3.0 to 6.0	N/A	N/A
Parcel ID		Bold	Dark Orange	2113436-01	2113436-02	2113436-03	2113433-01	2113433-02	2113433-03	2113438-01	2113438-02
Analysis Date				26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021
Parcel Certificate of Analysis				2112436	2112436	2112436	2113433	2113433	2113433	2113438	2113438
Volatile Organic Compounds											
Acetone	ug/L	100000	100000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ug/L	44	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ug/L	67000	67000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ug/L	380	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ug/L	5.6	0.89	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	ug/L	0.79	0.2	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	ug/L	500.00	140	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ug/L	2.4	2	0.6	ND (0.5)	ND (0.5)	3.1	1.9	2.0	ND (0.5)	ND (0.5)
Dibromochloromethane	ug/L	65000	65000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ug/L	3500	3500	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	ug/L	4600	150	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	ug/L	7600	7600	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ug/L	8	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ug/L	320	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	ug/L	1.6	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	ug/L	1.6	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ug/L	16	0.58	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropane	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropane	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	ug/L	5.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	1800	54	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.25	0.2	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	ug/L	51	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2-Butanone)	ug/L	470000	21000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	ug/L	140000	5200	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	ug/L	190	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	ug/L	610	26	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	ug/L	1300	43	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	ug/L	3.3	1.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2,2-Tetrachloroethane	ug/L	3.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	14000	320	ND (0.5)	ND (0.5)	ND (0.5)	1.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ug/L	640	23	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ug/L	4.7	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ug/L	2000	2000	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	ug/L	0.5	0.50	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	0.9	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	0.7	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	3300	72	ND (0.5)	ND (0.5)	ND (0.5)	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Petroleum Hydrocarbons											
F1 PHC (C6 - C10) - BTEX*	ug/L	420	420	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
F2 PHC (C10-C16)	ug/L	150	150	ND (100)	ND (177)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	-
F3 PHC (C16-C34)	ug/L	500	500	ND (100)	ND (177)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	-
F4 PHC (C34-C50)**	ug/L	500	500	ND (100)	ND (177)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	-

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- * F1 fraction does not include BTEX.
- ** In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Bold** Indicates groundwater exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Dark Orange** Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 8 - Pre-Remediation Analytical Results in Groundwater - PAH and PCB
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	BH/MW21-01	BH/MW21-02	BH/MW21-03	BH/MW21-04	BH/MW21-05	D206 (Duplicate BH/MW21-05)	FB24
Sampling Date			Bold	Dark Orange	23-Mar-2021	24-Mar-2021	23-Mar-2021	24-Mar-2021	23-Mar-2021	23-Mar-2021
Screen Depth (mbgs)	3.0 to 6.0	3.5 to 6.5			3.0 to 6.0	3.1 to 6.1	3.0 to 6.0	3.0 to 6.0	N/A	
Parcel ID	2113436-01	2113436-02			2113436-03	2113433-01	2113433-02	2113433-03	2113438-01	
Analysis Date	30-Mar-2021	30-Mar-2021			30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	
Parcel Certificate of Analysis	2112436	2112436			2112436	2113433	2113433	2113433	2113438	
Semi-Volatiles										
Acenaphthene	ug/L	600	17	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Acenaphthylene	ug/L	1.4	1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Anthracene	ug/L	1	1	0.02	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]anthracene	ug/L	1.8	1.8	0.04	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]pyrene	ug/L	0.81	0.81	0.03	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[b]fluoranthene	ug/L	0.75	0.75	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[g,h,i]perylene	ug/L	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[k]fluoranthene	ug/L	0.4	0.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Chrysene	ug/L	0.7	0.7	0.08	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Dibenzo[a,h]anthracene	ug/L	0.4	0.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Fluoranthene	ug/L	73	44	0.10	ND (0.01)	0.04	ND (0.01)	0.02	0.03	ND (0.01)
Fluorene	ug/L	290	290	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Indeno[1,2,3-cd]pyrene	ug/L	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1-Methylnaphthalene	ug/L	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
2-Methylnaphthalene	ug/L	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Methylnaphthalene (1&2)	ug/L	1500	1500	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Naphthalene	ug/L	1400	7	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Phenanthrene	ug/L	380	380	0.09	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Pyrene	ug/L	5.7	5.7	0.12	ND (0.01)	0.08	ND (0.01)	0.05	0.05	ND (0.01)
PCBs										
PCBs Total	ug/L	0.2	0.2	ND (0.05)	N/A	ND (0.05)	ND (0.15)	ND (0.05)	ND (0.05)	ND (0.05)

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates groundwater exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 9 - Pre-Remediation Analytical Results in Groundwater - Inorganics
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	BH/MW21-01	BH/MW21-03	BH/MW21-04	BH/MW21-05	D206 (Duplicate BH/MW21-05)	FB24
Sampling Date			Bold	Dark Orange	23-Mar-2021	23-Mar-2021	24-Mar-2021	23-Mar-2021	23-Mar-2021
Screen Depth (mbgs)	3.0 to 6.0	3.0 to 6.0			3.1 to 6.1	3.0 to 6.0	3.0 to 6.0	N/A	
Parcel ID	2113436-01	2113436-03			2113433-01	2113433-02	2113433-03	2113438-01	
Analysis Date	26-Mar-2021	26-Mar-2021			26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	
Parcel Certificate of Analysis	2112436	2112436			2113433	2113433	2113433	2113438	
Metals									
Mercury	ug/L	0.29	0.1	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Antimony	ug/L	16000	16000	ND (0.5)	0.9	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Arsenic	ug/L	1500	1500	ND (1)	2	1	ND (1)	ND (1)	ND (1)
Barium	ug/L	23000	23000	350	161	700	1200	1160	ND (1)
Beryllium	ug/L	53	53	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Boron	ug/L	36000	36000	77	61	92	77	76	ND (10)
Cadmium	ug/L	2.1	2.1	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chromium	ug/L	640	640	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chromium (VI)	ug/L	110	110	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ug/L	52	52	3.4	1.4	0.8	3.7	3.6	ND (0.5)
Copper	ug/L	69	69	1.5	0.9	4.2	2.5	2.3	0.7
Lead	ug/L	20	20	0.4	0.2	1.0	ND (0.1)	ND (0.1)	ND (0.1)
Molybdenum	ug/L	7300	7300	5.9	17.8	6.8	1.4	1.5	ND (0.5)
Nickel	ug/L	390	390	11	23	5	6	5	ND (1)
Selenium	ug/L	50	50	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Silver	ug/L	1.2	1.2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Sodium	ug/L	1800000	1800000	884000	181000	553000	617000	606000	219
Thallium	ug/L	400	400	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.1	ND (0.1)
Uranium	ug/L	330	330	1.7	1.7	2.6	1.1	1.1	ND (0.1)
Vanadium	ug/L	200	200	ND (0.5)	5.9	1.2	ND (0.5)	ND (0.5)	ND (0.5)
Zinc	ug/L	890	890	ND (5)	ND (5)	ND (5)	21	21	ND (5)
General Inorganics									
pH	ug/L	NV	NV	7.2	8.0	8.1	7.2	7.3	6.9

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates groundwater exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 10 - Post Remediation Analytical Results in Groundwater - PHC and VOC
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	MW21-01	MW21-01	MW21-02	MW21-02	Duplicate (Field Duplicate MW21-02)	MW21-03	MW21-03	D206 (Field Duplicate)	FB23	Field Blank	TB23	Trip Blank
Sampling Date				31-Aug-2021	16-Feb-2022	23-Aug-2021	6-Jan-2022	6-Jan-2022	23-Aug-2021	19-Jan-2022	23-Aug-2021	23-Aug-2021	6-Jan-2022	23-Aug-2021	6-Jan-2022
Screen Depth (mbgs)				3.0 to 6.1	3.0 to 6.1	3.6 to 6.7	3.6 to 6.7	3.6 to 6.7	3.0 to 6.1	3.0 to 6.1	3.0 to 6.1	N/A	N/A	N/A	N/A
Parcel ID		Bold	Dark Orange	2136274-03	2208458-01	2135219-01	2202236-01	2202236-02	2135221-02	2204302-01	2135221-01	2135216-01	2202236-03	2135216-02	2202236-04
Analysis Date				2-Sep-2021	22-Feb-2022	26-Aug-2021	8-Jan-2022	8-Jan-2022	26-Aug-2021	21-Jan-2022	26-Aug-2021	26-Aug-2021	8-Jan-2022	26-Aug-2021	8-Jan-2022
Parcel Certificate of Analysis				2136274	2208458	2135219	2202236	2202236	2135221	2204302	2135221	2135216	2202236	2135216	2202236
Volatile Organic Compounds															
Acetone	ug/L	100000	100000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ug/L	44	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ug/L	67000	67000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ug/L	380	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ug/L	5.6	0.89	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	ug/L	0.79	0.2	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	ug/L	500.00	140	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ug/L	2.4	2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ug/L	65000	65000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ug/L	3500	3500	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	ug/L	4600	150	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	ug/L	7600	7600	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ug/L	8	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ug/L	320	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	ug/L	1.6	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	ug/L	1.6	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ug/L	16	0.58	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	ug/L	5.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	1800	54	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.25	0.2	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	ug/L	51	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2-Butanone)	ug/L	470000	21000	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	ug/L	140000	5200	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	ug/L	190	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	ug/L	610	26	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	7.2	ND (5.0)	15.9
Styrene	ug/L	1300	43	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	ug/L	3.3	1.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2,2-Tetrachloroethane	ug/L	3.2	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	14000	320	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ug/L	640	23	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ug/L	4.7	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	ug/L	1.6	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ug/L	2000	2000	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	ug/L	0.5	0.50	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	NV	NV	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	3300	72	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Petroleum Hydrocarbons															
F1 PHC (C6 - C10) - BTEX*	ug/L	420	420	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
F2 PHC (C10-C16)	ug/L	150	150	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	N/A	ND (100)
F3 PHC (C16-C34)	ug/L	500	500	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	N/A	ND (100)
F4 PHC (C34-C50)**	ug/L	500	500	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	N/A	ND (100)

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- * F1 fraction does not include BTEX.
- ** In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates groundwater exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 11 - Post-Remediation Analytical Results in Groundwater - PAH and PCB
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	MW21-01	MW21-01	MW21-02	MW21-02	D206 (Field Duplicate MW21-02)	MW21-03	MW21-03	D206 (Field Duplicate MW21-03)	FB23	Trip Blank	Field Blank
Sampling Date		Bold	Dark Orange	14-Sep-2021	16-Feb-2022	23-Aug-2021	12-Jan-2021	12-Jan-2022	23-Aug-2021	19-Jan-2022	23-Aug-2021	23-Aug-2021	15-Dec-2021	12-Jan-2022
Screen Depth (mbgs)				3.0 to 6.1	3.0 to 6.1	3.6 to 6.7	3.6 to 6.7	3.6 to 6.7	3.0 to 6.1	3.0 to 6.1	3.0 to 6.1	N/A	N/A	N/A
Parcel ID				2136274-03	2208458-01	2135219-01	2203311-01	2203311-02	2135221-02	2204302-01	2135221-01	2135216-01	2203309-01	2203309-02
Analysis Date				20-Sep-2021	22-Feb-2022	3-Sep-2021	18-Jan-2022	18-Jan-2022	26-Aug-2021	21-Jan-2021	26-Aug-2021	26-Aug-2021	18-Jan-2021	18-Jan-2021
Parcel Certificate of Analysis				2138370	2208458	2135219	2203311	2203311	2135221	2204302	2135221	2135216	2203309	2203309
Semi-Volatiles														
Acenaphthene	ug/L	600	17	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Acenaphthylene	ug/L	1.4	1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Anthracene	ug/L	1	1	ND (0.01)	0.01	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]anthracene	ug/L	1.8	1.8	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]pyrene	ug/L	0.81	0.81	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[b]fluoranthene	ug/L	0.75	0.75	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[g,h,i]perylene	ug/L	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[k]fluoranthene	ug/L	0.4	0.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Chrysene	ug/L	0.7	0.7	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Dibenzo[a,h]anthracene	ug/L	0.4	0.4	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Fluoranthene	ug/L	73	44	0.06	0.05	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Fluorene	ug/L	290	290	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Indeno[1,2,3-cd]pyrene	ug/L	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1-Methylnaphthalene	ug/L	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
2-Methylnaphthalene	ug/L	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Methylnaphthalene (1&2)	ug/L	1500	1500	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Naphthalene	ug/L	1400	7	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Phenanthrene	ug/L	380	380	ND (0.05)	0.05	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Pyrene	ug/L	5.7	5.7	0.05	0.05	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
PCBs														
PCBs Total	ug/L	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Bold** Indicates groundwater exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Dark Orange** Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 12 - Post-Remediation Analytical Results in Groundwater - Inorganics
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	MW21-01	MW21-01	Duplicate (Duplicate MW21-01)	MW21-02	MW21-02	MW21-03	D206 (Duplicate)	MW21-03	FB23	Field Blank	Trip Blank
Sampling Date				31-Aug-2021	21-Dec-2021	21-Dec-2021	23-Aug-2021	22-Dec-2021	23-Aug-2021	23-Aug-2021	19-Jan-2022	23-Aug-2021	21-Dec-2021	15-Dec-2021
Screen Depth (mbgs)				3.0 to 6.1	3.0 to 6.1	3.0 to 6.1	3.6 to 6.7	3.6 to 6.7	3.0 to 6.1	3.0 to 6.1	3.0 to 6.1	N/A	N/A	N/A
Parcel ID		Bold	Dark Orange	2136274-03	2152337-01	2152337-01	2135219-02	2152337-03	2135221-02	2135221-01	2204302-01	2135216-01	2152337-04	2152337-05
Analysis Date				2-Sep-2021	23-Dec-2021	23-Dec-2021	25-Aug-2021	23-Dec-2021	25-Aug-2021	25-Aug-2021	21-Jan-2021	25-Aug-2021	23-Dec-2021	23-Dec-2021
Parcel Certificate of Analysis				2136274	2152337	2152337	2135219	2152337	2135221	2135221	2204302	2135216	2152337	2152337
Metals														
Antimony	ug/L	16000	16000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Arsenic	ug/L	1500	1500	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	4	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Barium	ug/L	23000	23000	644	595	615	225	179	210	226	195	ND (1)	ND (1)	ND (1)
Beryllium	ug/L	53	53	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Boron	ug/L	36000	36000	698	747	748	217	222	143	213	94	ND (10)	ND (10)	ND (10)
Cadmium	ug/L	2.1	2.1	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chromium	ug/L	640	640	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Chromium (VI)	ug/L	110	110	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ug/L	52	52	0.9	ND (0.5)	ND (0.5)	1.3	0.5	1.9	1.2	0.6	ND (0.5)	ND (0.5)	ND (0.5)
Copper	ug/L	69	69	2.0	1.2	1.1	ND (0.5)	1.2	0.9	ND (0.5)	ND (0.5)	ND (0.5)	1.7	ND (0.5)
Lead	ug/L	20	20	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.1	ND (0.1)
Mercury	ug/L	0.29	0.1	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Molybdenum	ug/L	7300	7300	5.4	3.5	3.5	2.1	4.9	5.0	2.1	1.7	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ug/L	390	390	4	4	4	3	4	6	3	3	ND (1)	ND (1)	ND (1)
Selenium	ug/L	50	50	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Silver	ug/L	1.2	1.2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Sodium	ug/L	1800000	1800000	348000	342000	348000	648000	462000	632000	630000	463000	ND (200)	ND (200)	ND (200)
Thallium	ug/L	400	400	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Uranium	ug/L	330	330	1.0	1.2	1.2	0.3	11.8	9.2	0.3	3.3	ND (0.1)	ND (0.1)	ND (0.1)
Vanadium	ug/L	200	200	ND (0.5)	ND (0.5)	ND (0.5)	0.7	ND (0.5)	1.7	0.7	0.5	ND (0.5)	ND (0.5)	ND (0.5)
Zinc	ug/L	890	890	11	ND (5)	ND (5)	ND (5)	ND (5)	7	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
General Inorganics														
pH	ug/L	6 to 9	6 to 9	-	-	-	-	6.8	-	-	7.6	-	-	-
Cyanide	ug/L	52	52	ND (2)	ND (2)	-	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	-	-

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Bold** Indicates groundwater exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Dark Orange** Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 13 - Maximum Concentrations in Soil
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 9	MECP Table 7
Metals and Inorganics						
Antimony	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (1.0)	1	8
Arsenic	SS-5	0.50	25-Mar-2019	4.1	18	18
Barium	SS-5	0.50	25-Mar-2019	158	220	390
Beryllium	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.5)	3	4
Boron	SS-2	0.50	18-Mar-2019	12.5	36	120
Boron, Hot Water Soluble	SS-2	0.50	18-Mar-2019	0.5		2
Cadmium	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.5)	1.2	1.2
Chromium	SS-2	0.50	18-Mar-2019	14.6	70	160
Chromium (VI)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.2)	1	8
Cobalt	SS-2	0.50	18-Mar-2019	7.0	22	22
Copper	SS-2	0.50	18-Mar-2019	14.1	92	140
Lead	SS-1	0.25	13-Mar-2019	51.5	120	120
Mercury	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.1)	0	0
Molybdenum	SS-5	0.50	25-Mar-2019	1.8	2	7
Nickel	SS-2	0.50	18-Mar-2019	15	82	100
Selenium	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (1.0)	2	2
Silver	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.3)	0.5	20.0
Thallium	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (1.0)	1	1
Uranium	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (1.0)	3	23
Vanadium	SS-1	0.50	18-Mar-2019	14.3	86	86
Zinc	SS-5	0.5	25-Mar-2019	24.0	290	340
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	SS-1	0.25	13-Mar-2019	0.03	0.072	7.9
Acenaphthylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.02)	0.093	0.15
Anthracene	SS-1	0.25	13-Mar-2019	0.06	0.22	0.67
Benzo(a)anthracene	SS-1	0.25	13-Mar-2019	0.13	0.36	0.5
Benzo(a)pyrene	SS-1	0.25	13-Mar-2019	0.1	0.3	0.3
Benzo(b)fluoranthene	SS-1	0.25	13-Mar-2019	0.13	0.47	0.78
Benzo(g,h,i)perylene	SS-1	0.25	13-Mar-2019	0.07	0.68	6.6
Benzo(k)fluoranthene	SS-1	0.25	13-Mar-2019	0.07	0.48	0.78
Chrysene	SS-1	0.25	13-Mar-2019	0.14	2.8	7
Dibenz(a,h)anthracene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.02)	0.1	0.1
Fluoranthene	SS-1	0.25	13-Mar-2019	0.33	0.69	0.69
Fluorene	SS-1	0.25	13-Mar-2019	0.03	0.19	62
Indeno(1,2,3-cd)pyrene	SS-1	0.25	13-Mar-2019	0.06	0.23	0.38
1-Methylnaphthalene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.02)	0.59	0.99
2-Methylnaphthalene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.02)	0.59	0.99
Methylnaphthalene, 2-(1-)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.04)	0.59	0.99
Naphthalene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.01)	0.09	0.6
Phenanthrene	SS-1	0.25	13-Mar-2019	0.25	0.69	6.2
Pyrene	SS-1	0.25	13-Mar-2019	0.25	1	78
Polychlorinated Biphenyls						
Total PCBs	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.3	0.35
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (7)	25	55
F2 PHC (C10-C16)	SS-2	0.50	18-Mar-2019	6	10	98
F3 PHC (C16-C34)	SS-2	0.50	18-Mar-2019	86	240	300
F4 PHC (C34-C50)	SS-2	0.50	18-Mar-2019	58	120	2800
Volatile Organic Compounds						
Acetone (2-Propanone)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.50)	0.5	16
Benzene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.02)	0.02	0.21
Bromodichloromethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	13
Bromoform	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.27
Bromomethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
Carbon Tetrachloride	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
Chlorobenzene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	2.4
Chloroform	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
Dibromochloromethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	9.4
Dichlorodifluoromethane (FREON 12)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	16
1,2-Dichlorobenzene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	3.4
1,3-Dichlorobenzene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	4.8
1,4-Dichlorobenzene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.083
1,1-Dichloroethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	3.5
1,2-Dichloroethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
1,1-Dichloroethylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
cis-1,2-Dichloroethylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	3.4
trans-1,2-Dichloroethylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.084
1,2-Dichloropropane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
cis-1,3-Dichloropropylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	NV	NV
trans-1,3-Dichloropropylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	NV	NV
1,3-Dichloropropene (cis+trans)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
Ethylbenzene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	2

NOTES:

All analyses performed by Paracel Laboratories.

All results are in ppm on dry weight basis

NV - No value

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

Results were compared to:

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils), and

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

Table 13 - Maximum Concentrations in Soil
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 9	MECP Table 7
Ethylene Dibromide	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
Hexane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	2.8
Methyl Ethyl Ketone (2-Butanone)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.50)	0.5	16
Methyl Isobutyl Ketone	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.50)	0.5	1.7
Methyl t-butyl ether (MTBE)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.75
Methylene Chloride(Dichloromethane)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.1
Styrene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.7
1,1,1,2-Tetrachloroethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.058
1,1,2,2-Tetrachloroethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.5
Tetrachloroethylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.28
Toluene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.2	2.3
1,1,1-Trichloroethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.38
1,1,2-Trichloroethane	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.05
Trichloroethylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	0.061
Trichlorofluoromethane (FREON 11)	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.25	4
Vinyl Chloride	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.02)	0.02	0.02
m/p-Xylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	NV	NV
o-Xylene	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	NV	NV
Total Xylenes	All Locations	0.25 to 0.50	All March 2019 Sampling Dates	ND (0.05)	0.05	3.1

NOTES:

All analyses performed by Paracel Laboratories.

All results are in ppm on dry weight basis

NV - No value

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

Results were compared to:

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils), and

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

Table 14 - Maximum Concentrations in Groundwater
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 9	MECP Table 7
Metals and Inorganics						
Antimony	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	16000	16000.00
Arsenic	MW21-3	3.0 to 6.1	23-Aug-2021	4.0	1500	1500
Barium	MW21-1	3.0 to 6.1	31-Aug-2021	644	23000	23000
Beryllium	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	53	53
Boron	MW21-1	3.0 to 6.1	21-Dec-2021	748	36000	36000
Cadmium	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.1)	2	2
Chromium	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (1)	640.0	640.0
Chromium (VI)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (10)	110	110
Cobalt	MW21-2	3.6 to 6.7	23-Aug-2021	1.9	52	52
Copper	MW21-1	3.0 to 6.1	31-Aug-2021	2.0	69	69
Lead	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.1)	20	20
Mercury	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.1)	0	0
Molybdenum	MW21-1	3.0 to 6.1	31-Aug-2021	5.4	7300	7300
Nickel	MW21-3	3.0 to 6.1	23-Aug-2021	6	390	390
Selenium	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (1)	50	50
Silver	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.1)	1.2	1.2
Sodium	MW21-02	3.6 to 6.7	23-Aug-2021	648000	1,800,000	1,800,000
Thallium	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.1)	400	400
Uranium	MW21-02	3.6 to 6.7	22-Dec-2021	11.8	330	330
Vanadium	MW21-3	3.0 to 6.1	23-Aug-2021	1.7	200	200
Zinc	MW21-1	3.0 to 6.1	31-Aug-2021	11	890	890
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	600	17
Acenaphthylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	1.4	1
Anthracene	MW21-01	3.0 to 6.1	16-Feb-2022	0.01	1	1
Benzo(a)anthracene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.01)	1.8	1.8
Benzo(a)pyrene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.01)	0.81	0.81
Benzo(b)fluoranthene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	0.75	0.75
Benzo(g,h,i)perylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	0.2	0.2
Benzo(k)fluoranthene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	0.4	0.4
Chrysene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	0.7	0.7
Dibenz(a,h)anthracene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	0.4	0.4
Fluoranthene	MW21-01	3.0 to 6.1	16-Feb-2022	0.05	73	44
Fluorene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	290	290
Indeno(1,2,3-cd)pyrene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	0.2	0.2
1-Methylnaphthalene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	1500	1500
2-Methylnaphthalene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	1500	1500
Methylnaphthalene, 2-(1-)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.10)	1500	1500
Naphthalene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.05)	1400	7
Phenanthrene	MW21-01	3.0 to 6.1	16-Feb-2022	0.05	380	380
Pyrene	MW21-01	3.0 to 6.1	14-Sept-2021 16-Feb-2022	0.05	5.7	5.7
Polychlorinated Biphenyls						
Total PCBs	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND(0.05)	0.2	0.2
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (25)	420	420
F2 PHC (C10-C16)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (100)	150	150
F3 PHC (C16-C34)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (100)	500	500
F4 PHC (C34-C50)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (100)	500	500
Volatile Organic Compounds						
Acetone (2-Propanone)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (5.0)	100000	100000
Benzene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	44	0.5
Bromodichloromethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	67000	67000
Bromoform	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	380	5
Bromomethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	5.6	0.89
Carbon Tetrachloride	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.2)	0.79	0.2
Chlorobenzene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	500	140
Chloroform	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	2.4	2
Dibromochloromethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	65000	65000
Dichlorodifluoromethane (FREON 12)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (1.0)	3500	3500
1,2-Dichlorobenzene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	4600	150
1,3-Dichlorobenzene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	7600	7600
1,4-Dichlorobenzene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	8	0.5
1,1-Dichloroethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	320	11
1,2-Dichloroethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1.6	0.5
1,1-Dichloroethylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1.6	0.5
cis-1,2-Dichloroethylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1.6	1.6
trans-1,2-Dichloroethylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1.6	1.6
1,2-Dichloropropane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	16	0.58

NOTES:

All analyses performed by Paracel Laboratories.

NV - No value

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

Results were compared to:

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils), and

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

Table 14 - Maximum Concentrations in Groundwater
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 9	MECP Table 7
cis-1,3-Dichloropropylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	NV	NV
trans-1,3-Dichloropropylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	NV	NV
1,3-Dichloropropene (cis+trans)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	5.2	0.5
Ethylbenzene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1800	54
Ethylene Dibromide	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.2)	0.25	0.2
Hexane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (1.0)	51	5
Methyl Ethyl Ketone (2-Butanone)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (5.0)	470000	21000
Methyl Isobutyl Ketone	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (5.0)	140000	5200
Methyl t-butyl ether (MTBE)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (2.0)	190	15
Methylene Chloride(Dichloromethane)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (5.0)	610	26
Styrene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1300	43
1,1,1,2-Tetrachloroethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	3.3	1.1
1,1,2,2-Tetrachloroethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	3.2	0.5
Tetrachloroethylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1.6	0.5
Toluene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	14000	320
1,1,1-Trichloroethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	640	23
1,1,2-Trichloroethane	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	4.7	0.5
Trichloroethylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	1.6	0.5
Trichlorofluoromethane (FREON 11)	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (1.0)	2000	2000
Vinyl Chloride	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	0.5	0.5
m/p-Xylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	NV	NV
o-Xylene	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	NV	NV
Total Xylenes	All Locations	3.0 to 6.7	All Post Remedial Sampling Dates	ND (0.5)	3300	72

NOTES:

All analyses performed by Paracel Laboratories.

NV - No value

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

Results were compared to:

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils), and

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

Table 15- Analytical Results in Leachate
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	O.Reg 347 Schedule 4	TCLP-206
Sample Date			16-Mar-2021
Metals			
Arsenic	mg/L	2.5	ND (0.05)
Barium	mg/L	100	1.28
Boron	mg/L	500	0.11
Cadmium	mg/L	0.5	ND (0.01)
Chromium	mg/L	5	ND (0.05)
Lead	mg/L	5	ND (0.05)
Mercury	mg/L	0.1	ND (0.005)
Selenium	mg/L	1	ND (0.05)
Silver	mg/L	5	ND (0.05)
Uranium	mg/L	10	ND (0.05)
Inorganics			
Fluoride	mg/L	150	0.24
Nitrate as N	mg/L	1000	ND (1)
Nitrite as N	mg/L	1000	ND (1)
Cyanide, free	mg/L	20	ND (0.02)
Volatiles			
Benzene	mg/L	0.5	ND (0.005)
Carbon Tetrachloride	mg/L	0.5	ND (0.005)
Chlorobenzene	mg/L	8	ND (0.004)
Chloroform	mg/L	10	ND (0.006)
1,2-Dichlorobenzene	mg/L	20	ND (0.004)
1,4-Dichlorobenzene	mg/L	0.5	ND (0.004)
1,2-Dichloroethane	mg/L	0.5	ND (0.005)
1,1-Dichloroethylene	mg/L	1.4	ND (0.006)
Methyl Ethyl Ketone (2-Butanone)	mg/L	200	ND (0.30)
Methylene Chloride	mg/L	5	ND (0.04)
Tetrachloroethylene	mg/L	3	ND (0.005)
Trichloroethylene	mg/L	5	ND (0.004)
Vinyl Chloride	mg/L	0.2	ND (0.005)
Organics			
2,4-Dinitrotoluene	mg/L	0.13	ND (0.001)
Benzo[a]pyrene	mg/L	0.001	ND (0.001)
Nitrobenzene	mg/L	2	ND (0.001)
Hexachloroethane	mg/L	3	ND (0.001)
Hexachlorobenzene	mg/L	0.13	ND (0.050)
Hexachlorobutadiene	mg/L	NV	ND (0.001)
2,3,4,6-Tetrachlorophenol	mg/L	10	ND (0.002)
2,4,5-Trichlorophenol	mg/L	400	ND (0.001)
2,4,6-Trichlorophenol	mg/L	0.5	ND (0.001)
2,4-Dichlorophenol	mg/L	90	ND (0.001)
2-Methylphenol	mg/L	200	ND (0.001)
3/4-Methylphenol	mg/L	200	ND (0.001)
Pentachlorophenol	mg/L	6	ND (0.005)
PCBs, total	mg/L	0.3	ND (0.003)
Physical Characteristics			
Ignitability	N/A	-	Non-ignitable

NOTES:

All results shown are in ppm (mg/L)

Indicates exceedance of Regulation 347 Schedule 4 leachate criteria

Table 16 - Relative Percent Differences - PHC and VOC in Soil
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	RDL	BH/MW21-03-01	D206	RPD (%)	Alert Limit (%)
			15-Mar-2021	15-Mar-2021		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/g dry	7	ND (7)	ND (7)	nc	60
F2 PHC (C10-C16)	ug/g dry	4	ND (4)	ND (4)	nc	60
F3 PHC (C16-C34)	ug/g dry	8	46	56	20	60
F4 PHC (C34-C50)	ug/g dry	6	28	34	nc	60
Volatiles						
Acetone	ug/g dry	0.50	ND (0.50)	ND (0.50)	nc	100
Benzene	ug/g dry	0.02	ND (0.02)	ND (0.02)	nc	100
Bromodichloromethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Bromoform	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Bromomethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Carbon Tetrachloride	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Chlorobenzene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Chloroform	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Dibromochloromethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Dichlorodifluoromethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,2-Dichlorobenzene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,3-Dichlorobenzene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,4-Dichlorobenzene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,1-Dichloroethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,2-Dichloroethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,1-Dichloroethylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
cis-1,2-Dichloroethylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
trans-1,2-Dichloroethylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,2-Dichloropropane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
cis-1,3-Dichloropropylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
trans-1,3-Dichloropropylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,3-Dichloropropene, total	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Ethylbenzene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Ethylene dibromide (dibromoethane, 1,2)	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Hexane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.50	ND (0.50)	ND (0.50)	nc	100
Methyl Isobutyl Ketone	ug/g dry	0.50	ND (0.50)	ND (0.50)	nc	100
Methyl tert-butyl ether	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Methylene Chloride	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Styrene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Tetrachloroethylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Toluene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,1,1-Trichloroethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
1,1,2-Trichloroethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Trichloroethylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Trichlorofluoromethane	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Vinyl Chloride	ug/g dry	0.02	ND (0.02)	ND (0.02)	nc	100
m/p-Xylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
o-Xylene	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100
Xylenes, total	ug/g dry	0.05	ND (0.05)	ND (0.05)	nc	100

NOTES:

Analysis by Paracel Laboratories Ltd.

All results on dry weight basis; Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 17 - Relative Percent Differences - PAH and PCB in Soil
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	RDL	BH/MW21-03-01	D206	RPD (%)	Alert Limit (%)
			15-Mar-2021	15-Mar-2021		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/g dry	0.02	0.11	0.21	63	80
Acenaphthylene	ug/g dry	0.02	0.07	0.12	nc	80
Anthracene	ug/g dry	0.02	0.47	0.83	55	80
Benzo[a]anthracene	ug/g dry	0.02	1.02	1.35	28	80
Benzo[a]pyrene	ug/g dry	0.02	0.88	1.16	27	80
Benzo[b]fluoranthene	ug/g dry	0.02	0.82	1.31	46	80
Benzo[g,h,i]perylene	ug/g dry	0.02	0.48	0.62	25	80
Benzo[k]fluoranthene	ug/g dry	0.02	0.45	0.74	49	80
Chrysene	ug/g dry	0.02	0.83	1.28	43	80
Dibenzo[a,h]anthracene	ug/g dry	0.02	0.13	0.19	38	80
Fluoranthene	ug/g dry	0.02	1.88	3.25	53	80
Fluorene	ug/g dry	0.02	0.19	0.3	45	80
Indeno[1,2,3-cd]pyrene	ug/g dry	0.02	0.47	0.64	31	80
1-Methylnaphthalene	ug/g dry	0.02	0.06	0.14	nc	80
2-Methylnaphthalene	ug/g dry	0.02	0.13	0.2	42	80
Methylnaphthalene (1&2)	ug/g dry	0.04	0.19	0.34	nc	80
Naphthalene	ug/g dry	0.01	0.21	0.33	44	80
Phenanthrene	ug/g dry	0.02	1.75	2.78	45	80
Pyrene	ug/g dry	0.02	1.5	2.53	51	80
Polychlorinated Biphenyls						
PCBs Total	ug/g dry	0.05	0.16	0.14	nc	100

NOTES:

Analysis by Paracel Laboratories Ltd.

All results on dry weight basis; Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 18 - Relative Percent Differences - Inorganics in Soil
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	RDL	BH/MW21-03-01	D206	RPD (%)	Alert Limit (%)
			15-Mar-2021	15-Mar-2021		
<i>Inorganic Parameters</i>						
Chromium (VI)	ug/g dry	0.2	ND (0.2)	ND (0.2)	nc	70
Mercury	ug/g dry	0.1	0.1	0.1	nc	60
Antimony	ug/g dry	1.0	ND (1.0)	ND (1.0)	nc	60
Arsenic	ug/g dry	1.0	2.9	2.6	nc	60
Barium	ug/g dry	1.0	144	136	6	60
Beryllium	ug/g dry	0.5	ND (0.5)	ND (0.5)	nc	60
Boron	ug/g dry	5.0	10.9	10.4	nc	60
Cadmium	ug/g dry	0.5	ND (0.5)	ND (0.5)	nc	60
Chromium	ug/g dry	5.0	15.4	13.3	nc	60
Cobalt	ug/g dry	1.0	3.2	3.2	nc	60
Copper	ug/g dry	5.0	18.8	17.8	nc	60
Lead	ug/g dry	1.0	18.8	17.9	5	60
Molybdenum	ug/g dry	1.0	1.5	ND (1.0)	nc	60
Nickel	ug/g dry	5.0	14.1	10	nc	60
Selenium	ug/g dry	1.0	ND (1.0)	ND (1.0)	nc	60
Silver	ug/g dry	0.3	ND (0.3)	ND (0.3)	nc	60
Thallium	ug/g dry	1.0	ND (1.0)	ND (1.0)	nc	60
Uranium	ug/g dry	1.0	ND (1.0)	ND (1.0)	nc	60
Vanadium	ug/g dry	10.0	11.6	11.4	nc	60
Zinc	ug/g dry	20.0	37.7	34.8	nc	60
Cyanide (free)	ug/g dry	0.0	ND (0.03)	ND (0.03)	nc	70

NOTES:

Analysis by Paracel Laboratories Ltd.

All results on dry weight basis; Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 19 - Relative Percent Differences - PHC and VOC in Groundwater - Pre-Remediation
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	RDL	BH/MW21-05	D206	RPD (%)	Alert Limit (%)
			23-Mar-2021	23-Mar-2021		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/L	25	ND (25)	ND (25)	nc	60
F2 PHC (C10-C16)	ug/L	100	ND (100)	ND (100)	nc	60
F3 PHC (C16-C34)	ug/L	100	ND (100)	ND (100)	nc	60
F4 PHC (C34-C50)	ug/L	100	ND (100)	ND (100)	nc	60
Volatiles						
Acetone	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Benzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Bromodichloromethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Bromoform	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Bromomethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Carbon Tetrachloride	ug/L	0.2	ND (0.2)	ND (0.2)	nc	60
Chlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Chloroform	ug/L	0.5	1.9	2.0	nc	60
Dibromochloromethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Dichlorodifluoromethane	ug/L	1.0	ND (1.0)	ND (1.0)	nc	60
1,2-Dichlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,3-Dichlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,4-Dichlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1-Dichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,2-Dichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1-Dichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,2-Dichloropropane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,3-Dichloropropene, total	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Ethylbenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	ND (0.2)	ND (0.2)	nc	60
Hexane	ug/L	1.0	ND (1.0)	ND (1.0)	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Methyl tert-butyl ether	ug/L	2.0	ND (2.0)	ND (2.0)	nc	60
Methylene Chloride	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Styrene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Tetrachloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Toluene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,1-Trichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,2-Trichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Trichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Trichlorofluoromethane	ug/L	1.0	ND (1.0)	ND (1.0)	nc	60
Vinyl Chloride	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
m/p-Xylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
o-Xylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Xylenes, total	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60

NOTES:

Analysis by Paracel Laboratories Ltd.

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 20 - Relative Percent Differences - PAH and PCB in Groundwater - Pre-Remediation
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	RDL	BH/MW21-05	D206	RPD (%)	Alert Limit (%)
			23-Mar-2021	23-Mar-2021		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Acenaphthylene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Anthracene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Benzo[a]anthracene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Benzo[a]pyrene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Benzo[b]fluoranthene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Benzo[g,h,i]perylene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Benzo[k]fluoranthene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Chrysene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Dibenzo[a,h]anthracene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Fluoranthene	ug/L	0.01	0.02	0.03	nc	60
Fluorene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Indeno[1,2,3-cd]pyrene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
1-Methylnaphthalene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
2-Methylnaphthalene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Methylnaphthalene (1&2)	ug/L	0.10	ND (0.10)	ND (0.10)	nc	60
Naphthalene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Phenanthrene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Pyrene	ug/L	0.01	0.05	0.05	mc	60
Polychlorinated Biphenyls						
PCBs Total	ug/L	0.050	ND (0.05)	ND (0.05)	nc	60

NOTES:

Analysis by Paracel Laboratories Ltd.

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 21 - Relative Percent Differences - Inorganic Parameters in Groundwater - Post-Remediation
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	RDL	BH/MW21-05	D206	RPD (%)	Alert Limit (%)
			23-Mar-2021	23-Mar-2021		
Inorganics						
Mercury	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Antimony	ug/L	0.5	ND (0.5)	ND (0.5)	nc	40
Arsenic	ug/L	1	ND (1)	ND (1)	nc	40
Barium	ug/L	1	1200	1160	3	40
Beryllium	ug/L	0.5	ND (0.5)	ND (0.5)	nc	40
Boron	ug/L	10	77	76	1	40
Cadmium	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Chromium	ug/L	1	ND (1)	ND (1)	nc	40
Chromium (VI)	ug/L	10	ND (10)	ND (10)	nc	40
Cobalt	ug/L	0.5	3.7	3.6	3	40
Copper	ug/L	0.5	2.5	2.3	nc	40
Lead	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Molybdenum	ug/L	0.5	1.4	1.5	nc	40
Nickel	ug/L	1	6	5	18	40
Selenium	ug/L	1	ND (1)	ND (1)	nc	40
Silver	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Sodium	ug/L	200	617000	606000	2	40
Thallium	ug/L	0.1	ND (0.1)	0.1	nc	40
Uranium	ug/L	0.1	1.1	1.1	0	40
Vanadium	ug/L	0.5	ND (0.5)	ND (0.5)	nc	40
Zinc	ug/L	5	21	21	nc	40
pH	No units		7.2	7.3		

NOTES:

Analysis by Paracel Laboratories Ltd.

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 22 - Relative Percent Differences - PHC and VOC in Groundwater - Post-Remediation
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	RDL	MW21-02	Duplicate	RPD (%)	Alert Limit (%)
			6-Jan-2022	6-Jan-2022		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/L	25	ND (25)	ND (25)	nc	60
F2 PHC (C10-C16)	ug/L	100	ND (100)	ND (100)	nc	60
F3 PHC (C16-C34)	ug/L	100	ND (100)	ND (100)	nc	60
F4 PHC (C34-C50)	ug/L	100	ND (100)	ND (100)	nc	60
Volatiles						
Acetone	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Benzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Bromodichloromethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Bromoform	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Bromomethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Carbon Tetrachloride	ug/L	0.2	ND (0.2)	ND (0.2)	nc	60
Chlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Chloroform	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Dibromochloromethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Dichlorodifluoromethane	ug/L	1.0	ND (1.0)	ND (1.0)	nc	60
1,2-Dichlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,3-Dichlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,4-Dichlorobenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1-Dichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,2-Dichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1-Dichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,2-Dichloropropane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,3-Dichloropropene, total	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Ethylbenzene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	ND (0.2)	ND (0.2)	nc	60
Hexane	ug/L	1.0	ND (1.0)	ND (1.0)	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Methyl tert-butyl ether	ug/L	2.0	ND (2.0)	ND (2.0)	nc	60
Methylene Chloride	ug/L	5.0	ND (5.0)	ND (5.0)	nc	60
Styrene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Tetrachloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Toluene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,1-Trichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
1,1,2-Trichloroethane	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Trichloroethylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Trichlorofluoromethane	ug/L	1.0	ND (1.0)	ND (1.0)	nc	60
Vinyl Chloride	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
m/p-Xylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
o-Xylene	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60
Xylenes, total	ug/L	0.5	ND (0.5)	ND (0.5)	nc	60

NOTES:

Analysis by Paracel Laboratories Ltd.

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 23 - Relative Percent Differences - PAH and PCB in Groundwater - Post-Remediation
 315 Miwate Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	RDL	MW21-02	Duplicate	RPD (%)	Alert Limit (%)
			12-Jan-2022	12-Jan-2022		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Acenaphthylene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Anthracene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Benzo[a]anthracene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Benzo[a]pyrene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Benzo[b]fluoranthene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Benzo[g,h,i]perylene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Benzo[k]fluoranthene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Chrysene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Dibenzo[a,h]anthracene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Fluoranthene	ug/L	0.01	ND (0.01)	ND (0.01)	nc	60
Fluorene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Indeno[1,2,3-cd]pyrene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
1-Methylnaphthalene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
2-Methylnaphthalene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Methylnaphthalene (1&2)	ug/L	0.10	ND (0.10)	ND (0.10)	nc	60
Naphthalene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Phenanthrene	ug/L	0.05	ND (0.05)	ND (0.05)	nc	60
Pyrene	ug/L	0.01	ND (0.01)	ND (0.01)	mc	60
Polychlorinated Biphenyls						
PCBs Total	ug/L	0.050	ND (0.05)	ND (0.05)	nc	60

NOTES:

Analysis by Paracel Laboratories Ltd.

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 24 - Relative Percent Differences - Inorganic Parameters in Groundwater - Post-Remediation
315 Miwate Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Parameter	Units	RDL	MW21-01	Duplicate	RPD (%)	Alert Limit (%)
			21-Dec-2021	21-Dec-2021		
<i>Inorganics</i>						
Antimony	ug/L	0.1	ND (0.5)	ND (0.5)	nc	40
Arsenic	ug/L	0.5	ND (1)	ND (1)	nc	40
Barium	ug/L	1	595	615	3	40
Beryllium	ug/L	1	ND (0.5)	ND (0.5)	nc	40
Boron	ug/L	0.5	747	748	0	40
Cadmium	ug/L	10	ND (0.1)	ND (0.1)	nc	40
Chromium	ug/L	0.1	ND (1)	ND (1)	nc	40
Chromium (VI)	ug/L	1	ND (10)	ND (10)	nc	40
Cobalt	ug/L	10	ND (0.5)	ND (0.5)	nc	40
Copper	ug/L	0.5	1.2	1.1	9	40
Lead	ug/L	0.5	ND (0.1)	ND (0.1)	nc	40
Mercury	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Molybdenum	ug/L	0.5	3.5	3.5	0	40
Nickel	ug/L	1	4	4	0	40
Selenium	ug/L	1	ND (1)	ND (1)	nc	40
Silver	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Sodium	ug/L	200	342000	348000	2	40
Thallium	ug/L	0.1	ND (0.1)	ND (0.1)	nc	40
Uranium	ug/L	0.1	1.2	1.2	0	40
Vanadium	ug/L	0.5	ND (0.5)	ND (0.5)	nc	40
Zinc	ug/L	5	ND (5)	ND (5)	nc	40

NOTES:

Analysis by Paracel Laboratories Ltd.

Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 2 - Pre-Remediation Analytical Results in Soil - PAH and PCB
 315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	BH/MW21-01-01	BH/MW21-02-01	BH/MW21-03-01	D206 (Duplicate BH/MW21-03-01)	BH/MW21-03-02	BH/MW21-04-01	BH/MW21-04-02	BH/MW21-05-01
Sampling Date				15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	17-Mar-2021
Sample Depth (mbgs)				0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.6 to 1.2	0.0 to 0.6	0.6 to 0.8	0.0 to 0.6
Parcel ID		Bold	Orange	2112349-01	2112349-02	2112349-03	2112349-04	2112349-05	2112349-06	2112349-07	2112654-01
Analysis Date				17-Mar-21	17-Mar-21	17-Mar-21	17-Mar-21	17-Mar-21	17-Mar-21	17-Mar-21	17-Mar-21
Parcel Certificate of Analysis				2112349	2112349	2112349	2112349	2112349	2112349	2112349	2112349
Semi-Volatiles											
Acenaphthene	ug/g dry	0.072	7.9	0.10	ND (0.02)	0.11	0.21	0.05	0.03	0.02	ND (0.02)
Acenaphthylene	ug/g dry	0.093	0.15	0.09	ND (0.02)	0.07	0.12	0.02	0.05	0.06	ND (0.02)
Anthracene	ug/g dry	0.22	0.67	0.21	ND (0.02)	0.47	0.83	0.17	0.07	0.11	ND (0.02)
Benzo[a]anthracene	ug/g dry	0.36	0.5	0.72	0.03	1.02	1.35	0.30	0.18	0.31	0.06
Benzo[a]pyrene	ug/g dry	0.3	0.3	0.42	0.04	0.88	1.16	0.32	0.19	0.26	0.07
Benzo[b]fluoranthene	ug/g dry	0.47	0.78	0.65	0.05	0.82	1.31	0.31	0.22	0.39	0.08
Benzo[g,h,i]perylene	ug/g dry	0.68	6.6	0.33	0.03	0.48	0.62	0.17	0.12	0.20	0.06
Benzo[k]fluoranthene	ug/g dry	0.48	0.78	0.31	0.02	0.45	0.74	0.15	0.11	0.16	0.04
Chrysene	ug/g dry	2.8	7	0.49	0.04	0.83	1.28	0.32	0.17	0.31	0.06
Dibenzo[a,h]anthracene	ug/g dry	0.1	0.1	0.08	ND (0.02)	0.13	0.19	0.05	0.03	0.05	ND (0.02)
Fluoranthene	ug/g dry	0.69	0.69	0.74	0.06	1.88	3.25	0.63	0.36	0.43	0.09
Fluorene	ug/g dry	0.19	62	0.13	ND (0.02)	0.19	0.3	0.07	0.03	0.06	ND (0.02)
Indeno[1,2,3-cd]pyrene	ug/g dry	0.23	0.38	0.25	0.02	0.47	0.64	0.16	0.11	0.19	0.04
1-Methylnaphthalene	ug/g dry	0.59	0.99	2.72	0.06	0.06	0.14	0.04	0.06	0.93	ND (0.02)
2-Methylnaphthalene	ug/g dry	0.59	0.99	4.34	0.11	0.13	0.2	0.06	0.10	1.36	0.04
Methylnaphthalene (1&2)	ug/g dry	0.59	0.99	7.05	0.17	0.19	0.34	0.10	0.17	2.29	0.06
Naphthalene	ug/g dry	0.09	0.6	1.94	0.05	0.21	0.33	0.10	0.04	1.00	0.03
Phenanthrene	ug/g dry	0.69	6.2	1.19	0.06	1.75	2.78	0.65	0.24	0.65	0.07
Pyrene	ug/g dry	1	78	0.86	0.05	1.50	2.53	0.50	0.31	0.42	0.09
PCBs											
PCBs Total	ug/g dry	0.3	0.35	ND (0.05)	ND (0.05)	0.16	0.14	ND (0.05)	0.11	ND (0.05)	ND (0.05)

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use
- Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 3 - Pre-Remediation Analytical Results in Soil - Inorganic Parameters
 315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
 OTT-00250193-P0

Parameter	Units	MECP Table 9 ¹	MECP Table 7 ²	BH/MW21-01-01	BH/MW21-02-01	BH/MW21-03-01	D206 (Duplicate BH/MW21-03-01)	BH/MW21-03-02	BH/MW21-04-01	BH/MW21-04-02	BH/MW21-05-01
				15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021	15-Mar-2021
Sampling Date				0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.0 to 0.6	0.6 to 1.2	0.0 to 0.6	0.6 to 0.8	0.0 to 0.6
Sample Depth (mbgs)				2112349-01	2112349-02	2112349-03	2112349-04	2112349-05	2112349-06	2112349-07	2112654-01
Parcel ID		Bold	Orange	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21	22-Mar-21
Analysis Date				2112349	2112349	2112349	2112349	2112349	2112349	2112349	2112349
Parcel Certificate of Analysis											
Metals											
Antimony	ug/g dry	1.3	7.5	3.8	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	1.3	ND (1.0)
Arsenic	ug/g dry	18	18	134	4.1	2.9	2.6	3.2	2.7	21.6	2.2
Barium	ug/g dry	220	390	420	137	144	136	198	211	161	146
Beryllium	ug/g dry	2.5	4	1.1	ND (0.5)	ND (0.5)	ND (0.5)	0.6	ND (0.5)	0.8	ND (0.5)
Boron	ug/g dry	36	120	16.7	9.2	10.9	10.4	17.8	13.4	16.8	9.5
Cadmium	ug/g dry	1.2	1.2	0.8	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chromium	ug/g dry	70	160	26.2	11.1	15.4	13.3	17.3	13.6	13.6	10.5
Chromium (VI)	ug/g dry	0.66	8	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Cobalt	ug/g dry	22	22	10.0	3.6	3.2	3.2	5.7	5.4	8.7	3.5
Copper	ug/g dry	92	140	121	8.0	18.8	17.8	10.0	20.8	55.8	10.1
Lead	ug/g dry	120	120	218	12.5	18.8	17.9	15.7	26.4	2880	9.7
Mercury	ug/g dry	0.27	0.27	0.6	ND (0.1)	0.1	0.1	ND (0.1)	ND (0.1)	0.3	ND (0.1)
Molybdenum	ug/g dry	2	6.9	13.5	1.9	1.5	ND (1.0)	ND (1.0)	ND (1.0)	3.6	ND (1.0)
Nickel	ug/g dry	82	100	37.4	9.5	14.1	10.0	14.6	11.4	24.4	9.1
Selenium	ug/g dry	1.5	2.4	2.6	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	1.7	ND (1.0)
Silver	ug/g dry	0.5	20	0.3	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)
Thallium	ug/g dry	1	1	1.7	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Uranium	ug/g dry	2.5	23	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vanadium	ug/g dry	86	86	29.8	ND (10.0)	11.6	11.4	10.4	19.8	22.5	13.6
Zinc	ug/g dry	290	340	183	25.3	37.7	34.8	ND (20.0)	39.9	148	ND (20.0)
General Inorganics											
Cyanide, free	ug/g dry	0.051	0.051	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)
pH	pH Units	5 to 9	5 to 9	-	-	-	-	-	8.20	7.58	-

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- 2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
- ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- Indicates soil exceedance of MECP Table 9 generic site condition standard for coarse textured soil and residential/parkland/institutional property use**
- Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use**

EXP Services Inc.

Windmill Dream Zibi Ontario Inc.

Phase Two Environmental Site Assessment

315 Miwàte Private, West Chaudière Island, Ottawa, Ontario

OTT-00250193-P0

April 20, 2022

Appendix H: Laboratory Certificates of Analysis

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi- Chaudiere Island
Project: OTT00250193E0
Custody:

Report Date: 18-Mar-2019
Order Date: 14-Mar-2019

Order #: 1911439

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

Parcel ID	Client ID
1911439-01	SS-1
1911439-02	TB-0314

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: exp Services Inc. (Ottawa)
Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019
 Order Date: 14-Mar-2019
Project Description: OTT00250193E0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	17-Mar-19	18-Mar-19
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	15-Mar-19	15-Mar-19
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Mar-19	18-Mar-19
PHC F1	CWS Tier 1 - P&T GC-FID	17-Mar-19	18-Mar-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	15-Mar-19	17-Mar-19
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	18-Mar-19	18-Mar-19
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	15-Mar-19	18-Mar-19
Solids, %	Gravimetric, calculation	18-Mar-19	18-Mar-19

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019

Order Date: 14-Mar-2019

Project Description: OTT00250193E0

Client ID:	SS-1	TB-0314	-	-
Sample Date:	03/14/2019 10:15	03/14/2019 10:15	-	-
Sample ID:	1911439-01	1911439-02	-	-
MDL/Units	Soil	Soil	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	89.3	100	-	-
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Metals

Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	2.2	-	-	-
Barium	1.0 ug/g dry	61.3	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	8.3	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	9.9	-	-	-
Chromium (VI)	0.2 ug/g dry	<0.2	-	-	-
Cobalt	1.0 ug/g dry	3.9	-	-	-
Copper	5.0 ug/g dry	8.3	-	-	-
Lead	1.0 ug/g dry	51.5	-	-	-
Mercury	0.1 ug/g dry	<0.1	-	-	-
Molybdenum	1.0 ug/g dry	<1.0	-	-	-
Nickel	5.0 ug/g dry	9.5	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	14.3	-	-	-
Zinc	20.0 ug/g dry	<20.0	-	-	-

Volatiles

Benzene	0.02 ug/g dry	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	-	-
Toluene	0.05 ug/g dry	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g dry	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	-	-
Toluene-d8	Surrogate	103%	106%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	25	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	14	-	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019

Order Date: 14-Mar-2019

Project Description: OTT00250193E0

Client ID:	SS-1	TB-0314	-	-
Sample Date:	03/14/2019 10:15	03/14/2019 10:15	-	-
Sample ID:	1911439-01	1911439-02	-	-
MDL/Units	Soil	Soil	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	0.03	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	0.06	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	0.13	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	0.10	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.13	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	0.07	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	0.07	-	-	-
Chrysene	0.02 ug/g dry	0.14	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	0.33	-	-	-
Fluorene	0.02 ug/g dry	0.03	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.06	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-
Phenanthrene	0.02 ug/g dry	0.25	-	-	-
Pyrene	0.02 ug/g dry	0.25	-	-	-
2-Fluorobiphenyl	Surrogate	95.8%	-	-	-
Terphenyl-d14	Surrogate	136%	-	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019
 Order Date: 14-Mar-2019
 Project Description: OTT00250193E0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.10		ug/g		82.5	50-140			
Surrogate: Terphenyl-d14	1.55		ug/g		116	50-140			
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	8.48		ug/g		106	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019
 Order Date: 14-Mar-2019
 Project Description: OTT00250193E0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	9			0.0	30	
F3 PHCs (C16-C34)	29	8	ug/g dry	73			87.3	30	QR-04
F4 PHCs (C34-C50)	ND	6	ug/g dry	21			0.0	30	
Metals									
Antimony	ND	1.0	ug/g dry	ND			0.0	30	
Arsenic	2.4	1.0	ug/g dry	2.2			7.7	30	
Barium	62.3	1.0	ug/g dry	61.3			1.6	30	
Beryllium	0.5	0.5	ug/g dry	ND			0.0	30	
Boron	9.0	5.0	ug/g dry	8.3			7.4	30	
Cadmium	ND	0.5	ug/g dry	ND			0.0	30	
Chromium (VI)	ND	0.2	ug/g dry	ND				35	
Chromium	10.2	5.0	ug/g dry	9.9			2.8	30	
Cobalt	4.0	1.0	ug/g dry	3.9			3.1	30	
Copper	8.6	5.0	ug/g dry	8.3			3.1	30	
Lead	52.7	1.0	ug/g dry	51.5			2.4	30	
Mercury	ND	0.1	ug/g dry	ND			0.0	30	
Molybdenum	1.1	1.0	ug/g dry	ND			0.0	30	
Nickel	9.5	5.0	ug/g dry	9.5			0.3	30	
Selenium	ND	1.0	ug/g dry	ND			0.0	30	
Silver	ND	0.3	ug/g dry	ND			0.0	30	
Thallium	ND	1.0	ug/g dry	ND			0.0	30	
Uranium	ND	1.0	ug/g dry	ND			0.0	30	
Vanadium	14.4	10.0	ug/g dry	14.3			0.8	30	
Zinc	ND	20.0	ug/g dry	ND			0.0	30	
Physical Characteristics									
% Solids	67.4	0.1	% by Wt.	68.9			2.3	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND				40	
Acenaphthylene	ND	0.02	ug/g dry	ND				40	
Anthracene	ND	0.02	ug/g dry	ND			0.0	40	
Benzo [a] anthracene	ND	0.02	ug/g dry	ND			0.0	40	
Benzo [a] pyrene	ND	0.02	ug/g dry	ND			0.0	40	
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND			0.0	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND			0.0	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND			0.0	40	
Chrysene	ND	0.02	ug/g dry	ND			0.0	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			0.0	40	
Fluoranthene	ND	0.02	ug/g dry	ND			0.0	40	
Fluorene	ND	0.02	ug/g dry	ND				40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND			0.0	40	
1-Methylnaphthalene	ND	0.02	ug/g dry	ND				40	
2-Methylnaphthalene	ND	0.02	ug/g dry	ND				40	
Naphthalene	ND	0.01	ug/g dry	ND				40	
Phenanthrene	ND	0.02	ug/g dry	ND			0.0	40	
Pyrene	ND	0.02	ug/g dry	ND			0.0	40	
Surrogate: 2-Fluorobiphenyl	1.15		ug/g dry		71.6	50-140			
Surrogate: Terphenyl-d14	1.74		ug/g dry		108	50-140			
Volatiles									
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	9.74		ug/g dry		106	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019

Order Date: 14-Mar-2019

Project Description: OTT00250193E0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F2 PHCs (C10-C16)	95	4	ug/g	9	89.7	60-140			
F3 PHCs (C16-C34)	276	8	ug/g	73	86.4	60-140			
F4 PHCs (C34-C50)	160	6	ug/g	21	94.1	60-140			
Metals									
Antimony	41.4		ug/L	ND	82.1	70-130			
Arsenic	46.3		ug/L	ND	90.8	70-130			
Barium	68.0		ug/L	24.5	87.1	70-130			
Beryllium	49.3		ug/L	ND	98.5	70-130			
Boron	49.7		ug/L	ND	92.7	70-130			
Cadmium	43.6		ug/L	ND	87.1	70-130			
Chromium (VI)	0.2		mg/L	ND	89.5	70-130			
Chromium	52.2		ug/L	ND	96.5	70-130			
Cobalt	43.8		ug/L	1.6	84.4	70-130			
Copper	48.8		ug/L	ND	90.9	70-130			
Lead	59.9		ug/L	20.6	78.7	70-130			
Mercury	1.44	0.1	ug/g	ND	95.9	70-130			
Molybdenum	47.1		ug/L	ND	93.3	70-130			
Nickel	49.1		ug/L	ND	90.7	70-130			
Selenium	44.2		ug/L	ND	88.1	70-130			
Silver	40.8		ug/L	ND	81.5	70-130			
Thallium	41.9		ug/L	ND	83.7	70-130			
Uranium	42.7		ug/L	ND	85.0	70-130			
Vanadium	54.2		ug/L	ND	97.0	70-130			
Zinc	49.3		ug/L	ND	86.1	70-130			
Semi-Volatiles									
Acenaphthene	0.196	0.02	ug/g	ND	97.5	50-140			
Acenaphthylene	0.178	0.02	ug/g	ND	88.5	50-140			
Anthracene	0.176	0.02	ug/g	ND	87.4	50-140			
Benzo [a] anthracene	0.183	0.02	ug/g	ND	90.8	50-140			
Benzo [a] pyrene	0.163	0.02	ug/g	ND	81.0	50-140			
Benzo [b] fluoranthene	0.260	0.02	ug/g	ND	129	50-140			
Benzo [g,h,i] perylene	0.180	0.02	ug/g	ND	89.5	50-140			
Benzo [k] fluoranthene	0.223	0.02	ug/g	ND	111	50-140			
Chrysene	0.197	0.02	ug/g	ND	97.8	50-140			
Dibenzo [a,h] anthracene	0.147	0.02	ug/g	ND	73.3	50-140			
Fluoranthene	0.178	0.02	ug/g	ND	88.6	50-140			
Fluorene	0.175	0.02	ug/g	ND	86.9	50-140			
Indeno [1,2,3-cd] pyrene	0.164	0.02	ug/g	ND	81.5	50-140			
1-Methylnaphthalene	0.141	0.02	ug/g	ND	70.2	50-140			
2-Methylnaphthalene	0.161	0.02	ug/g	ND	79.9	50-140			
Naphthalene	0.193	0.01	ug/g	ND	95.9	50-140			
Phenanthrene	0.192	0.02	ug/g	ND	95.4	50-140			
Pyrene	0.176	0.02	ug/g	ND	87.3	50-140			
Surrogate: 2-Fluorobiphenyl	1.10		ug/g		68.1	50-140			

Certificate of Analysis
Client: exp Services Inc. (Ottawa)
Client PO: Zibi- Chaudiere Island

Report Date: 18-Mar-2019
Order Date: 14-Mar-2019
Project Description: OTT00250193E0

Qualifier Notes:

QC Qualifiers :

QR-04 : Duplicate results exceeds RPD limits due to non-homogeneous matrix.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

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

1911439



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Chain of Custody
(Lab Use Only)

Page 1 of 1

Client Name: EXP Services Inc. Project Reference: Zbi - Chaudiere Island
 Contact Name: Patricia Stelmack Quote # 19-211
 Address: 100-2650 Queensview Drive PO # OTT-00250193-E0
 Ottawa, ON, K2B 8H6 Email Address: Patricia.Stelmack@exp.com
 Telephone: 613-688-1899

Turnaround Time:

1 Day 3 Day
 2 Day Regular
 Date Required: _____

Criteria: O. Reg. 153/04 (As Amended) Table 7 RSC Filing O. Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Parcel Order Number: 1911439				Required Analyses														
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP			B (HWS)	pH	PHC F1+BTEX				
				Date	Time				Hg	CrVI								
1 SS-1	Soil	/	4	03.14.19	10:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 TB-0314	S	/	1	0314.19	10:15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9				Sample #2 is a trip blank. ✓		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used. Method of Delivery: Walkin

Relinquished By (Sign): <u>[Signature]</u>	Received by Driver/Depot: <u>[Signature]</u>	Received at Lab: <u>SUNEPORN DOKMAI</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Scott Legend</u>	Date/Time: <u>03/14/19 11:30a</u>	Date/Time: <u>MAR 14 2019 12:00</u>	Date/Time: <u>03/14/19 12:53pm</u>
Date/Time: <u>03/14.19 11:30 am</u>	Temperature: <u>6.1</u> °C	Temperature: <u>9.1</u> °C	pH Verified [] By: _____

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO:
Project: OTT00250193EO
Custody: 121194

Report Date: 25-Mar-2019
Order Date: 19-Mar-2019

Order #: 1912284

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

Parcel ID	Client ID
1912284-01	NW-SS-2
1912284-02	TB-0319

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: exp Services Inc. (Ottawa)
Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.7 - ICP-OES	22-Mar-19	22-Mar-19
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	21-Mar-19	23-Mar-19
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Mar-19	21-Mar-19
Conductivity	MOE E3138 - probe @25 °C, water ext	22-Mar-19	22-Mar-19
Mercury by CVAA	EPA 7471B - CVAA, digestion	22-Mar-19	22-Mar-19
PCBs, total	SW846 8082A - GC-ECD	19-Mar-19	20-Mar-19
PHC F1	CWS Tier 1 - P&T GC-FID	21-Mar-19	23-Mar-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Mar-19	21-Mar-19
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	21-Mar-19	21-Mar-19
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	20-Mar-19	21-Mar-19
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	21-Mar-19	23-Mar-19
SAR	Calculated	22-Mar-19	22-Mar-19
Solids, %	Gravimetric, calculation	21-Mar-19	21-Mar-19

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Client ID:	NW-SS-2	TB-0319	-	-
Sample Date:	03/18/2019 03:00	03/19/2019 03:00	-	-
Sample ID:	1912284-01	1912284-02	-	-
MDL/Units	Soil	Soil	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	94.8	100	-	-
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General Inorganics

SAR	0.01 N/A	1.95	-	-	-
Conductivity	5 uS/cm	330	-	-	-

Metals

Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	2.8	-	-	-
Barium	1.0 ug/g dry	156	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	12.5	-	-	-
Boron, available	0.5 ug/g dry	0.5	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	14.6	-	-	-
Chromium (VI)	0.2 ug/g dry	<0.2	-	-	-
Cobalt	1.0 ug/g dry	7.0	-	-	-
Copper	5.0 ug/g dry	14.1	-	-	-
Lead	1.0 ug/g dry	12.6	-	-	-
Mercury	0.1 ug/g dry	<0.1	-	-	-
Molybdenum	1.0 ug/g dry	1.3	-	-	-
Nickel	5.0 ug/g dry	15.2	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	10.9	-	-	-
Zinc	20.0 ug/g dry	22.0	-	-	-

Volatiles

Acetone	0.50 ug/g dry	<0.50	<0.50	-	-
Benzene	0.02 ug/g dry	<0.02	<0.02	-	-
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	-	-
Bromoform	0.05 ug/g dry	<0.05	<0.05	-	-
Bromomethane	0.05 ug/g dry	<0.05	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	-	-
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
Chloroform	0.05 ug/g dry	<0.05	<0.05	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

	Client ID:	NW-SS-2	TB-0319	-	-
	Sample Date:	03/18/2019 03:00	03/19/2019 03:00	-	-
	Sample ID:	1912284-01	1912284-02	-	-
	MDL/Units	Soil	Soil	-	-
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	-	-
Ethylene dibromide (dibromoethane)	0.05 ug/g dry	<0.05	<0.05	-	-
Hexane	0.05 ug/g dry	<0.05	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	-	-
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	-	-
Styrene	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
Toluene	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	-	-
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g dry	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	-	-
4-Bromofluorobenzene	Surrogate	100%	102%	-	-
Dibromofluoromethane	Surrogate	106%	108%	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

	Client ID:	NW-SS-2	TB-0319	-	-
	Sample Date:	03/18/2019 03:00	03/19/2019 03:00	-	-
	Sample ID:	1912284-01	1912284-02	-	-
	MDL/Units	Soil	Soil	-	-
Toluene-d8	Surrogate	99.1%	98.6%	-	-
Benzene	0.02 ug/g dry	-	<0.02	-	-
Ethylbenzene	0.05 ug/g dry	-	<0.05	-	-
Toluene	0.05 ug/g dry	-	<0.05	-	-
m,p-Xylenes	0.05 ug/g dry	-	<0.05	-	-
o-Xylene	0.05 ug/g dry	-	<0.05	-	-
Xylenes, total	0.05 ug/g dry	-	<0.05	-	-
Toluene-d8	Surrogate	-	98.6%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g dry	6	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	86	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	58	-	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	<0.02	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	0.03	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	0.04	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	0.04	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.06	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	0.04	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	0.03	-	-	-
Chrysene	0.02 ug/g dry	0.04	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	0.12	-	-	-
Fluorene	0.02 ug/g dry	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.03	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-
Phenanthrene	0.02 ug/g dry	0.09	-	-	-
Pyrene	0.02 ug/g dry	0.09	-	-	-
2-Fluorobiphenyl	Surrogate	68.2%	-	-	-
Terphenyl-d14	Surrogate	79.1%	-	-	-

PCBs

PCBs, total	0.05 ug/g dry	<0.05	-	-	-
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Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

	Client ID:	NW-SS-2	TB-0319	-	-
	Sample Date:	03/18/2019 03:00	03/19/2019 03:00	-	-
	Sample ID:	1912284-01	1912284-02	-	-
	MDL/Units	Soil	Soil	-	-
Decachlorobiphenyl	Surrogate	70.7%	-	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Conductivity	ND	5	uS/cm						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron, available	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	0.146		ug/g		73.1	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.08		ug/g		80.7	50-140			
Surrogate: Terphenyl-d14	1.34		ug/g		101	50-140			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane)	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	9.04		ug/g		113	50-140			
Surrogate: Dibromofluoromethane	9.66		ug/g		121	50-140			
Surrogate: Toluene-d8	7.71		ug/g		96.3	50-140			
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	7.71		ug/g		96.3	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	43.6	0.01	N/A	42.5			2.5	200	
Conductivity	277	5	uS/cm	278			0.4	6.2	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND				30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND				30	
Metals									
Antimony	ND	1.0	ug/g dry	ND			0.0	30	
Arsenic	4.0	1.0	ug/g dry	3.9			1.9	30	
Barium	65.1	1.0	ug/g dry	66.4			2.0	30	
Beryllium	0.7	0.5	ug/g dry	0.8			3.3	30	
Boron, available	ND	0.5	ug/g dry	ND			0.0	35	
Boron	12.6	5.0	ug/g dry	11.6			8.2	30	
Cadmium	ND	0.5	ug/g dry	ND			0.0	30	
Chromium (VI)	ND	0.2	ug/g dry	ND				35	
Chromium	23.4	5.0	ug/g dry	23.3			0.4	30	
Cobalt	10.0	1.0	ug/g dry	10.1			1.0	30	
Copper	31.2	5.0	ug/g dry	31.3			0.2	30	
Lead	10.9	1.0	ug/g dry	10.8			0.5	30	
Mercury	ND	0.1	ug/g dry	ND			0.0	30	
Molybdenum	ND	1.0	ug/g dry	ND			0.0	30	
Nickel	23.6	5.0	ug/g dry	24.1			1.9	30	
Selenium	1.3	1.0	ug/g dry	1.3			0.8	30	
Silver	ND	0.3	ug/g dry	ND			0.0	30	
Thallium	ND	1.0	ug/g dry	ND			0.0	30	
Uranium	ND	1.0	ug/g dry	ND			0.0	30	
Vanadium	30.1	10.0	ug/g dry	30.5			1.2	30	
Zinc	62.8	20.0	ug/g dry	62.7			0.1	30	
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND				40	
Surrogate: Decachlorobiphenyl	0.174		ug/g dry		72.2	60-140			
Physical Characteristics									
% Solids	85.8	0.1	% by Wt.	86.0			0.2	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND				40	
Acenaphthylene	ND	0.02	ug/g dry	ND				40	
Anthracene	ND	0.02	ug/g dry	ND				40	
Benzo [a] anthracene	ND	0.02	ug/g dry	ND				40	
Benzo [a] pyrene	ND	0.02	ug/g dry	ND				40	
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND				40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND				40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND				40	
Chrysene	ND	0.02	ug/g dry	ND				40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND				40	
Fluoranthene	ND	0.02	ug/g dry	ND				40	
Fluorene	ND	0.02	ug/g dry	ND				40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND				40	
1-Methylnaphthalene	ND	0.02	ug/g dry	ND				40	
2-Methylnaphthalene	ND	0.02	ug/g dry	ND				40	
Naphthalene	ND	0.01	ug/g dry	ND				40	
Phenanthrene	ND	0.02	ug/g dry	ND				40	
Pyrene	ND	0.02	ug/g dry	ND				40	
Surrogate: 2-Fluorobiphenyl	1.51		ug/g dry		88.2	50-140			
Surrogate: Terphenyl-d14	2.15		ug/g dry		126	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	0.50	ug/g dry	ND				50	
Benzene	ND	0.02	ug/g dry	ND				50	
Bromodichloromethane	ND	0.05	ug/g dry	ND				50	
Bromoform	ND	0.05	ug/g dry	ND				50	
Bromomethane	ND	0.05	ug/g dry	ND				50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND				50	
Chlorobenzene	ND	0.05	ug/g dry	ND				50	
Chloroform	ND	0.05	ug/g dry	ND				50	
Dibromochloromethane	ND	0.05	ug/g dry	ND				50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND				50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Ethylene dibromide (dibromoethane)	ND	0.05	ug/g dry	ND				50	
Hexane	ND	0.05	ug/g dry	ND				50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND				50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND				50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND				50	
Methylene Chloride	ND	0.05	ug/g dry	ND				50	
Styrene	ND	0.05	ug/g dry	ND				50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND				50	
Trichloroethylene	ND	0.05	ug/g dry	ND				50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND				50	
Vinyl chloride	ND	0.02	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: 4-Bromofluorobenzene	9.22		ug/g dry		102	50-140			
Surrogate: Dibromofluoromethane	9.29		ug/g dry		102	50-140			
Surrogate: Toluene-d8	8.82		ug/g dry		97.3	50-140			
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	8.82		ug/g dry		97.3	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	182	7	ug/g		90.8	80-120			
F2 PHCs (C10-C16)	82	4	ug/g	ND	85.0	60-140			
F3 PHCs (C16-C34)	241	8	ug/g	ND	102	60-140			
F4 PHCs (C34-C50)	166	6	ug/g	ND	110	60-140			
Metals									
Antimony	41.8		ug/L	ND	82.9	70-130			
Arsenic	47.1		ug/L	1.6	91.1	70-130			
Barium	70.1		ug/L	26.6	87.0	70-130			
Beryllium	49.6		ug/L	ND	98.6	70-130			
Boron, available	3.98	0.5	ug/g	ND	79.5	70-122			
Boron	48.0		ug/L	ND	86.7	70-130			
Cadmium	43.2		ug/L	ND	86.3	70-130			
Chromium (VI)	0.2		mg/L	ND	78.0	70-130			
Chromium	52.9		ug/L	9.3	87.1	70-130			
Cobalt	47.0		ug/L	4.0	86.0	70-130			
Copper	52.8		ug/L	12.5	80.6	70-130			
Lead	46.4		ug/L	4.3	84.1	70-130			
Mercury	1.60	0.1	ug/g	ND	107	70-130			
Molybdenum	45.7		ug/L	ND	90.9	70-130			
Nickel	56.0		ug/L	9.6	92.7	70-130			
Selenium	44.6		ug/L	ND	88.1	70-130			
Silver	41.9		ug/L	ND	83.7	70-130			
Thallium	41.7		ug/L	ND	83.2	70-130			
Uranium	43.4		ug/L	ND	86.4	70-130			
Vanadium	60.7		ug/L	12.2	96.9	70-130			
Zinc	67.2		ug/L	25.1	84.3	70-130			
PCBs									
PCBs, total	0.762	0.05	ug/g	ND	79.0	60-140			
Surrogate: Decachlorobiphenyl	0.190		ug/g		78.7	60-140			
Semi-Volatiles									
Acenaphthene	0.267	0.02	ug/g	ND	125	50-140			
Acenaphthylene	0.220	0.02	ug/g	ND	103	50-140			
Anthracene	0.227	0.02	ug/g	ND	106	50-140			
Benzo [a] anthracene	0.225	0.02	ug/g	ND	105	50-140			
Benzo [a] pyrene	0.190	0.02	ug/g	ND	88.6	50-140			
Benzo [b] fluoranthene	0.259	0.02	ug/g	ND	121	50-140			
Benzo [g,h,i] perylene	0.194	0.02	ug/g	ND	90.8	50-140			
Benzo [k] fluoranthene	0.251	0.02	ug/g	ND	117	50-140			
Chrysene	0.217	0.02	ug/g	ND	102	50-140			
Dibenzo [a,h] anthracene	0.182	0.02	ug/g	ND	85.2	50-140			
Fluoranthene	0.236	0.02	ug/g	ND	110	50-140			
Fluorene	0.223	0.02	ug/g	ND	104	50-140			
Indeno [1,2,3-cd] pyrene	0.189	0.02	ug/g	ND	88.3	50-140			
1-Methylnaphthalene	0.178	0.02	ug/g	ND	83.4	50-140			
2-Methylnaphthalene	0.206	0.02	ug/g	ND	96.3	50-140			
Naphthalene	0.236	0.01	ug/g	ND	110	50-140			
Phenanthrene	0.231	0.02	ug/g	ND	108	50-140			
Pyrene	0.227	0.02	ug/g	ND	106	50-140			
Volatiles									
Acetone	12.3	0.50	ug/g		123	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	3.84	0.02	ug/g		96.0	60-130			
Bromodichloromethane	4.09	0.05	ug/g		102	60-130			
Bromoform	4.56	0.05	ug/g		114	60-130			
Bromomethane	3.47	0.05	ug/g		86.6	50-140			
Carbon Tetrachloride	3.87	0.05	ug/g		96.7	60-130			
Chlorobenzene	3.52	0.05	ug/g		88.1	60-130			
Chloroform	3.29	0.05	ug/g		82.3	60-130			
Dibromochloromethane	4.82	0.05	ug/g		120	60-130			
Dichlorodifluoromethane	5.13	0.05	ug/g		128	50-140			
1,2-Dichlorobenzene	2.89	0.05	ug/g		72.2	60-130			
1,3-Dichlorobenzene	3.31	0.05	ug/g		82.7	60-130			
1,4-Dichlorobenzene	3.16	0.05	ug/g		79.0	60-130			
1,1-Dichloroethane	4.94	0.05	ug/g		124	60-130			
1,2-Dichloroethane	4.11	0.05	ug/g		103	60-130			
1,1-Dichloroethylene	4.71	0.05	ug/g		118	60-130			
cis-1,2-Dichloroethylene	4.07	0.05	ug/g		102	60-130			
trans-1,2-Dichloroethylene	4.10	0.05	ug/g		102	60-130			
1,2-Dichloropropane	4.23	0.05	ug/g		106	60-130			
cis-1,3-Dichloropropylene	3.50	0.05	ug/g		87.6	60-130			
trans-1,3-Dichloropropylene	2.76	0.05	ug/g		69.1	60-130			
Ethylbenzene	3.74	0.05	ug/g		93.6	60-130			
Ethylene dibromide (dibromoethane)	4.33	0.05	ug/g		108	60-130			
Hexane	3.44	0.05	ug/g		85.9	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.22	0.50	ug/g		92.2	50-140			
Methyl Isobutyl Ketone	9.70	0.50	ug/g		97.0	50-140			
Methyl tert-butyl ether	8.21	0.05	ug/g		82.1	50-140			
Methylene Chloride	3.71	0.05	ug/g		92.7	60-130			
Styrene	3.47	0.05	ug/g		86.8	60-130			
1,1,1,2-Tetrachloroethane	4.80	0.05	ug/g		120	60-130			
1,1,1,2,2-Tetrachloroethane	2.53	0.05	ug/g		63.3	60-130			
Tetrachloroethylene	4.30	0.05	ug/g		107	60-130			
Toluene	3.65	0.05	ug/g		91.2	60-130			
1,1,1-Trichloroethane	3.81	0.05	ug/g		95.2	60-130			
1,1,2-Trichloroethane	4.00	0.05	ug/g		100	60-130			
Trichloroethylene	4.90	0.05	ug/g		122	60-130			
Trichlorofluoromethane	3.72	0.05	ug/g		93.1	50-140			
Vinyl chloride	4.47	0.02	ug/g		112	50-140			
m,p-Xylenes	7.40	0.05	ug/g		92.5	60-130			
o-Xylene	3.94	0.05	ug/g		98.6	60-130			
Benzene	3.84	0.02	ug/g		96.0	60-130			
Ethylbenzene	3.74	0.05	ug/g		93.6	60-130			
Toluene	3.65	0.05	ug/g		91.2	60-130			
m,p-Xylenes	7.40	0.05	ug/g		92.5	60-130			
o-Xylene	3.94	0.05	ug/g		98.6	60-130			

Certificate of Analysis
Client: exp Services Inc. (Ottawa)
Client PO:

Report Date: 25-Mar-2019

Order Date: 19-Mar-2019

Project Description: OTT00250193EO

Qualifier Notes:

Sample Qualifiers :

1 : Limited sample volume available limiting accuracy of reported result.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

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



Client Name: EXP	Project Reference: 07-00250193-EO	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular
Contact Name: St. Patricia	Quote # 19-211	
Address: 100-2650 Queensview Dr.	PO #	
Telephone: 613-688-1899	Email Address: patricia.stelmach@exp.com	

Criteria: O. Reg. 153/04 (As Amended) Table ___ RSC Filing O. Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Parcel Order Number: 1912284		Matrix	Air Volume	# of Containers	Sample Taken		PICs FI-F4-BTEX	VOCs	PAHs	Metals by ICP	Hg	CWI	B (HWS)	BTEX, FI	PCB	EC/SAR	Sulphur	+avid!
Sample ID/Location Name					Date	Time												
1	NW-55-2	S	/	4	03.18.19	3:00 pm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	TB-0319	/	/	1	03.19.19									✓				1x vid!
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments: **TB-0319 is trip blank.** Method of Delivery: **walk**

Relinquished By (Sign):	Received by (Driver/Depot):	Received at Lab: SUMERPERN DOUMMI	Verified By:
Relinquished By (Print): Scott Lesourd	Date/Time: Mar 19 2019	Date/Time: Mar 19 2019 05:03	Date/Time: 3/18/19
Date/Time: 03.19.19 1:35 pm	Temperature: 10.0°C	Temperature: 8.0°C	pH Verified [] By: _____

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi - Chaudiere Island
Project: OTT00250193E0
Custody:

Report Date: 1-Apr-2019
Order Date: 26-Mar-2019

Order #: 1913226

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

Parcel ID	Client ID
1913226-01	SS-5
1913226-02	TB-0326

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.7 - ICP-OES	29-Mar-19	29-Mar-19
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	28-Mar-19	29-Mar-19
Mercury by CVAA	EPA 7471B - CVAA, digestion	29-Mar-19	1-Apr-19
PCBs, total	SW846 8082A - GC-ECD	27-Mar-19	29-Mar-19
PHC F1	CWS Tier 1 - P&T GC-FID	28-Mar-19	29-Mar-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	27-Mar-19	28-Mar-19
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	29-Mar-19	29-Mar-19
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	29-Mar-19	1-Apr-19
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	28-Mar-19	29-Mar-19
Solids, %	Gravimetric, calculation	29-Mar-19	29-Mar-19

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Client ID:	SS-5	TB-0326	-	-
Sample Date:	03/25/2019 10:00	03/26/2019 09:00	-	-
Sample ID:	1913226-01	1913226-02	-	-
MDL/Units	Soil	Soil	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	95.4	100	-	-
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Metals

Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	4.1	-	-	-
Barium	1.0 ug/g dry	158	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	11.3	-	-	-
Boron, available	0.5 ug/g dry	<0.5	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	12.1	-	-	-
Chromium (VI)	0.2 ug/g dry	<0.2	-	-	-
Cobalt	1.0 ug/g dry	6.5	-	-	-
Copper	5.0 ug/g dry	8.0	-	-	-
Lead	1.0 ug/g dry	11.9	-	-	-
Mercury	0.1 ug/g dry	<0.1	-	-	-
Molybdenum	1.0 ug/g dry	1.8	-	-	-
Nickel	5.0 ug/g dry	13.7	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	12.5	-	-	-
Zinc	20.0 ug/g dry	24.0	-	-	-

Volatiles

Acetone	0.50 ug/g dry	<0.50	<0.50	-	-
Benzene	0.02 ug/g dry	<0.02	<0.02	-	-
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	-	-
Bromoform	0.05 ug/g dry	<0.05	<0.05	-	-
Bromomethane	0.05 ug/g dry	<0.05	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	-	-
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
Chloroform	0.05 ug/g dry	<0.05	<0.05	-	-
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

	Client ID:	SS-5	TB-0326	-	-
	Sample Date:	03/25/2019 10:00	03/26/2019 09:00	-	-
	Sample ID:	1913226-01	1913226-02	-	-
	MDL/Units	Soil	Soil	-	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	-	-
Ethylene dibromide (dibromoethane)	0.05 ug/g dry	<0.05	<0.05	-	-
Hexane	0.05 ug/g dry	<0.05	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	-	-
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	-	-
Styrene	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
Toluene	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	-
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	-	-
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g dry	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	-	-
4-Bromofluorobenzene	Surrogate	85.2%	87.0%	-	-
Dibromofluoromethane	Surrogate	85.3%	81.1%	-	-
Toluene-d8	Surrogate	71.8%	74.2%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	-	-

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

	Client ID:	SS-5	TB-0326	-	-
	Sample Date:	03/25/2019 10:00	03/26/2019 09:00	-	-
	Sample ID:	1913226-01	1913226-02	-	-
	MDL/Units	Soil	Soil	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	<8	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	-	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	<0.02	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	0.02	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	<0.02	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.03	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Chrysene	0.02 ug/g dry	0.03	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	0.05	-	-	-
Fluorene	0.02 ug/g dry	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-
Phenanthrene	0.02 ug/g dry	0.04	-	-	-
Pyrene	0.02 ug/g dry	0.05	-	-	-
2-Fluorobiphenyl	Surrogate	83.8%	-	-	-
Terphenyl-d14	Surrogate	89.9%	-	-	-

PCBs

PCBs, total	0.05 ug/g dry	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	76.0%	-	-	-

Certificate of Analysis
 Client: **exp Services Inc. (Ottawa)**
 Client PO: **Zibi - Chaudiere Island**

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

 Project Description: **OTT00250193E0**

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron, available	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	0.113		ug/g		113	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.08		ug/g		80.9	50-140			
Surrogate: Terphenyl-d14	1.08		ug/g		81.1	50-140			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane)	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	2.93		ug/g		91.7	50-140			
Surrogate: Dibromofluoromethane	3.17		ug/g		99.1	50-140			
Surrogate: Toluene-d8	2.62		ug/g		81.9	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	55	8	ug/g dry	65			17.4	30	
F4 PHCs (C34-C50)	123	6	ug/g dry	166			29.9	30	
Metals									
Antimony	1.1	1.0	ug/g dry	ND			0.0	30	
Arsenic	4.1	1.0	ug/g dry	4.1			0.6	30	
Barium	147	1.0	ug/g dry	158			7.3	30	
Beryllium	0.5	0.5	ug/g dry	ND			0.0	30	
Boron, available	ND	0.5	ug/g dry	ND			0.0	35	
Boron	13.4	5.0	ug/g dry	11.3			17.0	30	
Cadmium	ND	0.5	ug/g dry	ND			0.0	30	
Chromium (VI)	ND	0.2	ug/g dry	ND				35	
Chromium	14.4	5.0	ug/g dry	12.1			17.5	30	
Cobalt	6.4	1.0	ug/g dry	6.5			2.4	30	
Copper	7.8	5.0	ug/g dry	8.0			2.4	30	
Lead	11.5	1.0	ug/g dry	11.9			3.0	30	
Mercury	ND	0.1	ug/g dry	ND			0.0	30	
Molybdenum	2.0	1.0	ug/g dry	1.8			12.3	30	
Nickel	14.1	5.0	ug/g dry	13.7			3.2	30	
Selenium	ND	1.0	ug/g dry	ND			0.0	30	
Silver	ND	0.3	ug/g dry	ND			0.0	30	
Thallium	ND	1.0	ug/g dry	ND			0.0	30	
Uranium	ND	1.0	ug/g dry	ND			0.0	30	
Vanadium	13.4	10.0	ug/g dry	12.5			7.4	30	
Zinc	23.5	20.0	ug/g dry	24.0			2.1	30	
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND				40	
Surrogate: Decachlorobiphenyl	0.141		ug/g dry		118	60-140			
Physical Characteristics									
% Solids	95.1	0.1	% by Wt.	95.4			0.4	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND				40	
Acenaphthylene	ND	0.02	ug/g dry	ND			0.0	40	
Anthracene	0.020	0.02	ug/g dry	ND			0.0	40	
Benzo [a] anthracene	0.035	0.02	ug/g dry	0.024			37.9	40	
Benzo [a] pyrene	0.028	0.02	ug/g dry	ND			0.0	40	
Benzo [b] fluoranthene	0.040	0.02	ug/g dry	0.030			29.5	40	
Benzo [g,h,i] perylene	0.021	0.02	ug/g dry	ND			0.0	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND			0.0	40	
Chrysene	0.040	0.02	ug/g dry	0.027			39.7	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			0.0	40	
Fluoranthene	0.068	0.02	ug/g dry	0.049			33.0	40	
Fluorene	ND	0.02	ug/g dry	ND			0.0	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND			0.0	40	
1-Methylnaphthalene	ND	0.02	ug/g dry	ND			0.0	40	
2-Methylnaphthalene	ND	0.02	ug/g dry	ND			0.0	40	
Naphthalene	ND	0.01	ug/g dry	ND			0.0	40	
Phenanthrene	0.050	0.02	ug/g dry	0.041			20.4	40	
Pyrene	0.059	0.02	ug/g dry	0.048			19.6	40	
Surrogate: 2-Fluorobiphenyl	1.25		ug/g dry		89.2	50-140			
Surrogate: Terphenyl-d14	1.33		ug/g dry		95.1	50-140			
Volatiles									
Acetone	ND	0.50	ug/g dry	ND				50	
Benzene	ND	0.02	ug/g dry	ND				50	

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromodichloromethane	ND	0.05	ug/g dry	ND				50	
Bromoform	ND	0.05	ug/g dry	ND				50	
Bromomethane	ND	0.05	ug/g dry	ND				50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND				50	
Chlorobenzene	ND	0.05	ug/g dry	ND				50	
Chloroform	ND	0.05	ug/g dry	ND				50	
Dibromochloromethane	ND	0.05	ug/g dry	ND				50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND				50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND			0.0	50	
Ethylene dibromide (dibromoethane)	ND	0.05	ug/g dry	ND				50	
Hexane	ND	0.05	ug/g dry	ND				50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND				50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND				50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND				50	
Methylene Chloride	ND	0.05	ug/g dry	ND				50	
Styrene	ND	0.05	ug/g dry	ND				50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND				50	
Trichloroethylene	ND	0.05	ug/g dry	ND				50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND				50	
Vinyl chloride	ND	0.02	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: 4-Bromofluorobenzene	2.85		ug/g dry		80.0	50-140			
Surrogate: Dibromofluoromethane	3.23		ug/g dry		90.7	50-140			
Surrogate: Toluene-d8	2.73		ug/g dry		76.8	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	182	7	ug/g		91.0	80-120			
F2 PHCs (C10-C16)	81	4	ug/g	ND	88.8	60-140			
F3 PHCs (C16-C34)	303	8	ug/g	65	106	60-140			
F4 PHCs (C34-C50)	338	6	ug/g	166	122	60-140			
Metals									
Antimony	46.8		ug/L		93.6	70-130			
Arsenic	50.2		ug/L		100	70-130			
Barium	49.9		ug/L		99.9	70-130			
Beryllium	55.1		ug/L		110	70-130			
Boron, available	3.55	0.5	ug/g	ND	71.0	70-122			
Boron	53.3		ug/L		107	70-130			
Cadmium	50.5		ug/L		101	70-130			
Chromium (VI)	5.1	0.2	ug/g	ND	88.5	70-130			
Chromium	54.5		ug/L		109	70-130			
Cobalt	48.5		ug/L		97.0	70-130			
Copper	53.4		ug/L		107	70-130			
Lead	44.4		ug/L		88.7	70-130			
Mercury	1.40	0.1	ug/g	ND	93.4	70-130			
Molybdenum	49.9		ug/L		99.8	70-130			
Nickel	52.4		ug/L		105	70-130			
Selenium	49.8		ug/L		99.5	70-130			
Silver	47.5		ug/L		95.0	70-130			
Thallium	46.8		ug/L		93.5	70-130			
Uranium	50.0		ug/L		100	70-130			
Vanadium	53.4		ug/L		107	70-130			
Zinc	50.9		ug/L		102	70-130			
PCBs									
PCBs, total	0.511	0.05	ug/g	ND	107	60-140			
Surrogate: Decachlorobiphenyl	0.142		ug/g		119	60-140			
Semi-Volatiles									
Acenaphthene	0.157	0.02	ug/g	ND	89.6	50-140			
Acenaphthylene	0.152	0.02	ug/g	ND	86.8	50-140			
Anthracene	0.209	0.02	ug/g	ND	119	50-140			
Benzo [a] anthracene	0.212	0.02	ug/g	0.024	108	50-140			
Benzo [a] pyrene	0.167	0.02	ug/g	ND	95.7	50-140			
Benzo [b] fluoranthene	0.272	0.02	ug/g	0.030	139	50-140			
Benzo [g,h,i] perylene	0.157	0.02	ug/g	ND	89.7	50-140			
Benzo [k] fluoranthene	0.213	0.02	ug/g	ND	122	50-140			
Chrysene	0.252	0.02	ug/g	0.027	129	50-140			
Dibenzo [a,h] anthracene	0.139	0.02	ug/g	ND	79.4	50-140			
Fluoranthene	0.264	0.02	ug/g	0.049	123	50-140			
Fluorene	0.166	0.02	ug/g	ND	95.3	50-140			
Indeno [1,2,3-cd] pyrene	0.158	0.02	ug/g	ND	90.5	50-140			
1-Methylnaphthalene	0.190	0.02	ug/g	ND	109	50-140			
2-Methylnaphthalene	0.211	0.02	ug/g	ND	121	50-140			
Naphthalene	0.197	0.01	ug/g	ND	113	50-140			
Phenanthrene	0.273	0.02	ug/g	0.041	133	50-140			
Pyrene	0.256	0.02	ug/g	0.048	119	50-140			
Volatiles									
Acetone	6.45	0.50	ug/g		64.5	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	3.22	0.02	ug/g		80.6	60-130			
Bromodichloromethane	2.78	0.05	ug/g		69.5	60-130			
Bromoform	2.70	0.05	ug/g		67.6	60-130			
Bromomethane	3.16	0.05	ug/g		79.1	50-140			
Carbon Tetrachloride	2.73	0.05	ug/g		68.1	60-130			
Chlorobenzene	3.39	0.05	ug/g		84.7	60-130			
Chloroform	3.05	0.05	ug/g		76.3	60-130			
Dibromochloromethane	3.02	0.05	ug/g		75.4	60-130			
Dichlorodifluoromethane	2.85	0.05	ug/g		71.2	50-140			
1,2-Dichlorobenzene	3.99	0.05	ug/g		99.7	60-130			
1,3-Dichlorobenzene	4.05	0.05	ug/g		101	60-130			
1,4-Dichlorobenzene	3.28	0.05	ug/g		82.1	60-130			
1,1-Dichloroethane	3.34	0.05	ug/g		83.4	60-130			
1,2-Dichloroethane	3.00	0.05	ug/g		75.0	60-130			
1,1-Dichloroethylene	3.44	0.05	ug/g		86.1	60-130			
cis-1,2-Dichloroethylene	2.97	0.05	ug/g		74.4	60-130			
trans-1,2-Dichloroethylene	2.75	0.05	ug/g		68.7	60-130			
1,2-Dichloropropane	3.22	0.05	ug/g		80.5	60-130			
cis-1,3-Dichloropropylene	2.75	0.05	ug/g		68.8	60-130			
trans-1,3-Dichloropropylene	2.83	0.05	ug/g		70.7	60-130			
Ethylbenzene	3.22	0.05	ug/g		80.4	60-130			
Ethylene dibromide (dibromoethane)	4.25	0.05	ug/g		106	60-130			
Hexane	2.88	0.05	ug/g		71.9	60-130			
Methyl Ethyl Ketone (2-Butanone)	6.89	0.50	ug/g		68.9	50-140			
Methyl Isobutyl Ketone	8.36	0.50	ug/g		83.6	50-140			
Methyl tert-butyl ether	6.94	0.05	ug/g		69.4	50-140			
Methylene Chloride	3.08	0.05	ug/g		76.9	60-130			
Styrene	3.88	0.05	ug/g		97.1	60-130			
1,1,1,2-Tetrachloroethane	3.16	0.05	ug/g		79.1	60-130			
1,1,1,2,2-Tetrachloroethane	3.50	0.05	ug/g		87.4	60-130			
Tetrachloroethylene	4.07	0.05	ug/g		102	60-130			
Toluene	3.19	0.05	ug/g		79.8	60-130			
1,1,1-Trichloroethane	2.86	0.05	ug/g		71.5	60-130			
1,1,2-Trichloroethane	3.58	0.05	ug/g		89.5	60-130			
Trichloroethylene	3.56	0.05	ug/g		89.0	60-130			
Trichlorofluoromethane	2.71	0.05	ug/g		67.8	50-140			
Vinyl chloride	2.83	0.02	ug/g		70.7	50-140			
m,p-Xylenes	8.22	0.05	ug/g		103	60-130			
o-Xylene	3.38	0.05	ug/g		84.6	60-130			

Certificate of Analysis
Client: exp Services Inc. (Ottawa)
Client PO: Zibi - Chaudiere Island

Report Date: 01-Apr-2019

Order Date: 26-Mar-2019

Project Description: OTT00250193E0

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

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



RELIABLE.

Head Office
300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
1-800-743-1947
paracel@paracellabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 1

Client Name: EXP Services Inc.	Project Reference: Zibi - Chaudiere Island	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Patricia Stelmack	Quote #: 19-211	
Address: 100-2650 Queensview Drive Ottawa, ON, K2B 8H6	PO #: OTT-00250193-E0 Email Address: Patricia.Stelmack@exp.com	
Telephone: 613-688-1899		

Criteria: O. Reg. 153/04 (As Amended) Table 1 RSC Filing O. Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Required Analyses

Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	VOC, PHC F1-F4	PCB	EC/SAR	pH	VOC, PHC F1		
				Date	Time														
1 SS-5	Soil	/	4	03.25.19	10:00	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 TB-0326	S	/	1	03.26.19	9:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used.

TB-0326 is a trip blank.

Method of Delivery:

Paracel

Relinquished By (Sign): <i>[Signature]</i>	Received by Driver/Depot: <i>[Signature]</i>	Received at Lab: <i>[Signature]</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): Scott Lessard	Date/Time: 26/03/19 11:53	Date/Time: 26/03/19	Date/Time: 3/26/19 14:15
Date/Time: 03.26.19 9:00 am	Temperature: _____ °C AH	Temperature: 18 °C	pH Verified [] By: _____

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi Albert and Chaudière Island
Project: OTT00250193P0
Custody:

Report Date: 23-Mar-2021
Order Date: 16-Mar-2021

Order #: 2112349

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

Parcel ID	Client ID
2112349-01	BH/MW21-01-01
2112349-02	BH/MW21-02-01
2112349-03	BH/MW21-03-01
2112349-04	D206
2112349-05	BH/MW21-03-02
2112349-06	BH/MW21-04-01
2112349-07	BH/MW21-04-02

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	17-Mar-21	19-Mar-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	17-Mar-21	19-Mar-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	23-Mar-21	23-Mar-21
PCBs, total	SW846 8082A - GC-ECD	17-Mar-21	18-Mar-21
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	19-Mar-21	19-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	18-Mar-21	19-Mar-21
PHC F4G (gravimetric)	CWS Tier 1 - Extraction Gravimetric	22-Mar-21	22-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Mar-21	19-Mar-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	22-Mar-21	22-Mar-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	17-Mar-21	22-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	18-Mar-21	18-Mar-21
Solids, %	Gravimetric, calculation	18-Mar-21	18-Mar-21

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Client ID:	BH/MW21-01-01	BH/MW21-02-01	BH/MW21-03-01	D206
Sample Date:	15-Mar-21 08:30	15-Mar-21 09:15	15-Mar-21 09:30	15-Mar-21 09:30
Sample ID:	2112349-01	2112349-02	2112349-03	2112349-04
MDL/Units	Soil	Soil	Soil	Soil

Physical Characteristics

% Solids	0.1 % by Wt.	74.8	85.1	87.5	84.9
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General Inorganics

Cyanide, free	0.03 ug/g dry	<0.03	<0.03	<0.03	<0.03
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Metals

Antimony	1.0 ug/g dry	3.8	<1.0	<1.0	<1.0
Arsenic	1.0 ug/g dry	134	4.1	2.9	2.6
Barium	1.0 ug/g dry	420	137	144	136
Beryllium	0.5 ug/g dry	1.1	<0.5	<0.5	<0.5
Boron	5.0 ug/g dry	16.7	9.2	10.9	10.4
Cadmium	0.5 ug/g dry	0.8	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	26.2	11.1	15.4	13.3
Chromium (VI)	0.2 ug/g dry	<0.2	<0.2	<0.2	<0.2
Cobalt	1.0 ug/g dry	10.0	3.6	3.2	3.2
Copper	5.0 ug/g dry	121	8.0	18.8	17.8
Lead	1.0 ug/g dry	218	12.5	18.8	17.9
Mercury	0.1 ug/g dry	0.6	<0.1	0.1	0.1
Molybdenum	1.0 ug/g dry	13.5	1.9	1.5	<1.0
Nickel	5.0 ug/g dry	37.4	9.5	14.1	10.0
Selenium	1.0 ug/g dry	2.6	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	1.7	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Vanadium	10.0 ug/g dry	29.8	<10.0	11.6	11.4
Zinc	20.0 ug/g dry	183	25.3	37.7	34.8

Volatiles

Acetone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Benzene	0.02 ug/g dry	0.78	<0.02	<0.02	<0.02
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromoform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Chloroform	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	BH/MW21-01-01	BH/MW21-02-01	BH/MW21-03-01	D206
	Sample Date:	15-Mar-21 08:30	15-Mar-21 09:15	15-Mar-21 09:30	15-Mar-21 09:30
	Sample ID:	2112349-01	2112349-02	2112349-03	2112349-04
	MDL/Units	Soil	Soil	Soil	Soil
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.05 ug/g dry	0.11	<0.05	<0.05	<0.05
Ethylene dibromide (dibromoethane, 1,2-)	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Hexane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Styrene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Toluene	0.05 ug/g dry	0.93	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02
m,p-Xylenes	0.05 ug/g dry	0.57	<0.05	<0.05	<0.05
o-Xylene	0.05 ug/g dry	0.21	<0.05	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	0.79	<0.05	<0.05	<0.05
4-Bromofluorobenzene	Surrogate	114%	111%	118%	105%
Dibromofluoromethane	Surrogate	128%	112%	129%	128%
Toluene-d8	Surrogate	89.2%	91.3%	91.7%	91.7%

Hydrocarbons

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	BH/MW21-01-01	BH/MW21-02-01	BH/MW21-03-01	D206
	Sample Date:	15-Mar-21 08:30	15-Mar-21 09:15	15-Mar-21 09:30	15-Mar-21 09:30
	Sample ID:	2112349-01	2112349-02	2112349-03	2112349-04
	MDL/Units	Soil	Soil	Soil	Soil
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	623	52	46	56
F4 PHCs (C34-C50)	6 ug/g dry	779 [1]	36	28	34
F4G PHCs (gravimetric)	50 ug/g dry	1370	-	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	0.10	<0.02	0.11	0.21
Acenaphthylene	0.02 ug/g dry	0.09	<0.02	0.07	0.12
Anthracene	0.02 ug/g dry	0.21	<0.02	0.47	0.83
Benzo [a] anthracene	0.02 ug/g dry	0.72	0.03	1.02	1.35
Benzo [a] pyrene	0.02 ug/g dry	0.42	0.04	0.88	1.16
Benzo [b] fluoranthene	0.02 ug/g dry	0.65	0.05	0.82	1.31
Benzo [g,h,i] perylene	0.02 ug/g dry	0.33	0.03	0.48	0.62
Benzo [k] fluoranthene	0.02 ug/g dry	0.31	0.02	0.45	0.74
Chrysene	0.02 ug/g dry	0.49	0.04	0.83	1.28
Dibenzo [a,h] anthracene	0.02 ug/g dry	0.08	<0.02	0.13	0.19
Fluoranthene	0.02 ug/g dry	0.74	0.06	1.88	3.25
Fluorene	0.02 ug/g dry	0.13	<0.02	0.19	0.30
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.25	0.02	0.47	0.64
1-Methylnaphthalene	0.02 ug/g dry	2.72	0.06	0.06	0.14
2-Methylnaphthalene	0.02 ug/g dry	4.34	0.11	0.13	0.20
Methylnaphthalene (1&2)	0.04 ug/g dry	7.05	0.17	0.19	0.34
Naphthalene	0.01 ug/g dry	1.94	0.05	0.21	0.33
Phenanthrene	0.02 ug/g dry	1.19	0.06	1.75	2.78
Pyrene	0.02 ug/g dry	0.86	0.05	1.50	2.53
2-Fluorobiphenyl	Surrogate	118%	123%	64.3%	78.5%
Terphenyl-d14	Surrogate	129%	98.3%	71.3%	86.8%

PCBs

PCBs, total	0.05 ug/g dry	<0.05	<0.05	0.16	0.14
Decachlorobiphenyl	Surrogate	133%	95.2%	95.9%	104%

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Client ID:	BH/MW21-03-02	BH/MW21-04-01	BH/MW21-04-02	-
Sample Date:	15-Mar-21 09:45	15-Mar-21 10:00	15-Mar-21 10:15	-
Sample ID:	2112349-05	2112349-06	2112349-07	-
MDL/Units	Soil	Soil	Soil	-

Physical Characteristics

% Solids	0.1 % by Wt.	84.5	88.5	70.4	-
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General Inorganics

Cyanide, free	0.03 ug/g dry	<0.03	<0.03	<0.03	-
pH	0.05 pH Units	-	8.20	7.58	-

Metals

Antimony	1.0 ug/g dry	<1.0	<1.0	1.3	-
Arsenic	1.0 ug/g dry	3.2	2.7	21.6	-
Barium	1.0 ug/g dry	198	211	161	-
Beryllium	0.5 ug/g dry	0.6	<0.5	0.8	-
Boron	5.0 ug/g dry	17.8	13.4	16.8	-
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	-
Chromium	5.0 ug/g dry	17.3	13.6	26.7	-
Chromium (VI)	0.2 ug/g dry	<0.2	<0.2	<0.2	-
Cobalt	1.0 ug/g dry	5.7	5.4	8.7	-
Copper	5.0 ug/g dry	10.0	20.8	55.8	-
Lead	1.0 ug/g dry	15.7	26.4	2880	-
Mercury	0.1 ug/g dry	<0.1	<0.1	0.3	-
Molybdenum	1.0 ug/g dry	<1.0	<1.0	3.6	-
Nickel	5.0 ug/g dry	14.6	11.4	24.4	-
Selenium	1.0 ug/g dry	<1.0	<1.0	1.7	-
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	-
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	-
Uranium	1.0 ug/g dry	<1.0	<1.0	<1.0	-
Vanadium	10.0 ug/g dry	10.4	19.8	22.5	-
Zinc	20.0 ug/g dry	<20.0	39.9	148	-

Volatiles

Acetone	0.50 ug/g dry	<0.50	<0.50	<0.50	-
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Bromoform	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Bromomethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Chloroform	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	<0.05	-

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

	MDL/Units	Client ID: Sample Date: Sample ID:	BH/MW21-03-02 15-Mar-21 09:45 2112349-05 Soil	BH/MW21-04-01 15-Mar-21 10:00 2112349-06 Soil	BH/MW21-04-02 15-Mar-21 10:15 2112349-07 Soil	- - - -
Dichlorodifluoromethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,2-Dichlorobenzene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,3-Dichlorobenzene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,4-Dichlorobenzene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,1-Dichloroethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,2-Dichloroethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,1-Dichloroethylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
cis-1,2-Dichloroethylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
trans-1,2-Dichloroethylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,2-Dichloropropane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
cis-1,3-Dichloropropylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
trans-1,3-Dichloropropylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,3-Dichloropropene, total	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Ethylbenzene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Ethylene dibromide (dibromoethane, 1	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Hexane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry		<0.50	<0.50	<0.50	-
Methyl Isobutyl Ketone	0.50 ug/g dry		<0.50	<0.50	<0.50	-
Methyl tert-butyl ether	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Methylene Chloride	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Styrene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,1,1,2,2-Tetrachloroethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Tetrachloroethylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Toluene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,1,1-Trichloroethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
1,1,2-Trichloroethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Trichloroethylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Trichlorofluoromethane	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Vinyl chloride	0.02 ug/g dry		<0.02	<0.02	<0.02	-
m,p-Xylenes	0.05 ug/g dry		<0.05	<0.05	<0.05	-
o-Xylene	0.05 ug/g dry		<0.05	<0.05	<0.05	-
Xylenes, total	0.05 ug/g dry		<0.05	<0.05	<0.05	-
4-Bromofluorobenzene	Surrogate		108%	112%	104%	-
Dibromofluoromethane	Surrogate		116%	130%	116%	-

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	BH/MW21-03-02	BH/MW21-04-01	BH/MW21-04-02	-
	Sample Date:	15-Mar-21 09:45	15-Mar-21 10:00	15-Mar-21 10:15	-
	Sample ID:	2112349-05	2112349-06	2112349-07	-
	MDL/Units	Soil	Soil	Soil	-
Toluene-d8	Surrogate	92.0%	85.8%	89.7%	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	121	61	-
F3 PHCs (C16-C34)	8 ug/g dry	38	293	315	-
F4 PHCs (C34-C50)	6 ug/g dry	34	183 [1]	248 [1]	-
F4G PHCs (gravimetric)	50 ug/g dry	-	746	681	-
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	0.05	0.03	0.02	-
Acenaphthylene	0.02 ug/g dry	0.02	0.05	0.06	-
Anthracene	0.02 ug/g dry	0.17	0.07	0.11	-
Benzo [a] anthracene	0.02 ug/g dry	0.30	0.18	0.31	-
Benzo [a] pyrene	0.02 ug/g dry	0.32	0.19	0.26	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.31	0.22	0.39	-
Benzo [g,h,i] perylene	0.02 ug/g dry	0.17	0.12	0.20	-
Benzo [k] fluoranthene	0.02 ug/g dry	0.15	0.11	0.16	-
Chrysene	0.02 ug/g dry	0.32	0.17	0.31	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	0.05	0.03	0.05	-
Fluoranthene	0.02 ug/g dry	0.63	0.36	0.43	-
Fluorene	0.02 ug/g dry	0.07	0.03	0.06	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.16	0.11	0.19	-
1-Methylnaphthalene	0.02 ug/g dry	0.04	0.06	0.93	-
2-Methylnaphthalene	0.02 ug/g dry	0.06	0.10	1.36	-
Methylnaphthalene (1&2)	0.04 ug/g dry	0.10	0.17	2.29	-
Naphthalene	0.01 ug/g dry	0.10	0.04	1.00	-
Phenanthrene	0.02 ug/g dry	0.65	0.24	0.65	-
Pyrene	0.02 ug/g dry	0.50	0.31	0.42	-
2-Fluorobiphenyl	Surrogate	58.1%	81.9%	71.8%	-
Terphenyl-d14	Surrogate	92.7%	88.7%	85.6%	-
PCBs					
PCBs, total	0.05 ug/g dry	<0.05	0.11	<0.05	-
Decachlorobiphenyl	Surrogate	105%	101%	104%	-

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	0.03	ug/g						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
F4G PHCs (gravimetric)	ND	50	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	0.106		ug/g		106	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	1.11		ug/g		83.5	50-140			
Surrogate: Terphenyl-d14	1.44		ug/g		108	50-140			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-Hexane	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	3.63		ug/g		114	50-140			
Surrogate: Dibromofluoromethane	4.13		ug/g		129	50-140			
Surrogate: Toluene-d8	3.19		ug/g		99.8	50-140			

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	0.03	ug/g dry	ND			NC	35	
pH	7.53	0.05	pH Units	7.58			0.7	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	18	8	ug/g dry	13			NC	30	
F4 PHCs (C34-C50)	9	6	ug/g dry	8			19.6	30	
Metals									
Antimony	3.4	1.0	ug/g dry	3.8			10.3	30	
Arsenic	127	1.0	ug/g dry	134			5.8	30	
Barium	397	1.0	ug/g dry	420			5.6	30	
Beryllium	1.1	0.5	ug/g dry	1.1			4.1	30	
Boron	15.0	5.0	ug/g dry	16.7			10.3	30	
Cadmium	0.9	0.5	ug/g dry	0.8			3.3	30	
Chromium (VI)	ND	0.2	ug/g dry	ND			NC	35	
Chromium	24.6	5.0	ug/g dry	26.2			6.3	30	
Cobalt	9.7	1.0	ug/g dry	10.0			2.8	30	
Copper	112	5.0	ug/g dry	121			7.8	30	
Lead	201	1.0	ug/g dry	218			7.8	30	
Mercury	0.469	0.1	ug/g dry	0.560			17.6	30	
Molybdenum	13.1	1.0	ug/g dry	13.5			3.1	30	
Nickel	33.8	5.0	ug/g dry	37.4			10.1	30	
Selenium	2.5	1.0	ug/g dry	2.6			3.6	30	
Silver	0.3	0.3	ug/g dry	0.3			6.8	30	
Thallium	1.6	1.0	ug/g dry	1.7			1.4	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	28.1	10.0	ug/g dry	29.8			5.8	30	
Zinc	171	20.0	ug/g dry	183			6.7	30	
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND			NC	40	
Surrogate: Decachlorobiphenyl	0.134		ug/g dry		111	60-140			
Physical Characteristics									
% Solids	75.6	0.1	% by Wt.	74.5			1.4	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g dry	ND			NC	40	
Anthracene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [a] anthracene	0.027	0.02	ug/g dry	0.035			24.2	40	
Benzo [a] pyrene	0.025	0.02	ug/g dry	0.035			35.7	40	
Benzo [b] fluoranthene	0.033	0.02	ug/g dry	0.054			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	0.027			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	0.022			NC	40	
Chrysene	0.036	0.02	ug/g dry	0.044			22.3	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Fluoranthene	0.054	0.02	ug/g dry	0.058			7.9	40	
Fluorene	ND	0.02	ug/g dry	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	0.025			NC	40	
1-Methylnaphthalene	0.036	0.02	ug/g dry	0.061			NC	40	
2-Methylnaphthalene	0.063	0.02	ug/g dry	0.110			NC	40	
Naphthalene	0.047	0.01	ug/g dry	0.048			1.6	40	
Phenanthrene	0.055	0.02	ug/g dry	0.062			10.8	40	
Pyrene	0.042	0.02	ug/g dry	0.049			13.5	40	
Surrogate: 2-Fluorobiphenyl	0.988		ug/g dry		63.0	50-140			
Surrogate: Terphenyl-d14	1.28		ug/g dry		81.7	50-140			
Volatiles									

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acetone	ND	0.50	ug/g dry	ND			NC	50	
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	4.40		ug/g dry		102	50-140			
Surrogate: Dibromofluoromethane	5.15		ug/g dry		119	50-140			
Surrogate: Toluene-d8	4.09		ug/g dry		94.7	50-140			

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.231	0.03	ug/g	ND	77.1	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	199	7	ug/g	ND	99.5	80-120			
F2 PHCs (C10-C16)	76	4	ug/g	ND	95.6	80-120			
F3 PHCs (C16-C34)	199	8	ug/g	ND	102	80-120			
F4 PHCs (C34-C50)	131	6	ug/g	ND	106	80-120			
F4G PHCs (gravimetric)	980	50	ug/g	ND	98.0	80-120			
Metals									
Antimony	43.7	1.0	ug/g	1.5	84.3	70-130			
Arsenic	97.5	1.0	ug/g	53.6	87.8	70-130			
Barium	214	1.0	ug/g	168	91.9	70-130			
Beryllium	47.1	0.5	ug/g	ND	93.4	70-130			
Boron	49.9	5.0	ug/g	6.7	86.5	70-130			
Cadmium	45.5	0.5	ug/g	ND	90.3	70-130			
Chromium (VI)	4.8	0.2	ug/g	ND	96.5	70-130			
Chromium	59.7	5.0	ug/g	10.5	98.5	70-130			
Cobalt	52.2	1.0	ug/g	4.0	96.3	70-130			
Copper	90.6	5.0	ug/g	48.3	84.6	70-130			
Lead	118	1.0	ug/g	87.1	62.3	70-130			QM-07
Mercury	1.93	0.1	ug/g	0.560	91.5	70-130			
Molybdenum	52.7	1.0	ug/g	5.4	94.6	70-130			
Nickel	60.0	5.0	ug/g	15.0	90.1	70-130			
Selenium	41.7	1.0	ug/g	1.0	81.3	70-130			
Silver	45.1	0.3	ug/g	ND	90.0	70-130			
Thallium	43.7	1.0	ug/g	ND	86.0	70-130			
Uranium	41.7	1.0	ug/g	ND	83.0	70-130			
Vanadium	62.1	10.0	ug/g	11.9	100	70-130			
Zinc	112	20.0	ug/g	73.0	78.4	70-130			
PCBs									
PCBs, total	0.468	0.05	ug/g	ND	97.0	60-140			
Surrogate: Decachlorobiphenyl	0.144		ug/g		120	60-140			
Semi-Volatiles									
Acenaphthene	0.194	0.02	ug/g	ND	99.1	50-140			
Acenaphthylene	0.176	0.02	ug/g	ND	89.9	50-140			
Anthracene	0.207	0.02	ug/g	ND	106	50-140			
Benzo [a] anthracene	0.192	0.02	ug/g	0.035	80.5	50-140			
Benzo [a] pyrene	0.198	0.02	ug/g	0.035	83.1	50-140			
Benzo [b] fluoranthene	0.264	0.02	ug/g	0.054	107	50-140			
Benzo [g,h,i] perylene	0.178	0.02	ug/g	0.027	77.1	50-140			
Benzo [k] fluoranthene	0.208	0.02	ug/g	0.022	94.8	50-140			
Chrysene	0.242	0.02	ug/g	0.044	101	50-140			
Dibenzo [a,h] anthracene	0.162	0.02	ug/g	ND	82.7	50-140			
Fluoranthene	0.229	0.02	ug/g	0.058	87.0	50-140			
Fluorene	0.182	0.02	ug/g	ND	92.7	50-140			
Indeno [1,2,3-cd] pyrene	0.172	0.02	ug/g	0.025	75.1	50-140			
1-Methylnaphthalene	0.214	0.02	ug/g	0.061	78.2	50-140			
2-Methylnaphthalene	0.265	0.02	ug/g	0.110	78.9	50-140			

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Naphthalene	0.257	0.01	ug/g	0.048	107	50-140			
Phenanthrene	0.240	0.02	ug/g	0.062	91.2	50-140			
Pyrene	0.234	0.02	ug/g	0.049	94.6	50-140			
Surrogate: 2-Fluorobiphenyl	1.12		ug/g		71.5	50-140			
Surrogate: Terphenyl-d14	1.50		ug/g		95.6	50-140			
Volatiles									
Acetone	13.1	0.50	ug/g	ND	131	50-140			
Benzene	4.35	0.02	ug/g	ND	109	60-130			
Bromodichloromethane	4.75	0.05	ug/g	ND	119	60-130			
Bromoform	4.04	0.05	ug/g	ND	101	60-130			
Bromomethane	4.60	0.05	ug/g	ND	115	50-140			
Carbon Tetrachloride	4.39	0.05	ug/g	ND	110	60-130			
Chlorobenzene	4.08	0.05	ug/g	ND	102	60-130			
Chloroform	4.55	0.05	ug/g	ND	114	60-130			
Dibromochloromethane	4.15	0.05	ug/g	ND	104	60-130			
Dichlorodifluoromethane	5.12	0.05	ug/g	ND	128	50-140			
1,2-Dichlorobenzene	3.78	0.05	ug/g	ND	94.5	60-130			
1,3-Dichlorobenzene	3.72	0.05	ug/g	ND	92.9	60-130			
1,4-Dichlorobenzene	3.47	0.05	ug/g	ND	86.9	60-130			
1,1-Dichloroethane	5.06	0.05	ug/g	ND	127	60-130			
1,2-Dichloroethane	4.84	0.05	ug/g	ND	121	60-130			
1,1-Dichloroethylene	4.60	0.05	ug/g	ND	115	60-130			
cis-1,2-Dichloroethylene	4.52	0.05	ug/g	ND	113	60-130			
trans-1,2-Dichloroethylene	4.25	0.05	ug/g	ND	106	60-130			
1,2-Dichloropropane	4.47	0.05	ug/g	ND	112	60-130			
cis-1,3-Dichloropropylene	4.30	0.05	ug/g	ND	107	60-130			
trans-1,3-Dichloropropylene	4.32	0.05	ug/g	ND	108	60-130			
Ethylbenzene	4.10	0.05	ug/g	ND	103	60-130			
Ethylene dibromide (dibromoethane, 1,2-	3.92	0.05	ug/g	ND	98.0	60-130			
Hexane	4.40	0.05	ug/g	ND	110	60-130			
Methyl Ethyl Ketone (2-Butanone)	11.2	0.50	ug/g	ND	112	50-140			
Methyl Isobutyl Ketone	13.0	0.50	ug/g	ND	130	50-140			
Methyl tert-butyl ether	10.5	0.05	ug/g	ND	105	50-140			
Methylene Chloride	4.92	0.05	ug/g	ND	123	60-130			
Styrene	3.93	0.05	ug/g	ND	98.2	60-130			
1,1,1,2-Tetrachloroethane	4.27	0.05	ug/g	ND	107	60-130			
1,1,2,2-Tetrachloroethane	3.49	0.05	ug/g	ND	87.2	60-130			
Tetrachloroethylene	4.15	0.05	ug/g	ND	104	60-130			
Toluene	4.20	0.05	ug/g	ND	105	60-130			
1,1,1-Trichloroethane	4.52	0.05	ug/g	ND	113	60-130			
1,1,2-Trichloroethane	4.73	0.05	ug/g	ND	118	60-130			
Trichloroethylene	4.91	0.05	ug/g	ND	123	60-130			
Trichlorofluoromethane	4.85	0.05	ug/g	ND	121	50-140			
Vinyl chloride	4.93	0.02	ug/g	ND	123	50-140			
m,p-Xylenes	8.42	0.05	ug/g	ND	105	60-130			
o-Xylene	4.28	0.05	ug/g	ND	107	60-130			
Surrogate: 4-Bromofluorobenzene	2.79		ug/g		87.1	50-140			
Surrogate: Dibromofluoromethane	4.21		ug/g		132	50-140			
Surrogate: Toluene-d8	2.73		ug/g		85.4	50-140			

Certificate of Analysis

Report Date: 23-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 16-Mar-2021

Client PO: Zibi Albert and Chaudière Island

Project Description: OTT00250193P0

Qualifier Notes:

Sample Qualifiers :

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

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

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

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

CCME PHC additional information:

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



Client Name: EXP Services Inc.	Project Reference: Zibi - Albert and Chaudiere Island	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Patricia Stelmack	Quote #: 21-158	
Address: 100-2650 Queensview Drive Ottawa, ON, K2B 8H6	PO #: OTT-00250193-P0	
Telephone: 613-688-1899	Email Address: Patricia.Stelmack@exp.com	

Criteria: O. Reg. 153/04 (As Amended) Table 7; RSC Filing O. Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)				Required Analyses																		
Parcel Order Number: 2112349				Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP			CrVI	B (HWS)	VOC, PHC F1-F4	PCB	pH	Free Cyanide	limited sample	
Sample ID/Location Name							Date	Time				Hg	Cd	Pb								
1	BH/MW21-01-01	Soil	2	2021/03/15	08:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	BH/MW21-02-01	Soil	2	2021/03/15	09:15	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	BH/MW21-03-01	Soil	2	2021/03/15	09:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	D206	Soil	2	2021/03/15	09:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	BH/MW21-03-02	Soil	2	2021/03/15	09:45	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	BH/MW21-04-01	Soil	2	2021/03/15	10:00	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	BH/MW21-04-02	Soil	2	2021/03/15	10:15	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used. Method of Delivery: *Drop*

Relinquished By (Sign): <i>[Signature]</i>	Received by Driver/Depot: <i>[Signature]</i>	Received at Lab: <i>[Signature]</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): Jeremy Eckert	Date/Time: March 17, 2021 12:29	Date/Time: 03/16/2021	Date/Time: March 17, 2021 12:54
Date/Time: 2021/03/16 12:00 pm	Temperature: 36 °C	Temperature: 15.8 °C	pH Verified [] By: <i>[Signature]</i>

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi - Albert and Chaudière Island
Project: OTT00250193P0
Custody:

Report Date: 25-Mar-2021
Order Date: 19-Mar-2021

Order #: 2112654

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

Paracel ID	Client ID
2112654-01	BH/MW21-05-01

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	22-Mar-21	23-Mar-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	22-Mar-21	24-Mar-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	24-Mar-21	24-Mar-21
PCBs, total	SW846 8082A - GC-ECD	22-Mar-21	23-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	22-Mar-21	23-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	22-Mar-21	24-Mar-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	23-Mar-21	23-Mar-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	22-Mar-21	25-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	22-Mar-21	23-Mar-21
Solids, %	Gravimetric, calculation	22-Mar-21	22-Mar-21

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Client ID:	BH/MW21-05-01	-	-	-
Sample Date:	17-Mar-21 08:00	-	-	-
Sample ID:	2112654-01	-	-	-
MDL/Units	Soil	-	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	93.4	-	-	-
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General Inorganics

Cyanide, free	0.03 ug/g dry	<0.03	-	-	-
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Metals

Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	2.2	-	-	-
Barium	1.0 ug/g dry	146	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	9.5	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	10.5	-	-	-
Chromium (VI)	0.2 ug/g dry	<0.2	-	-	-
Cobalt	1.0 ug/g dry	3.5	-	-	-
Copper	5.0 ug/g dry	10.1	-	-	-
Lead	1.0 ug/g dry	9.7	-	-	-
Mercury	0.1 ug/g dry	<0.1	-	-	-
Molybdenum	1.0 ug/g dry	<1.0	-	-	-
Nickel	5.0 ug/g dry	9.1	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	13.6	-	-	-
Zinc	20.0 ug/g dry	<20.0	-	-	-

Volatiles

Acetone	0.50 ug/g dry	<0.50	-	-	-
Benzene	0.02 ug/g dry	<0.02	-	-	-
Bromodichloromethane	0.05 ug/g dry	<0.05	-	-	-
Bromoform	0.05 ug/g dry	<0.05	-	-	-
Bromomethane	0.05 ug/g dry	<0.05	-	-	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	-	-	-
Chlorobenzene	0.05 ug/g dry	<0.05	-	-	-
Chloroform	0.05 ug/g dry	<0.05	-	-	-
Dibromochloromethane	0.05 ug/g dry	<0.05	-	-	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	-	-	-

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	BH/MW21-05-01	-	-	-
	Sample Date:	17-Mar-21 08:00	-	-	-
	Sample ID:	2112654-01	-	-	-
	MDL/Units	Soil	-	-	-
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	94	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	102	-	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	<0.02	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	0.06	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	0.07	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	0.08	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	0.06	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	0.04	-	-	-
Chrysene	0.02 ug/g dry	0.06	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	0.09	-	-	-
Fluorene	0.02 ug/g dry	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	0.04	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	0.04	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	0.06	-	-	-
Naphthalene	0.01 ug/g dry	0.03	-	-	-
Phenanthrene	0.02 ug/g dry	0.07	-	-	-
Pyrene	0.02 ug/g dry	0.09	-	-	-
2-Fluorobiphenyl	Surrogate	109%	-	-	-
Terphenyl-d14	Surrogate	114%	-	-	-

PCBs

PCBs, total	0.05 ug/g dry	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	105%	-	-	-

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	0.03	ug/g						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	0.120		ug/g		120	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	0.973		ug/g		72.9	50-140			
Surrogate: Terphenyl-d14	1.40		ug/g		105	50-140			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	3.71		ug/g		116	50-140			
Surrogate: Dibromofluoromethane	2.99		ug/g		93.5	50-140			
Surrogate: Toluene-d8	3.65		ug/g		114	50-140			

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	0.03	ug/g dry	ND			NC	35	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	143	8	ug/g dry	163			13.5	30	
F4 PHCs (C34-C50)	19	6	ug/g dry	22			11.7	30	
Metals									
Antimony	ND	1.0	ug/g dry	ND			NC	30	
Arsenic	2.3	1.0	ug/g dry	2.2			1.8	30	
Barium	54.9	1.0	ug/g dry	54.2			1.4	30	
Beryllium	ND	0.5	ug/g dry	ND			NC	30	
Boron	5.5	5.0	ug/g dry	ND			NC	30	
Cadmium	ND	0.5	ug/g dry	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g dry	ND			NC	35	
Chromium	14.9	5.0	ug/g dry	14.1			6.0	30	
Cobalt	5.0	1.0	ug/g dry	4.9			3.2	30	
Copper	11.4	5.0	ug/g dry	11.7			2.6	30	
Lead	6.3	1.0	ug/g dry	6.1			3.2	30	
Mercury	ND	0.1	ug/g dry	ND			NC	30	
Molybdenum	ND	1.0	ug/g dry	ND			NC	30	
Nickel	10.8	5.0	ug/g dry	10.9			0.3	30	
Selenium	ND	1.0	ug/g dry	ND			NC	30	
Silver	ND	0.3	ug/g dry	ND			NC	30	
Thallium	ND	1.0	ug/g dry	ND			NC	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	27.3	10.0	ug/g dry	26.0			4.9	30	
Zinc	31.6	20.0	ug/g dry	31.7			0.4	30	
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND			NC	40	
Surrogate: Decachlorobiphenyl	0.133		ug/g dry		120	60-140			
Physical Characteristics									
% Solids	74.9	0.1	% by Wt.	71.6			4.5	25	
Semi-Volatiles									
Acenaphthene	120	2.00	ug/g dry	131			9.1	40	
Acenaphthylene	15.7	2.00	ug/g dry	17.1			8.6	40	
Anthracene	225	2.00	ug/g dry	235			4.4	40	
Benzo [a] anthracene	158	2.00	ug/g dry	170			7.0	40	
Benzo [a] pyrene	98.1	2.00	ug/g dry	116			16.7	40	
Benzo [b] fluoranthene	99.7	2.00	ug/g dry	112			11.5	40	
Benzo [g,h,i] perylene	37.5	2.00	ug/g dry	43.5			14.7	40	
Benzo [k] fluoranthene	64.7	2.00	ug/g dry	64.5			0.2	40	
Chrysene	123	2.00	ug/g dry	151			20.4	40	
Dibenzo [a,h] anthracene	16.8	2.00	ug/g dry	19.2			13.4	40	
Fluoranthene	312	2.00	ug/g dry	335			7.2	40	
Fluorene	152	2.00	ug/g dry	163			7.1	40	
Indeno [1,2,3-cd] pyrene	40.2	2.00	ug/g dry	46.3			14.2	40	
1-Methylnaphthalene	98.2	2.00	ug/g dry	94.2			4.1	40	
2-Methylnaphthalene	180	2.00	ug/g dry	171			5.0	40	
Naphthalene	331	1.00	ug/g dry	362			9.0	40	
Phenanthrene	590	2.00	ug/g dry	631			6.7	40	
Pyrene	251	2.00	ug/g dry	270			7.5	40	
Surrogate: 2-Fluorobiphenyl	1.31		ug/g dry		95.1	50-140			
Surrogate: Terphenyl-d14	1.63		ug/g dry		119	50-140			
Volatiles									
Acetone	ND	0.50	ug/g dry	ND			NC	50	

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2)	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	4.12		ug/g dry		115	50-140			
Surrogate: Dibromofluoromethane	3.45		ug/g dry		96.3	50-140			
Surrogate: Toluene-d8	4.23		ug/g dry		118	50-140			

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.224	0.03	ug/g	ND	74.5	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	162	7	ug/g	ND	81.1	80-120			
F2 PHCs (C10-C16)	79	4	ug/g	ND	92.6	60-140			
F3 PHCs (C16-C34)	449	8	ug/g	163	137	60-140			
F4 PHCs (C34-C50)	187	6	ug/g	22	126	60-140			
Metals									
Antimony	45.0	1.0	ug/g	ND	89.8	70-130			
Arsenic	46.7	1.0	ug/g	ND	91.6	70-130			
Barium	71.2	1.0	ug/g	21.7	99.1	70-130			
Beryllium	48.4	0.5	ug/g	ND	96.4	70-130			
Boron	48.3	5.0	ug/g	ND	92.6	70-130			
Cadmium	49.0	0.5	ug/g	ND	97.9	70-130			
Chromium (VI)	0.1	0.2	ug/g	ND	72.0	70-130			
Chromium	55.9	5.0	ug/g	5.6	101	70-130			
Cobalt	50.5	1.0	ug/g	1.9	97.1	70-130			
Copper	51.1	5.0	ug/g	ND	92.9	70-130			
Lead	37.5	1.0	ug/g	2.4	70.2	70-130			
Mercury	1.53	0.1	ug/g	ND	102	70-130			
Molybdenum	48.2	1.0	ug/g	ND	96.2	70-130			
Nickel	51.9	5.0	ug/g	ND	95.2	70-130			
Selenium	43.1	1.0	ug/g	ND	86.1	70-130			
Silver	33.5	0.3	ug/g	ND	67.0	70-130			QM-07
Thallium	45.7	1.0	ug/g	ND	91.3	70-130			
Uranium	35.7	1.0	ug/g	ND	71.1	70-130			
Vanadium	62.3	10.0	ug/g	10.4	104	70-130			
Zinc	57.0	20.0	ug/g	ND	88.7	70-130			
PCBs									
PCBs, total	0.425	0.05	ug/g	ND	95.5	60-140			
Surrogate: Decachlorobiphenyl	0.151		ug/g		136	60-140			
Semi-Volatiles									
Acenaphthene	0.146	0.02	ug/g	ND	87.6	50-140			
Acenaphthylene	0.128	0.02	ug/g	ND	76.7	50-140			
Anthracene	0.138	0.02	ug/g	ND	83.1	50-140			
Benzo [a] anthracene	0.108	0.02	ug/g	ND	64.8	50-140			
Benzo [a] pyrene	0.135	0.02	ug/g	ND	80.8	50-140			
Benzo [b] fluoranthene	0.145	0.02	ug/g	ND	87.1	50-140			
Benzo [g,h,i] perylene	0.127	0.02	ug/g	ND	76.2	50-140			
Benzo [k] fluoranthene	0.130	0.02	ug/g	ND	77.9	50-140			
Chrysene	0.141	0.02	ug/g	ND	84.9	50-140			
Dibenzo [a,h] anthracene	0.119	0.02	ug/g	ND	71.3	50-140			
Fluoranthene	0.121	0.02	ug/g	ND	72.8	50-140			
Fluorene	0.131	0.02	ug/g	ND	78.8	50-140			
Indeno [1,2,3-cd] pyrene	0.118	0.02	ug/g	ND	71.1	50-140			
1-Methylnaphthalene	0.142	0.02	ug/g	ND	85.5	50-140			
2-Methylnaphthalene	0.152	0.02	ug/g	ND	91.2	50-140			
Naphthalene	0.169	0.01	ug/g	ND	101	50-140			

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Phenanthrene	0.139	0.02	ug/g	ND	83.2	50-140			
Pyrene	0.123	0.02	ug/g	ND	73.6	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.950</i>		<i>ug/g</i>		<i>71.3</i>	<i>50-140</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>1.39</i>		<i>ug/g</i>		<i>104</i>	<i>50-140</i>			
Volatiles									
Acetone	11.0	0.50	ug/g	ND	110	50-140			
Benzene	4.00	0.02	ug/g	ND	100	60-130			
Bromodichloromethane	3.87	0.05	ug/g	ND	96.6	60-130			
Bromoform	3.68	0.05	ug/g	ND	92.1	60-130			
Bromomethane	3.41	0.05	ug/g	ND	85.1	50-140			
Carbon Tetrachloride	3.40	0.05	ug/g	ND	85.1	60-130			
Chlorobenzene	3.82	0.05	ug/g	ND	95.5	60-130			
Chloroform	3.87	0.05	ug/g	ND	96.7	60-130			
Dibromochloromethane	3.46	0.05	ug/g	ND	86.5	60-130			
Dichlorodifluoromethane	3.50	0.05	ug/g	ND	87.5	50-140			
1,2-Dichlorobenzene	3.65	0.05	ug/g	ND	91.2	60-130			
1,3-Dichlorobenzene	3.63	0.05	ug/g	ND	90.8	60-130			
1,4-Dichlorobenzene	3.69	0.05	ug/g	ND	92.4	60-130			
1,1-Dichloroethane	3.82	0.05	ug/g	ND	95.4	60-130			
1,2-Dichloroethane	3.61	0.05	ug/g	ND	90.2	60-130			
1,1-Dichloroethylene	3.47	0.05	ug/g	ND	86.8	60-130			
cis-1,2-Dichloroethylene	4.05	0.05	ug/g	ND	101	60-130			
trans-1,2-Dichloroethylene	3.65	0.05	ug/g	ND	91.3	60-130			
1,2-Dichloropropane	4.06	0.05	ug/g	ND	101	60-130			
cis-1,3-Dichloropropylene	3.81	0.05	ug/g	ND	95.3	60-130			
trans-1,3-Dichloropropylene	3.68	0.05	ug/g	ND	92.1	60-130			
Ethylbenzene	3.68	0.05	ug/g	ND	92.0	60-130			
Ethylene dibromide (dibromoethane, 1,2)	3.90	0.05	ug/g	ND	97.5	60-130			
Hexane	4.44	0.05	ug/g	ND	111	60-130			
Methyl Ethyl Ketone (2-Butanone)	11.9	0.50	ug/g	ND	119	50-140			
Methyl Isobutyl Ketone	10.5	0.50	ug/g	ND	105	50-140			
Methyl tert-butyl ether	10.6	0.05	ug/g	ND	106	50-140			
Methylene Chloride	3.55	0.05	ug/g	ND	88.7	60-130			
Styrene	3.54	0.05	ug/g	ND	88.5	60-130			
1,1,1,2-Tetrachloroethane	3.78	0.05	ug/g	ND	94.5	60-130			
1,1,2,2-Tetrachloroethane	3.93	0.05	ug/g	ND	98.2	60-130			
Tetrachloroethylene	3.73	0.05	ug/g	ND	93.2	60-130			
Toluene	3.70	0.05	ug/g	ND	92.6	60-130			
1,1,1-Trichloroethane	3.65	0.05	ug/g	ND	91.1	60-130			
1,1,2-Trichloroethane	4.14	0.05	ug/g	ND	104	60-130			
Trichloroethylene	3.89	0.05	ug/g	ND	97.3	60-130			
Trichlorofluoromethane	3.38	0.05	ug/g	ND	84.4	50-140			
Vinyl chloride	3.85	0.02	ug/g	ND	96.4	50-140			
m,p-Xylenes	7.18	0.05	ug/g	ND	89.8	60-130			
o-Xylene	3.62	0.05	ug/g	ND	90.6	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>3.05</i>		<i>ug/g</i>		<i>95.3</i>	<i>50-140</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>3.30</i>		<i>ug/g</i>		<i>103</i>	<i>50-140</i>			
<i>Surrogate: Toluene-d8</i>	<i>3.05</i>		<i>ug/g</i>		<i>95.3</i>	<i>50-140</i>			

Certificate of Analysis

Report Date: 25-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 19-Mar-2021

Client PO: Zibi - Albert and Chaudière Island

Project Description: OTT00250193P0

Qualifier Notes:

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

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

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

CCME PHC additional information:

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

TRU:
RESI:
REL:

Paracel ID: 2112654



Office
19 St. Laurent Blvd.
Ontario K1G 4J8
507-749-1947
info@paracellabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 1

Client Name: EXP Services Inc. Project Reference: Zibi - Albert and Chaudiere Island

Contact Name: Patricia Stelmack Quote # 21-158

Address: 100-2650 Queensview Drive PO# OTT-00250193-P0
Ottawa, ON, K2B 8H6 Email Address: Patricia.Stelmack@exp.com

Telephone: 613-688-1899

Turnaround Time:

1 Day 3 Day

2 Day Regular

Date Required: _____

Criteria: O. Reg. 153/04 (As Amended) Table 7, RSC Filing O. Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Required Analyses

Paracel Order Number:		Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (GW/S)	VOC, PHC F1-F4	PCB	pH	Free Cyanide				
Sample ID/Location Name					Date	Time															
1	BH/MW2-05-01	Soil		2	2021/03/17	800	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used.

Method of Delivery:
Drop Box

Relinquished By (Sign): <i>[Signature]</i>	Received by (Driver/Depot): <i>[Signature]</i>	Received at Lab: <i>Imneerom Dohma</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): <i>Jeremy Eckert</i>	Date/Time: <i>Mar 19/21 1543</i>	Date/Time: <i>Mar 19, 2021 04:4</i>	Date/Time: <i>March 19, 2021 17:11</i>
Date/Time: <i>2021/03/19 0900</i>	Temperature: <i>54</i> °C	Temperature: <i>7.2</i> °C	pH Verified [] By: _____

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi-Albert and Chaudiere Island
Project: OTT00250193P0
Custody:

Report Date: 31-Mar-2021
Order Date: 25-Mar-2021

Order #: 2113433

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

Parcel ID	Client ID
2113433-01	BH/MW21-04
2113433-02	BH/MW21-05
2113433-03	D206

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	26-Mar-21	26-Mar-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	26-Mar-21	26-Mar-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	26-Mar-21	26-Mar-21
PCBs, total	EPA 608 - GC-ECD	29-Mar-21	29-Mar-21
pH	EPA 150.1 - pH probe @25 °C	26-Mar-21	26-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	26-Mar-21	26-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	27-Mar-21	29-Mar-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	30-Mar-21	30-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	26-Mar-21	26-Mar-21

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Client ID:	BH/MW21-04	BH/MW21-05	D206	-
Sample Date:	24-Mar-21 14:00	23-Mar-21 09:45	23-Mar-21 09:45	-
Sample ID:	2113433-01	2113433-02	2113433-03	-
MDL/Units	Water	Water	Water	-

General Inorganics

pH	0.1 pH Units	8.1	7.2	7.3	-
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Metals

Mercury	0.1 ug/L	<0.1	<0.1	<0.1	-
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	-
Arsenic	1 ug/L	1	<1	<1	-
Barium	1 ug/L	700	1200	1160	-
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	-
Boron	10 ug/L	92	77	76	-
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	-
Chromium	1 ug/L	<1	<1	<1	-
Chromium (VI)	10 ug/L	<10	<10	<10	-
Cobalt	0.5 ug/L	0.8	3.7	3.6	-
Copper	0.5 ug/L	4.2	2.5	2.3	-
Lead	0.1 ug/L	1.0	<0.1	<0.1	-
Molybdenum	0.5 ug/L	6.8	1.4	1.5	-
Nickel	1 ug/L	5	6	5	-
Selenium	1 ug/L	<1	<1	<1	-
Silver	0.1 ug/L	<0.1	<0.1	<0.1	-
Sodium	200 ug/L	553000	617000	606000	-
Thallium	0.1 ug/L	<0.1	<0.1	0.1	-
Uranium	0.1 ug/L	2.6	1.1	1.1	-
Vanadium	0.5 ug/L	1.2	<0.5	<0.5	-
Zinc	5 ug/L	<5	21	21	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	3.1	1.9	2.0	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	BH/MW21-04	BH/MW21-05	D206	-
	Sample Date:	24-Mar-21 14:00	23-Mar-21 09:45	23-Mar-21 09:45	-
	Sample ID:	2113433-01	2113433-02	2113433-03	-
	MDL/Units	Water	Water	Water	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	1.1	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	0.9	<0.5	<0.5	-
o-Xylene	0.5 ug/L	0.7	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	1.6	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	93.2%	93.1%	94.5%	-
Dibromofluoromethane	Surrogate	86.6%	85.5%	87.0%	-
Toluene-d8	Surrogate	106%	106%	105%	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	-

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	BH/MW21-04	BH/MW21-05	D206	-
	Sample Date:	24-Mar-21 14:00	23-Mar-21 09:45	23-Mar-21 09:45	-
	Sample ID:	2113433-01	2113433-02	2113433-03	-
	MDL/Units	Water	Water	Water	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-
Fluoranthene	0.01 ug/L	<0.01	0.02	0.03	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	-
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	<0.05	-
Pyrene	0.01 ug/L	<0.01	0.05	0.05	-
2-Fluorobiphenyl	Surrogate	109%	88.7%	96.5%	-
Terphenyl-d14	Surrogate	123%	106%	115%	-

PCBs

PCBs, total	0.05 ug/L	<0.15 [1]	<0.05	<0.05	-
Decachlorobiphenyl	Surrogate	84.3% [1]	107%	93.2%	-

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
<i>Surrogate: Decachlorobiphenyl</i>	0.505		ug/L		101	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
<i>Surrogate: 2-Fluorobiphenyl</i>	18.5		ug/L		92.6	50-140			
<i>Surrogate: Terphenyl-d14</i>	24.1		ug/L		120	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2)	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	75.7		ug/L		94.6	50-140			
Surrogate: Dibromofluoromethane	63.2		ug/L		79.0	50-140			
Surrogate: Toluene-d8	84.9		ug/L		106	50-140			

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Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.9	0.1	pH Units	8.0			0.6	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	226	1	ug/L	224			0.9	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	175	10	ug/L	172			2.0	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	1.24	0.5	ug/L	1.24			0.1	20	
Copper	0.80	0.5	ug/L	0.72			10.6	20	
Lead	0.14	0.1	ug/L	ND			NC	20	
Molybdenum	6.30	0.5	ug/L	6.20			1.6	20	
Nickel	5.9	1	ug/L	6.1			2.9	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	945000	4850	ug/L	950000			0.5	20	
Thallium	0.17	0.1	ug/L	0.15			16.5	20	
Uranium	1.8	0.1	ug/L	1.8			1.0	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	79.7		ug/L		99.6	50-140			
<i>Surrogate: Dibromofluoromethane</i>	67.9		ug/L		84.9	50-140			
<i>Surrogate: Toluene-d8</i>	84.3		ug/L		105	50-140			

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2030	25	ug/L	ND	101	68-117			
F2 PHCs (C10-C16)	1500	100	ug/L	ND	93.8	60-140			
F3 PHCs (C16-C34)	4000	100	ug/L	ND	102	60-140			
F4 PHCs (C34-C50)	2530	100	ug/L	ND	102	60-140			
Metals									
Mercury	3.08	0.1	ug/L	ND	103	70-130			
Antimony	41.6	0.5	ug/L	ND	83.0	80-120			
Arsenic	50.8	1	ug/L	ND	101	80-120			
Barium	265	1	ug/L	224	80.6	80-120			
Beryllium	40.7	0.5	ug/L	ND	81.3	80-120			
Boron	45	10	ug/L	ND	89.2	80-120			
Cadmium	41.0	0.1	ug/L	ND	82.0	80-120			
Chromium (VI)	203	10	ug/L	ND	102	70-130			
Chromium	59.9	1	ug/L	ND	120	80-120			
Cobalt	55.0	0.5	ug/L	1.24	108	80-120			
Copper	48.3	0.5	ug/L	0.72	95.1	80-120			
Lead	39.8	0.1	ug/L	ND	79.4	80-120			QM-07
Molybdenum	56.5	0.5	ug/L	6.20	101	80-120			
Nickel	54.3	1	ug/L	6.1	96.6	80-120			
Selenium	39.7	1	ug/L	ND	79.3	80-120			QM-07
Silver	33.1	0.1	ug/L	ND	66.3	80-120			QM-07
Sodium	11700	200	ug/L	ND	117	80-120			
Thallium	43.4	0.1	ug/L	0.15	86.6	80-120			
Uranium	47.3	0.1	ug/L	1.8	91.0	80-120			
Vanadium	64.2	0.5	ug/L	ND	128	80-120			QM-07
Zinc	50	5	ug/L	ND	101	80-120			
PCBs									
PCBs, total	0.986	0.05	ug/L	ND	98.6	60-140			
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.542</i>		<i>ug/L</i>		<i>108</i>	<i>60-140</i>			
Semi-Volatiles									
Acenaphthene	4.81	0.05	ug/L	ND	96.3	50-140			
Acenaphthylene	4.39	0.05	ug/L	ND	87.7	50-140			
Anthracene	4.87	0.01	ug/L	ND	97.4	50-140			
Benzo [a] anthracene	3.79	0.01	ug/L	ND	75.8	50-140			
Benzo [a] pyrene	4.44	0.01	ug/L	ND	88.9	50-140			
Benzo [b] fluoranthene	5.36	0.05	ug/L	ND	107	50-140			
Benzo [g,h,i] perylene	4.65	0.05	ug/L	ND	93.0	50-140			
Benzo [k] fluoranthene	5.06	0.05	ug/L	ND	101	50-140			
Chrysene	5.12	0.05	ug/L	ND	102	50-140			
Dibenzo [a,h] anthracene	5.02	0.05	ug/L	ND	100	50-140			
Fluoranthene	5.06	0.01	ug/L	ND	101	50-140			
Fluorene	4.48	0.05	ug/L	ND	89.6	50-140			
Indeno [1,2,3-cd] pyrene	4.85	0.05	ug/L	ND	96.9	50-140			
1-Methylnaphthalene	5.20	0.05	ug/L	ND	104	50-140			
2-Methylnaphthalene	5.56	0.05	ug/L	ND	111	50-140			
Naphthalene	5.46	0.05	ug/L	ND	109	50-140			
Phenanthrene	4.68	0.05	ug/L	ND	93.6	50-140			
Pyrene	5.23	0.01	ug/L	ND	105	50-140			

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<i>Surrogate: 2-Fluorobiphenyl</i>	18.5		ug/L		92.4	50-140			
<i>Surrogate: Terphenyl-d14</i>	22.8		ug/L		114	50-140			
Volatiles									
Acetone	97.8	5.0	ug/L	ND	97.8	50-140			
Benzene	36.2	0.5	ug/L	ND	90.5	60-130			
Bromodichloromethane	29.3	0.5	ug/L	ND	73.3	60-130			
Bromoform	32.6	0.5	ug/L	ND	81.5	60-130			
Bromomethane	35.8	0.5	ug/L	ND	89.4	50-140			
Carbon Tetrachloride	26.8	0.2	ug/L	ND	67.0	60-130			
Chlorobenzene	43.7	0.5	ug/L	ND	109	60-130			
Chloroform	39.0	0.5	ug/L	ND	97.5	60-130			
Dibromochloromethane	27.8	0.5	ug/L	ND	69.4	60-130			
Dichlorodifluoromethane	37.4	1.0	ug/L	ND	93.4	50-140			
1,2-Dichlorobenzene	41.0	0.5	ug/L	ND	103	60-130			
1,3-Dichlorobenzene	41.5	0.5	ug/L	ND	104	60-130			
1,4-Dichlorobenzene	40.8	0.5	ug/L	ND	102	60-130			
1,1-Dichloroethane	37.6	0.5	ug/L	ND	94.1	60-130			
1,2-Dichloroethane	44.4	0.5	ug/L	ND	111	60-130			
1,1-Dichloroethylene	32.1	0.5	ug/L	ND	80.2	60-130			
cis-1,2-Dichloroethylene	36.1	0.5	ug/L	ND	90.2	60-130			
trans-1,2-Dichloroethylene	32.9	0.5	ug/L	ND	82.2	60-130			
1,2-Dichloropropane	37.6	0.5	ug/L	ND	93.9	60-130			
cis-1,3-Dichloropropylene	27.0	0.5	ug/L	ND	67.4	60-130			
trans-1,3-Dichloropropylene	28.0	0.5	ug/L	ND	69.9	60-130			
Ethylbenzene	41.2	0.5	ug/L	ND	103	60-130			
Ethylene dibromide (dibromoethane, 1,2)	37.4	0.2	ug/L	ND	93.5	60-130			
Hexane	27.6	1.0	ug/L	ND	69.1	60-130			
Methyl Ethyl Ketone (2-Butanone)	90.3	5.0	ug/L	ND	90.3	50-140			
Methyl Isobutyl Ketone	83.6	5.0	ug/L	ND	83.6	50-140			
Methyl tert-butyl ether	89.8	2.0	ug/L	ND	89.8	50-140			
Methylene Chloride	34.3	5.0	ug/L	ND	85.8	60-130			
Styrene	46.0	0.5	ug/L	ND	115	60-130			
1,1,1,2-Tetrachloroethane	33.0	0.5	ug/L	ND	82.6	60-130			
1,1,2,2-Tetrachloroethane	34.4	0.5	ug/L	ND	86.0	60-130			
Tetrachloroethylene	45.1	0.5	ug/L	ND	113	60-130			
Toluene	44.7	0.5	ug/L	ND	112	60-130			
1,1,1-Trichloroethane	29.0	0.5	ug/L	ND	72.6	60-130			
1,1,2-Trichloroethane	34.8	0.5	ug/L	ND	87.0	60-130			
Trichloroethylene	40.7	0.5	ug/L	ND	102	60-130			
Trichlorofluoromethane	30.8	1.0	ug/L	ND	76.9	60-130			
Vinyl chloride	37.7	0.5	ug/L	ND	94.3	50-140			
m,p-Xylenes	98.8	0.5	ug/L	ND	123	60-130			
o-Xylene	49.3	0.5	ug/L	ND	123	60-130			

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193P0

Qualifier Notes:

Sample Qualifiers :

1 : Elevated Reporting Limits due to limited sample volume.

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc.	Project Reference: Zibi - Albert and Chaudiere Island	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Patricia Stelmack	Quote #: 21-158	
Address: 100-2650 Queensview Drive Ottawa, ON, K2B 8H6	PO #: QTT 0220193-P0	
Telephone: 613-688-1939	Email Address: Patricia.Stelmack@exp.com	

 Criteria: O, Reg. 153/04 (As Amended) Table BSC Filing O, Reg. 558/00 PM10 CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Parcel Order Number: 2113433	Matrix	Air Volume	# of Containers	Sample Taken		Required Analyses														
				Date	Time	PHOS P1-P4-BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (Pb, Cu, Ni)	VOC, P10 P1-P4	PCB	pH	Limited Samples				
Sample ID/Location Name																				
1 BH/MW21-04	GW		9	2021/03/24	1400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2 BH/MW21-05	GW		9	2021/03/23	945	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 D206	GW		9	2021/03/23	945	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used.

 Method of Delivery: **Drop Box**

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab:	Verified by:
Relinquished By (Print): Jeremy Eckert	Date/Time: Mar 25/21 13:30	Date/Time: 3-25-21 16:22	Date/Time: 3-25-21 16:00
Date/Time: 2021/03/25 13:30	Temperature: 14.2°C	Temperature: 15°C	All Verified By: NK

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi-Albert and Chaudiere Island
Project: OTT00250193N0
Custody:

Report Date: 31-Mar-2021
Order Date: 25-Mar-2021

Order #: 2113436

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

Parcel ID	Client ID
2113436-01	BH/MW21-01
2113436-02	BH/MW21-02
2113436-03	BH/MW21-03

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193N0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	26-Mar-21	26-Mar-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	26-Mar-21	26-Mar-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	26-Mar-21	26-Mar-21
PCBs, total	EPA 608 - GC-ECD	29-Mar-21	29-Mar-21
pH	EPA 150.1 - pH probe @25 °C	26-Mar-21	26-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	26-Mar-21	26-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	27-Mar-21	29-Mar-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	30-Mar-21	30-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	26-Mar-21	26-Mar-21

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Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193N0

Client ID:	BH/MW21-01	BH/MW21-02	BH/MW21-03	-
Sample Date:	23-Mar-21 12:50	24-Mar-21 10:00	23-Mar-21 11:00	-
Sample ID:	2113436-01	2113436-02	2113436-03	-
MDL/Units	Water	Water	Water	-

General Inorganics

pH	0.1 pH Units	7.2	-	8.0	-
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Metals

Mercury	0.1 ug/L	<0.1	-	<0.1	-
Antimony	0.5 ug/L	<0.5	-	0.9	-
Arsenic	1 ug/L	<1	-	2	-
Barium	1 ug/L	350	-	161	-
Beryllium	0.5 ug/L	<0.5	-	<0.5	-
Boron	10 ug/L	77	-	61	-
Cadmium	0.1 ug/L	<0.1	-	<0.1	-
Chromium	1 ug/L	<1	-	<1	-
Chromium (VI)	10 ug/L	<10	-	<10	-
Cobalt	0.5 ug/L	3.4	-	1.4	-
Copper	0.5 ug/L	1.5	-	0.9	-
Lead	0.1 ug/L	0.4	-	0.2	-
Molybdenum	0.5 ug/L	5.9	-	17.8	-
Nickel	1 ug/L	11	-	23	-
Selenium	1 ug/L	<1	-	<1	-
Silver	0.1 ug/L	<0.1	-	<0.1	-
Sodium	200 ug/L	884000	-	181000	-
Thallium	0.1 ug/L	<0.1	-	<0.1	-
Uranium	0.1 ug/L	1.7	-	1.7	-
Vanadium	0.5 ug/L	<0.5	-	5.9	-
Zinc	5 ug/L	<5	-	<5	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	0.6	<0.5	<0.5	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-

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Project Description: OTT00250193N0

	Client ID:	BH/MW21-01	BH/MW21-02	BH/MW21-03	-
	Sample Date:	23-Mar-21 12:50	24-Mar-21 10:00	23-Mar-21 11:00	-
	Sample ID:	2113436-01	2113436-02	2113436-03	-
	MDL/Units	Water	Water	Water	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	93.2%	93.2%	91.4%	-
Dibromofluoromethane	Surrogate	86.8%	88.6%	85.1%	-
Toluene-d8	Surrogate	106%	103%	106%	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	-

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Project Description: OTT00250193N0

	Client ID:	BH/MW21-01	BH/MW21-02	BH/MW21-03	-
	Sample Date:	23-Mar-21 12:50	24-Mar-21 10:00	23-Mar-21 11:00	-
	Sample ID:	2113436-01	2113436-02	2113436-03	-
	MDL/Units	Water	Water	Water	-
F2 PHCs (C10-C16)	100 ug/L	<100	<177 [1]	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<177 [1]	<100	-
F4 PHCs (C34-C50)	100 ug/L	<100	<177 [1]	<100	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Anthracene	0.01 ug/L	0.02	<0.01	<0.01	-
Benzo [a] anthracene	0.01 ug/L	0.04	<0.01	<0.01	-
Benzo [a] pyrene	0.01 ug/L	0.03	<0.01	<0.01	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Chrysene	0.05 ug/L	0.08	<0.05	<0.05	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-
Fluoranthene	0.01 ug/L	0.10	<0.01	0.04	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	-
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Phenanthrene	0.05 ug/L	0.09	<0.05	<0.05	-
Pyrene	0.01 ug/L	0.12	<0.01	0.08	-
2-Fluorobiphenyl	Surrogate	96.1%	94.4%	97.3%	-
Terphenyl-d14	Surrogate	120%	103%	115%	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	<0.05	-
Decachlorobiphenyl	Surrogate	96.2%	-	98.8%	-

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Order Date: 25-Mar-2021

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Project Description: OTT00250193NO

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
<i>Surrogate: Decachlorobiphenyl</i>	0.505		ug/L		101	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
<i>Surrogate: 2-Fluorobiphenyl</i>	18.5		ug/L		92.6	50-140			
<i>Surrogate: Terphenyl-d14</i>	24.1		ug/L		120	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						

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Project Description: OTT00250193N0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	75.7		ug/L		94.6	50-140			
Surrogate: Dibromofluoromethane	63.2		ug/L		79.0	50-140			
Surrogate: Toluene-d8	84.9		ug/L		106	50-140			

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Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.9	0.1	pH Units	8.0			0.6	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	226	1	ug/L	224			0.9	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	175	10	ug/L	172			2.0	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	1.24	0.5	ug/L	1.24			0.1	20	
Copper	0.80	0.5	ug/L	0.72			10.6	20	
Lead	0.14	0.1	ug/L	ND			NC	20	
Molybdenum	6.30	0.5	ug/L	6.20			1.6	20	
Nickel	5.9	1	ug/L	6.1			2.9	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	945000	4850	ug/L	950000			0.5	20	
Thallium	0.17	0.1	ug/L	0.15			16.5	20	
Uranium	1.8	0.1	ug/L	1.8			1.0	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

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Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193N0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	79.7		ug/L		99.6	50-140			
<i>Surrogate: Dibromofluoromethane</i>	67.9		ug/L		84.9	50-140			
<i>Surrogate: Toluene-d8</i>	84.3		ug/L		105	50-140			

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Project Description: OTT00250193N0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2030	25	ug/L	ND	101	68-117			
F2 PHCs (C10-C16)	1500	100	ug/L	ND	93.8	60-140			
F3 PHCs (C16-C34)	4000	100	ug/L	ND	102	60-140			
F4 PHCs (C34-C50)	2530	100	ug/L	ND	102	60-140			
Metals									
Mercury	3.08	0.1	ug/L	ND	103	70-130			
Antimony	41.6	0.5	ug/L	ND	83.0	80-120			
Arsenic	50.8	1	ug/L	ND	101	80-120			
Barium	265	1	ug/L	224	80.6	80-120			
Beryllium	40.7	0.5	ug/L	ND	81.3	80-120			
Boron	45	10	ug/L	ND	89.2	80-120			
Cadmium	41.0	0.1	ug/L	ND	82.0	80-120			
Chromium (VI)	203	10	ug/L	ND	102	70-130			
Chromium	59.9	1	ug/L	ND	120	80-120			
Cobalt	55.0	0.5	ug/L	1.24	108	80-120			
Copper	48.3	0.5	ug/L	0.72	95.1	80-120			
Lead	39.8	0.1	ug/L	ND	79.4	80-120			QM-07
Molybdenum	56.5	0.5	ug/L	6.20	101	80-120			
Nickel	54.3	1	ug/L	6.1	96.6	80-120			
Selenium	39.7	1	ug/L	ND	79.3	80-120			QM-07
Silver	33.1	0.1	ug/L	ND	66.3	80-120			QM-07
Sodium	11700	200	ug/L	ND	117	80-120			
Thallium	43.4	0.1	ug/L	0.15	86.6	80-120			
Uranium	47.3	0.1	ug/L	1.8	91.0	80-120			
Vanadium	64.2	0.5	ug/L	ND	128	80-120			QM-07
Zinc	50	5	ug/L	ND	101	80-120			
PCBs									
PCBs, total	0.986	0.05	ug/L	ND	98.6	60-140			
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.542</i>		<i>ug/L</i>		<i>108</i>	<i>60-140</i>			
Semi-Volatiles									
Acenaphthene	4.81	0.05	ug/L	ND	96.3	50-140			
Acenaphthylene	4.39	0.05	ug/L	ND	87.7	50-140			
Anthracene	4.87	0.01	ug/L	ND	97.4	50-140			
Benzo [a] anthracene	3.79	0.01	ug/L	ND	75.8	50-140			
Benzo [a] pyrene	4.44	0.01	ug/L	ND	88.9	50-140			
Benzo [b] fluoranthene	5.36	0.05	ug/L	ND	107	50-140			
Benzo [g,h,i] perylene	4.65	0.05	ug/L	ND	93.0	50-140			
Benzo [k] fluoranthene	5.06	0.05	ug/L	ND	101	50-140			
Chrysene	5.12	0.05	ug/L	ND	102	50-140			
Dibenzo [a,h] anthracene	5.02	0.05	ug/L	ND	100	50-140			
Fluoranthene	5.06	0.01	ug/L	ND	101	50-140			
Fluorene	4.48	0.05	ug/L	ND	89.6	50-140			
Indeno [1,2,3-cd] pyrene	4.85	0.05	ug/L	ND	96.9	50-140			
1-Methylnaphthalene	5.20	0.05	ug/L	ND	104	50-140			
2-Methylnaphthalene	5.56	0.05	ug/L	ND	111	50-140			
Naphthalene	5.46	0.05	ug/L	ND	109	50-140			
Phenanthrene	4.68	0.05	ug/L	ND	93.6	50-140			
Pyrene	5.23	0.01	ug/L	ND	105	50-140			

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193N0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<i>Surrogate: 2-Fluorobiphenyl</i>	18.5		ug/L		92.4	50-140			
<i>Surrogate: Terphenyl-d14</i>	22.8		ug/L		114	50-140			
Volatiles									
Acetone	97.8	5.0	ug/L	ND	97.8	50-140			
Benzene	36.2	0.5	ug/L	ND	90.5	60-130			
Bromodichloromethane	29.3	0.5	ug/L	ND	73.3	60-130			
Bromoform	32.6	0.5	ug/L	ND	81.5	60-130			
Bromomethane	35.8	0.5	ug/L	ND	89.4	50-140			
Carbon Tetrachloride	26.8	0.2	ug/L	ND	67.0	60-130			
Chlorobenzene	43.7	0.5	ug/L	ND	109	60-130			
Chloroform	39.0	0.5	ug/L	ND	97.5	60-130			
Dibromochloromethane	27.8	0.5	ug/L	ND	69.4	60-130			
Dichlorodifluoromethane	37.4	1.0	ug/L	ND	93.4	50-140			
1,2-Dichlorobenzene	41.0	0.5	ug/L	ND	103	60-130			
1,3-Dichlorobenzene	41.5	0.5	ug/L	ND	104	60-130			
1,4-Dichlorobenzene	40.8	0.5	ug/L	ND	102	60-130			
1,1-Dichloroethane	37.6	0.5	ug/L	ND	94.1	60-130			
1,2-Dichloroethane	44.4	0.5	ug/L	ND	111	60-130			
1,1-Dichloroethylene	32.1	0.5	ug/L	ND	80.2	60-130			
cis-1,2-Dichloroethylene	36.1	0.5	ug/L	ND	90.2	60-130			
trans-1,2-Dichloroethylene	32.9	0.5	ug/L	ND	82.2	60-130			
1,2-Dichloropropane	37.6	0.5	ug/L	ND	93.9	60-130			
cis-1,3-Dichloropropylene	27.0	0.5	ug/L	ND	67.4	60-130			
trans-1,3-Dichloropropylene	28.0	0.5	ug/L	ND	69.9	60-130			
Ethylbenzene	41.2	0.5	ug/L	ND	103	60-130			
Ethylene dibromide (dibromoethane, 1,2)	37.4	0.2	ug/L	ND	93.5	60-130			
Hexane	27.6	1.0	ug/L	ND	69.1	60-130			
Methyl Ethyl Ketone (2-Butanone)	90.3	5.0	ug/L	ND	90.3	50-140			
Methyl Isobutyl Ketone	83.6	5.0	ug/L	ND	83.6	50-140			
Methyl tert-butyl ether	89.8	2.0	ug/L	ND	89.8	50-140			
Methylene Chloride	34.3	5.0	ug/L	ND	85.8	60-130			
Styrene	46.0	0.5	ug/L	ND	115	60-130			
1,1,1,2-Tetrachloroethane	33.0	0.5	ug/L	ND	82.6	60-130			
1,1,1,2,2-Tetrachloroethane	34.4	0.5	ug/L	ND	86.0	60-130			
Tetrachloroethylene	45.1	0.5	ug/L	ND	113	60-130			
Toluene	44.7	0.5	ug/L	ND	112	60-130			
1,1,1-Trichloroethane	29.0	0.5	ug/L	ND	72.6	60-130			
1,1,2-Trichloroethane	34.8	0.5	ug/L	ND	87.0	60-130			
Trichloroethylene	40.7	0.5	ug/L	ND	102	60-130			
Trichlorofluoromethane	30.8	1.0	ug/L	ND	76.9	60-130			
Vinyl chloride	37.7	0.5	ug/L	ND	94.3	50-140			
m,p-Xylenes	98.8	0.5	ug/L	ND	123	60-130			
o-Xylene	49.3	0.5	ug/L	ND	123	60-130			

Certificate of Analysis

Report Date: 31-Mar-2021

Client: exp Services Inc. (Ottawa)

Order Date: 25-Mar-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193N0

Qualifier Notes:

Sample Qualifiers :

1 : Elevated Reporting Limits due to limited sample volume.

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc.	Project Reference: Zbl - Albert and Chaudiere Island	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Patricia Stelmack	Quote # 21-158	
Address: 100-2050 Queensview Drive Ottawa, ON, K2B 8H6	PO # OTT 00250193-NO	
Telephone: 613-608-1899	Email Address: Patricia.Stelmack@exp.com	

Criteria: O, Reg. 153/04 (As Amended) Table 7 BSC Filing O, Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)					Required Analyses																							
Parcel Order Number	Matrix	Air Volume	# of Containers	Sample Taken		Pb	Cd	Cu	Zn	Mn	Ni	Co	Fe	Mg	Ca	K	Na	Cl	SO ₄	NO ₃	NO ₂	NH ₄	H ₂ O ₂	VOCs	Pb	PCB	pH	Limited Sample
				Date	Time																							
1	BH/MW21-01	GW	9	2021/03/23	1250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	BH/MW21-02	GW	4	2021/03/24	1000	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	BH/MW21-03	GW	9	2021/03/23	1100	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4																												
5																												
6																												
7																												
8																												
9																												
10																												

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used. Method of Delivery: Drop Box

Requested By (Sign):	Received by Drive/Drop:	Received at Lab:	Verked by:
Requested By (Print): Jeremy Eckert	Date/Time: Mar 25/21 1330	Date/Time: 3-25-21 1610	Date/Time: 3-25-21 1614
	Temperature: 14.26 °C	Temperature: 13.6 °C	pH Verified By:

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi- Albert and Chaudière Island
Project: OTT00250193P0
Custody:

Report Date: 30-Aug-2021
Order Date: 23-Aug-2021

Order #: 2135216

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

Parcel ID	Client ID
2135216-01	FB23
2135216-02	TB23

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	27-Aug-21	27-Aug-21
Cyanide, free	MOE E3015 - Auto Colour	25-Aug-21	25-Aug-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	25-Aug-21	26-Aug-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	25-Aug-21	25-Aug-21
PCBs, total	EPA 608 - GC-ECD	24-Aug-21	25-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	25-Aug-21	26-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Aug-21	25-Aug-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	26-Aug-21	26-Aug-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	25-Aug-21	26-Aug-21

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Client ID:	FB23	TB23	-	-
Sample Date:	23-Aug-21 14:10	17-Aug-21 00:00	-	-
Sample ID:	2135216-01	2135216-02	-	-
MDL/Units	Water	Water	-	-

General Inorganics

Cyanide, free	2 ug/L	<2	-	-
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Metals

Mercury	0.1 ug/L	<0.1	-	-
Antimony	0.5 ug/L	<0.5	-	-
Arsenic	1 ug/L	<1	-	-
Barium	1 ug/L	<1	-	-
Beryllium	0.5 ug/L	<0.5	-	-
Boron	10 ug/L	<10	-	-
Cadmium	0.1 ug/L	<0.1	-	-
Chromium	1 ug/L	<1	-	-
Chromium (VI)	10 ug/L	<10	-	-
Cobalt	0.5 ug/L	<0.5	-	-
Copper	0.5 ug/L	<0.5	-	-
Lead	0.1 ug/L	<0.1	-	-
Molybdenum	0.5 ug/L	<0.5	-	-
Nickel	1 ug/L	<1	-	-
Selenium	1 ug/L	<1	-	-
Silver	0.1 ug/L	<0.1	-	-
Sodium	200 ug/L	<200	-	-
Thallium	0.1 ug/L	<0.1	-	-
Uranium	0.1 ug/L	<0.1	-	-
Vanadium	0.5 ug/L	<0.5	-	-
Zinc	5 ug/L	<5	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	<0.5	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	FB23	TB23	-	-
	Sample Date:	23-Aug-21 14:10	17-Aug-21 00:00	-	-
	Sample ID:	2135216-01	2135216-02	-	-
	MDL/Units	Water	Water	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	-	-
Hexane	1.0 ug/L	<1.0	<1.0	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-
4-Bromofluorobenzene	Surrogate	93.3%	94.0%	-	-
Dibromofluoromethane	Surrogate	94.6%	100%	-	-
Toluene-d8	Surrogate	99.6%	100%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	FB23	TB23	-	-
	Sample Date:	23-Aug-21 14:10	17-Aug-21 00:00	-	-
	Sample ID:	2135216-01	2135216-02	-	-
	MDL/Units	Water	Water	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	-	-	-
Acenaphthylene	0.05 ug/L	<0.05	-	-	-
Anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	-	-
Chrysene	0.05 ug/L	<0.05	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-
Fluoranthene	0.01 ug/L	<0.01	-	-	-
Fluorene	0.05 ug/L	<0.05	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	-	-
Naphthalene	0.05 ug/L	<0.05	-	-	-
Phenanthrene	0.05 ug/L	<0.05	-	-	-
Pyrene	0.01 ug/L	<0.01	-	-	-
2-Fluorobiphenyl	Surrogate	79.3%	-	-	-
Terphenyl-d14	Surrogate	97.5%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	85.4%	-	-	-

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.518		ug/L		104	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	16.1		ug/L		80.6	50-140			
Surrogate: Terphenyl-d14	21.1		ug/L		106	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-Hexane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	70.7		ug/L		88.4	50-140			
Surrogate: Dibromofluoromethane	42.1		ug/L		52.6	50-140			
Surrogate: Toluene-d8	79.8		ug/L		99.8	50-140			

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	50.2	1	ug/L	51.9			3.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	25	10	ug/L	25			0.1	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	2.45	0.5	ug/L	2.47			0.8	20	
Lead	0.14	0.1	ug/L	0.13			5.5	20	
Molybdenum	1.66	0.5	ug/L	1.53			8.1	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	23600	200	ug/L	23600			0.1	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	0.2	0.1	ug/L	0.2			0.4	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	74.0		ug/L		92.5	50-140			
Surrogate: Dibromofluoromethane	70.5		ug/L		88.1	50-140			
Surrogate: Toluene-d8	82.7		ug/L		103	50-140			

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	31.9	2	ug/L	ND	106	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	2110	25	ug/L	ND	106	68-117			
F2 PHCs (C10-C16)	1730	100	ug/L	ND	108	60-140			
F3 PHCs (C16-C34)	4110	100	ug/L	ND	105	60-140			
F4 PHCs (C34-C50)	2560	100	ug/L	ND	103	60-140			
Metals									
Mercury	3.32	0.1	ug/L	ND	111	70-130			
Antimony	50.5	0.5	ug/L	ND	101	80-120			
Arsenic	60.2	1	ug/L	ND	119	80-120			
Barium	102	1	ug/L	51.9	100	80-120			
Beryllium	49.3	0.5	ug/L	ND	98.5	80-120			
Boron	67	10	ug/L	25	85.3	80-120			
Cadmium	50.1	0.1	ug/L	ND	100	80-120			
Chromium (VI)	196	10	ug/L	ND	98.0	70-130			
Chromium	59.7	1	ug/L	ND	118	80-120			
Cobalt	57.2	0.5	ug/L	ND	114	80-120			
Copper	55.3	0.5	ug/L	2.47	106	80-120			
Lead	49.4	0.1	ug/L	0.13	98.5	80-120			
Molybdenum	57.8	0.5	ug/L	1.53	113	80-120			
Nickel	54.1	1	ug/L	ND	107	80-120			
Selenium	57.8	1	ug/L	ND	116	80-120			
Silver	45.4	0.1	ug/L	ND	90.8	80-120			
Sodium	32400	200	ug/L	23600	88.2	80-120			
Thallium	49.7	0.1	ug/L	ND	99.3	80-120			
Uranium	54.5	0.1	ug/L	0.2	109	80-120			
Vanadium	61.2	0.5	ug/L	ND	122	80-120			QM-07
Zinc	55	5	ug/L	ND	101	80-120			
PCBs									
PCBs, total	0.823	0.05	ug/L	ND	82.3	65-135			
Surrogate: Decachlorobiphenyl	0.360		ug/L		72.0	60-140			
Semi-Volatiles									
Acenaphthene	4.33	0.05	ug/L	ND	86.5	50-140			
Acenaphthylene	3.05	0.05	ug/L	ND	61.1	50-140			
Anthracene	3.94	0.01	ug/L	ND	78.9	50-140			
Benzo [a] anthracene	4.08	0.01	ug/L	ND	81.7	50-140			
Benzo [a] pyrene	4.76	0.01	ug/L	ND	95.2	50-140			
Benzo [b] fluoranthene	5.63	0.05	ug/L	ND	113	50-140			
Benzo [g,h,i] perylene	4.82	0.05	ug/L	ND	96.3	50-140			
Benzo [k] fluoranthene	5.22	0.05	ug/L	ND	104	50-140			
Chrysene	4.57	0.05	ug/L	ND	91.5	50-140			
Dibenzo [a,h] anthracene	4.93	0.05	ug/L	ND	98.6	50-140			
Fluoranthene	3.89	0.01	ug/L	ND	77.7	50-140			
Fluorene	3.87	0.05	ug/L	ND	77.3	50-140			
Indeno [1,2,3-cd] pyrene	4.23	0.05	ug/L	ND	84.5	50-140			
1-Methylnaphthalene	4.24	0.05	ug/L	ND	84.8	50-140			
2-Methylnaphthalene	4.71	0.05	ug/L	ND	94.3	50-140			

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Naphthalene	4.64	0.05	ug/L	ND	92.8	50-140			
Phenanthrene	3.84	0.05	ug/L	ND	76.8	50-140			
Pyrene	4.01	0.01	ug/L	ND	80.2	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	17.7		ug/L		88.3	50-140			
<i>Surrogate: Terphenyl-d14</i>	20.4		ug/L		102	50-140			
Volatiles									
Acetone	67.3	5.0	ug/L	ND	67.3	50-140			
Benzene	40.2	0.5	ug/L	ND	100	60-130			
Bromodichloromethane	37.7	0.5	ug/L	ND	94.2	60-130			
Bromoform	36.7	0.5	ug/L	ND	91.7	60-130			
Bromomethane	43.9	0.5	ug/L	ND	110	50-140			
Carbon Tetrachloride	37.5	0.2	ug/L	ND	93.7	60-130			
Chlorobenzene	34.3	0.5	ug/L	ND	85.7	60-130			
Chloroform	41.8	0.5	ug/L	ND	104	60-130			
Dibromochloromethane	28.2	0.5	ug/L	ND	70.6	60-130			
Dichlorodifluoromethane	43.6	1.0	ug/L	ND	109	50-140			
1,2-Dichlorobenzene	44.5	0.5	ug/L	ND	111	60-130			
1,3-Dichlorobenzene	44.5	0.5	ug/L	ND	111	60-130			
1,4-Dichlorobenzene	44.0	0.5	ug/L	ND	110	60-130			
1,1-Dichloroethane	40.7	0.5	ug/L	ND	102	60-130			
1,2-Dichloroethane	37.1	0.5	ug/L	ND	92.8	60-130			
1,1-Dichloroethylene	40.0	0.5	ug/L	ND	99.9	60-130			
cis-1,2-Dichloroethylene	40.8	0.5	ug/L	ND	102	60-130			
trans-1,2-Dichloroethylene	39.7	0.5	ug/L	ND	99.2	60-130			
1,2-Dichloropropane	39.9	0.5	ug/L	ND	99.8	60-130			
cis-1,3-Dichloropropylene	31.4	0.5	ug/L	ND	78.6	60-130			
trans-1,3-Dichloropropylene	30.7	0.5	ug/L	ND	76.6	60-130			
Ethylbenzene	45.2	0.5	ug/L	ND	113	60-130			
Ethylene dibromide (dibromoethane, 1,2-	34.3	0.2	ug/L	ND	85.8	60-130			
Hexane	34.0	1.0	ug/L	ND	85.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	101	5.0	ug/L	ND	101	50-140			
Methyl Isobutyl Ketone	105	5.0	ug/L	ND	105	50-140			
Methyl tert-butyl ether	107	2.0	ug/L	ND	107	50-140			
Methylene Chloride	31.0	5.0	ug/L	ND	77.6	60-130			
Styrene	43.6	0.5	ug/L	ND	109	60-130			
1,1,1,2-Tetrachloroethane	40.2	0.5	ug/L	ND	100	60-130			
1,1,2,2-Tetrachloroethane	24.0	0.5	ug/L	ND	60.0	60-130			
Tetrachloroethylene	30.9	0.5	ug/L	ND	77.3	60-130			
Toluene	36.3	0.5	ug/L	ND	90.8	60-130			
1,1,1-Trichloroethane	40.7	0.5	ug/L	ND	102	60-130			
1,1,2-Trichloroethane	42.5	0.5	ug/L	ND	106	60-130			
Trichloroethylene	42.9	0.5	ug/L	ND	107	60-130			
Trichlorofluoromethane	29.1	1.0	ug/L	ND	72.8	60-130			
Vinyl chloride	37.0	0.5	ug/L	ND	92.4	50-140			
m,p-Xylenes	96.0	0.5	ug/L	ND	120	60-130			
o-Xylene	41.2	0.5	ug/L	ND	103	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	61.4		ug/L		76.8	50-140			
<i>Surrogate: Dibromofluoromethane</i>	72.3		ug/L		90.4	50-140			
<i>Surrogate: Toluene-d8</i>	66.0		ug/L		82.6	50-140			

Certificate of Analysis

Report Date: 30-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Qualifier Notes:

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc. Project Reference: Zibi - Albert and Claudine Island
 Contact Name: Patricia Stolmack Quote #: 21-158
 Address: 100-2650 Queenview Drive PO #: OTT 0026100
 Ottawa, ON, K2B 1H6 Email Address: ~~http://www.exp.com~~
 Telephone: 613-688-1829 ~~http://www.exp.com~~ jeremy.eckert@exp.com patricia.stolmack@exp.com
 Criteria: Reg. 153.04 (As Amended) Table RSC Filing Reg. 558.00 PWQO CCMB SUB (Stream) SUB (Sanitary) Municipality Other
 Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm Sanitary Sewer) P (Paint) A (Air) O (Other)

Turnaround Time:
 1 Day 3 Day
 2 Day Regular
 Date Required: 08/24/2021

Parcel Order Number: 2135216				Required Analyses													
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHOS P1-P4-BTEX	VOCs	PAMA	Metals by ICP	Hg	CYT	a (HWS)	VOC, PMA P1-P4	PCB	pH	Free Cyanide	VOC/BTEX/FI
				Date	Time												
1 FB23	0		9	2021/08/23	1410	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2 TB23	0		1	2021/08/23	1405	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Comments: Data will be compared to Table 7 + Table 9 SCS; most stringent standard will be used

Relinquished By (Name): *[Signature]* Received by Drive Dept: *[Signature]* Relinquished at Lab: *Sumegrom Okonai* Verified By: *[Signature]*
 Relinquished By (Print): Jeremy Eckert Date/Time: 2021/08/23 16:00 Temperature: 9.2 °C Date/Time: 2021/08/24 12:42 Temperature: 8.3 °C Date/Time: 2021/08/24 12:42
 Method of Delivery: *Drop Box*
 All Verified / Qty: 8/1

15:40

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi- Albert and Chaudière Island
Project: OTT00250193N0
Custody:

Report Date: 27-Aug-2021
Order Date: 23-Aug-2021

Order #: 2135219

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

Paracel ID	Client ID
2135219-01	MW21-02

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	27-Aug-21	27-Aug-21
Cyanide, free	MOE E3015 - Auto Colour	25-Aug-21	25-Aug-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	25-Aug-21	26-Aug-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	25-Aug-21	25-Aug-21
PCBs, total	EPA 608 - GC-ECD	24-Aug-21	25-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	25-Aug-21	26-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Aug-21	25-Aug-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	25-Aug-21	26-Aug-21

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Client ID:	MW21-02	-	-	-
Sample Date:	23-Aug-21 14:00	-	-	-
Sample ID:	2135219-01	-	-	-
MDL/Units	Water	-	-	-

General Inorganics

Cyanide, free	2 ug/L	<2	-	-	-
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Metals

Mercury	0.1 ug/L	<0.1	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-
Arsenic	1 ug/L	<1	-	-	-
Barium	1 ug/L	225	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10 ug/L	217	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Chromium	1 ug/L	<1	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-
Cobalt	0.5 ug/L	1.3	-	-	-
Copper	0.5 ug/L	<0.5	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-
Molybdenum	0.5 ug/L	2.1	-	-	-
Nickel	1 ug/L	3	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	648000	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Uranium	0.1 ug/L	0.3	-	-	-
Vanadium	0.5 ug/L	0.7	-	-	-
Zinc	5 ug/L	<5	-	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

	Client ID:	MW21-02	-	-	-
	Sample Date:	23-Aug-21 14:00	-	-	-
	Sample ID:	2135219-01	-	-	-
	MDL/Units	Water	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	91.6%	-	-	-
Dibromofluoromethane	Surrogate	96.5%	-	-	-
Toluene-d8	Surrogate	100%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-

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Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

	Client ID:	MW21-02	-	-	-
	Sample Date:	23-Aug-21 14:00	-	-	-
	Sample ID:	2135219-01	-	-	-
	MDL/Units	Water	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-
PCBs					
PCBs, total	0.05 ug/L	<0.10 [1]	-	-	-
Decachlorobiphenyl	Surrogate	97.7% [1]	-	-	-

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.518		ug/L		104	60-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						

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Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	70.7		ug/L		88.4	50-140			
Surrogate: Dibromofluoromethane	42.1		ug/L		52.6	50-140			
Surrogate: Toluene-d8	79.8		ug/L		99.8	50-140			

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	50.2	1	ug/L	51.9			3.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	25	10	ug/L	25			0.1	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	2.45	0.5	ug/L	2.47			0.8	20	
Lead	0.14	0.1	ug/L	0.13			5.5	20	
Molybdenum	1.66	0.5	ug/L	1.53			8.1	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	23600	200	ug/L	23600			0.1	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	0.2	0.1	ug/L	0.2			0.4	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

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Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	74.0		ug/L		92.5	50-140			
<i>Surrogate: Dibromofluoromethane</i>	70.5		ug/L		88.1	50-140			
<i>Surrogate: Toluene-d8</i>	82.7		ug/L		103	50-140			

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	31.9	2	ug/L	ND	106	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	2110	25	ug/L	ND	106	68-117			
F2 PHCs (C10-C16)	1730	100	ug/L	ND	108	60-140			
F3 PHCs (C16-C34)	4110	100	ug/L	ND	105	60-140			
F4 PHCs (C34-C50)	2560	100	ug/L	ND	103	60-140			
Metals									
Mercury	3.32	0.1	ug/L	ND	111	70-130			
Antimony	50.5	0.5	ug/L	ND	101	80-120			
Arsenic	60.2	1	ug/L	ND	119	80-120			
Barium	102	1	ug/L	51.9	100	80-120			
Beryllium	49.3	0.5	ug/L	ND	98.5	80-120			
Boron	67	10	ug/L	25	85.3	80-120			
Cadmium	50.1	0.1	ug/L	ND	100	80-120			
Chromium (VI)	196	10	ug/L	ND	98.0	70-130			
Chromium	59.7	1	ug/L	ND	118	80-120			
Cobalt	57.2	0.5	ug/L	ND	114	80-120			
Copper	55.3	0.5	ug/L	2.47	106	80-120			
Lead	49.4	0.1	ug/L	0.13	98.5	80-120			
Molybdenum	57.8	0.5	ug/L	1.53	113	80-120			
Nickel	54.1	1	ug/L	ND	107	80-120			
Selenium	57.8	1	ug/L	ND	116	80-120			
Silver	45.4	0.1	ug/L	ND	90.8	80-120			
Sodium	32400	200	ug/L	23600	88.2	80-120			
Thallium	49.7	0.1	ug/L	ND	99.3	80-120			
Uranium	54.5	0.1	ug/L	0.2	109	80-120			
Vanadium	61.2	0.5	ug/L	ND	122	80-120			QM-07
Zinc	55	5	ug/L	ND	101	80-120			
PCBs									
PCBs, total	0.823	0.05	ug/L	ND	82.3	65-135			
Surrogate: Decachlorobiphenyl	0.360		ug/L		72.0	60-140			
Volatiles									
Acetone	67.3	5.0	ug/L	ND	67.3	50-140			
Benzene	40.2	0.5	ug/L	ND	100	60-130			
Bromodichloromethane	37.7	0.5	ug/L	ND	94.2	60-130			
Bromoform	36.7	0.5	ug/L	ND	91.7	60-130			
Bromomethane	43.9	0.5	ug/L	ND	110	50-140			
Carbon Tetrachloride	37.5	0.2	ug/L	ND	93.7	60-130			
Chlorobenzene	34.3	0.5	ug/L	ND	85.7	60-130			
Chloroform	41.8	0.5	ug/L	ND	104	60-130			
Dibromochloromethane	28.2	0.5	ug/L	ND	70.6	60-130			
Dichlorodifluoromethane	43.6	1.0	ug/L	ND	109	50-140			
1,2-Dichlorobenzene	44.5	0.5	ug/L	ND	111	60-130			
1,3-Dichlorobenzene	44.5	0.5	ug/L	ND	111	60-130			
1,4-Dichlorobenzene	44.0	0.5	ug/L	ND	110	60-130			
1,1-Dichloroethane	40.7	0.5	ug/L	ND	102	60-130			
1,2-Dichloroethane	37.1	0.5	ug/L	ND	92.8	60-130			

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	40.0	0.5	ug/L	ND	99.9	60-130			
cis-1,2-Dichloroethylene	40.8	0.5	ug/L	ND	102	60-130			
trans-1,2-Dichloroethylene	39.7	0.5	ug/L	ND	99.2	60-130			
1,2-Dichloropropane	39.9	0.5	ug/L	ND	99.8	60-130			
cis-1,3-Dichloropropylene	31.4	0.5	ug/L	ND	78.6	60-130			
trans-1,3-Dichloropropylene	30.7	0.5	ug/L	ND	76.6	60-130			
Ethylbenzene	45.2	0.5	ug/L	ND	113	60-130			
Ethylene dibromide (dibromoethane, 1,2-	34.3	0.2	ug/L	ND	85.8	60-130			
Hexane	34.0	1.0	ug/L	ND	85.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	101	5.0	ug/L	ND	101	50-140			
Methyl Isobutyl Ketone	105	5.0	ug/L	ND	105	50-140			
Methyl tert-butyl ether	107	2.0	ug/L	ND	107	50-140			
Methylene Chloride	31.0	5.0	ug/L	ND	77.6	60-130			
Styrene	43.6	0.5	ug/L	ND	109	60-130			
1,1,1,2-Tetrachloroethane	40.2	0.5	ug/L	ND	100	60-130			
1,1,2,2-Tetrachloroethane	24.0	0.5	ug/L	ND	60.0	60-130			
Tetrachloroethylene	30.9	0.5	ug/L	ND	77.3	60-130			
Toluene	36.3	0.5	ug/L	ND	90.8	60-130			
1,1,1-Trichloroethane	40.7	0.5	ug/L	ND	102	60-130			
1,1,2-Trichloroethane	42.5	0.5	ug/L	ND	106	60-130			
Trichloroethylene	42.9	0.5	ug/L	ND	107	60-130			
Trichlorofluoromethane	29.1	1.0	ug/L	ND	72.8	60-130			
Vinyl chloride	37.0	0.5	ug/L	ND	92.4	50-140			
m,p-Xylenes	96.0	0.5	ug/L	ND	120	60-130			
o-Xylene	41.2	0.5	ug/L	ND	103	60-130			
Surrogate: 4-Bromofluorobenzene	61.4		ug/L		76.8	50-140			
Surrogate: Dibromofluoromethane	72.3		ug/L		90.4	50-140			
Surrogate: Toluene-d8	66.0		ug/L		82.6	50-140			

Certificate of Analysis

Report Date: 27-Aug-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193N0

Qualifier Notes:

Sample Qualifiers :

1 : Elevated Reporting Limits due to limited sample volume.

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc.	Project Reference: Ziti - Albert and Chaudiere Island	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input checked="" type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular
Contact Name: Patricia Steinhack	Quota #: 21-158	
Address: 100-2650 Queensview Drive Ottawa, ON, K2B 6H6	PO #: OTT-00250193-80	
Telephone: 613-628-1899	Email Address: jeremy.eckert@exp.com <i>patricia.steinhack@exp.com</i> <i>jeremy.eckert@exp.com</i>	

Criteria: 0. Reg. 153.04 (As Amended) Table 1 RSC Filing 0. Reg. 558.06 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Parcel Order Number: 2135219				Required Analyses														
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHOS P1-P4-BTEX	VOCs	PAHs	Metals by ICP	Hg	Cd	Pb (diss)	VOC, PHE P1-P4	PCB	pH	Free Cyanide		
				Date	Time													
1 MW21-02	GW		8	2021/08/23	1400	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: ~~data will be compared to Table 7+9 SCS; most stringent standard will be used~~
Data will be compared to Table 7+9 SCS; most stringent standard will be used

Relinquished By (Sign): *[Signature]* Received by (Sign): *[Signature]* Received at Lab: *Jameson Ohmer* Verified By: *[Signature]*

Relinquished by (Print): *Jeremy Eckert* Date/Time: *Aug 23/21 16:00* Temperature: *9.2 °C* Date/Time: *Aug 24, 2021 18:05* Temperature: *8.3 °C* Date/Time: *Aug 24, 2021 12:58*

Method of Delivery: *Drop Box*

15:46

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi- Albert and Chaudière Island
Project: OTT00250193P0
Custody:

Report Date: 15-Oct-2021
Order Date: 23-Aug-2021

Revised Report

Order #: 2135221

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

Parcel ID	Client ID
2135221-01	D206
2135221-02	MW21-03

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	27-Aug-21	27-Aug-21
Cyanide, free	MOE E3015 - Auto Colour	25-Aug-21	25-Aug-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	25-Aug-21	26-Aug-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	25-Aug-21	25-Aug-21
PCBs, total	EPA 608 - GC-ECD	24-Aug-21	25-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	25-Aug-21	26-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Aug-21	25-Aug-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	26-Aug-21	26-Aug-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	25-Aug-21	26-Aug-21

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Client ID:	D206	MW21-03	-	-
Sample Date:	23-Aug-21 14:00	23-Aug-21 10:45	-	-
Sample ID:	2135221-01	2135221-02	-	-
MDL/Units	Water	Water	-	-

General Inorganics

Cyanide, free	2 ug/L	<2	<2	-	-
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Metals

Mercury	0.1 ug/L	<0.1	<0.1	-	-
Antimony	0.5 ug/L	<0.5	<0.5	-	-
Arsenic	1 ug/L	<1	4	-	-
Barium	1 ug/L	226	210	-	-
Beryllium	0.5 ug/L	<0.5	<0.5	-	-
Boron	10 ug/L	213	143	-	-
Cadmium	0.1 ug/L	<0.1	<0.1	-	-
Chromium	1 ug/L	<1	<1	-	-
Chromium (VI)	10 ug/L	<10	<10	-	-
Cobalt	0.5 ug/L	1.2	1.9	-	-
Copper	0.5 ug/L	<0.5	0.9	-	-
Lead	0.1 ug/L	<0.1	<0.1	-	-
Molybdenum	0.5 ug/L	2.1	5.0	-	-
Nickel	1 ug/L	3	6	-	-
Selenium	1 ug/L	<1	<1	-	-
Silver	0.1 ug/L	<0.1	<0.1	-	-
Sodium	200 ug/L	630000	632000	-	-
Thallium	0.1 ug/L	<0.1	<0.1	-	-
Uranium	0.1 ug/L	0.3	9.2	-	-
Vanadium	0.5 ug/L	0.7	1.7	-	-
Zinc	5 ug/L	<5	7	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	<0.5	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	D206	MW21-03	-	-
	Sample Date:	23-Aug-21 14:00	23-Aug-21 10:45	-	-
	Sample ID:	2135221-01	2135221-02	-	-
	MDL/Units	Water	Water	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	-	-
Hexane	1.0 ug/L	<1.0	<1.0	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-
4-Bromofluorobenzene	Surrogate	86.8%	91.7%	-	-
Dibromofluoromethane	Surrogate	54.6%	83.7%	-	-
Toluene-d8	Surrogate	98.8%	103%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

	Client ID:	D206	MW21-03	-	-
	Sample Date:	23-Aug-21 14:00	23-Aug-21 10:45	-	-
	Sample ID:	2135221-01	2135221-02	-	-
	MDL/Units	Water	Water	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	-	<0.05	-	-
Acenaphthylene	0.05 ug/L	-	<0.05	-	-
Anthracene	0.01 ug/L	-	<0.01	-	-
Benzo [a] anthracene	0.01 ug/L	-	<0.01	-	-
Benzo [a] pyrene	0.01 ug/L	-	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	-	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	-	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	-	<0.05	-	-
Chrysene	0.05 ug/L	-	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	-	<0.05	-	-
Fluoranthene	0.01 ug/L	-	<0.01	-	-
Fluorene	0.05 ug/L	-	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	-	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	-	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	-	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	-	<0.10	-	-
Naphthalene	0.05 ug/L	-	<0.05	-	-
Phenanthrene	0.05 ug/L	-	<0.05	-	-
Pyrene	0.01 ug/L	-	<0.01	-	-
2-Fluorobiphenyl	Surrogate	-	81.5%	-	-
Terphenyl-d14	Surrogate	-	101%	-	-

PCBs

PCBs, total	0.05 ug/L	N/A	<0.05	-	-
Decachlorobiphenyl	Surrogate	N/A	108%	-	-

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
Aroclor-1260	ND	0.05	ug/L						
Aroclor-1254	ND	0.05	ug/L						
Aroclor-1248	ND	0.05	ug/L						
Aroclor-1242	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.518		ug/L		104	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	16.1		ug/L		80.6	50-140			
Surrogate: Terphenyl-d14	21.1		ug/L		106	50-140			

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	70.7		ug/L		88.4	50-140			
Surrogate: Dibromofluoromethane	42.1		ug/L		52.6	50-140			
Surrogate: Toluene-d8	79.8		ug/L		99.8	50-140			

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	50.2	1	ug/L	51.9			3.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	25	10	ug/L	25			0.1	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	2.45	0.5	ug/L	2.47			0.8	20	
Lead	0.14	0.1	ug/L	0.13			5.5	20	
Molybdenum	1.66	0.5	ug/L	1.53			8.1	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	23600	200	ug/L	23600			0.1	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	0.2	0.1	ug/L	0.2			0.4	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	74.0		ug/L		92.5	50-140			
<i>Surrogate: Dibromofluoromethane</i>	70.5		ug/L		88.1	50-140			
<i>Surrogate: Toluene-d8</i>	82.7		ug/L		103	50-140			

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	31.9	2	ug/L	ND	106	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	2110	25	ug/L	ND	106	68-117			
F2 PHCs (C10-C16)	1730	100	ug/L	ND	108	60-140			
F3 PHCs (C16-C34)	4110	100	ug/L	ND	105	60-140			
F4 PHCs (C34-C50)	2560	100	ug/L	ND	103	60-140			
Metals									
Mercury	3.32	0.1	ug/L	ND	111	70-130			
Antimony	50.5	0.5	ug/L	ND	101	80-120			
Arsenic	60.2	1	ug/L	ND	119	80-120			
Barium	102	1	ug/L	51.9	100	80-120			
Beryllium	49.3	0.5	ug/L	ND	98.5	80-120			
Boron	67	10	ug/L	25	85.3	80-120			
Cadmium	50.1	0.1	ug/L	ND	100	80-120			
Chromium (VI)	196	10	ug/L	ND	98.0	70-130			
Chromium	59.7	1	ug/L	ND	118	80-120			
Cobalt	57.2	0.5	ug/L	ND	114	80-120			
Copper	55.3	0.5	ug/L	2.47	106	80-120			
Lead	49.4	0.1	ug/L	0.13	98.5	80-120			
Molybdenum	57.8	0.5	ug/L	1.53	113	80-120			
Nickel	54.1	1	ug/L	ND	107	80-120			
Selenium	57.8	1	ug/L	ND	116	80-120			
Silver	45.4	0.1	ug/L	ND	90.8	80-120			
Sodium	32400	200	ug/L	23600	88.2	80-120			
Thallium	49.7	0.1	ug/L	ND	99.3	80-120			
Uranium	54.5	0.1	ug/L	0.2	109	80-120			
Vanadium	61.2	0.5	ug/L	ND	122	80-120			QM-07
Zinc	55	5	ug/L	ND	101	80-120			
PCBs									
PCBs, total	0.823	0.05	ug/L	ND	82.3	65-135			
Surrogate: Decachlorobiphenyl	0.360		ug/L		72.0	60-140			
Semi-Volatiles									
Acenaphthene	4.33	0.05	ug/L	ND	86.5	50-140			
Acenaphthylene	3.05	0.05	ug/L	ND	61.1	50-140			
Anthracene	3.94	0.01	ug/L	ND	78.9	50-140			
Benzo [a] anthracene	4.08	0.01	ug/L	ND	81.7	50-140			
Benzo [a] pyrene	4.76	0.01	ug/L	ND	95.2	50-140			
Benzo [b] fluoranthene	5.63	0.05	ug/L	ND	113	50-140			
Benzo [g,h,i] perylene	4.82	0.05	ug/L	ND	96.3	50-140			
Benzo [k] fluoranthene	5.22	0.05	ug/L	ND	104	50-140			
Chrysene	4.57	0.05	ug/L	ND	91.5	50-140			
Dibenzo [a,h] anthracene	4.93	0.05	ug/L	ND	98.6	50-140			
Fluoranthene	3.89	0.01	ug/L	ND	77.7	50-140			
Fluorene	3.87	0.05	ug/L	ND	77.3	50-140			
Indeno [1,2,3-cd] pyrene	4.23	0.05	ug/L	ND	84.5	50-140			
1-Methylnaphthalene	4.24	0.05	ug/L	ND	84.8	50-140			
2-Methylnaphthalene	4.71	0.05	ug/L	ND	94.3	50-140			

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Naphthalene	4.64	0.05	ug/L	ND	92.8	50-140			
Phenanthrene	3.84	0.05	ug/L	ND	76.8	50-140			
Pyrene	4.01	0.01	ug/L	ND	80.2	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	17.7		ug/L		88.3	50-140			
<i>Surrogate: Terphenyl-d14</i>	20.4		ug/L		102	50-140			
Volatiles									
Acetone	67.3	5.0	ug/L	ND	67.3	50-140			
Benzene	40.2	0.5	ug/L	ND	100	60-130			
Bromodichloromethane	37.7	0.5	ug/L	ND	94.2	60-130			
Bromoform	36.7	0.5	ug/L	ND	91.7	60-130			
Bromomethane	43.9	0.5	ug/L	ND	110	50-140			
Carbon Tetrachloride	37.5	0.2	ug/L	ND	93.7	60-130			
Chlorobenzene	34.3	0.5	ug/L	ND	85.7	60-130			
Chloroform	41.8	0.5	ug/L	ND	104	60-130			
Dibromochloromethane	28.2	0.5	ug/L	ND	70.6	60-130			
Dichlorodifluoromethane	43.6	1.0	ug/L	ND	109	50-140			
1,2-Dichlorobenzene	44.5	0.5	ug/L	ND	111	60-130			
1,3-Dichlorobenzene	44.5	0.5	ug/L	ND	111	60-130			
1,4-Dichlorobenzene	44.0	0.5	ug/L	ND	110	60-130			
1,1-Dichloroethane	40.7	0.5	ug/L	ND	102	60-130			
1,2-Dichloroethane	37.1	0.5	ug/L	ND	92.8	60-130			
1,1-Dichloroethylene	40.0	0.5	ug/L	ND	99.9	60-130			
cis-1,2-Dichloroethylene	40.8	0.5	ug/L	ND	102	60-130			
trans-1,2-Dichloroethylene	39.7	0.5	ug/L	ND	99.2	60-130			
1,2-Dichloropropane	39.9	0.5	ug/L	ND	99.8	60-130			
cis-1,3-Dichloropropylene	31.4	0.5	ug/L	ND	78.6	60-130			
trans-1,3-Dichloropropylene	30.7	0.5	ug/L	ND	76.6	60-130			
Ethylbenzene	45.2	0.5	ug/L	ND	113	60-130			
Ethylene dibromide (dibromoethane, 1,2-	34.3	0.2	ug/L	ND	85.8	60-130			
Hexane	34.0	1.0	ug/L	ND	85.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	101	5.0	ug/L	ND	101	50-140			
Methyl Isobutyl Ketone	105	5.0	ug/L	ND	105	50-140			
Methyl tert-butyl ether	107	2.0	ug/L	ND	107	50-140			
Methylene Chloride	31.0	5.0	ug/L	ND	77.6	60-130			
Styrene	43.6	0.5	ug/L	ND	109	60-130			
1,1,1,2-Tetrachloroethane	40.2	0.5	ug/L	ND	100	60-130			
1,1,2,2-Tetrachloroethane	24.0	0.5	ug/L	ND	60.0	60-130			
Tetrachloroethylene	30.9	0.5	ug/L	ND	77.3	60-130			
Toluene	36.3	0.5	ug/L	ND	90.8	60-130			
1,1,1-Trichloroethane	40.7	0.5	ug/L	ND	102	60-130			
1,1,2-Trichloroethane	42.5	0.5	ug/L	ND	106	60-130			
Trichloroethylene	42.9	0.5	ug/L	ND	107	60-130			
Trichlorofluoromethane	29.1	1.0	ug/L	ND	72.8	60-130			
Vinyl chloride	37.0	0.5	ug/L	ND	92.4	50-140			
m,p-Xylenes	96.0	0.5	ug/L	ND	120	60-130			
o-Xylene	41.2	0.5	ug/L	ND	103	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	61.4		ug/L		76.8	50-140			
<i>Surrogate: Dibromofluoromethane</i>	72.3		ug/L		90.4	50-140			
<i>Surrogate: Toluene-d8</i>	66.0		ug/L		82.6	50-140			

Certificate of Analysis

Report Date: 15-Oct-2021

Client: exp Services Inc. (Ottawa)

Order Date: 23-Aug-2021

Client PO: Zibi- Albert and Chaudière Island

Project Description: OTT00250193P0

Qualifier Notes:

Sample Qualifiers :

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

Revision 1 - This report excludes PCB data for sample D206 due to possible laboratory contamination.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc. Project Reference: Zibi - Albert and Chaudhri Island
 Contact Name: Patricia Skelmack Quote #: 21-158
 Address: 100-2650 Queenstown Drive PO #: OTT-002601103-90
 Ottawa, ON, K2B 8B6 Email Address: ~~patricia.skelmack@exp.com~~ patricia.skelmack@exp.com jeremy.ecker@exp.com
 Telephone: 613-685-1899 Date Required: _____

Criteria: O. Reg. 153/04 (As Amended) Table 1 RSC Filing O. Reg. 558/06 PAOQ COME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Turnaround Time:
 1 Day 3 Day
 2 Day Regular

Parcel Order Number: 2135221		Required Analyses														
Sample ID/Location Name	Matrix	Air Volume	Liters of Contaminants	Sample Taken		PAHs (16)	VOCs	PAAHs	Metals by ICP	Hg	CrV6	B (BTEX)	VOC, POC, P1, P4	POB	pH	Free Cyanide
				Date	Time											
1	D206	GW	8	20/08/23	1400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	MW21-03	GW	9	20/08/23	1045	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: ~~As per O. Reg. 153/04 Table 7 and Table 9 SW, P, A, O, SS, GW, PAOQ, COME, SUB (Storm) and SUB (Sanitary) will be used.~~
 Data will be compared to Table 7 and Table 9 SCS; most stringent standard will be used.

Relinquished By (Print): *me* Received by (Print): *[Signature]* Received at Lab: *Jeremy Ecker* Verified By: *[Signature]*
 Date/Time: 2021/08/23 16:00 Date/Time: Aug 23/21 Temperature: 8.1 °C 15:46 Date/Time: Aug 24, 2021 12:05 Temperature: 8.3 °C Date/Time: AUG 24, 2021 12:04
 pH Verified (Y/N): *BS*

Method of Delivery: *Drop box*

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi-Albert and Chaudiere Island
Project: OTT00250193PO
Custody:

Report Date: 7-Sep-2021
Order Date: 31-Aug-2021

Order #: 2136274

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

Parcel ID	Client ID
2136274-01	MW21-02
2136274-02	D206
2136274-03	MW21-01

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	1-Sep-21	2-Sep-21
Cyanide, free	MOE E3015 - Auto Colour	3-Sep-21	3-Sep-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	1-Sep-21	2-Sep-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	2-Sep-21	2-Sep-21
PHC F1	CWS Tier 1 - P&T GC-FID	2-Sep-21	2-Sep-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	31-Aug-21	1-Sep-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	3-Sep-21	3-Sep-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	2-Sep-21	2-Sep-21

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Client ID:	MW21-02	D206	MW21-01	-
Sample Date:	31-Aug-21 12:00	31-Aug-21 12:00	31-Aug-21 12:30	-
Sample ID:	2136274-01	2136274-02	2136274-03	-
MDL/Units	Water	Water	Water	-

General Inorganics

Cyanide, free	2 ug/L	-	-	<2	-
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Metals

Mercury	0.1 ug/L	-	-	<0.1	-
Antimony	0.5 ug/L	-	-	<0.5	-
Arsenic	1 ug/L	-	-	<1	-
Barium	1 ug/L	-	-	644	-
Beryllium	0.5 ug/L	-	-	<0.5	-
Boron	10 ug/L	-	-	698	-
Cadmium	0.1 ug/L	-	-	<0.1	-
Chromium	1 ug/L	-	-	<1	-
Chromium (VI)	10 ug/L	-	-	<10	-
Cobalt	0.5 ug/L	-	-	0.9	-
Copper	0.5 ug/L	-	-	2.0	-
Lead	0.1 ug/L	-	-	<0.1	-
Molybdenum	0.5 ug/L	-	-	5.4	-
Nickel	1 ug/L	-	-	4	-
Selenium	1 ug/L	-	-	<1	-
Silver	0.1 ug/L	-	-	<0.1	-
Sodium	200 ug/L	-	-	348000	-
Thallium	0.1 ug/L	-	-	<0.1	-
Uranium	0.1 ug/L	-	-	1.0	-
Vanadium	0.5 ug/L	-	-	<0.5	-
Zinc	5 ug/L	-	-	11	-

Volatiles

Acetone	5.0 ug/L	-	-	<5.0	-
Benzene	0.5 ug/L	-	-	<0.5	-
Bromodichloromethane	0.5 ug/L	-	-	<0.5	-
Bromoform	0.5 ug/L	-	-	<0.5	-
Bromomethane	0.5 ug/L	-	-	<0.5	-
Carbon Tetrachloride	0.2 ug/L	-	-	<0.2	-
Chlorobenzene	0.5 ug/L	-	-	<0.5	-
Chloroform	0.5 ug/L	-	-	<0.5	-
Dibromochloromethane	0.5 ug/L	-	-	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	-	-	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	-	-	<0.5	-

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

	Client ID:	MW21-02	D206	MW21-01	-
	Sample Date:	31-Aug-21 12:00	31-Aug-21 12:00	31-Aug-21 12:30	-
	Sample ID:	2136274-01	2136274-02	2136274-03	-
	MDL/Units	Water	Water	Water	-
1,3-Dichlorobenzene	0.5 ug/L	-	-	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	-	-	<0.5	-
1,1-Dichloroethane	0.5 ug/L	-	-	<0.5	-
1,2-Dichloroethane	0.5 ug/L	-	-	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	-	-	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	-	-	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	-	-	<0.5	-
1,2-Dichloropropane	0.5 ug/L	-	-	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	-	-	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	-	-	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	-	-	<0.5	-
Ethylbenzene	0.5 ug/L	-	-	<0.5	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	-	-	<0.2	-
Hexane	1.0 ug/L	-	-	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	-	-	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	-	-	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	-	-	<2.0	-
Methylene Chloride	5.0 ug/L	-	-	<5.0	-
Styrene	0.5 ug/L	-	-	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	-	-	<0.5	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	-	-	<0.5	-
Tetrachloroethylene	0.5 ug/L	-	-	<0.5	-
Toluene	0.5 ug/L	-	-	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	-	-	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	-	-	<0.5	-
Trichloroethylene	0.5 ug/L	-	-	<0.5	-
Trichlorofluoromethane	1.0 ug/L	-	-	<1.0	-
Vinyl chloride	0.5 ug/L	-	-	<0.5	-
m,p-Xylenes	0.5 ug/L	-	-	<0.5	-
o-Xylene	0.5 ug/L	-	-	<0.5	-
Xylenes, total	0.5 ug/L	-	-	<0.5	-
4-Bromofluorobenzene	Surrogate	-	-	100%	-
Dibromofluoromethane	Surrogate	-	-	84.2%	-
Toluene-d8	Surrogate	-	-	94.6%	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	-	-	<25	-

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

	Client ID:	MW21-02	D206	MW21-01	-
	Sample Date:	31-Aug-21 12:00	31-Aug-21 12:00	31-Aug-21 12:30	-
	Sample ID:	2136274-01	2136274-02	2136274-03	-
	MDL/Units	Water	Water	Water	-
F2 PHCs (C10-C16)	100 ug/L	-	-	<100	-
F3 PHCs (C16-C34)	100 ug/L	-	-	<100	-
F4 PHCs (C34-C50)	100 ug/L	-	-	<100	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	-	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-
Anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Chrysene	0.05 ug/L	<0.05	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-
Fluorene	0.05 ug/L	<0.05	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	-	-
Naphthalene	0.05 ug/L	<0.05	<0.05	-	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	-	-
Pyrene	0.01 ug/L	<0.01	<0.01	-	-
2-Fluorobiphenyl	Surrogate	77.9%	79.9%	-	-
Terphenyl-d14	Surrogate	96.1%	100%	-	-

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	16.5		ug/L		82.4	50-140			
Surrogate: Terphenyl-d14	19.7		ug/L		98.4	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	91.6		ug/L		115	50-140			
Surrogate: Dibromofluoromethane	68.0		ug/L		85.1	50-140			
Surrogate: Toluene-d8	75.6		ug/L		94.6	50-140			

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	ND	1	ug/L	ND			NC	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	ND	10	ug/L	ND			NC	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	ND	0.5	ug/L	ND			NC	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	ND	0.5	ug/L	ND			NC	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	ND	200	ug/L	ND			NC	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	2.06	0.5	ug/L	3.37			48.3	30	QR-07
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	6.81	0.5	ug/L	11.6			52.2	30	QR-07
Dibromochloromethane	ND	0.5	ug/L	1.39			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	82.3		ug/L		103	50-140			
<i>Surrogate: Dibromofluoromethane</i>	69.0		ug/L		86.2	50-140			
<i>Surrogate: Toluene-d8</i>	54.4		ug/L		68.0	50-140			

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	28.5	2	ug/L	ND	94.9	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	1690	25	ug/L	ND	84.6	68-117			
F2 PHCs (C10-C16)	1410	100	ug/L	ND	88.4	60-140			
F3 PHCs (C16-C34)	3370	100	ug/L	ND	85.9	60-140			
F4 PHCs (C34-C50)	2060	100	ug/L	ND	83.2	60-140			
Metals									
Mercury	3.64	0.1	ug/L	ND	121	70-130			
Antimony	52.4	0.5	ug/L	ND	105	80-120			
Arsenic	54.1	1	ug/L	ND	108	80-120			
Barium	52.7	1	ug/L	ND	105	80-120			
Beryllium	53.2	0.5	ug/L	ND	106	80-120			
Boron	50	10	ug/L	ND	93.6	80-120			
Cadmium	54.2	0.1	ug/L	ND	108	80-120			
Chromium (VI)	202	10	ug/L	ND	101	70-130			
Chromium	53.9	1	ug/L	ND	108	80-120			
Cobalt	54.3	0.5	ug/L	ND	109	80-120			
Copper	53.3	0.5	ug/L	ND	106	80-120			
Lead	51.9	0.1	ug/L	ND	104	80-120			
Molybdenum	49.1	0.5	ug/L	ND	98.1	80-120			
Nickel	52.8	1	ug/L	ND	106	80-120			
Selenium	53.8	1	ug/L	ND	108	80-120			
Silver	50.4	0.1	ug/L	ND	101	80-120			
Sodium	9900	200	ug/L	ND	97.2	80-120			
Thallium	50.9	0.1	ug/L	ND	102	80-120			
Uranium	49.6	0.1	ug/L	ND	99.3	80-120			
Vanadium	54.1	0.5	ug/L	ND	108	80-120			
Zinc	57	5	ug/L	ND	114	80-120			
Semi-Volatiles									
Acenaphthene	3.47	0.05	ug/L	ND	69.4	50-140			
Acenaphthylene	3.27	0.05	ug/L	ND	65.5	50-140			
Anthracene	3.74	0.01	ug/L	ND	74.7	50-140			
Benzo [a] anthracene	3.71	0.01	ug/L	ND	74.1	50-140			
Benzo [a] pyrene	4.24	0.01	ug/L	ND	84.8	50-140			
Benzo [b] fluoranthene	4.72	0.05	ug/L	ND	94.3	50-140			
Benzo [g,h,i] perylene	4.18	0.05	ug/L	ND	83.5	50-140			
Benzo [k] fluoranthene	4.54	0.05	ug/L	ND	90.8	50-140			
Chrysene	4.19	0.05	ug/L	ND	83.7	50-140			
Dibenzo [a,h] anthracene	4.35	0.05	ug/L	ND	86.9	50-140			
Fluoranthene	3.60	0.01	ug/L	ND	72.0	50-140			
Fluorene	3.32	0.05	ug/L	ND	66.5	50-140			
Indeno [1,2,3-cd] pyrene	3.75	0.05	ug/L	ND	74.9	50-140			
1-Methylnaphthalene	4.50	0.05	ug/L	ND	90.0	50-140			
2-Methylnaphthalene	4.86	0.05	ug/L	ND	97.2	50-140			
Naphthalene	4.46	0.05	ug/L	ND	89.2	50-140			
Phenanthrene	3.34	0.05	ug/L	ND	66.7	50-140			
Pyrene	3.66	0.01	ug/L	ND	73.2	50-140			
Surrogate: 2-Fluorobiphenyl	19.0		ug/L		94.8	50-140			

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<i>Surrogate: Terphenyl-d14</i>	18.7		ug/L		93.4	50-140			
Volatiles									
Acetone	128	5.0	ug/L	ND	128	50-140			
Benzene	32.5	0.5	ug/L	ND	81.3	60-130			
Bromodichloromethane	35.5	0.5	ug/L	ND	88.8	60-130			
Bromoform	41.6	0.5	ug/L	ND	104	60-130			
Bromomethane	43.9	0.5	ug/L	ND	110	50-140			
Carbon Tetrachloride	41.3	0.2	ug/L	ND	103	60-130			
Chlorobenzene	31.8	0.5	ug/L	ND	79.5	60-130			
Chloroform	38.4	0.5	ug/L	ND	96.0	60-130			
Dibromochloromethane	38.1	0.5	ug/L	ND	95.2	60-130			
Dichlorodifluoromethane	36.6	1.0	ug/L	ND	91.6	50-140			
1,2-Dichlorobenzene	45.6	0.5	ug/L	ND	114	60-130			
1,3-Dichlorobenzene	44.1	0.5	ug/L	ND	110	60-130			
1,4-Dichlorobenzene	45.6	0.5	ug/L	ND	114	60-130			
1,1-Dichloroethane	31.8	0.5	ug/L	ND	79.5	60-130			
1,2-Dichloroethane	40.5	0.5	ug/L	ND	101	60-130			
1,1-Dichloroethylene	27.6	0.5	ug/L	ND	69.0	60-130			
cis-1,2-Dichloroethylene	31.2	0.5	ug/L	ND	78.1	60-130			
trans-1,2-Dichloroethylene	29.6	0.5	ug/L	ND	74.0	60-130			
1,2-Dichloropropane	28.7	0.5	ug/L	ND	71.7	60-130			
cis-1,3-Dichloropropylene	39.4	0.5	ug/L	ND	98.6	60-130			
trans-1,3-Dichloropropylene	44.5	0.5	ug/L	ND	111	60-130			
Ethylbenzene	40.0	0.5	ug/L	ND	100	60-130			
Ethylene dibromide (dibromoethane, 1,2-	37.3	0.2	ug/L	ND	93.2	60-130			
Hexane	28.6	1.0	ug/L	ND	71.6	60-130			
Methyl Ethyl Ketone (2-Butanone)	67.5	5.0	ug/L	ND	67.5	50-140			
Methyl Isobutyl Ketone	109	5.0	ug/L	ND	109	50-140			
Methyl tert-butyl ether	91.6	2.0	ug/L	ND	91.6	50-140			
Methylene Chloride	37.6	5.0	ug/L	ND	94.0	60-130			
Styrene	39.8	0.5	ug/L	ND	99.4	60-130			
1,1,1,2-Tetrachloroethane	41.2	0.5	ug/L	ND	103	60-130			
1,1,2,2-Tetrachloroethane	29.0	0.5	ug/L	ND	72.5	60-130			
Tetrachloroethylene	31.7	0.5	ug/L	ND	79.2	60-130			
Toluene	40.4	0.5	ug/L	ND	101	60-130			
1,1,1-Trichloroethane	41.6	0.5	ug/L	ND	104	60-130			
1,1,2-Trichloroethane	36.0	0.5	ug/L	ND	90.1	60-130			
Trichloroethylene	35.0	0.5	ug/L	ND	87.4	60-130			
Trichlorofluoromethane	41.0	1.0	ug/L	ND	103	60-130			
Vinyl chloride	42.0	0.5	ug/L	ND	105	50-140			
m,p-Xylenes	78.5	0.5	ug/L	ND	98.1	60-130			
o-Xylene	40.0	0.5	ug/L	ND	99.9	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	79.8		ug/L		99.7	50-140			
<i>Surrogate: Dibromofluoromethane</i>	42.1		ug/L		52.6	50-140			
<i>Surrogate: Toluene-d8</i>	76.0		ug/L		95.0	50-140			

Certificate of Analysis

Report Date: 07-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 31-Aug-2021

Client PO: Zibi-Albert and Chaudiere Island

Project Description: OTT00250193PO

Qualifier Notes:

QC Qualifiers :

QR-07 : Duplicate result exceeds RPD limits due to non-homogeneity between multiple sample vials. Remainder of QA/QC is acceptable.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: **EXP Services Inc.** Project Reference: **Zoi - Albert and Claudine Island**

Contact Name: **Patricia Stelmack** Quote #: **21-158**

Address: **100-2850 Queensview Drive** PO #: **OTT-00250190 PO**

Ottawa, ON, K2B 8H5

Telephone: **613-688-1899**

Print Address: **Patricia.Stelmack@exp.com** **jeremy.eckert@exp.com**

Turnaround Time:

1 Day 3 Day

2 Day Regular

Date Required:

Criteria: O. Reg. 151/04 (As Amended) Table 2 RSC Piling O. Reg. 558/00 PM10 CO2E SUB (State) SUB (Sanitary) Municipality: _____ Other: _____

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

Required Analyses

Parcel Order Number: 2136274		Matrix	Air Volume	# of Containers	Sample Taken		PHCs: P1-P4-BTEX	VOCs	PAHs	Metals by ICP	Hg	CMT	B (BPA/B)	VOC, PHEC P1-P4	PCB	pH	Free Cyanide
Sample ID/Location Name	Date				Time												
1	MW21-02	SW		1	02/08/31	1200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	D206	SW		1		1200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	MW21-01	GW		7		1230	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: ~~As per the 2018 report for 151 Table 2 and Table 2.3.3, the 2018 report will be used.~~
 Samples will be compared to Table 7 and 9 SCS; most stringent standard will be used.

Method of Delivery:

Walkin

Requested By (Sign):	Received by (Sign):	Received at Lab: Superior Labs	Verified By:
Requested By (Print): Jeremy Eckert	Date/Time: 08/31/2021 13:00	Date/Time: 09/01/2021 04:48	Date/Time: Sept 1/21
Date/Time: 2021/08/31 13:00	Temperature: 10.7c	Temperature: 14.6c	PH Verified: 11.4

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi-Block 206
Project: OTT00250193PO
Custody: 60985

Report Date: 21-Sep-2021
Order Date: 14-Sep-2021

Order #: 2138370

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

Paracel ID	Client ID
2138370-01	MW21-01

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 21-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 14-Sep-2021

Client PO: Zibi-Block 206

Project Description: OTT00250193PO

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	EPA 608 - GC-ECD	20-Sep-21	20-Sep-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	20-Sep-21	20-Sep-21

Certificate of Analysis

Report Date: 21-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 14-Sep-2021

Client PO: Zibi-Block 206

Project Description: OTT00250193PO

Client ID:	MW21-01	-	-	-
Sample Date:	14-Sep-21 15:00	-	-	-
Sample ID:	2138370-01	-	-	-
MDL/Units	Water	-	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	-	-	-
Acenaphthylene	0.05 ug/L	<0.05	-	-	-
Anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	-	-
Chrysene	0.05 ug/L	<0.05	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-
Fluoranthene	0.01 ug/L	0.06	-	-	-
Fluorene	0.05 ug/L	<0.05	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	-	-
Naphthalene	0.05 ug/L	<0.05	-	-	-
Phenanthrene	0.05 ug/L	<0.05	-	-	-
Pyrene	0.01 ug/L	0.05	-	-	-
2-Fluorobiphenyl	Surrogate	80.1%	-	-	-
Terphenyl-d14	Surrogate	99.7%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	103%	-	-	-

Certificate of Analysis

Report Date: 21-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 14-Sep-2021

Client PO: Zibi-Block 206

Project Description: OTT00250193PO

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.432		ug/L		86.3	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	16.3		ug/L		81.6	50-140			
Surrogate: Terphenyl-d14	19.1		ug/L		95.7	50-140			

Certificate of Analysis

Report Date: 21-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 14-Sep-2021

Client PO: Zibi-Block 206

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	0.867	0.05	ug/L	ND	86.7	65-135			
<i>Surrogate: Decachlorobiphenyl</i>	0.513		ug/L		103	60-140			
Semi-Volatiles									
Acenaphthene	4.05	0.05	ug/L	ND	80.9	50-140			
Acenaphthylene	3.34	0.05	ug/L	ND	66.8	50-140			
Anthracene	3.94	0.01	ug/L	ND	78.9	50-140			
Benzo [a] anthracene	3.84	0.01	ug/L	ND	76.7	50-140			
Benzo [a] pyrene	5.16	0.01	ug/L	ND	103	50-140			
Benzo [b] fluoranthene	4.59	0.05	ug/L	ND	91.8	50-140			
Benzo [g,h,i] perylene	5.33	0.05	ug/L	ND	107	50-140			
Benzo [k] fluoranthene	3.72	0.05	ug/L	ND	74.3	50-140			
Chrysene	4.82	0.05	ug/L	ND	96.5	50-140			
Dibenzo [a,h] anthracene	5.04	0.05	ug/L	ND	101	50-140			
Fluoranthene	4.09	0.01	ug/L	ND	81.9	50-140			
Fluorene	3.63	0.05	ug/L	ND	72.7	50-140			
Indeno [1,2,3-cd] pyrene	4.37	0.05	ug/L	ND	87.4	50-140			
1-Methylnaphthalene	4.13	0.05	ug/L	ND	82.7	50-140			
2-Methylnaphthalene	4.26	0.05	ug/L	ND	85.3	50-140			
Naphthalene	4.22	0.05	ug/L	ND	84.4	50-140			
Phenanthrene	3.71	0.05	ug/L	ND	74.1	50-140			
Pyrene	4.16	0.01	ug/L	ND	83.1	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	17.5		ug/L		87.7	50-140			
<i>Surrogate: Terphenyl-d14</i>	21.6		ug/L		108	50-140			

Certificate of Analysis

Report Date: 21-Sep-2021

Client: exp Services Inc. (Ottawa)

Order Date: 14-Sep-2021

Client PO: Zibi-Block 206

Project Description: OTT00250193PO

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated



Client Name: Exp Services Inc.	Project Ref: Zibi - Block 206	Page 1 of 1
Contact Name: Accounts Payable	Quote #: 21-158	Turnaround Time <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular
Address: 100-2650 Queensview Dr.	PO #: 071-00250193-PO	
Telephone: 613-688-1899	Email: patricia.stelmuck@exp.com jeremy.eckert@exp.com	Date Required: _____

REG 153/14 <input checked="" type="checkbox"/> REG 406/15 <input type="checkbox"/>		Other Regulation		Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)		Required Analysis																
<input type="checkbox"/> Table 1	<input type="checkbox"/> Rec/Perk	<input type="checkbox"/> Med/Plne	<input type="checkbox"/> REC-558	<input type="checkbox"/> PWCO	Sample Taken Date Time	PCB	PAH															
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Course	<input type="checkbox"/> COME	<input type="checkbox"/> MISA																		
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other		<input type="checkbox"/> SU - San	<input type="checkbox"/> SU - Storm																		
<input checked="" type="checkbox"/> Table 7+9		Mun: _____																				
For RSC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Other: _____																				
Sample ID/Location Name		Matrix	Air Volume	# of Containers																		
1	MW21-01	GW	2	2021/09/14	1500	X	X															
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Comments: Data will be compared to Table 7+9 SCS; most stringent standard will be used.		Method of Delivery: Walk-in	
Relinquished By (Print): Jeremy Eckert	Received By (Print): Jennegerm Bohmer	Received at Lab: Sept 15, 2021 12:10	Verified By: [Signature]
Date/Time: 2021/09/14 1600	Date/Time: 09/14/21 4:45 pm	Date/Time: Sept 15, 2021 12:10	Date/Time: Sept 15, 2021 3:08
Temperature: 4.0 °C	Temperature: 4.0 °C	Temperature: 8.3 °C	Temperature: _____ °C

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Block 206
Project: OTT00250193P0
Custody: 134996

Report Date: 30-Dec-2021
Order Date: 22-Dec-2021

Order #: 2152337

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

Parcel ID	Client ID
2152337-01	MW21-01
2152337-02	Duplicate
2152337-03	MW21-02
2152337-04	Field Blank
2152337-05	Trip Blank

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	29-Dec-21	29-Dec-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	24-Dec-21	29-Dec-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	23-Dec-21	23-Dec-21

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Client ID:	MW21-01	Duplicate	MW21-02	Field Blank
Sample Date:	21-Dec-21 16:00	21-Dec-21 16:00	22-Dec-21 10:00	21-Dec-21 16:00
Sample ID:	2152337-01	2152337-02	2152337-03	2152337-04
MDL/Units	Water	Water	Water	Water

Metals

	MDL/Units	MW21-01	Duplicate	MW21-02	Field Blank
Mercury	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Arsenic	1 ug/L	<1	<1	<1	<1
Barium	1 ug/L	595	615	179	<1
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Boron	10 ug/L	747	748	222	<10
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Chromium	1 ug/L	<1	<1	<1	<1
Chromium (VI)	10 ug/L	<10	<10	<10	<10
Cobalt	0.5 ug/L	<0.5	<0.5	0.5	<0.5
Copper	0.5 ug/L	1.2	1.1	1.2	1.7
Lead	0.1 ug/L	<0.1	<0.1	<0.1	0.1
Molybdenum	0.5 ug/L	3.5	3.5	4.9	<0.5
Nickel	1 ug/L	4	4	4	<1
Selenium	1 ug/L	<1	<1	<1	<1
Silver	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Sodium	200 ug/L	342000	348000	462000	<200
Thallium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Uranium	0.1 ug/L	1.2	1.2	11.8	<0.1
Vanadium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Zinc	5 ug/L	<5	<5	<5	<5

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Client ID:	Trip Blank	-	-	-
Sample Date:	15-Dec-21 16:00	-	-	-
Sample ID:	2152337-05	-	-	-
MDL/Units	Water	-	-	-

Metals

Mercury	0.1 ug/L	<0.1	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-
Arsenic	1 ug/L	<1	-	-	-
Barium	1 ug/L	<1	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10 ug/L	<10	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Chromium	1 ug/L	<1	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-
Cobalt	0.5 ug/L	<0.5	-	-	-
Copper	0.5 ug/L	<0.5	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-
Molybdenum	0.5 ug/L	<0.5	-	-	-
Nickel	1 ug/L	<1	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	<200	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Uranium	0.1 ug/L	<0.1	-	-	-
Vanadium	0.5 ug/L	<0.5	-	-	-
Zinc	5 ug/L	<5	-	-	-

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Mercury	0.15	0.1	ug/L	0.14			2.1	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	ND	1	ug/L	ND			NC	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	ND	10	ug/L	ND			NC	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	ND	0.5	ug/L	ND			NC	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	ND	0.5	ug/L	ND			NC	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	266	200	ug/L	234			12.8	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Mercury	3.18	0.1	ug/L	0.14	101	70-130			
Antimony	41.4	0.5	ug/L	ND	82.7	80-120			
Arsenic	47.5	1	ug/L	ND	94.9	80-120			
Barium	48.2	1	ug/L	ND	96.2	80-120			
Beryllium	49.0	0.5	ug/L	ND	97.9	80-120			
Boron	49	10	ug/L	ND	93.9	80-120			
Cadmium	49.4	0.1	ug/L	ND	98.7	80-120			
Chromium (VI)	183	10	ug/L	ND	91.5	70-130			
Chromium	46.6	1	ug/L	ND	93.1	80-120			
Cobalt	47.7	0.5	ug/L	ND	95.3	80-120			
Copper	46.0	0.5	ug/L	ND	91.9	80-120			
Lead	43.6	0.1	ug/L	ND	87.2	80-120			
Molybdenum	43.4	0.5	ug/L	ND	86.6	80-120			
Nickel	44.8	1	ug/L	ND	89.6	80-120			
Selenium	48.5	1	ug/L	ND	96.9	80-120			
Silver	47.9	0.1	ug/L	ND	95.8	80-120			
Sodium	8670	200	ug/L	234	84.4	80-120			
Thallium	46.8	0.1	ug/L	ND	93.6	80-120			
Uranium	45.3	0.1	ug/L	ND	90.5	80-120			
Vanadium	47.6	0.5	ug/L	ND	95.2	80-120			
Zinc	49	5	ug/L	ND	97.5	80-120			

Certificate of Analysis

Report Date: 30-Dec-2021

Client: exp Services Inc. (Ottawa)

Order Date: 22-Dec-2021

Client PO: Block 206

Project Description: OTT00250193P0

Qualifier Notes:

QC Qualifiers :

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated



Parcel Order Number (Lab Use Only) 152337	Chain Of Custody (Lab Use Only) No 134996
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Client Name: EXP SERVICES INC.	Project Ref: OTT-00250193-PO (Nloc 206)	Page 1 of 1
Contact Name: Patricia Stelmack	Quote #: 21-58	Turnaround Time
Address: 2650 QUEENSWAY DRIVE, OTTAWA	PO #: _____	<input type="checkbox"/> 1 day <input type="checkbox"/> 3 day
Telephone: 613-688-1899	E-mail: Patricia.stelmack@exp.com Jeremy.Grant@exp.com	<input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular
		Date Required: _____

REGULATIONS		Other Regulation		Matrix Type		Required Analysis									
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Wrk	<input type="checkbox"/> Med/Line	<input type="checkbox"/> R10 555	<input type="checkbox"/> PW00	<input checked="" type="checkbox"/> S (Soil/Sed.)	<input checked="" type="checkbox"/> GW (Ground Water)									
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> CCM1	<input type="checkbox"/> MSA	<input type="checkbox"/> SW (Surface Water)	<input type="checkbox"/> SS (Storm/Sanitary Sewer)									
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agr/Other		<input type="checkbox"/> SU-San1	<input type="checkbox"/> SU-Storm	<input type="checkbox"/> P (Paint)	<input type="checkbox"/> A (Air)	<input type="checkbox"/> O (Other)								
<input type="checkbox"/> Table _____	For RSC: <input type="checkbox"/> Yes <input type="checkbox"/> No		Mun: _____		Sample Taken										
Sample ID/Location Name				Matrix	Air Volume	# of Containers	Date	Time	PHCS P1-P6-BTEX	VOCS	PAHs	Metals by ICP	Hg	CrVI	BI (HMB)
1	MW21-01			GW	3	3	2021-12-21	16:00				X	X	X	
2	Duplicate			GW	3	3	2021-12-21	16:00				X	X	X	
3	MW21-02			GW	3	3	2021-12-22	10:00				X	X	X	
4	FIELD Blank				3	3	2021-12-21	16:00				X	X	X	
5	TRIP Blank				3	3	2021-12-21	16:00				X	X	X	
6															
7															
8															
9															
10															

Comments: -SAMPLES will be compared To Table 7 & 9 SCS, most stringent standard will be used		Method of Delivery: Drop box	
Requisitioned By (Sign): Philip Oliveira	Received By (Sign): [Signature]	Received at Lab: Sumnerpark Lab	Verified By: [Signature]
Requisitioned By (Print): Philip Oliveira	Date/Time: 12/22/21 2:53pm	Date/Time: DEC 22 2021 04:14	Date/Time: Dec 22 2021 9:56
Date/Time: Dec 22 2021 14:45	Temperature: 1.0 °C	Temperature: 3.8 °C	pH Verified: [Signature]

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Block 206
Project: OTT00250193P0
Custody: 133472

Report Date: 13-Jan-2022
Order Date: 6-Jan-2022

Order #: 2202236

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

Paracel ID	Client ID
2202236-01	MW21-02
2202236-02	Duplicate
2202236-03	Field Blank
2202236-04	Trip Blank

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 13-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 6-Jan-2022

Client PO: Block 206

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Cyanide, free	MOE E3015 - Auto Colour	12-Jan-22	12-Jan-22
pH	EPA 150.1 - pH probe @25 °C	10-Jan-22	10-Jan-22
PHC F1	CWS Tier 1 - P&T GC-FID	7-Jan-22	8-Jan-22
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	10-Jan-22	11-Jan-22
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	7-Jan-22	8-Jan-22

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Block 206

Report Date: 13-Jan-2022

Order Date: 6-Jan-2022

Project Description: OTT00250193P0

	Client ID:	MW21-02	Duplicate	Field Blank	Trip Blank
	Sample Date:	06-Jan-22 14:45	06-Jan-22 14:45	06-Jan-22 14:45	15-Dec-21 14:45
	Sample ID:	2202236-01	2202236-02	2202236-03	2202236-04
	MDL/Units	Water	Water	Water	Water

General Inorganics

	MDL/Units	MW21-02	Duplicate	Field Blank	Trip Blank
Cyanide, free	2 ug/L	<2	<2	<2	<2
pH	0.1 pH Units	6.8	6.8	7.1	6.0

Volatiles

	MDL/Units	MW21-02	Duplicate	Field Blank	Trip Blank
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	7.2	15.9
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Report Date: 13-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 6-Jan-2022

Client PO: Block 206

Project Description: OTT00250193P0

	Client ID: Sample Date: Sample ID:	MW21-02 06-Jan-22 14:45 2202236-01	Duplicate 06-Jan-22 14:45 2202236-02	Field Blank 06-Jan-22 14:45 2202236-03	Trip Blank 15-Dec-21 14:45 2202236-04
	MDL/Units	Water	Water	Water	Water
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	78.0%	92.6%	99.2%	102%
Dibromofluoromethane	Surrogate	106%	114%	110%	113%
Toluene-d8	Surrogate	85.0%	86.9%	85.4%	85.9%

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100

Certificate of Analysis

Report Date: 13-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 6-Jan-2022

Client PO: Block 206

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2)	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	91.3		ug/L		114	50-140			
Surrogate: Dibromofluoromethane	85.5		ug/L		107	50-140			
Surrogate: Toluene-d8	70.2		ug/L		87.7	50-140			

Certificate of Analysis

Report Date: 13-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 6-Jan-2022

Client PO: Block 206

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	7.7	0.1	pH Units	7.8			1.0	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	1.07			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	86.4		ug/L		108	50-140			
Surrogate: Dibromofluoromethane	90.5		ug/L		113	50-140			
Surrogate: Toluene-d8	69.1		ug/L		86.4	50-140			

Certificate of Analysis

Report Date: 13-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 6-Jan-2022

Client PO: Block 206

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	30.7	2	ug/L	ND	102	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	2100	25	ug/L	ND	105	68-117			
F2 PHCs (C10-C16)	1560	100	ug/L	ND	97.3	60-140			
F3 PHCs (C16-C34)	4310	100	ug/L	ND	110	60-140			
F4 PHCs (C34-C50)	2550	100	ug/L	ND	103	60-140			
Volatiles									
Acetone	89.0	5.0	ug/L	ND	89.0	50-140			
Benzene	39.6	0.5	ug/L	ND	99.0	60-130			
Bromodichloromethane	36.0	0.5	ug/L	ND	90.1	60-130			
Bromoform	41.7	0.5	ug/L	ND	104	60-130			
Bromomethane	38.7	0.5	ug/L	ND	96.7	50-140			
Carbon Tetrachloride	39.4	0.2	ug/L	ND	98.6	60-130			
Chlorobenzene	39.4	0.5	ug/L	ND	98.6	60-130			
Chloroform	38.7	0.5	ug/L	ND	96.8	60-130			
Dibromochloromethane	40.1	0.5	ug/L	ND	100	60-130			
Dichlorodifluoromethane	34.8	1.0	ug/L	ND	86.9	50-140			
1,2-Dichlorobenzene	31.5	0.5	ug/L	ND	78.7	60-130			
1,3-Dichlorobenzene	32.8	0.5	ug/L	ND	82.0	60-130			
1,4-Dichlorobenzene	32.6	0.5	ug/L	ND	81.4	60-130			
1,1-Dichloroethane	40.1	0.5	ug/L	ND	100	60-130			
1,2-Dichloroethane	33.9	0.5	ug/L	ND	84.8	60-130			
1,1-Dichloroethylene	45.1	0.5	ug/L	ND	113	60-130			
cis-1,2-Dichloroethylene	37.7	0.5	ug/L	ND	94.3	60-130			
trans-1,2-Dichloroethylene	40.7	0.5	ug/L	ND	102	60-130			
1,2-Dichloropropane	38.3	0.5	ug/L	ND	95.8	60-130			
cis-1,3-Dichloropropylene	35.6	0.5	ug/L	ND	88.9	60-130			
trans-1,3-Dichloropropylene	36.6	0.5	ug/L	ND	91.6	60-130			
Ethylbenzene	34.6	0.5	ug/L	ND	86.6	60-130			
Ethylene dibromide (dibromoethane, 1,2-	41.4	0.2	ug/L	ND	104	60-130			
Hexane	44.9	1.0	ug/L	ND	112	60-130			
Methyl Ethyl Ketone (2-Butanone)	76.3	5.0	ug/L	ND	76.3	50-140			
Methyl Isobutyl Ketone	82.3	5.0	ug/L	ND	82.3	50-140			
Methyl tert-butyl ether	95.1	2.0	ug/L	ND	95.1	50-140			
Methylene Chloride	39.4	5.0	ug/L	ND	98.4	60-130			
Styrene	37.5	0.5	ug/L	ND	93.7	60-130			
1,1,1,2-Tetrachloroethane	43.0	0.5	ug/L	ND	107	60-130			
1,1,2,2-Tetrachloroethane	36.7	0.5	ug/L	ND	91.8	60-130			
Tetrachloroethylene	39.4	0.5	ug/L	ND	98.4	60-130			
Toluene	40.6	0.5	ug/L	ND	102	60-130			
1,1,1-Trichloroethane	38.3	0.5	ug/L	ND	95.8	60-130			
1,1,2-Trichloroethane	38.6	0.5	ug/L	ND	96.5	60-130			
Trichloroethylene	39.5	0.5	ug/L	ND	98.8	60-130			
Trichlorofluoromethane	40.3	1.0	ug/L	ND	101	60-130			
Vinyl chloride	44.2	0.5	ug/L	ND	111	50-140			
m,p-Xylenes	62.6	0.5	ug/L	ND	78.3	60-130			
o-Xylene	40.2	0.5	ug/L	ND	100	60-130			
Surrogate: 4-Bromofluorobenzene	63.1		ug/L		78.9	50-140			

Certificate of Analysis
 Client: exp Services Inc. (Ottawa)
 Client PO: Block 206

Report Date: 13-Jan-2022
 Order Date: 6-Jan-2022
 Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	87.0		ug/L		109	50-140			
Surrogate: Toluene-d8	58.1		ug/L		72.6	50-140			

Certificate of Analysis

Report Date: 13-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 6-Jan-2022

Client PO: Block 206

Project Description: OTT00250193P0

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

The Sample Date for lab provided Trip QC samples is based on the date of preparation at the lab.

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

CCME PHC additional information:

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



Parcel Order Number (Lab Use Only) 2202236	Chain Of Custody (Lab Use Only) No 133472
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Client Name: EXP Services Inc	Project Ref: OTT-00250193-PO (R10020)	Page 1 of 1
Contact Name: Patricia Stelmack	Quote #: 21-58	Turnaround Time
Address: 2650 QUEENSVIEW DRIVE, OTTAWA	PO #: _____	<input type="checkbox"/> 1 day <input type="checkbox"/> 3 day
Telephone: 613-688-1899	Email: Patricia.Stelmack@exp.com Jeremy.Eckert@exp.com	<input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular
		Date Required: _____

<input checked="" type="checkbox"/> REG 510/04 <input type="checkbox"/> REG 06/19	Other Regulation	Matrix Type: S (Soil/Sed) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)	Required Analysis												
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Med/Vet	<input type="checkbox"/> REG 518 <input type="checkbox"/> PWD3	Matrix	Air Volume	# of Containers	Sample Taken		PHGs FT-1-4	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (PbMS)	FREE CHLORINE	pH
<input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Course	<input type="checkbox"/> COME <input type="checkbox"/> MISA				Date	Time									
<input type="checkbox"/> Table 1 <input type="checkbox"/> Agr/Other	<input type="checkbox"/> SI - San <input type="checkbox"/> SI - Storm														
<input type="checkbox"/> Table _____	Mat: _____														
For RSC: <input type="checkbox"/> Yes <input type="checkbox"/> No															
Sample ID/Location Name															
1	MW 21-02	GW		5	2022-01-06	14h45	X	X						X	X
2	Duplicate	GW		5	2022-01-06	14h45	X	X						X	X
3	FIELD BLANK			5	2022-01-06	14h45	X	X						X	X
4	TRIP BLANK			6	2022-01-06	14h45	X	X						X	X
5					Dec 15, 2021										
6															
7															
8															
9															
10															

Comments: **- Samples will be compared to table 749 SES, most stringent standard will be used.**

Relinquished By (Sign): Philip Olivier	Received By (Driver Sign): [Signature]	Received at (Site): [Signature]	Method of Delivery: R Drop Box
Relinquished By (Print): Philip Olivier	Date/Time: 01/06/2022 4:40pm	Date/Time: 11:45 2017-01-07	Verified By: [Signature]
Date/Time: 2022-01-06 16h30	Temperature: 3.7 °C	Temperature: 2.6 °C	Date/Time: Jan 07, 2022 12:10
Chain of Custody (Env) sig		pH Verified: <input checked="" type="checkbox"/> W: BS	

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi - Albert and Chaudiere Island
Project: OTT00250193P0
Custody:

Report Date: 18-Jan-2022
Order Date: 12-Jan-2022

Order #: 2203309

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

Paracel ID	Client ID
2203309-01	Trip Blank
2203309-02	Field Blank

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	EPA 608 - GC-ECD	13-Jan-22	14-Jan-22
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	17-Jan-22	18-Jan-22

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	Trip Blank	Field Blank	-	-
	Sample Date:	15-Dec-21 12:30	12-Jan-22 12:15	-	-
	Sample ID:	2203309-01	2203309-02	-	-
	MDL/Units	Water	Water	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	-	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-
Anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Chrysene	0.05 ug/L	<0.05	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-
Fluorene	0.05 ug/L	<0.05	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	-	-
Naphthalene	0.05 ug/L	<0.05	<0.05	-	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	-	-
Pyrene	0.01 ug/L	<0.01	<0.01	-	-
2-Fluorobiphenyl	Surrogate	86.0%	107%	-	-
Terphenyl-d14	Surrogate	108%	115%	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	<0.05	-	-
Decachlorobiphenyl	Surrogate	112%	127%	-	-

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.627		ug/L		125	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	17.2		ug/L		85.8	50-140			
Surrogate: Terphenyl-d14	19.8		ug/L		98.9	50-140			

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	0.905	0.05	ug/L	ND	90.5	65-135			
<i>Surrogate: Decachlorobiphenyl</i>	0.619		ug/L		124	60-140			
Semi-Volatiles									
Acenaphthene	3.60	0.05	ug/L	ND	72.1	50-140			
Acenaphthylene	3.10	0.05	ug/L	ND	62.1	50-140			
Anthracene	2.98	0.01	ug/L	ND	59.5	50-140			
Benzo [a] anthracene	3.53	0.01	ug/L	ND	70.5	50-140			
Benzo [a] pyrene	4.10	0.01	ug/L	ND	82.0	50-140			
Benzo [b] fluoranthene	4.42	0.05	ug/L	ND	88.4	50-140			
Benzo [g,h,i] perylene	3.66	0.05	ug/L	ND	73.2	50-140			
Benzo [k] fluoranthene	4.45	0.05	ug/L	ND	89.0	50-140			
Chrysene	4.21	0.05	ug/L	ND	84.2	50-140			
Dibenzo [a,h] anthracene	2.95	0.05	ug/L	ND	59.1	50-140			
Fluoranthene	3.45	0.01	ug/L	ND	69.0	50-140			
Fluorene	3.59	0.05	ug/L	ND	71.9	50-140			
Indeno [1,2,3-cd] pyrene	3.02	0.05	ug/L	ND	60.4	50-140			
1-Methylnaphthalene	4.71	0.05	ug/L	ND	94.2	50-140			
2-Methylnaphthalene	5.07	0.05	ug/L	ND	101	50-140			
Naphthalene	4.13	0.05	ug/L	ND	82.6	50-140			
Phenanthrene	3.37	0.05	ug/L	ND	67.3	50-140			
Pyrene	3.43	0.01	ug/L	ND	68.7	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	17.2		ug/L		86.0	50-140			
<i>Surrogate: Terphenyl-d14</i>	20.1		ug/L		101	50-140			

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

The Sample Date for lab provided Trip QC samples is based on the date of preparation at the lab.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated



Client Name: EXP Services Inc.	Project Reference: Zibi - Albert and Chaudiere Island	Turnaround Time: <input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Patricia Stelmack	Quote #: 21-503	
Address: 503-2650 Queensview Drive Ottawa, ON, K2B 8H6	PO #: OTT 00250193-P0 Email Address: Patricia.Stelmack@exp.com jeremy.zekent@exp.com	
Telephone: 613-688-1899		

Criteria: 0. Reg. 153/04 (As Amended) Table 7 RSC Piling 0. Reg. 558/06 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Parcel Order Number: 2203309		Matrix	Air Volume	# of Containers	Sample Taken		Pb/Cd (Pb+Cd) (BTEX)	VOCs	PAHs	Metals by ICP	Hg	COP	B (BPA/S)	VOC, PHEO P1-P4	PCB	pH				
Sample ID/Location Name	Date				Time															
1	Trip Blank	0		2	22/01/22	12:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Field Blank	0		2	22/01/22	12:15	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used. Method of Delivery: walk-in

Requisitioned By (Sign): <i>[Signature]</i>	Received by Driver (Sign): <i>[Signature]</i>	Arrived at Lab: <i>[Signature]</i>	Verified By: <i>[Signature]</i>
Requisitioned By (Print): Jeremy Zekent	Date/Time: Jan 17, 2022	Date/Time: Jan 17, 2022 12:20	Date/Time: 2022/01/20 15:00
Date/Time: 22/01/22 15:00	Temperature: 9.8 °C	Temperature: 10.4 °C	All Verified By: _____

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi - Albert and Chaudiere Island
Project: OTT00250193P0
Custody:

Report Date: 18-Jan-2022
Order Date: 12-Jan-2022

Order #: 2203311

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

Parcel ID	Client ID
2203311-01	MW21-02
2203311-02	D206
2203311-03	MW21-01

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	14-Jan-22	14-Jan-22
PCBs, total	EPA 608 - GC-ECD	13-Jan-22	14-Jan-22
PHC F1	CWS Tier 1 - P&T GC-FID	14-Jan-22	14-Jan-22
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Jan-22	17-Jan-22
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	17-Jan-22	18-Jan-22

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Client ID:	MW21-02	D206	MW21-01	-
Sample Date:	12-Jan-22 11:00	12-Jan-22 11:00	12-Jan-22 12:00	-
Sample ID:	2203311-01	2203311-02	2203311-03	-
MDL/Units	Water	Water	Water	-

Volatiles

Benzene	0.5 ug/L	-	-	<0.5	-
Ethylbenzene	0.5 ug/L	-	-	<0.5	-
Toluene	0.5 ug/L	-	-	<0.5	-
m,p-Xylenes	0.5 ug/L	-	-	<0.5	-
o-Xylene	0.5 ug/L	-	-	<0.5	-
Xylenes, total	0.5 ug/L	-	-	<0.5	-
Toluene-d8	Surrogate	-	-	83.4%	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	-	-	<25	-
F2 PHCs (C10-C16)	100 ug/L	-	-	<100	-
F3 PHCs (C16-C34)	100 ug/L	-	-	<100	-
F4 PHCs (C34-C50)	100 ug/L	-	-	<100	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	-	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-
Anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Chrysene	0.05 ug/L	<0.05	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-
Fluorene	0.05 ug/L	<0.05	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	-	-
Naphthalene	0.05 ug/L	<0.05	<0.05	-	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	-	-
Pyrene	0.01 ug/L	<0.01	<0.01	-	-
2-Fluorobiphenyl	Surrogate	86.8%	92.2%	-	-
Terphenyl-d14	Surrogate	89.3%	113%	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	<0.05	-	-
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Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	MW21-02	D206	MW21-01	-
	Sample Date:	12-Jan-22 11:00	12-Jan-22 11:00	12-Jan-22 12:00	-
	Sample ID:	2203311-01	2203311-02	2203311-03	-
	MDL/Units	Water	Water	Water	-
Decachlorobiphenyl	Surrogate	110%	105%	-	-

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.627		ug/L		125	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	17.2		ug/L		85.8	50-140			
Surrogate: Terphenyl-d14	19.8		ug/L		98.9	50-140			
Volatiles									
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	72.9		ug/L		91.2	50-140			

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	67.9		ug/L		84.9	50-140			

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1790	25	ug/L	ND	89.3	68-117			
F2 PHCs (C10-C16)	1080	100	ug/L	ND	67.5	60-140			
F3 PHCs (C16-C34)	2720	100	ug/L	ND	69.5	60-140			
F4 PHCs (C34-C50)	2240	100	ug/L	ND	90.3	60-140			
PCBs									
PCBs, total	0.905	0.05	ug/L	ND	90.5	65-135			
<i>Surrogate: Decachlorobiphenyl</i>	0.619		ug/L		124	60-140			
Semi-Volatiles									
Acenaphthene	3.60	0.05	ug/L	ND	72.1	50-140			
Acenaphthylene	3.10	0.05	ug/L	ND	62.1	50-140			
Anthracene	2.98	0.01	ug/L	ND	59.5	50-140			
Benzo [a] anthracene	3.53	0.01	ug/L	ND	70.5	50-140			
Benzo [a] pyrene	4.10	0.01	ug/L	ND	82.0	50-140			
Benzo [b] fluoranthene	4.42	0.05	ug/L	ND	88.4	50-140			
Benzo [g,h,i] perylene	3.66	0.05	ug/L	ND	73.2	50-140			
Benzo [k] fluoranthene	4.45	0.05	ug/L	ND	89.0	50-140			
Chrysene	4.21	0.05	ug/L	ND	84.2	50-140			
Dibenzo [a,h] anthracene	2.95	0.05	ug/L	ND	59.1	50-140			
Fluoranthene	3.45	0.01	ug/L	ND	69.0	50-140			
Fluorene	3.59	0.05	ug/L	ND	71.9	50-140			
Indeno [1,2,3-cd] pyrene	3.02	0.05	ug/L	ND	60.4	50-140			
1-Methylnaphthalene	4.71	0.05	ug/L	ND	94.2	50-140			
2-Methylnaphthalene	5.07	0.05	ug/L	ND	101	50-140			
Naphthalene	4.13	0.05	ug/L	ND	82.6	50-140			
Phenanthrene	3.37	0.05	ug/L	ND	67.3	50-140			
Pyrene	3.43	0.01	ug/L	ND	68.7	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	17.2		ug/L		86.0	50-140			
<i>Surrogate: Terphenyl-d14</i>	20.1		ug/L		101	50-140			
Volatiles									
Benzene	37.1	0.5	ug/L	ND	92.7	60-130			
Ethylbenzene	32.2	0.5	ug/L	ND	80.6	60-130			
Toluene	38.7	0.5	ug/L	ND	96.7	60-130			
m,p-Xylenes	59.9	0.5	ug/L	ND	74.9	60-130			
o-Xylene	37.6	0.5	ug/L	ND	93.9	60-130			
<i>Surrogate: Toluene-d8</i>	56.2		ug/L		70.2	50-140			

Certificate of Analysis

Report Date: 18-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 12-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc.	Project Reference: Zbi - Albert and Claudine Island
Contact Name: Patricia Skirmack	Quote #: 21-123
Address: 100-2880 Queensview Drive Ottawa, ON, K2B 8H8	PO #: OTT 00050193-P8
Telephone: 613-688-1899	Email Address: Patricia.Skirmack@exp.com jeremy.eckert@exp.com

 Turnaround Time:
 1 Day 3 Day
 2 Day Regular
 Date Required:

 Criteria: O. Reg. 153/04 (As Amended) Table 1 RSC Filing O. Reg. 558/00 PRCO CCME SUB (Storm) SUB (Sanitary) Municipality: Other:

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

Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken		Required Analytes										
					Date	Time	PHOS (P-PAS-PTES)	VOCK	PAHs	Metals by ICP	As	Cd	Cr	Bi	VOG, POC, P-FA	PCB	pH
1	MW21-02	GW		2	22/01/12	11:00	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	D206	GW		2	22/01/12	11:00	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	MW21-01	GW		3	22/01/12	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used.

 Method of Delivery: Waste

Relinquished By (Sign): <u>[Signature]</u>	Received By (Direct/Temp): <u>[Signature]</u>	Relieved at Lab: <u>Whitney Bohmer</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Jeremy Eckert</u>	Date/Time: <u>Jan 12/12</u>	Date/Time: <u>2012/01/12 12:30</u>	Date/Time: <u>2013/01/12 13:55</u>
Date/Time: <u>22/01/12 15:00</u>	Temperature: <u>9.8 °C</u>	Temperature: <u>10.4 °C</u>	All Verified () By:

16:22

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi - Albert and Chaudiere Island
Project: OTT00250193P0
Custody:

Report Date: 26-Jan-2022
Order Date: 20-Jan-2022

Order #: 2204302

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

Paracel ID	Client ID
2204302-01	MW21-03

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	20-Jan-22	20-Jan-22
Cyanide, free	MOE E3015 - Auto Colour	21-Jan-22	21-Jan-22
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	26-Jan-22	26-Jan-22
Metals, ICP-MS	EPA 200.8 - ICP-MS	21-Jan-22	21-Jan-22
PCBs, total	EPA 608 - GC-ECD	24-Jan-22	24-Jan-22
pH	EPA 150.1 - pH probe @25 °C	21-Jan-22	21-Jan-22
PHC F1	CWS Tier 1 - P&T GC-FID	21-Jan-22	21-Jan-22
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	21-Jan-22	22-Jan-22
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	21-Jan-22	21-Jan-22
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	21-Jan-22	21-Jan-22

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Client ID:	MW21-03	-	-	-
Sample Date:	19-Jan-22 14:00	-	-	-
Sample ID:	2204302-01	-	-	-
MDL/Units	Water	-	-	-

General Inorganics

Cyanide, free	2 ug/L	<2	-	-	-
pH	0.1 pH Units	7.6	-	-	-

Metals

Mercury	0.1 ug/L	<0.1	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-
Arsenic	1 ug/L	<1	-	-	-
Barium	1 ug/L	195	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10 ug/L	94	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Chromium	1 ug/L	<1	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-
Cobalt	0.5 ug/L	0.6	-	-	-
Copper	0.5 ug/L	<0.5	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-
Molybdenum	0.5 ug/L	1.7	-	-	-
Nickel	1 ug/L	3	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	463000	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Uranium	0.1 ug/L	3.3	-	-	-
Vanadium	0.5 ug/L	0.5	-	-	-
Zinc	5 ug/L	<5	-	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	MW21-03	-	-	-
	Sample Date:	19-Jan-22 14:00	-	-	-
	Sample ID:	2204302-01	-	-	-
	MDL/Units	Water	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	97.6%	-	-	-
Dibromofluoromethane	Surrogate	61.0%	-	-	-
Toluene-d8	Surrogate	104%	-	-	-

Hydrocarbons

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	MW21-03	-	-	-
	Sample Date:	19-Jan-22 14:00	-	-	-
	Sample ID:	2204302-01	-	-	-
	MDL/Units	Water	-	-	-
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	-	-	-
Acenaphthylene	0.05 ug/L	<0.05	-	-	-
Anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	-	-
Chrysene	0.05 ug/L	<0.05	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-
Fluoranthene	0.01 ug/L	<0.01	-	-	-
Fluorene	0.05 ug/L	<0.05	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	-	-
Naphthalene	0.05 ug/L	<0.05	-	-	-
Phenanthrene	0.05 ug/L	<0.05	-	-	-
Pyrene	0.01 ug/L	<0.01	-	-	-
2-Fluorobiphenyl	Surrogate	116%	-	-	-
Terphenyl-d14	Surrogate	118%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	104%	-	-	-

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.522		ug/L		104	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	41.3		ug/L		103	50-140			
Surrogate: Terphenyl-d14	40.9		ug/L		102	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-Hexane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	79.2		ug/L		99.0	50-140			
Surrogate: Dibromofluoromethane	72.9		ug/L		91.1	50-140			
Surrogate: Toluene-d8	84.3		ug/L		105	50-140			

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	7.4	0.1	pH Units	7.5			1.2	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	0.65	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	22.0	1	ug/L	20.7			6.3	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	19	10	ug/L	19			2.3	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	0.71	0.5	ug/L	0.73			2.4	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	1.21	0.5	ug/L	1.09			10.5	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	15500	200	ug/L	15700			1.5	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	2.68	0.5	ug/L	2.26			17.0	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	5.02	0.5	ug/L	4.47			11.6	30	
Dibromochloromethane	1.63	0.5	ug/L	1.56			4.4	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	79.2		ug/L		99.0	50-140			
Surrogate: Dibromofluoromethane	73.3		ug/L		91.6	50-140			
Surrogate: Toluene-d8	83.6		ug/L		104	50-140			

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	28.9	2	ug/L	ND	96.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	1750	25	ug/L	ND	87.5	68-117			
F2 PHCs (C10-C16)	1110	100	ug/L	ND	69.6	60-140			
F3 PHCs (C16-C34)	3580	100	ug/L	ND	91.4	60-140			
F4 PHCs (C34-C50)	2560	100	ug/L	ND	103	60-140			
Metals									
Mercury	2.93	0.1	ug/L	ND	97.7	70-130			
Antimony	48.4	0.5	ug/L	ND	96.6	80-120			
Arsenic	49.0	1	ug/L	ND	97.5	80-120			
Barium	65.7	1	ug/L	20.7	90.0	80-120			
Beryllium	46.3	0.5	ug/L	ND	92.7	80-120			
Boron	61	10	ug/L	19	85.4	80-120			
Cadmium	46.6	0.1	ug/L	ND	93.1	80-120			
Chromium (VI)	200	10	ug/L	ND	100	70-130			
Chromium	47.3	1	ug/L	ND	94.4	80-120			
Cobalt	47.7	0.5	ug/L	ND	95.4	80-120			
Copper	46.1	0.5	ug/L	0.73	90.7	80-120			
Lead	43.7	0.1	ug/L	ND	87.3	80-120			
Molybdenum	45.1	0.5	ug/L	1.09	88.0	80-120			
Nickel	46.9	1	ug/L	ND	92.7	80-120			
Selenium	48.6	1	ug/L	ND	97.0	80-120			
Silver	45.0	0.1	ug/L	ND	90.0	80-120			
Sodium	23500	200	ug/L	15700	77.2	80-120			QM-07
Thallium	46.3	0.1	ug/L	ND	92.6	80-120			
Uranium	45.7	0.1	ug/L	ND	91.5	80-120			
Vanadium	47.9	0.5	ug/L	ND	95.7	80-120			
Zinc	54	5	ug/L	5	98.1	80-120			
PCBs									
PCBs, total	0.842	0.05	ug/L	ND	84.2	65-135			
Surrogate: Decachlorobiphenyl	0.529		ug/L		106	60-140			
Semi-Volatiles									
Acenaphthene	3.94	0.05	ug/L	ND	78.9	50-140			
Acenaphthylene	3.47	0.05	ug/L	ND	69.5	50-140			
Anthracene	3.76	0.01	ug/L	ND	75.2	50-140			
Benzo [a] anthracene	4.07	0.01	ug/L	ND	81.5	50-140			
Benzo [a] pyrene	4.56	0.01	ug/L	ND	91.3	50-140			
Benzo [b] fluoranthene	5.42	0.05	ug/L	ND	108	50-140			
Benzo [g,h,i] perylene	4.79	0.05	ug/L	ND	95.9	50-140			
Benzo [k] fluoranthene	5.01	0.05	ug/L	ND	100	50-140			
Chrysene	4.89	0.05	ug/L	ND	97.7	50-140			
Dibenzo [a,h] anthracene	5.11	0.05	ug/L	ND	102	50-140			
Fluoranthene	3.89	0.01	ug/L	ND	77.9	50-140			
Fluorene	4.31	0.05	ug/L	ND	86.2	50-140			
Indeno [1,2,3-cd] pyrene	5.01	0.05	ug/L	ND	100	50-140			
1-Methylnaphthalene	5.82	0.05	ug/L	ND	116	50-140			
2-Methylnaphthalene	6.06	0.05	ug/L	ND	121	50-140			

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Naphthalene	4.40	0.05	ug/L	ND	88.0	50-140			
Phenanthrene	3.90	0.05	ug/L	ND	77.9	50-140			
Pyrene	3.96	0.01	ug/L	ND	79.2	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	42.2		ug/L		105	50-140			
<i>Surrogate: Terphenyl-d14</i>	44.6		ug/L		111	50-140			
Volatiles									
Acetone	110	5.0	ug/L	ND	110	50-140			
Benzene	40.4	0.5	ug/L	ND	101	60-130			
Bromodichloromethane	33.9	0.5	ug/L	ND	84.7	60-130			
Bromoform	38.5	0.5	ug/L	ND	96.3	60-130			
Bromomethane	45.0	0.5	ug/L	ND	112	50-140			
Carbon Tetrachloride	33.6	0.2	ug/L	ND	84.1	60-130			
Chlorobenzene	40.1	0.5	ug/L	ND	100	60-130			
Chloroform	38.2	0.5	ug/L	ND	95.5	60-130			
Dibromochloromethane	36.3	0.5	ug/L	ND	90.8	60-130			
Dichlorodifluoromethane	40.6	1.0	ug/L	ND	102	50-140			
1,2-Dichlorobenzene	38.7	0.5	ug/L	ND	96.7	60-130			
1,3-Dichlorobenzene	38.6	0.5	ug/L	ND	96.5	60-130			
1,4-Dichlorobenzene	39.9	0.5	ug/L	ND	99.6	60-130			
1,1-Dichloroethane	38.7	0.5	ug/L	ND	96.7	60-130			
1,2-Dichloroethane	41.4	0.5	ug/L	ND	104	60-130			
1,1-Dichloroethylene	39.1	0.5	ug/L	ND	97.7	60-130			
cis-1,2-Dichloroethylene	37.9	0.5	ug/L	ND	94.8	60-130			
trans-1,2-Dichloroethylene	40.4	0.5	ug/L	ND	101	60-130			
1,2-Dichloropropane	38.5	0.5	ug/L	ND	96.3	60-130			
cis-1,3-Dichloropropylene	35.6	0.5	ug/L	ND	89.0	60-130			
trans-1,3-Dichloropropylene	38.0	0.5	ug/L	ND	95.0	60-130			
Ethylbenzene	41.2	0.5	ug/L	ND	103	60-130			
Ethylene dibromide (dibromoethane, 1,2-	36.0	0.2	ug/L	ND	89.9	60-130			
Hexane	34.8	1.0	ug/L	ND	87.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	110	5.0	ug/L	ND	110	50-140			
Methyl Isobutyl Ketone	124	5.0	ug/L	ND	124	50-140			
Methyl tert-butyl ether	112	2.0	ug/L	ND	112	50-140			
Methylene Chloride	42.2	5.0	ug/L	ND	105	60-130			
Styrene	37.6	0.5	ug/L	ND	93.9	60-130			
1,1,1,2-Tetrachloroethane	36.6	0.5	ug/L	ND	91.6	60-130			
1,1,2,2-Tetrachloroethane	38.0	0.5	ug/L	ND	95.1	60-130			
Tetrachloroethylene	37.6	0.5	ug/L	ND	94.1	60-130			
Toluene	40.1	0.5	ug/L	ND	100	60-130			
1,1,1-Trichloroethane	46.7	0.5	ug/L	ND	117	60-130			
1,1,2-Trichloroethane	41.6	0.5	ug/L	ND	104	60-130			
Trichloroethylene	41.3	0.5	ug/L	ND	103	60-130			
Trichlorofluoromethane	35.9	1.0	ug/L	ND	89.7	60-130			
Vinyl chloride	36.3	0.5	ug/L	ND	90.8	50-140			
m,p-Xylenes	81.9	0.5	ug/L	ND	102	60-130			
o-Xylene	42.5	0.5	ug/L	ND	106	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	80.6		ug/L		101	50-140			
<i>Surrogate: Dibromofluoromethane</i>	81.1		ug/L		101	50-140			
<i>Surrogate: Toluene-d8</i>	80.6		ug/L		101	50-140			

Certificate of Analysis

Report Date: 26-Jan-2022

Client: exp Services Inc. (Ottawa)

Order Date: 20-Jan-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Qualifier Notes:

QC Qualifiers :

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

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

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



Client Name: EXP Services Inc.	Project Reference: Zbl - Albert and Chaudiere Island	<input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day <input checked="" type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular Date Required: _____
Contact Name: Patricia Selmack	Order # 25-158	
Address: 100-2650 Queensview Drive Ottawa, ON, K2B 8H6	PO # 011-000000	
Telephone: 613-688-1899	Email Address: Patricia.Selmack@exp.com, jerry.ekert@exp.com	

Criteria: O. Reg. 151/04 (As Amended) Table 1 RSC Paving O. Reg. 558/00 PWQO CCME SUB (Storm) SUB (Sanitary) Municipality: _____ Other: _____

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

Parcel Order Number: <i>2202302</i>		Matrix	Air Volume	# of Containers	Sample Taken		Required Analyses											
Sample ID/Location Name	Date				Time	PHC P1-P4-BTEX	VOCs	PAHs	Metals by ICP	Ni	CYR	B (HHS)	VOG PHC P1-P4	PCB	pH	Free Cyanide		
1	MW21-03	GW	10		23/01/19	14:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
2							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Comments: Data will be compared to Reg. 153 Table 7 and Table 9 SCS; most stringent standard will be used. Method of Delivery: *Drop Box*

Relinquished By (Sign): <i>[Signature]</i>	Received by (Print/Sign): <i>[Signature]</i>	Received by (Sign): <i>[Signature]</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): <i>Jeremy Eckert</i>	Date/Time: <i>23/01/19 17:00</i>	Date/Time: <i>Jan 23 2019 17:00</i>	Date/Time: <i>Jan 20, 22 12:24</i>
	Temperature: <i>8.7 °C</i>	Temperature: <i>9.7 °C</i>	pH Verified/Ver: <i>8.8</i>

Certificate of Analysis

exp Services Inc. (Ottawa)

100-2650 Queensview Dr.
Ottawa, ON K2B8K2
Attn: Patricia Stelmack

Client PO: Zibi - Albert and Chaudiere Island
Project: OTT00250193P0
Custody:

Report Date: 24-Feb-2022
Order Date: 17-Feb-2022

Order #: 2208458

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

Paracel ID	Client ID
2208458-01	MW21-01

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Cyanide, free	MOE E3015 - Auto Colour	18-Feb-22	18-Feb-22
PCBs, total	EPA 608 - GC-ECD	23-Feb-22	23-Feb-22
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	22-Feb-22	22-Feb-22
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	18-Feb-22	19-Feb-22

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Client ID:	MW21-01	-	-	-
Sample Date:	16-Feb-22 17:30	-	-	-
Sample ID:	2208458-01	-	-	-
MDL/Units	Water	-	-	-

General Inorganics

Cyanide, free	2 ug/L	<2	-	-	-
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Volatiles

Acetone	5.0 ug/L	<5.0	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

	Client ID:	MW21-01	-	-	-
	Sample Date:	16-Feb-22 17:30	-	-	-
	Sample ID:	2208458-01	-	-	-
	MDL/Units	Water	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	100%	-	-	-
Dibromofluoromethane	Surrogate	92.3%	-	-	-
Toluene-d8	Surrogate	103%	-	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05 [1]	-	-	-
Acenaphthylene	0.05 ug/L	<0.05 [1]	-	-	-
Anthracene	0.01 ug/L	0.01 [1]	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01 [1]	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01 [1]	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05 [1]	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05 [1]	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05 [1]	-	-	-
Chrysene	0.05 ug/L	<0.05 [1]	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05 [1]	-	-	-
Fluoranthene	0.01 ug/L	0.05 [1]	-	-	-
Fluorene	0.05 ug/L	<0.05 [1]	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05 [1]	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05 [1]	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05 [1]	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10 [1]	-	-	-
Naphthalene	0.05 ug/L	<0.05 [1]	-	-	-
Phenanthrene	0.05 ug/L	0.05 [1]	-	-	-
Pyrene	0.01 ug/L	0.05 [1]	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	115%	-	-	-

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L						
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.655		ug/L		131	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	22.3		ug/L		112	50-140			
Surrogate: Terphenyl-d14	23.7		ug/L		119	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	84.4		ug/L		106	50-140			
Surrogate: Dibromofluoromethane	60.3		ug/L		75.4	50-140			
Surrogate: Toluene-d8	84.8		ug/L		106	50-140			

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	82.9		ug/L		104	50-140			
Surrogate: Dibromofluoromethane	62.6		ug/L		78.3	50-140			
Surrogate: Toluene-d8	83.0		ug/L		104	50-140			

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193PO

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	49.1	2	ug/L	ND	98.1	61-139			
PCBs									
PCBs, total	1.07	0.05	ug/L	ND	107	65-135			
Surrogate: Decachlorobiphenyl	0.571		ug/L		114	60-140			
Semi-Volatiles									
Acenaphthene	2.97	0.05	ug/L	ND	59.4	50-140			
Acenaphthylene	4.02	0.05	ug/L	ND	80.5	50-140			
Anthracene	3.79	0.01	ug/L	ND	75.8	50-140			
Benzo [a] anthracene	3.74	0.01	ug/L	ND	74.8	50-140			
Benzo [a] pyrene	4.30	0.01	ug/L	ND	86.0	50-140			
Benzo [b] fluoranthene	3.55	0.05	ug/L	ND	71.1	50-140			
Benzo [g,h,i] perylene	4.75	0.05	ug/L	ND	95.0	50-140			
Benzo [k] fluoranthene	3.12	0.05	ug/L	ND	62.4	50-140			
Chrysene	4.10	0.05	ug/L	ND	82.0	50-140			
Dibenzo [a,h] anthracene	4.90	0.05	ug/L	ND	97.9	50-140			
Fluoranthene	3.69	0.01	ug/L	ND	73.8	50-140			
Fluorene	4.12	0.05	ug/L	ND	82.4	50-140			
Indeno [1,2,3-cd] pyrene	4.89	0.05	ug/L	ND	97.9	50-140			
1-Methylnaphthalene	5.61	0.05	ug/L	ND	112	50-140			
2-Methylnaphthalene	5.91	0.05	ug/L	ND	118	50-140			
Naphthalene	4.43	0.05	ug/L	ND	88.7	50-140			
Phenanthrene	3.93	0.05	ug/L	ND	78.7	50-140			
Pyrene	3.31	0.01	ug/L	ND	66.1	50-140			
Surrogate: 2-Fluorobiphenyl	25.4		ug/L		127	50-140			
Surrogate: Terphenyl-d14	25.7		ug/L		128	50-140			
Volatiles									
Acetone	78.1	5.0	ug/L	ND	78.1	50-140			
Benzene	28.5	0.5	ug/L	ND	71.2	60-130			
Bromodichloromethane	31.9	0.5	ug/L	ND	79.7	60-130			
Bromoform	35.3	0.5	ug/L	ND	88.2	60-130			
Bromomethane	32.0	0.5	ug/L	ND	79.9	50-140			
Carbon Tetrachloride	30.7	0.2	ug/L	ND	76.8	60-130			
Chlorobenzene	29.5	0.5	ug/L	ND	73.8	60-130			
Chloroform	32.0	0.5	ug/L	ND	80.0	60-130			
Dibromochloromethane	45.5	0.5	ug/L	ND	114	60-130			
Dichlorodifluoromethane	37.5	1.0	ug/L	ND	93.8	50-140			
1,2-Dichlorobenzene	34.0	0.5	ug/L	ND	85.0	60-130			
1,3-Dichlorobenzene	33.9	0.5	ug/L	ND	84.8	60-130			
1,4-Dichlorobenzene	29.8	0.5	ug/L	ND	74.6	60-130			
1,1-Dichloroethane	34.1	0.5	ug/L	ND	85.4	60-130			
1,2-Dichloroethane	30.5	0.5	ug/L	ND	76.3	60-130			
1,1-Dichloroethylene	29.1	0.5	ug/L	ND	72.6	60-130			
cis-1,2-Dichloroethylene	39.8	0.5	ug/L	ND	99.4	60-130			
trans-1,2-Dichloroethylene	29.1	0.5	ug/L	ND	72.7	60-130			
1,2-Dichloropropane	35.4	0.5	ug/L	ND	88.6	60-130			
cis-1,3-Dichloropropylene	42.6	0.5	ug/L	ND	107	60-130			
trans-1,3-Dichloropropylene	37.9	0.5	ug/L	ND	94.7	60-130			
Ethylbenzene	30.0	0.5	ug/L	ND	75.0	60-130			

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Ethylene dibromide (dibromoethane, 1,2-	40.7	0.2	ug/L	ND	102	60-130			
Hexane	39.6	1.0	ug/L	ND	99.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	85.5	5.0	ug/L	ND	85.5	50-140			
Methyl Isobutyl Ketone	64.9	5.0	ug/L	ND	64.9	50-140			
Methyl tert-butyl ether	85.8	2.0	ug/L	ND	85.8	50-140			
Methylene Chloride	31.9	5.0	ug/L	ND	79.6	60-130			
Styrene	30.2	0.5	ug/L	ND	75.6	60-130			
1,1,1,2-Tetrachloroethane	28.8	0.5	ug/L	ND	72.0	60-130			
1,1,2,2-Tetrachloroethane	36.5	0.5	ug/L	ND	91.3	60-130			
Tetrachloroethylene	31.4	0.5	ug/L	ND	78.6	60-130			
Toluene	30.8	0.5	ug/L	ND	77.0	60-130			
1,1,1-Trichloroethane	28.1	0.5	ug/L	ND	70.2	60-130			
1,1,2-Trichloroethane	36.7	0.5	ug/L	ND	91.7	60-130			
Trichloroethylene	43.8	0.5	ug/L	ND	110	60-130			
Trichlorofluoromethane	31.0	1.0	ug/L	ND	77.4	60-130			
Vinyl chloride	40.3	0.5	ug/L	ND	101	50-140			
m,p-Xylenes	58.3	0.5	ug/L	ND	72.9	60-130			
o-Xylene	38.1	0.5	ug/L	ND	95.2	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84.7</i>		<i>ug/L</i>		<i>106</i>	<i>50-140</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>79.5</i>		<i>ug/L</i>		<i>99.3</i>	<i>50-140</i>			
<i>Surrogate: Toluene-d8</i>	<i>81.0</i>		<i>ug/L</i>		<i>101</i>	<i>50-140</i>			

Certificate of Analysis

Report Date: 24-Feb-2022

Client: exp Services Inc. (Ottawa)

Order Date: 17-Feb-2022

Client PO: Zibi - Albert and Chaudiere Island

Project Description: OTT00250193P0

Qualifier Notes:

Sample Qualifiers :

1 : Surrogate recoveries not available.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

EXP Services Inc.

*Windmill Dream Zibi Ontario Inc.
Phase Two Environmental Site Assessment
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0
April 20, 2022*

Appendix I: Hydraulic Conductivity

Rising Head Test Analysis (Bail Test) - BH/MW21-3
Hvorslev Method (1951)
315 Mìwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

Standpipe radius:	r =	0.025
Borehole radius:	R =	0.102
Length of gravel pack zone	$L_e =$	3.05 m
Static water level:	$H_0 =$	12.91 m
First water level reading:		10.64 m
Time for 37% change	t_{37}	54360 sec
Hydraulic Conductivity:	$K =$	$r^2 \ln(L_e/R) / 2L_e t_{37}$
Hydraulic Conductivity:	K	6.61107E-09 (m/s)
Hydraulic Conductivity:	K	6.6111E-07 (cm/s)

Data Quality High: 70 to 100% recovery to original water level
 Low: Less than 50% recovery to original water level

Rising Head Test Analysis (Bail Test) - BH/MW21-3
Hvorslev Method (1951)
315 Miwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

H₀ 12.91 Relative static water level

Date	Time	LEVEL	Seconds	Drawdown	H/H0	% Recovery
8/23/2021	10:38:52 AM	10.64	0	2.27	1.00	0
8/23/2021	10:39:52 AM	10.65	60	2.27	1.00	0
8/23/2021	10:40:52 AM	10.65	120	2.26	1.00	0
8/23/2021	10:41:52 AM	10.72	180	2.19	0.97	3
8/23/2021	10:42:52 AM	10.72	240	2.19	0.97	3
8/23/2021	10:43:52 AM	10.72	300	2.19	0.97	3
8/23/2021	10:44:52 AM	10.72	360	2.19	0.96	4
8/23/2021	10:45:52 AM	10.72	420	2.19	0.96	4
8/23/2021	10:46:52 AM	10.72	480	2.19	0.96	4
8/23/2021	10:47:52 AM	10.73	540	2.18	0.96	4
8/23/2021	10:48:52 AM	10.73	600	2.18	0.96	4
8/23/2021	10:49:52 AM	10.73	660	2.18	0.96	4
8/23/2021	10:50:52 AM	10.73	720	2.18	0.96	4
8/23/2021	10:51:52 AM	10.73	780	2.18	0.96	4
8/23/2021	10:52:52 AM	10.73	840	2.18	0.96	4
8/23/2021	10:53:52 AM	10.73	900	2.18	0.96	4
8/23/2021	10:54:52 AM	10.74	960	2.17	0.96	4
8/23/2021	10:55:52 AM	10.74	1020	2.17	0.96	4
8/23/2021	10:56:52 AM	10.74	1080	2.17	0.96	4
8/23/2021	10:57:52 AM	10.74	1140	2.17	0.96	4
8/23/2021	10:58:52 AM	10.74	1200	2.17	0.96	4
8/23/2021	10:59:52 AM	10.74	1260	2.17	0.95	5
8/23/2021	11:00:52 AM	10.74	1320	2.17	0.95	5
8/23/2021	11:01:52 AM	10.75	1380	2.16	0.95	5
8/23/2021	11:02:52 AM	10.75	1440	2.16	0.95	5
8/23/2021	11:03:52 AM	10.75	1500	2.16	0.95	5
8/23/2021	11:04:52 AM	10.75	1560	2.16	0.95	5
8/23/2021	11:05:52 AM	10.75	1620	2.16	0.95	5
8/23/2021	11:06:52 AM	10.75	1680	2.16	0.95	5
8/23/2021	11:07:52 AM	10.75	1740	2.16	0.95	5
8/23/2021	11:08:52 AM	10.76	1800	2.15	0.95	5
8/23/2021	11:09:52 AM	10.76	1860	2.15	0.95	5
8/23/2021	11:10:52 AM	10.76	1920	2.15	0.95	5
8/23/2021	11:11:52 AM	10.76	1980	2.15	0.95	5
8/23/2021	11:12:52 AM	10.76	2040	2.15	0.95	5
8/23/2021	11:13:52 AM	10.76	2100	2.15	0.95	5
8/23/2021	11:14:52 AM	10.76	2160	2.15	0.95	5
8/23/2021	11:15:52 AM	10.77	2220	2.14	0.94	6
8/23/2021	11:16:52 AM	10.77	2280	2.14	0.94	6
8/23/2021	11:17:52 AM	10.77	2340	2.14	0.94	6
8/23/2021	11:18:52 AM	10.77	2400	2.14	0.94	6
8/23/2021	11:19:52 AM	10.77	2460	2.14	0.94	6
8/23/2021	11:20:52 AM	10.77	2520	2.14	0.94	6
8/23/2021	11:21:52 AM	10.77	2580	2.14	0.94	6
8/23/2021	11:22:52 AM	10.77	2640	2.14	0.94	6
8/23/2021	11:23:52 AM	10.78	2700	2.13	0.94	6
8/23/2021	11:24:52 AM	10.78	2760	2.13	0.94	6
8/23/2021	11:25:52 AM	10.78	2820	2.13	0.94	6
8/23/2021	11:26:52 AM	10.78	2880	2.13	0.94	6
8/23/2021	11:27:52 AM	10.78	2940	2.13	0.94	6
8/23/2021	11:28:52 AM	10.78	3000	2.13	0.94	6
8/23/2021	11:29:52 AM	10.78	3060	2.13	0.94	6
8/23/2021	11:30:52 AM	10.78	3120	2.13	0.94	6
8/23/2021	11:31:52 AM	10.79	3180	2.12	0.94	6
8/23/2021	11:32:52 AM	10.79	3240	2.12	0.94	6
8/23/2021	11:33:52 AM	10.79	3300	2.12	0.94	6
8/23/2021	11:34:52 AM	10.79	3360	2.12	0.93	7
8/23/2021	11:35:52 AM	10.79	3420	2.12	0.93	7
8/23/2021	11:36:52 AM	10.79	3480	2.12	0.93	7
8/23/2021	11:37:52 AM	10.79	3540	2.12	0.93	7
8/23/2021	11:38:52 AM	10.79	3600	2.12	0.93	7
8/23/2021	11:39:52 AM	10.80	3660	2.12	0.93	7
8/23/2021	11:40:52 AM	10.80	3720	2.11	0.93	7
8/23/2021	11:41:52 AM	10.80	3780	2.11	0.93	7
8/23/2021	11:42:52 AM	10.80	3840	2.11	0.93	7
8/23/2021	11:43:52 AM	10.80	3900	2.11	0.93	7
8/23/2021	11:44:52 AM	10.80	3960	2.11	0.93	7
8/23/2021	11:45:52 AM	10.80	4020	2.11	0.93	7
8/23/2021	11:46:52 AM	10.80	4080	2.11	0.93	7
8/23/2021	11:47:52 AM	10.80	4140	2.11	0.93	7

8/23/2021	11:48:52 AM	10.81	4200	2.10	0.93	7
8/23/2021	11:49:52 AM	10.81	4260	2.10	0.93	7
8/23/2021	11:50:52 AM	10.81	4320	2.10	0.93	7
8/23/2021	11:51:52 AM	10.81	4380	2.10	0.93	7
8/23/2021	11:52:52 AM	10.81	4440	2.10	0.92	8
8/23/2021	11:53:52 AM	10.81	4500	2.10	0.92	8
8/23/2021	11:54:52 AM	10.81	4560	2.10	0.92	8
8/23/2021	11:55:52 AM	10.81	4620	2.10	0.92	8
8/23/2021	11:56:52 AM	10.81	4680	2.10	0.92	8
8/23/2021	11:57:52 AM	10.82	4740	2.09	0.92	8
8/23/2021	11:58:52 AM	10.82	4800	2.09	0.92	8
8/23/2021	11:59:52 AM	10.82	4860	2.09	0.92	8
8/23/2021	12:00:52 PM	10.82	4920	2.09	0.92	8
8/23/2021	12:01:52 PM	10.82	4980	2.09	0.92	8
8/23/2021	12:02:52 PM	10.82	5040	2.09	0.92	8
8/23/2021	12:03:52 PM	10.82	5100	2.09	0.92	8
8/23/2021	12:04:52 PM	10.82	5160	2.09	0.92	8
8/23/2021	12:05:52 PM	10.82	5220	2.09	0.92	8
8/23/2021	12:06:52 PM	10.83	5280	2.08	0.92	8
8/23/2021	12:07:52 PM	10.83	5340	2.08	0.92	8
8/23/2021	12:08:52 PM	10.83	5400	2.08	0.92	8
8/23/2021	12:09:52 PM	10.83	5460	2.08	0.92	8
8/23/2021	12:10:52 PM	10.83	5520	2.08	0.92	8
8/23/2021	12:11:52 PM	10.83	5580	2.08	0.92	8
8/23/2021	12:12:52 PM	10.83	5640	2.08	0.92	8
8/23/2021	12:13:52 PM	10.83	5700	2.08	0.92	8
8/23/2021	12:14:52 PM	10.83	5760	2.08	0.91	9
8/23/2021	12:15:52 PM	10.84	5820	2.07	0.91	9
8/23/2021	12:16:52 PM	10.84	5880	2.07	0.91	9
8/23/2021	12:17:52 PM	10.84	5940	2.07	0.91	9
8/23/2021	12:18:52 PM	10.84	6000	2.07	0.91	9
8/23/2021	12:19:52 PM	10.84	6060	2.07	0.91	9
8/23/2021	12:20:52 PM	10.84	6120	2.07	0.91	9
8/23/2021	12:21:52 PM	10.84	6180	2.07	0.91	9
8/23/2021	12:22:52 PM	10.84	6240	2.07	0.91	9
8/23/2021	12:23:52 PM	10.84	6300	2.07	0.91	9
8/23/2021	12:24:52 PM	10.84	6360	2.07	0.91	9
8/23/2021	12:25:52 PM	10.84	6420	2.07	0.91	9
8/23/2021	12:26:52 PM	10.85	6480	2.06	0.91	9
8/23/2021	12:27:52 PM	10.85	6540	2.06	0.91	9
8/23/2021	12:28:52 PM	10.85	6600	2.06	0.91	9
8/23/2021	12:29:52 PM	10.85	6660	2.06	0.91	9
8/23/2021	12:30:52 PM	10.85	6720	2.06	0.91	9
8/23/2021	12:31:52 PM	10.85	6780	2.06	0.91	9
8/23/2021	12:32:52 PM	10.85	6840	2.06	0.91	9
8/23/2021	12:33:52 PM	10.85	6900	2.06	0.91	9
8/23/2021	12:34:52 PM	10.85	6960	2.06	0.91	9
8/23/2021	12:35:52 PM	10.85	7020	2.06	0.91	9
8/23/2021	12:36:52 PM	10.86	7080	2.05	0.91	9
8/23/2021	12:37:52 PM	10.86	7140	2.05	0.90	10
8/23/2021	12:38:52 PM	10.86	7200	2.05	0.90	10
8/23/2021	12:39:52 PM	10.86	7260	2.05	0.90	10
8/23/2021	12:40:52 PM	10.86	7320	2.05	0.90	10
8/23/2021	12:41:52 PM	10.86	7380	2.05	0.90	10
8/23/2021	12:42:52 PM	10.86	7440	2.05	0.90	10
8/23/2021	12:43:52 PM	10.86	7500	2.05	0.90	10
8/23/2021	12:44:52 PM	10.86	7560	2.05	0.90	10
8/23/2021	12:45:52 PM	10.86	7620	2.05	0.90	10
8/23/2021	12:46:52 PM	10.87	7680	2.04	0.90	10
8/23/2021	12:47:52 PM	10.87	7740	2.04	0.90	10
8/23/2021	12:48:52 PM	10.87	7800	2.04	0.90	10
8/23/2021	12:49:52 PM	10.87	7860	2.04	0.90	10
8/23/2021	12:50:52 PM	10.87	7920	2.04	0.90	10
8/23/2021	12:51:52 PM	10.87	7980	2.04	0.90	10
8/23/2021	12:52:52 PM	10.87	8040	2.04	0.90	10
8/23/2021	12:53:52 PM	10.87	8100	2.04	0.90	10
8/23/2021	12:54:52 PM	10.87	8160	2.04	0.90	10
8/23/2021	12:55:52 PM	10.87	8220	2.04	0.90	10
8/23/2021	12:56:52 PM	10.88	8280	2.04	0.90	10
8/23/2021	12:57:52 PM	10.88	8340	2.03	0.90	10
8/23/2021	12:58:52 PM	10.88	8400	2.03	0.90	10
8/23/2021	12:59:52 PM	10.88	8460	2.03	0.89	11
8/23/2021	1:00:52 PM	10.88	8520	2.03	0.89	11
8/23/2021	1:01:52 PM	10.88	8580	2.03	0.89	11
8/23/2021	1:02:52 PM	10.88	8640	2.03	0.89	11
8/23/2021	1:03:52 PM	10.88	8700	2.03	0.89	11
8/23/2021	1:04:52 PM	10.88	8760	2.03	0.89	11
8/23/2021	1:05:52 PM	10.89	8820	2.02	0.89	11
8/23/2021	1:06:52 PM	10.89	8880	2.02	0.89	11

8/23/2021	1:07:52 PM	10.89	8940	2.02	0.89	11
8/23/2021	1:08:52 PM	10.89	9000	2.02	0.89	11
8/23/2021	1:09:52 PM	10.89	9060	2.02	0.89	11
8/23/2021	1:10:52 PM	10.89	9120	2.02	0.89	11
8/23/2021	1:11:52 PM	10.89	9180	2.02	0.89	11
8/23/2021	1:12:52 PM	10.89	9240	2.02	0.89	11
8/23/2021	1:13:52 PM	10.89	9300	2.02	0.89	11
8/23/2021	1:14:52 PM	10.90	9360	2.01	0.89	11
8/23/2021	1:15:52 PM	10.90	9420	2.01	0.89	11
8/23/2021	1:16:52 PM	10.90	9480	2.01	0.89	11
8/23/2021	1:17:52 PM	10.90	9540	2.01	0.89	11
8/23/2021	1:18:52 PM	10.90	9600	2.01	0.89	11
8/23/2021	1:19:52 PM	10.90	9660	2.01	0.89	11
8/23/2021	1:20:52 PM	10.90	9720	2.01	0.88	12
8/23/2021	1:21:52 PM	10.90	9780	2.01	0.88	12
8/23/2021	1:22:52 PM	10.90	9840	2.01	0.88	12
8/23/2021	1:23:52 PM	10.91	9900	2.00	0.88	12
8/23/2021	1:24:52 PM	10.91	9960	2.00	0.88	12
8/23/2021	1:25:52 PM	10.91	10020	2.00	0.88	12
8/23/2021	1:26:52 PM	10.91	10080	2.00	0.88	12
8/23/2021	1:27:52 PM	10.91	10140	2.00	0.88	12
8/23/2021	1:28:52 PM	10.91	10200	2.00	0.88	12
8/23/2021	1:29:52 PM	10.91	10260	2.00	0.88	12
8/23/2021	1:30:52 PM	10.91	10320	2.00	0.88	12
8/23/2021	1:31:52 PM	10.91	10380	2.00	0.88	12
8/23/2021	1:32:52 PM	10.91	10440	2.00	0.88	12
8/23/2021	1:33:52 PM	10.92	10500	1.99	0.88	12
8/23/2021	1:34:52 PM	10.92	10560	1.99	0.88	12
8/23/2021	1:35:52 PM	10.92	10620	1.99	0.88	12
8/23/2021	1:36:52 PM	10.92	10680	1.99	0.88	12
8/23/2021	1:37:52 PM	10.92	10740	1.99	0.88	12
8/23/2021	1:38:52 PM	10.92	10800	1.99	0.88	12
8/23/2021	1:39:52 PM	10.92	10860	1.99	0.88	12
8/23/2021	1:40:52 PM	10.92	10920	1.99	0.88	12
8/23/2021	1:41:52 PM	10.92	10980	1.99	0.88	12
8/23/2021	1:42:52 PM	10.92	11040	1.99	0.87	13
8/23/2021	1:43:52 PM	10.93	11100	1.98	0.87	13
8/23/2021	1:44:52 PM	10.93	11160	1.98	0.87	13
8/23/2021	1:45:52 PM	10.93	11220	1.98	0.87	13
8/23/2021	1:46:52 PM	10.93	11280	1.98	0.87	13
8/23/2021	1:47:52 PM	10.93	11340	1.98	0.87	13
8/23/2021	1:48:52 PM	10.93	11400	1.98	0.87	13
8/23/2021	1:49:52 PM	10.93	11460	1.98	0.87	13
8/23/2021	1:50:52 PM	10.93	11520	1.98	0.87	13
8/23/2021	1:51:52 PM	10.93	11580	1.98	0.87	13
8/23/2021	1:52:52 PM	10.93	11640	1.98	0.87	13
8/23/2021	1:53:52 PM	10.94	11700	1.97	0.87	13
8/23/2021	1:54:52 PM	10.94	11760	1.97	0.87	13
8/23/2021	1:55:52 PM	10.94	11820	1.97	0.87	13
8/23/2021	1:56:52 PM	10.94	11880	1.97	0.87	13
8/23/2021	1:57:52 PM	10.94	11940	1.97	0.87	13
8/23/2021	1:58:52 PM	10.94	12000	1.97	0.87	13
8/23/2021	1:59:52 PM	10.94	12060	1.97	0.87	13
8/23/2021	2:00:52 PM	10.94	12120	1.97	0.87	13
8/23/2021	2:01:52 PM	10.95	12180	1.96	0.87	13
8/23/2021	2:02:52 PM	10.95	12240	1.96	0.87	13
8/23/2021	2:03:52 PM	10.95	12300	1.96	0.86	14
8/23/2021	2:04:52 PM	10.95	12360	1.96	0.86	14
8/23/2021	2:05:52 PM	10.95	12420	1.96	0.86	14
8/23/2021	2:06:52 PM	10.95	12480	1.96	0.86	14
8/23/2021	2:07:52 PM	10.95	12540	1.96	0.86	14
8/23/2021	2:08:52 PM	10.95	12600	1.96	0.86	14
8/23/2021	2:09:52 PM	10.95	12660	1.96	0.86	14
8/23/2021	2:10:52 PM	10.96	12720	1.95	0.86	14
8/23/2021	2:11:52 PM	10.96	12780	1.95	0.86	14
8/23/2021	2:12:52 PM	10.96	12840	1.95	0.86	14
8/23/2021	2:13:52 PM	10.96	12900	1.95	0.86	14
8/23/2021	2:14:52 PM	10.96	12960	1.95	0.86	14
8/23/2021	2:15:52 PM	10.96	13020	1.95	0.86	14
8/23/2021	2:16:52 PM	10.96	13080	1.95	0.86	14
8/23/2021	2:17:52 PM	10.96	13140	1.95	0.86	14
8/23/2021	2:18:52 PM	10.96	13200	1.95	0.86	14
8/23/2021	2:19:52 PM	10.96	13260	1.95	0.86	14
8/23/2021	2:20:52 PM	10.97	13320	1.94	0.86	14
8/23/2021	2:21:52 PM	10.97	13380	1.94	0.86	14
8/23/2021	2:22:52 PM	10.97	13440	1.94	0.86	14
8/23/2021	2:23:52 PM	10.97	13500	1.94	0.85	15
8/23/2021	2:24:52 PM	10.97	13560	1.94	0.85	15
8/23/2021	2:25:52 PM	10.97	13620	1.94	0.85	15

8/23/2021	2:26:52 PM	10.97	13680	1.94	0.85	15
8/23/2021	2:27:52 PM	10.97	13740	1.94	0.85	15
8/23/2021	2:28:52 PM	10.97	13800	1.94	0.85	15
8/23/2021	2:29:52 PM	10.98	13860	1.93	0.85	15
8/23/2021	2:30:52 PM	10.98	13920	1.93	0.85	15
8/23/2021	2:31:52 PM	10.98	13980	1.93	0.85	15
8/23/2021	2:32:52 PM	10.98	14040	1.93	0.85	15
8/23/2021	2:33:52 PM	10.98	14100	1.93	0.85	15
8/23/2021	2:34:52 PM	10.98	14160	1.93	0.85	15
8/23/2021	2:35:52 PM	10.98	14220	1.93	0.85	15
8/23/2021	2:36:52 PM	10.98	14280	1.93	0.85	15
8/23/2021	2:37:52 PM	10.98	14340	1.93	0.85	15
8/23/2021	2:38:52 PM	10.98	14400	1.93	0.85	15
8/23/2021	2:39:52 PM	10.99	14460	1.93	0.85	15
8/23/2021	2:40:52 PM	10.99	14520	1.92	0.85	15
8/23/2021	2:41:52 PM	10.99	14580	1.92	0.85	15
8/23/2021	2:42:52 PM	10.99	14640	1.92	0.85	15
8/23/2021	2:43:52 PM	10.99	14700	1.92	0.85	15
8/23/2021	2:44:52 PM	10.99	14760	1.92	0.85	15
8/23/2021	2:45:52 PM	10.99	14820	1.92	0.85	15
8/23/2021	2:46:52 PM	10.99	14880	1.92	0.85	15
8/23/2021	2:47:52 PM	10.99	14940	1.92	0.84	16
8/23/2021	2:48:52 PM	10.99	15000	1.92	0.84	16
8/23/2021	2:49:52 PM	10.99	15060	1.92	0.84	16
8/23/2021	2:50:52 PM	11.00	15120	1.91	0.84	16
8/23/2021	2:51:52 PM	11.00	15180	1.91	0.84	16
8/23/2021	2:52:52 PM	11.00	15240	1.91	0.84	16
8/23/2021	2:53:52 PM	11.00	15300	1.91	0.84	16
8/23/2021	2:54:52 PM	11.00	15360	1.91	0.84	16
8/23/2021	2:55:52 PM	11.00	15420	1.91	0.84	16
8/23/2021	2:56:52 PM	11.00	15480	1.91	0.84	16
8/23/2021	2:57:52 PM	11.00	15540	1.91	0.84	16
8/23/2021	2:58:52 PM	11.00	15600	1.91	0.84	16
8/23/2021	2:59:52 PM	11.00	15660	1.91	0.84	16
8/23/2021	3:00:52 PM	11.00	15720	1.91	0.84	16
8/23/2021	3:01:52 PM	11.00	15780	1.91	0.84	16
8/23/2021	3:02:52 PM	11.01	15840	1.90	0.84	16
8/23/2021	3:03:52 PM	11.01	15900	1.90	0.84	16
8/23/2021	3:04:52 PM	11.01	15960	1.90	0.84	16
8/23/2021	3:05:52 PM	11.01	16020	1.90	0.84	16
8/23/2021	3:06:52 PM	11.01	16080	1.90	0.84	16
8/23/2021	3:07:52 PM	11.01	16140	1.90	0.84	16
8/23/2021	3:08:52 PM	11.01	16200	1.90	0.84	16
8/23/2021	3:09:52 PM	11.01	16260	1.90	0.84	16
8/23/2021	3:10:52 PM	11.01	16320	1.90	0.84	16
8/23/2021	3:11:52 PM	11.01	16380	1.90	0.84	16
8/23/2021	3:12:52 PM	11.01	16440	1.90	0.84	16
8/23/2021	3:13:52 PM	11.02	16500	1.90	0.83	17
8/23/2021	3:14:52 PM	11.02	16560	1.89	0.83	17
8/23/2021	3:15:52 PM	11.02	16620	1.89	0.83	17
8/23/2021	3:16:52 PM	11.02	16680	1.89	0.83	17
8/23/2021	3:17:52 PM	11.02	16740	1.89	0.83	17
8/23/2021	3:18:52 PM	11.02	16800	1.89	0.83	17
8/23/2021	3:19:52 PM	11.02	16860	1.89	0.83	17
8/23/2021	3:20:52 PM	11.02	16920	1.89	0.83	17
8/23/2021	3:21:52 PM	11.02	16980	1.89	0.83	17
8/23/2021	3:22:52 PM	11.02	17040	1.89	0.83	17
8/23/2021	3:23:52 PM	11.02	17100	1.89	0.83	17
8/23/2021	3:24:52 PM	11.02	17160	1.89	0.83	17
8/23/2021	3:25:52 PM	11.02	17220	1.89	0.83	17
8/23/2021	3:26:52 PM	11.03	17280	1.88	0.83	17
8/23/2021	3:27:52 PM	11.03	17340	1.88	0.83	17
8/23/2021	3:28:52 PM	11.03	17400	1.88	0.83	17
8/23/2021	3:29:52 PM	11.03	17460	1.88	0.83	17
8/23/2021	3:30:52 PM	11.03	17520	1.88	0.83	17
8/23/2021	3:31:52 PM	11.03	17580	1.88	0.83	17
8/23/2021	3:32:52 PM	11.03	17640	1.88	0.83	17
8/23/2021	3:33:52 PM	11.03	17700	1.88	0.83	17
8/23/2021	3:34:52 PM	11.03	17760	1.88	0.83	17
8/23/2021	3:35:52 PM	11.03	17820	1.88	0.83	17
8/23/2021	3:36:52 PM	11.03	17880	1.88	0.83	17
8/23/2021	3:37:52 PM	11.03	17940	1.88	0.83	17
8/23/2021	3:38:52 PM	11.04	18000	1.88	0.83	17
8/23/2021	3:39:52 PM	11.04	18060	1.87	0.83	17
8/23/2021	3:40:52 PM	11.04	18120	1.87	0.83	17
8/23/2021	3:41:52 PM	11.04	18180	1.87	0.83	17
8/23/2021	3:42:52 PM	11.04	18240	1.87	0.82	18
8/23/2021	3:43:52 PM	11.04	18300	1.87	0.82	18
8/23/2021	3:44:52 PM	11.04	18360	1.87	0.82	18

8/23/2021	3:45:52 PM	11.04	18420	1.87	0.82	18
8/23/2021	3:46:52 PM	11.04	18480	1.87	0.82	18
8/23/2021	3:47:52 PM	11.04	18540	1.87	0.82	18
8/23/2021	3:48:52 PM	11.04	18600	1.87	0.82	18
8/23/2021	3:49:52 PM	11.04	18660	1.87	0.82	18
8/23/2021	3:50:52 PM	11.04	18720	1.87	0.82	18
8/23/2021	3:51:52 PM	11.05	18780	1.86	0.82	18
8/23/2021	3:52:52 PM	11.05	18840	1.86	0.82	18
8/23/2021	3:53:52 PM	11.05	18900	1.86	0.82	18
8/23/2021	3:54:52 PM	11.05	18960	1.86	0.82	18
8/23/2021	3:55:52 PM	11.05	19020	1.86	0.82	18
8/23/2021	3:56:52 PM	11.05	19080	1.86	0.82	18
8/23/2021	3:57:52 PM	11.05	19140	1.86	0.82	18
8/23/2021	3:58:52 PM	11.05	19200	1.86	0.82	18
8/23/2021	3:59:52 PM	11.05	19260	1.86	0.82	18
8/23/2021	4:00:52 PM	11.05	19320	1.86	0.82	18
8/23/2021	4:01:52 PM	11.05	19380	1.86	0.82	18
8/23/2021	4:02:52 PM	11.05	19440	1.86	0.82	18
8/23/2021	4:03:52 PM	11.06	19500	1.86	0.82	18
8/23/2021	4:04:52 PM	11.06	19560	1.85	0.82	18
8/23/2021	4:05:52 PM	11.06	19620	1.85	0.82	18
8/23/2021	4:06:52 PM	11.06	19680	1.85	0.82	18
8/23/2021	4:07:52 PM	11.06	19740	1.85	0.82	18
8/23/2021	4:08:52 PM	11.06	19800	1.85	0.82	18
8/23/2021	4:09:52 PM	11.06	19860	1.85	0.82	18
8/23/2021	4:10:52 PM	11.06	19920	1.85	0.82	18
8/23/2021	4:11:52 PM	11.06	19980	1.85	0.81	19
8/23/2021	4:12:52 PM	11.06	20040	1.85	0.81	19
8/23/2021	4:13:52 PM	11.06	20100	1.85	0.81	19
8/23/2021	4:14:52 PM	11.06	20160	1.85	0.81	19
8/23/2021	4:15:52 PM	11.06	20220	1.85	0.81	19
8/23/2021	4:16:52 PM	11.06	20280	1.85	0.81	19
8/23/2021	4:17:52 PM	11.06	20340	1.85	0.81	19
8/23/2021	4:18:52 PM	11.07	20400	1.84	0.81	19
8/23/2021	4:19:52 PM	11.07	20460	1.84	0.81	19
8/23/2021	4:20:52 PM	11.07	20520	1.84	0.81	19
8/23/2021	4:21:52 PM	11.07	20580	1.84	0.81	19
8/23/2021	4:22:52 PM	11.07	20640	1.84	0.81	19
8/23/2021	4:23:52 PM	11.07	20700	1.84	0.81	19
8/23/2021	4:24:52 PM	11.07	20760	1.84	0.81	19
8/23/2021	4:25:52 PM	11.07	20820	1.84	0.81	19
8/23/2021	4:26:52 PM	11.07	20880	1.84	0.81	19
8/23/2021	4:27:52 PM	11.07	20940	1.84	0.81	19
8/23/2021	4:28:52 PM	11.07	21000	1.84	0.81	19
8/23/2021	4:29:52 PM	11.07	21060	1.84	0.81	19
8/23/2021	4:30:52 PM	11.07	21120	1.84	0.81	19
8/23/2021	4:31:52 PM	11.08	21180	1.83	0.81	19
8/23/2021	4:32:52 PM	11.08	21240	1.83	0.81	19
8/23/2021	4:33:52 PM	11.08	21300	1.83	0.81	19
8/23/2021	4:34:52 PM	11.08	21360	1.83	0.81	19
8/23/2021	4:35:52 PM	11.08	21420	1.83	0.81	19
8/23/2021	4:36:52 PM	11.08	21480	1.83	0.81	19
8/23/2021	4:37:52 PM	11.08	21540	1.83	0.81	19
8/23/2021	4:38:52 PM	11.08	21600	1.83	0.81	19
8/23/2021	4:39:52 PM	11.08	21660	1.83	0.81	19
8/23/2021	4:40:52 PM	11.08	21720	1.83	0.81	19
8/23/2021	4:41:52 PM	11.08	21780	1.83	0.81	19
8/23/2021	4:42:52 PM	11.08	21840	1.83	0.80	20
8/23/2021	4:43:52 PM	11.08	21900	1.83	0.80	20
8/23/2021	4:44:52 PM	11.08	21960	1.83	0.80	20
8/23/2021	4:45:52 PM	11.09	22020	1.82	0.80	20
8/23/2021	4:46:52 PM	11.09	22080	1.82	0.80	20
8/23/2021	4:47:52 PM	11.09	22140	1.82	0.80	20
8/23/2021	4:48:52 PM	11.09	22200	1.82	0.80	20
8/23/2021	4:49:52 PM	11.09	22260	1.82	0.80	20
8/23/2021	4:50:52 PM	11.09	22320	1.82	0.80	20
8/23/2021	4:51:52 PM	11.09	22380	1.82	0.80	20
8/23/2021	4:52:52 PM	11.09	22440	1.82	0.80	20
8/23/2021	4:53:52 PM	11.09	22500	1.82	0.80	20
8/23/2021	4:54:52 PM	11.09	22560	1.82	0.80	20
8/23/2021	4:55:52 PM	11.09	22620	1.82	0.80	20
8/23/2021	4:56:52 PM	11.10	22680	1.82	0.80	20
8/23/2021	4:57:52 PM	11.10	22740	1.81	0.80	20
8/23/2021	4:58:52 PM	11.10	22800	1.81	0.80	20
8/23/2021	4:59:52 PM	11.10	22860	1.81	0.80	20
8/23/2021	5:00:52 PM	11.10	22920	1.81	0.80	20
8/23/2021	5:01:52 PM	11.10	22980	1.81	0.80	20
8/23/2021	5:02:52 PM	11.10	23040	1.81	0.80	20
8/23/2021	5:03:52 PM	11.10	23100	1.81	0.80	20

8/23/2021	5:04:52 PM	11.10	23160	1.81	0.80	20
8/23/2021	5:05:52 PM	11.10	23220	1.81	0.80	20
8/23/2021	5:06:52 PM	11.10	23280	1.81	0.80	20
8/23/2021	5:07:52 PM	11.10	23340	1.81	0.80	20
8/23/2021	5:08:52 PM	11.10	23400	1.81	0.80	20
8/23/2021	5:09:52 PM	11.11	23460	1.80	0.80	20
8/23/2021	5:10:52 PM	11.11	23520	1.80	0.79	21
8/23/2021	5:11:52 PM	11.11	23580	1.80	0.79	21
8/23/2021	5:12:52 PM	11.11	23640	1.80	0.79	21
8/23/2021	5:13:52 PM	11.11	23700	1.80	0.79	21
8/23/2021	5:14:52 PM	11.11	23760	1.80	0.79	21
8/23/2021	5:15:52 PM	11.11	23820	1.80	0.79	21
8/23/2021	5:16:52 PM	11.11	23880	1.80	0.79	21
8/23/2021	5:17:52 PM	11.11	23940	1.80	0.79	21
8/23/2021	5:18:52 PM	11.11	24000	1.80	0.79	21
8/23/2021	5:19:52 PM	11.11	24060	1.80	0.79	21
8/23/2021	5:20:52 PM	11.11	24120	1.80	0.79	21
8/23/2021	5:21:52 PM	11.11	24180	1.80	0.79	21
8/23/2021	5:22:52 PM	11.12	24240	1.79	0.79	21
8/23/2021	5:23:52 PM	11.12	24300	1.79	0.79	21
8/23/2021	5:24:52 PM	11.12	24360	1.79	0.79	21
8/23/2021	5:25:52 PM	11.12	24420	1.79	0.79	21
8/23/2021	5:26:52 PM	11.12	24480	1.79	0.79	21
8/23/2021	5:27:52 PM	11.12	24540	1.79	0.79	21
8/23/2021	5:28:52 PM	11.12	24600	1.79	0.79	21
8/23/2021	5:29:52 PM	11.12	24660	1.79	0.79	21
8/23/2021	5:30:52 PM	11.12	24720	1.79	0.79	21
8/23/2021	5:31:52 PM	11.12	24780	1.79	0.79	21
8/23/2021	5:32:52 PM	11.12	24840	1.79	0.79	21
8/23/2021	5:33:52 PM	11.13	24900	1.79	0.79	21
8/23/2021	5:34:52 PM	11.13	24960	1.78	0.79	21
8/23/2021	5:35:52 PM	11.13	25020	1.78	0.79	21
8/23/2021	5:36:52 PM	11.13	25080	1.78	0.79	21
8/23/2021	5:37:52 PM	11.13	25140	1.78	0.79	21
8/23/2021	5:38:52 PM	11.13	25200	1.78	0.78	22
8/23/2021	5:39:52 PM	11.13	25260	1.78	0.78	22
8/23/2021	5:40:52 PM	11.13	25320	1.78	0.78	22
8/23/2021	5:41:52 PM	11.13	25380	1.78	0.78	22
8/23/2021	5:42:52 PM	11.13	25440	1.78	0.78	22
8/23/2021	5:43:52 PM	11.13	25500	1.78	0.78	22
8/23/2021	5:44:52 PM	11.13	25560	1.78	0.78	22
8/23/2021	5:45:52 PM	11.13	25620	1.78	0.78	22
8/23/2021	5:46:52 PM	11.13	25680	1.78	0.78	22
8/23/2021	5:47:52 PM	11.14	25740	1.77	0.78	22
8/23/2021	5:48:52 PM	11.14	25800	1.77	0.78	22
8/23/2021	5:49:52 PM	11.14	25860	1.77	0.78	22
8/23/2021	5:50:52 PM	11.14	25920	1.77	0.78	22
8/23/2021	5:51:52 PM	11.14	25980	1.77	0.78	22
8/23/2021	5:52:52 PM	11.14	26040	1.77	0.78	22
8/23/2021	5:53:52 PM	11.14	26100	1.77	0.78	22
8/23/2021	5:54:52 PM	11.14	26160	1.77	0.78	22
8/23/2021	5:55:52 PM	11.14	26220	1.77	0.78	22
8/23/2021	5:56:52 PM	11.14	26280	1.77	0.78	22
8/23/2021	5:57:52 PM	11.14	26340	1.77	0.78	22
8/23/2021	5:58:52 PM	11.15	26400	1.76	0.78	22
8/23/2021	5:59:52 PM	11.15	26460	1.76	0.78	22
8/23/2021	6:00:52 PM	11.15	26520	1.76	0.78	22
8/23/2021	6:01:52 PM	11.15	26580	1.76	0.78	22
8/23/2021	6:02:52 PM	11.15	26640	1.76	0.78	22
8/23/2021	6:03:52 PM	11.15	26700	1.76	0.78	22
8/23/2021	6:04:52 PM	11.15	26760	1.76	0.78	22
8/23/2021	6:05:52 PM	11.15	26820	1.76	0.78	22
8/23/2021	6:06:52 PM	11.15	26880	1.76	0.78	22
8/23/2021	6:07:52 PM	11.15	26940	1.76	0.78	22
8/23/2021	6:08:52 PM	11.15	27000	1.76	0.77	23
8/23/2021	6:09:52 PM	11.15	27060	1.76	0.77	23
8/23/2021	6:10:52 PM	11.15	27120	1.76	0.77	23
8/23/2021	6:11:52 PM	11.15	27180	1.76	0.77	23
8/23/2021	6:12:52 PM	11.15	27240	1.76	0.77	23
8/23/2021	6:13:52 PM	11.15	27300	1.76	0.77	23
8/23/2021	6:14:52 PM	11.16	27360	1.75	0.77	23
8/23/2021	6:15:52 PM	11.16	27420	1.75	0.77	23
8/23/2021	6:16:52 PM	11.16	27480	1.75	0.77	23
8/23/2021	6:17:52 PM	11.16	27540	1.75	0.77	23
8/23/2021	6:18:52 PM	11.16	27600	1.75	0.77	23
8/23/2021	6:19:52 PM	11.16	27660	1.75	0.77	23
8/23/2021	6:20:52 PM	11.16	27720	1.75	0.77	23
8/23/2021	6:21:52 PM	11.16	27780	1.75	0.77	23
8/23/2021	6:22:52 PM	11.16	27840	1.75	0.77	23

8/23/2021	6:23:52 PM	11.16	27900	1.75	0.77	23
8/23/2021	6:24:52 PM	11.16	27960	1.75	0.77	23
8/23/2021	6:25:52 PM	11.16	28020	1.75	0.77	23
8/23/2021	6:26:52 PM	11.16	28080	1.75	0.77	23
8/23/2021	6:27:52 PM	11.16	28140	1.75	0.77	23
8/23/2021	6:28:52 PM	11.16	28200	1.75	0.77	23
8/23/2021	6:29:52 PM	11.17	28260	1.74	0.77	23
8/23/2021	6:30:52 PM	11.17	28320	1.74	0.77	23
8/23/2021	6:31:52 PM	11.17	28380	1.74	0.77	23
8/23/2021	6:32:52 PM	11.17	28440	1.74	0.77	23
8/23/2021	6:33:52 PM	11.17	28500	1.74	0.77	23
8/23/2021	6:34:52 PM	11.17	28560	1.74	0.77	23
8/23/2021	6:35:52 PM	11.17	28620	1.74	0.77	23
8/23/2021	6:36:52 PM	11.17	28680	1.74	0.77	23
8/23/2021	6:37:52 PM	11.17	28740	1.74	0.77	23
8/23/2021	6:38:52 PM	11.17	28800	1.74	0.77	23
8/23/2021	6:39:52 PM	11.17	28860	1.74	0.76	24
8/23/2021	6:40:52 PM	11.17	28920	1.74	0.76	24
8/23/2021	6:41:52 PM	11.18	28980	1.73	0.76	24
8/23/2021	6:42:52 PM	11.18	29040	1.73	0.76	24
8/23/2021	6:43:52 PM	11.18	29100	1.73	0.76	24
8/23/2021	6:44:52 PM	11.18	29160	1.73	0.76	24
8/23/2021	6:45:52 PM	11.18	29220	1.73	0.76	24
8/23/2021	6:46:52 PM	11.18	29280	1.73	0.76	24
8/23/2021	6:47:52 PM	11.18	29340	1.73	0.76	24
8/23/2021	6:48:52 PM	11.18	29400	1.73	0.76	24
8/23/2021	6:49:52 PM	11.18	29460	1.73	0.76	24
8/23/2021	6:50:52 PM	11.18	29520	1.73	0.76	24
8/23/2021	6:51:52 PM	11.19	29580	1.72	0.76	24
8/23/2021	6:52:52 PM	11.19	29640	1.72	0.76	24
8/23/2021	6:53:52 PM	11.19	29700	1.72	0.76	24
8/23/2021	6:54:52 PM	11.19	29760	1.72	0.76	24
8/23/2021	6:55:52 PM	11.19	29820	1.72	0.76	24
8/23/2021	6:56:52 PM	11.19	29880	1.72	0.76	24
8/23/2021	6:57:52 PM	11.19	29940	1.72	0.76	24
8/23/2021	6:58:52 PM	11.19	30000	1.72	0.76	24
8/23/2021	6:59:52 PM	11.19	30060	1.72	0.76	24
8/23/2021	7:00:52 PM	11.19	30120	1.72	0.76	24
8/23/2021	7:01:52 PM	11.19	30180	1.72	0.76	24
8/23/2021	7:02:52 PM	11.19	30240	1.72	0.76	24
8/23/2021	7:03:52 PM	11.19	30300	1.72	0.76	24
8/23/2021	7:04:52 PM	11.19	30360	1.72	0.76	24
8/23/2021	7:05:52 PM	11.19	30420	1.72	0.76	24
8/23/2021	7:06:52 PM	11.19	30480	1.72	0.76	24
8/23/2021	7:07:52 PM	11.19	30540	1.72	0.76	24
8/23/2021	7:08:52 PM	11.20	30600	1.71	0.76	24
8/23/2021	7:09:52 PM	11.20	30660	1.71	0.76	24
8/23/2021	7:10:52 PM	11.20	30720	1.71	0.75	25
8/23/2021	7:11:52 PM	11.20	30780	1.71	0.75	25
8/23/2021	7:12:52 PM	11.20	30840	1.71	0.75	25
8/23/2021	7:13:52 PM	11.20	30900	1.71	0.75	25
8/23/2021	7:14:52 PM	11.20	30960	1.71	0.75	25
8/23/2021	7:15:52 PM	11.20	31020	1.71	0.75	25
8/23/2021	7:16:52 PM	11.20	31080	1.71	0.75	25
8/23/2021	7:17:52 PM	11.20	31140	1.71	0.75	25
8/23/2021	7:18:52 PM	11.20	31200	1.71	0.75	25
8/23/2021	7:19:52 PM	11.20	31260	1.71	0.75	25
8/23/2021	7:20:52 PM	11.21	31320	1.70	0.75	25
8/23/2021	7:21:52 PM	11.21	31380	1.70	0.75	25
8/23/2021	7:22:52 PM	11.21	31440	1.70	0.75	25
8/23/2021	7:23:52 PM	11.21	31500	1.70	0.75	25
8/23/2021	7:24:52 PM	11.21	31560	1.70	0.75	25
8/23/2021	7:25:52 PM	11.21	31620	1.70	0.75	25
8/23/2021	7:26:52 PM	11.21	31680	1.70	0.75	25
8/23/2021	7:27:52 PM	11.21	31740	1.70	0.75	25
8/23/2021	7:28:52 PM	11.21	31800	1.70	0.75	25
8/23/2021	7:29:52 PM	11.21	31860	1.70	0.75	25
8/23/2021	7:30:52 PM	11.21	31920	1.70	0.75	25
8/23/2021	7:31:52 PM	11.22	31980	1.69	0.75	25
8/23/2021	7:32:52 PM	11.22	32040	1.69	0.75	25
8/23/2021	7:33:52 PM	11.22	32100	1.69	0.75	25
8/23/2021	7:34:52 PM	11.22	32160	1.69	0.75	25
8/23/2021	7:35:52 PM	11.22	32220	1.69	0.75	25
8/23/2021	7:36:52 PM	11.22	32280	1.69	0.75	25
8/23/2021	7:37:52 PM	11.22	32340	1.69	0.75	25
8/23/2021	7:38:52 PM	11.22	32400	1.69	0.74	26
8/23/2021	7:39:52 PM	11.22	32460	1.69	0.74	26
8/23/2021	7:40:52 PM	11.22	32520	1.69	0.74	26
8/23/2021	7:41:52 PM	11.22	32580	1.69	0.74	26

8/23/2021	7:42:52 PM	11.22	32640	1.69	0.74	26
8/23/2021	7:43:52 PM	11.22	32700	1.69	0.74	26
8/23/2021	7:44:52 PM	11.22	32760	1.69	0.74	26
8/23/2021	7:45:52 PM	11.23	32820	1.68	0.74	26
8/23/2021	7:46:52 PM	11.23	32880	1.68	0.74	26
8/23/2021	7:47:52 PM	11.23	32940	1.68	0.74	26
8/23/2021	7:48:52 PM	11.23	33000	1.68	0.74	26
8/23/2021	7:49:52 PM	11.23	33060	1.68	0.74	26
8/23/2021	7:50:52 PM	11.23	33120	1.68	0.74	26
8/23/2021	7:51:52 PM	11.23	33180	1.68	0.74	26
8/23/2021	7:52:52 PM	11.23	33240	1.68	0.74	26
8/23/2021	7:53:52 PM	11.23	33300	1.68	0.74	26
8/23/2021	7:54:52 PM	11.23	33360	1.68	0.74	26
8/23/2021	7:55:52 PM	11.23	33420	1.68	0.74	26
8/23/2021	7:56:52 PM	11.23	33480	1.68	0.74	26
8/23/2021	7:57:52 PM	11.23	33540	1.68	0.74	26
8/23/2021	7:58:52 PM	11.24	33600	1.67	0.74	26
8/23/2021	7:59:52 PM	11.24	33660	1.67	0.74	26
8/23/2021	8:00:52 PM	11.24	33720	1.67	0.74	26
8/23/2021	8:01:52 PM	11.24	33780	1.67	0.74	26
8/23/2021	8:02:52 PM	11.24	33840	1.67	0.74	26
8/23/2021	8:03:52 PM	11.24	33900	1.67	0.74	26
8/23/2021	8:04:52 PM	11.24	33960	1.67	0.74	26
8/23/2021	8:05:52 PM	11.24	34020	1.67	0.74	26
8/23/2021	8:06:52 PM	11.24	34080	1.67	0.74	26
8/23/2021	8:07:52 PM	11.24	34140	1.67	0.73	27
8/23/2021	8:08:52 PM	11.24	34200	1.67	0.73	27
8/23/2021	8:09:52 PM	11.24	34260	1.67	0.73	27
8/23/2021	8:10:52 PM	11.24	34320	1.67	0.73	27
8/23/2021	8:11:52 PM	11.25	34380	1.66	0.73	27
8/23/2021	8:12:52 PM	11.25	34440	1.66	0.73	27
8/23/2021	8:13:52 PM	11.25	34500	1.66	0.73	27
8/23/2021	8:14:52 PM	11.25	34560	1.66	0.73	27
8/23/2021	8:15:52 PM	11.25	34620	1.66	0.73	27
8/23/2021	8:16:52 PM	11.25	34680	1.66	0.73	27
8/23/2021	8:17:52 PM	11.25	34740	1.66	0.73	27
8/23/2021	8:18:52 PM	11.25	34800	1.66	0.73	27
8/23/2021	8:19:52 PM	11.25	34860	1.66	0.73	27
8/23/2021	8:20:52 PM	11.25	34920	1.66	0.73	27
8/23/2021	8:21:52 PM	11.25	34980	1.66	0.73	27
8/23/2021	8:22:52 PM	11.25	35040	1.66	0.73	27
8/23/2021	8:23:52 PM	11.25	35100	1.66	0.73	27
8/23/2021	8:24:52 PM	11.26	35160	1.66	0.73	27
8/23/2021	8:25:52 PM	11.26	35220	1.65	0.73	27
8/23/2021	8:26:52 PM	11.26	35280	1.65	0.73	27
8/23/2021	8:27:52 PM	11.26	35340	1.65	0.73	27
8/23/2021	8:28:52 PM	11.26	35400	1.65	0.73	27
8/23/2021	8:29:52 PM	11.26	35460	1.65	0.73	27
8/23/2021	8:30:52 PM	11.26	35520	1.65	0.73	27
8/23/2021	8:31:52 PM	11.26	35580	1.65	0.73	27
8/23/2021	8:32:52 PM	11.26	35640	1.65	0.73	27
8/23/2021	8:33:52 PM	11.26	35700	1.65	0.73	27
8/23/2021	8:34:52 PM	11.26	35760	1.65	0.73	27
8/23/2021	8:35:52 PM	11.26	35820	1.65	0.73	27
8/23/2021	8:36:52 PM	11.26	35880	1.65	0.73	27
8/23/2021	8:37:52 PM	11.26	35940	1.65	0.72	28
8/23/2021	8:38:52 PM	11.27	36000	1.64	0.72	28
8/23/2021	8:39:52 PM	11.27	36060	1.64	0.72	28
8/23/2021	8:40:52 PM	11.27	36120	1.64	0.72	28
8/23/2021	8:41:52 PM	11.27	36180	1.64	0.72	28
8/23/2021	8:42:52 PM	11.27	36240	1.64	0.72	28
8/23/2021	8:43:52 PM	11.27	36300	1.64	0.72	28
8/23/2021	8:44:52 PM	11.27	36360	1.64	0.72	28
8/23/2021	8:45:52 PM	11.27	36420	1.64	0.72	28
8/23/2021	8:46:52 PM	11.27	36480	1.64	0.72	28
8/23/2021	8:47:52 PM	11.27	36540	1.64	0.72	28
8/23/2021	8:48:52 PM	11.27	36600	1.64	0.72	28
8/23/2021	8:49:52 PM	11.27	36660	1.64	0.72	28
8/23/2021	8:50:52 PM	11.27	36720	1.64	0.72	28
8/23/2021	8:51:52 PM	11.28	36780	1.63	0.72	28
8/23/2021	8:52:52 PM	11.28	36840	1.63	0.72	28
8/23/2021	8:53:52 PM	11.28	36900	1.63	0.72	28
8/23/2021	8:54:52 PM	11.28	36960	1.63	0.72	28
8/23/2021	8:55:52 PM	11.28	37020	1.63	0.72	28
8/23/2021	8:56:52 PM	11.28	37080	1.63	0.72	28
8/23/2021	8:57:52 PM	11.28	37140	1.63	0.72	28
8/23/2021	8:58:52 PM	11.28	37200	1.63	0.72	28
8/23/2021	8:59:52 PM	11.28	37260	1.63	0.72	28
8/23/2021	9:00:52 PM	11.28	37320	1.63	0.72	28

8/23/2021	9:01:52 PM	11.28	37380	1.63	0.72	28
8/23/2021	9:02:52 PM	11.28	37440	1.63	0.72	28
8/23/2021	9:03:52 PM	11.29	37500	1.63	0.72	28
8/23/2021	9:04:52 PM	11.29	37560	1.62	0.72	28
8/23/2021	9:05:52 PM	11.29	37620	1.62	0.72	28
8/23/2021	9:06:52 PM	11.29	37680	1.62	0.72	28
8/23/2021	9:07:52 PM	11.29	37740	1.62	0.71	29
8/23/2021	9:08:52 PM	11.29	37800	1.62	0.71	29
8/23/2021	9:09:52 PM	11.29	37860	1.62	0.71	29
8/23/2021	9:10:52 PM	11.29	37920	1.62	0.71	29
8/23/2021	9:11:52 PM	11.29	37980	1.62	0.71	29
8/23/2021	9:12:52 PM	11.29	38040	1.62	0.71	29
8/23/2021	9:13:52 PM	11.29	38100	1.62	0.71	29
8/23/2021	9:14:52 PM	11.29	38160	1.62	0.71	29
8/23/2021	9:15:52 PM	11.29	38220	1.62	0.71	29
8/23/2021	9:16:52 PM	11.29	38280	1.62	0.71	29
8/23/2021	9:17:52 PM	11.30	38340	1.62	0.71	29
8/23/2021	9:18:52 PM	11.30	38400	1.61	0.71	29
8/23/2021	9:19:52 PM	11.30	38460	1.61	0.71	29
8/23/2021	9:20:52 PM	11.30	38520	1.61	0.71	29
8/23/2021	9:21:52 PM	11.30	38580	1.61	0.71	29
8/23/2021	9:22:52 PM	11.30	38640	1.61	0.71	29
8/23/2021	9:23:52 PM	11.30	38700	1.61	0.71	29
8/23/2021	9:24:52 PM	11.30	38760	1.61	0.71	29
8/23/2021	9:25:52 PM	11.30	38820	1.61	0.71	29
8/23/2021	9:26:52 PM	11.30	38880	1.61	0.71	29
8/23/2021	9:27:52 PM	11.30	38940	1.61	0.71	29
8/23/2021	9:28:52 PM	11.30	39000	1.61	0.71	29
8/23/2021	9:29:52 PM	11.30	39060	1.61	0.71	29
8/23/2021	9:30:52 PM	11.31	39120	1.60	0.71	29
8/23/2021	9:31:52 PM	11.31	39180	1.60	0.71	29
8/23/2021	9:32:52 PM	11.31	39240	1.60	0.71	29
8/23/2021	9:33:52 PM	11.31	39300	1.60	0.71	29
8/23/2021	9:34:52 PM	11.31	39360	1.60	0.71	29
8/23/2021	9:35:52 PM	11.31	39420	1.60	0.71	29
8/23/2021	9:36:52 PM	11.31	39480	1.60	0.71	29
8/23/2021	9:37:52 PM	11.31	39540	1.60	0.71	29
8/23/2021	9:38:52 PM	11.31	39600	1.60	0.71	29
8/23/2021	9:39:52 PM	11.31	39660	1.60	0.71	29
8/23/2021	9:40:52 PM	11.31	39720	1.60	0.70	30
8/23/2021	9:41:52 PM	11.31	39780	1.60	0.70	30
8/23/2021	9:42:52 PM	11.31	39840	1.60	0.70	30
8/23/2021	9:43:52 PM	11.31	39900	1.60	0.70	30
8/23/2021	9:44:52 PM	11.31	39960	1.60	0.70	30
8/23/2021	9:45:52 PM	11.31	40020	1.60	0.70	30
8/23/2021	9:46:52 PM	11.31	40080	1.60	0.70	30
8/23/2021	9:47:52 PM	11.31	40140	1.60	0.70	30
8/23/2021	9:48:52 PM	11.32	40200	1.59	0.70	30
8/23/2021	9:49:52 PM	11.32	40260	1.59	0.70	30
8/23/2021	9:50:52 PM	11.32	40320	1.59	0.70	30
8/23/2021	9:51:52 PM	11.32	40380	1.59	0.70	30
8/23/2021	9:52:52 PM	11.32	40440	1.59	0.70	30
8/23/2021	9:53:52 PM	11.32	40500	1.59	0.70	30
8/23/2021	9:54:52 PM	11.32	40560	1.59	0.70	30
8/23/2021	9:55:52 PM	11.32	40620	1.59	0.70	30
8/23/2021	9:56:52 PM	11.32	40680	1.59	0.70	30
8/23/2021	9:57:52 PM	11.32	40740	1.59	0.70	30
8/23/2021	9:58:52 PM	11.32	40800	1.59	0.70	30
8/23/2021	9:59:52 PM	11.32	40860	1.59	0.70	30
8/23/2021	10:00:52 PM	11.32	40920	1.59	0.70	30
8/23/2021	10:01:52 PM	11.32	40980	1.59	0.70	30
8/23/2021	10:02:52 PM	11.32	41040	1.59	0.70	30
8/23/2021	10:03:52 PM	11.33	41100	1.58	0.70	30
8/23/2021	10:04:52 PM	11.33	41160	1.58	0.70	30
8/23/2021	10:05:52 PM	11.33	41220	1.58	0.70	30
8/23/2021	10:06:52 PM	11.33	41280	1.58	0.70	30
8/23/2021	10:07:52 PM	11.33	41340	1.58	0.70	30
8/23/2021	10:08:52 PM	11.33	41400	1.58	0.70	30
8/23/2021	10:09:52 PM	11.33	41460	1.58	0.70	30
8/23/2021	10:10:52 PM	11.33	41520	1.58	0.70	30
8/23/2021	10:11:52 PM	11.33	41580	1.58	0.70	30
8/23/2021	10:12:52 PM	11.33	41640	1.58	0.70	30
8/23/2021	10:13:52 PM	11.33	41700	1.58	0.70	30
8/23/2021	10:14:52 PM	11.33	41760	1.58	0.70	30
8/23/2021	10:15:52 PM	11.33	41820	1.58	0.70	30
8/23/2021	10:16:52 PM	11.33	41880	1.58	0.69	31
8/23/2021	10:17:52 PM	11.33	41940	1.58	0.69	31
8/23/2021	10:18:52 PM	11.33	42000	1.58	0.69	31
8/23/2021	10:19:52 PM	11.33	42060	1.58	0.69	31

8/23/2021	10:20:52 PM	11.34	42120	1.57	0.69	31
8/23/2021	10:21:52 PM	11.34	42180	1.57	0.69	31
8/23/2021	10:22:52 PM	11.34	42240	1.57	0.69	31
8/23/2021	10:23:52 PM	11.34	42300	1.57	0.69	31
8/23/2021	10:24:52 PM	11.34	42360	1.57	0.69	31
8/23/2021	10:25:52 PM	11.34	42420	1.57	0.69	31
8/23/2021	10:26:52 PM	11.34	42480	1.57	0.69	31
8/23/2021	10:27:52 PM	11.34	42540	1.57	0.69	31
8/23/2021	10:28:52 PM	11.34	42600	1.57	0.69	31
8/23/2021	10:29:52 PM	11.34	42660	1.57	0.69	31
8/23/2021	10:30:52 PM	11.34	42720	1.57	0.69	31
8/23/2021	10:31:52 PM	11.34	42780	1.57	0.69	31
8/23/2021	10:32:52 PM	11.34	42840	1.57	0.69	31
8/23/2021	10:33:52 PM	11.34	42900	1.57	0.69	31
8/23/2021	10:34:52 PM	11.35	42960	1.56	0.69	31
8/23/2021	10:35:52 PM	11.35	43020	1.56	0.69	31
8/23/2021	10:36:52 PM	11.35	43080	1.56	0.69	31
8/23/2021	10:37:52 PM	11.35	43140	1.56	0.69	31
8/23/2021	10:38:52 PM	11.35	43200	1.56	0.69	31
8/23/2021	10:39:52 PM	11.35	43260	1.56	0.69	31
8/23/2021	10:40:52 PM	11.35	43320	1.56	0.69	31
8/23/2021	10:41:52 PM	11.35	43380	1.56	0.69	31
8/23/2021	10:42:52 PM	11.35	43440	1.56	0.69	31
8/23/2021	10:43:52 PM	11.35	43500	1.56	0.69	31
8/23/2021	10:44:52 PM	11.35	43560	1.56	0.69	31
8/23/2021	10:45:52 PM	11.35	43620	1.56	0.69	31
8/23/2021	10:46:52 PM	11.35	43680	1.56	0.69	31
8/23/2021	10:47:52 PM	11.35	43740	1.56	0.69	31
8/23/2021	10:48:52 PM	11.35	43800	1.56	0.69	31
8/23/2021	10:49:52 PM	11.35	43860	1.56	0.69	31
8/23/2021	10:50:52 PM	11.36	43920	1.55	0.68	32
8/23/2021	10:51:52 PM	11.36	43980	1.55	0.68	32
8/23/2021	10:52:52 PM	11.36	44040	1.55	0.68	32
8/23/2021	10:53:52 PM	11.36	44100	1.55	0.68	32
8/23/2021	10:54:52 PM	11.36	44160	1.55	0.68	32
8/23/2021	10:55:52 PM	11.36	44220	1.55	0.68	32
8/23/2021	10:56:52 PM	11.36	44280	1.55	0.68	32
8/23/2021	10:57:52 PM	11.36	44340	1.55	0.68	32
8/23/2021	10:58:52 PM	11.36	44400	1.55	0.68	32
8/23/2021	10:59:52 PM	11.36	44460	1.55	0.68	32
8/23/2021	11:00:52 PM	11.36	44520	1.55	0.68	32
8/23/2021	11:01:52 PM	11.36	44580	1.55	0.68	32
8/23/2021	11:02:52 PM	11.36	44640	1.55	0.68	32
8/23/2021	11:03:52 PM	11.36	44700	1.55	0.68	32
8/23/2021	11:04:52 PM	11.37	44760	1.54	0.68	32
8/23/2021	11:05:52 PM	11.37	44820	1.54	0.68	32
8/23/2021	11:06:52 PM	11.37	44880	1.54	0.68	32
8/23/2021	11:07:52 PM	11.37	44940	1.54	0.68	32
8/23/2021	11:08:52 PM	11.37	45000	1.54	0.68	32
8/23/2021	11:09:52 PM	11.37	45060	1.54	0.68	32
8/23/2021	11:10:52 PM	11.37	45120	1.54	0.68	32
8/23/2021	11:11:52 PM	11.37	45180	1.54	0.68	32
8/23/2021	11:12:52 PM	11.37	45240	1.54	0.68	32
8/23/2021	11:13:52 PM	11.37	45300	1.54	0.68	32
8/23/2021	11:14:52 PM	11.37	45360	1.54	0.68	32
8/23/2021	11:15:52 PM	11.37	45420	1.54	0.68	32
8/23/2021	11:16:52 PM	11.37	45480	1.54	0.68	32
8/23/2021	11:17:52 PM	11.37	45540	1.54	0.68	32
8/23/2021	11:18:52 PM	11.37	45600	1.54	0.68	32
8/23/2021	11:19:52 PM	11.37	45660	1.54	0.68	32
8/23/2021	11:20:52 PM	11.37	45720	1.54	0.68	32
8/23/2021	11:21:52 PM	11.38	45780	1.53	0.68	32
8/23/2021	11:22:52 PM	11.38	45840	1.53	0.68	32
8/23/2021	11:23:52 PM	11.38	45900	1.53	0.68	32
8/23/2021	11:24:52 PM	11.38	45960	1.53	0.68	32
8/23/2021	11:25:52 PM	11.38	46020	1.53	0.68	32
8/23/2021	11:26:52 PM	11.38	46080	1.53	0.67	33
8/23/2021	11:27:52 PM	11.38	46140	1.53	0.67	33
8/23/2021	11:28:52 PM	11.38	46200	1.53	0.67	33
8/23/2021	11:29:52 PM	11.38	46260	1.53	0.67	33
8/23/2021	11:30:52 PM	11.38	46320	1.53	0.67	33
8/23/2021	11:31:52 PM	11.38	46380	1.53	0.67	33
8/23/2021	11:32:52 PM	11.38	46440	1.53	0.67	33
8/23/2021	11:33:52 PM	11.38	46500	1.53	0.67	33
8/23/2021	11:34:52 PM	11.38	46560	1.53	0.67	33
8/23/2021	11:35:52 PM	11.39	46620	1.52	0.67	33
8/23/2021	11:36:52 PM	11.39	46680	1.52	0.67	33
8/23/2021	11:37:52 PM	11.39	46740	1.52	0.67	33
8/23/2021	11:38:52 PM	11.39	46800	1.52	0.67	33

8/23/2021	11:39:52 PM	11.39	46860	1.52	0.67	33
8/23/2021	11:40:52 PM	11.39	46920	1.52	0.67	33
8/23/2021	11:41:52 PM	11.39	46980	1.52	0.67	33
8/23/2021	11:42:52 PM	11.39	47040	1.52	0.67	33
8/23/2021	11:43:52 PM	11.39	47100	1.52	0.67	33
8/23/2021	11:44:52 PM	11.39	47160	1.52	0.67	33
8/23/2021	11:45:52 PM	11.39	47220	1.52	0.67	33
8/23/2021	11:46:52 PM	11.39	47280	1.52	0.67	33
8/23/2021	11:47:52 PM	11.39	47340	1.52	0.67	33
8/23/2021	11:48:52 PM	11.39	47400	1.52	0.67	33
8/23/2021	11:49:52 PM	11.40	47460	1.51	0.67	33
8/23/2021	11:50:52 PM	11.40	47520	1.51	0.67	33
8/23/2021	11:51:52 PM	11.40	47580	1.51	0.67	33
8/23/2021	11:52:52 PM	11.40	47640	1.51	0.67	33
8/23/2021	11:53:52 PM	11.40	47700	1.51	0.67	33
8/23/2021	11:54:52 PM	11.40	47760	1.51	0.67	33
8/23/2021	11:55:52 PM	11.40	47820	1.51	0.67	33
8/23/2021	11:56:52 PM	11.40	47880	1.51	0.67	33
8/23/2021	11:57:52 PM	11.40	47940	1.51	0.67	33
8/23/2021	11:58:52 PM	11.40	48000	1.51	0.67	33
8/23/2021	11:59:52 PM	11.40	48060	1.51	0.66	34
8/24/2021	12:00:52 AM	11.40	48120	1.51	0.66	34
8/24/2021	12:01:52 AM	11.40	48180	1.51	0.66	34
8/24/2021	12:02:52 AM	11.40	48240	1.51	0.66	34
8/24/2021	12:03:52 AM	11.40	48300	1.51	0.66	34
8/24/2021	12:04:52 AM	11.40	48360	1.51	0.66	34
8/24/2021	12:05:52 AM	11.40	48420	1.51	0.66	34
8/24/2021	12:06:52 AM	11.41	48480	1.50	0.66	34
8/24/2021	12:07:52 AM	11.41	48540	1.50	0.66	34
8/24/2021	12:08:52 AM	11.41	48600	1.50	0.66	34
8/24/2021	12:09:52 AM	11.41	48660	1.50	0.66	34
8/24/2021	12:10:52 AM	11.41	48720	1.50	0.66	34
8/24/2021	12:11:52 AM	11.41	48780	1.50	0.66	34
8/24/2021	12:12:52 AM	11.41	48840	1.50	0.66	34
8/24/2021	12:13:52 AM	11.41	48900	1.50	0.66	34
8/24/2021	12:14:52 AM	11.41	48960	1.50	0.66	34
8/24/2021	12:15:52 AM	11.41	49020	1.50	0.66	34
8/24/2021	12:16:52 AM	11.41	49080	1.50	0.66	34
8/24/2021	12:17:52 AM	11.41	49140	1.50	0.66	34
8/24/2021	12:18:52 AM	11.41	49200	1.50	0.66	34
8/24/2021	12:19:52 AM	11.41	49260	1.50	0.66	34
8/24/2021	12:20:52 AM	11.42	49320	1.49	0.66	34
8/24/2021	12:21:52 AM	11.42	49380	1.49	0.66	34
8/24/2021	12:22:52 AM	11.42	49440	1.49	0.66	34
8/24/2021	12:23:52 AM	11.42	49500	1.49	0.66	34
8/24/2021	12:24:52 AM	11.42	49560	1.49	0.66	34
8/24/2021	12:25:52 AM	11.42	49620	1.49	0.66	34
8/24/2021	12:26:52 AM	11.42	49680	1.49	0.66	34
8/24/2021	12:27:52 AM	11.42	49740	1.49	0.66	34
8/24/2021	12:28:52 AM	11.42	49800	1.49	0.66	34
8/24/2021	12:29:52 AM	11.42	49860	1.49	0.66	34
8/24/2021	12:30:52 AM	11.42	49920	1.49	0.66	34
8/24/2021	12:31:52 AM	11.42	49980	1.49	0.66	34
8/24/2021	12:32:52 AM	11.42	50040	1.49	0.66	34
8/24/2021	12:33:52 AM	11.42	50100	1.49	0.66	34
8/24/2021	12:34:52 AM	11.42	50160	1.49	0.65	35
8/24/2021	12:35:52 AM	11.42	50220	1.49	0.65	35
8/24/2021	12:36:52 AM	11.43	50280	1.48	0.65	35
8/24/2021	12:37:52 AM	11.43	50340	1.48	0.65	35
8/24/2021	12:38:52 AM	11.43	50400	1.48	0.65	35
8/24/2021	12:39:52 AM	11.43	50460	1.48	0.65	35
8/24/2021	12:40:52 AM	11.43	50520	1.48	0.65	35
8/24/2021	12:41:52 AM	11.43	50580	1.48	0.65	35
8/24/2021	12:42:52 AM	11.43	50640	1.48	0.65	35
8/24/2021	12:43:52 AM	11.43	50700	1.48	0.65	35
8/24/2021	12:44:52 AM	11.43	50760	1.48	0.65	35
8/24/2021	12:45:52 AM	11.43	50820	1.48	0.65	35
8/24/2021	12:46:52 AM	11.43	50880	1.48	0.65	35
8/24/2021	12:47:52 AM	11.43	50940	1.48	0.65	35
8/24/2021	12:48:52 AM	11.43	51000	1.48	0.65	35
8/24/2021	12:49:52 AM	11.44	51060	1.47	0.65	35
8/24/2021	12:50:52 AM	11.44	51120	1.47	0.65	35
8/24/2021	12:51:52 AM	11.44	51180	1.47	0.65	35
8/24/2021	12:52:52 AM	11.44	51240	1.47	0.65	35
8/24/2021	12:53:52 AM	11.44	51300	1.47	0.65	35
8/24/2021	12:54:52 AM	11.44	51360	1.47	0.65	35
8/24/2021	12:55:52 AM	11.44	51420	1.47	0.65	35
8/24/2021	12:56:52 AM	11.44	51480	1.47	0.65	35
8/24/2021	12:57:52 AM	11.44	51540	1.47	0.65	35

8/24/2021	12:58:52 AM	11.44	51600	1.47	0.65	35
8/24/2021	12:59:52 AM	11.44	51660	1.47	0.65	35
8/24/2021	1:00:52 AM	11.44	51720	1.47	0.65	35
8/24/2021	1:01:52 AM	11.44	51780	1.47	0.65	35
8/24/2021	1:02:52 AM	11.44	51840	1.47	0.65	35
8/24/2021	1:03:52 AM	11.44	51900	1.47	0.65	35
8/24/2021	1:04:52 AM	11.44	51960	1.47	0.65	35
8/24/2021	1:05:52 AM	11.45	52020	1.46	0.65	35
8/24/2021	1:06:52 AM	11.45	52080	1.46	0.64	36
8/24/2021	1:07:52 AM	11.45	52140	1.46	0.64	36
8/24/2021	1:08:52 AM	11.45	52200	1.46	0.64	36
8/24/2021	1:09:52 AM	11.45	52260	1.46	0.64	36
8/24/2021	1:10:52 AM	11.45	52320	1.46	0.64	36
8/24/2021	1:11:52 AM	11.45	52380	1.46	0.64	36
8/24/2021	1:12:52 AM	11.45	52440	1.46	0.64	36
8/24/2021	1:13:52 AM	11.45	52500	1.46	0.64	36
8/24/2021	1:14:52 AM	11.45	52560	1.46	0.64	36
8/24/2021	1:15:52 AM	11.45	52620	1.46	0.64	36
8/24/2021	1:16:52 AM	11.45	52680	1.46	0.64	36
8/24/2021	1:17:52 AM	11.45	52740	1.46	0.64	36
8/24/2021	1:18:52 AM	11.45	52800	1.46	0.64	36
8/24/2021	1:19:52 AM	11.45	52860	1.46	0.64	36
8/24/2021	1:20:52 AM	11.45	52920	1.46	0.64	36
8/24/2021	1:21:52 AM	11.46	52980	1.45	0.64	36
8/24/2021	1:22:52 AM	11.46	53040	1.45	0.64	36
8/24/2021	1:23:52 AM	11.46	53100	1.45	0.64	36
8/24/2021	1:24:52 AM	11.46	53160	1.45	0.64	36
8/24/2021	1:25:52 AM	11.46	53220	1.45	0.64	36
8/24/2021	1:26:52 AM	11.46	53280	1.45	0.64	36
8/24/2021	1:27:52 AM	11.46	53340	1.45	0.64	36
8/24/2021	1:28:52 AM	11.46	53400	1.45	0.64	36
8/24/2021	1:29:52 AM	11.46	53460	1.45	0.64	36
8/24/2021	1:30:52 AM	11.46	53520	1.45	0.64	36
8/24/2021	1:31:52 AM	11.46	53580	1.45	0.64	36
8/24/2021	1:32:52 AM	11.46	53640	1.45	0.64	36
8/24/2021	1:33:52 AM	11.46	53700	1.45	0.64	36
8/24/2021	1:34:52 AM	11.46	53760	1.45	0.64	36
8/24/2021	1:35:52 AM	11.46	53820	1.45	0.64	36
8/24/2021	1:36:52 AM	11.46	53880	1.45	0.64	36
8/24/2021	1:37:52 AM	11.46	53940	1.45	0.64	36
8/24/2021	1:38:52 AM	11.47	54000	1.44	0.64	36
8/24/2021	1:39:52 AM	11.47	54060	1.44	0.64	36
8/24/2021	1:40:52 AM	11.47	54120	1.44	0.64	36
8/24/2021	1:41:52 AM	11.47	54180	1.44	0.64	36
8/24/2021	1:42:52 AM	11.47	54240	1.44	0.64	36
8/24/2021	1:43:52 AM	11.47	54300	1.44	0.64	36
8/24/2021	1:44:52 AM	11.47	54360	1.44	0.63	37
8/24/2021	1:45:52 AM	11.47	54420	1.44	0.63	37
8/24/2021	1:46:52 AM	11.47	54480	1.44	0.63	37
8/24/2021	1:47:52 AM	11.47	54540	1.44	0.63	37
8/24/2021	1:48:52 AM	11.47	54600	1.44	0.63	37
8/24/2021	1:49:52 AM	11.47	54660	1.44	0.63	37
8/24/2021	1:50:52 AM	11.47	54720	1.44	0.63	37
8/24/2021	1:51:52 AM	11.47	54780	1.44	0.63	37
8/24/2021	1:52:52 AM	11.47	54840	1.44	0.63	37
8/24/2021	1:53:52 AM	11.47	54900	1.44	0.63	37
8/24/2021	1:54:52 AM	11.48	54960	1.43	0.63	37
8/24/2021	1:55:52 AM	11.48	55020	1.43	0.63	37
8/24/2021	1:56:52 AM	11.48	55080	1.43	0.63	37
8/24/2021	1:57:52 AM	11.48	55140	1.43	0.63	37
8/24/2021	1:58:52 AM	11.48	55200	1.43	0.63	37
8/24/2021	1:59:52 AM	11.48	55260	1.43	0.63	37
8/24/2021	2:00:52 AM	11.48	55320	1.43	0.63	37
8/24/2021	2:01:52 AM	11.48	55380	1.43	0.63	37
8/24/2021	2:02:52 AM	11.48	55440	1.43	0.63	37
8/24/2021	2:03:52 AM	11.48	55500	1.43	0.63	37
8/24/2021	2:04:52 AM	11.48	55560	1.43	0.63	37
8/24/2021	2:05:52 AM	11.48	55620	1.43	0.63	37
8/24/2021	2:06:52 AM	11.48	55680	1.43	0.63	37
8/24/2021	2:07:52 AM	11.48	55740	1.43	0.63	37
8/24/2021	2:08:52 AM	11.48	55800	1.43	0.63	37
8/24/2021	2:09:52 AM	11.49	55860	1.42	0.63	37
8/24/2021	2:10:52 AM	11.49	55920	1.42	0.63	37
8/24/2021	2:11:52 AM	11.49	55980	1.42	0.63	37
8/24/2021	2:12:52 AM	11.49	56040	1.42	0.63	37
8/24/2021	2:13:52 AM	11.49	56100	1.42	0.63	37
8/24/2021	2:14:52 AM	11.49	56160	1.42	0.63	37
8/24/2021	2:15:52 AM	11.49	56220	1.42	0.63	37
8/24/2021	2:16:52 AM	11.49	56280	1.42	0.63	37

8/24/2021	2:17:52 AM	11.49	56340	1.42	0.63	37
8/24/2021	2:18:52 AM	11.49	56400	1.42	0.63	37
8/24/2021	2:19:52 AM	11.49	56460	1.42	0.62	38
8/24/2021	2:20:52 AM	11.49	56520	1.42	0.62	38
8/24/2021	2:21:52 AM	11.49	56580	1.42	0.62	38
8/24/2021	2:22:52 AM	11.49	56640	1.42	0.62	38
8/24/2021	2:23:52 AM	11.49	56700	1.42	0.62	38
8/24/2021	2:24:52 AM	11.49	56760	1.42	0.62	38
8/24/2021	2:25:52 AM	11.50	56820	1.41	0.62	38
8/24/2021	2:26:52 AM	11.50	56880	1.41	0.62	38
8/24/2021	2:27:52 AM	11.50	56940	1.41	0.62	38
8/24/2021	2:28:52 AM	11.50	57000	1.41	0.62	38
8/24/2021	2:29:52 AM	11.50	57060	1.41	0.62	38
8/24/2021	2:30:52 AM	11.50	57120	1.41	0.62	38
8/24/2021	2:31:52 AM	11.50	57180	1.41	0.62	38
8/24/2021	2:32:52 AM	11.50	57240	1.41	0.62	38
8/24/2021	2:33:52 AM	11.50	57300	1.41	0.62	38
8/24/2021	2:34:52 AM	11.50	57360	1.41	0.62	38
8/24/2021	2:35:52 AM	11.50	57420	1.41	0.62	38
8/24/2021	2:36:52 AM	11.50	57480	1.41	0.62	38
8/24/2021	2:37:52 AM	11.50	57540	1.41	0.62	38
8/24/2021	2:38:52 AM	11.50	57600	1.41	0.62	38
8/24/2021	2:39:52 AM	11.51	57660	1.41	0.62	38
8/24/2021	2:40:52 AM	11.51	57720	1.40	0.62	38
8/24/2021	2:41:52 AM	11.51	57780	1.40	0.62	38
8/24/2021	2:42:52 AM	11.51	57840	1.40	0.62	38
8/24/2021	2:43:52 AM	11.51	57900	1.40	0.62	38
8/24/2021	2:44:52 AM	11.51	57960	1.40	0.62	38
8/24/2021	2:45:52 AM	11.51	58020	1.40	0.62	38
8/24/2021	2:46:52 AM	11.51	58080	1.40	0.62	38
8/24/2021	2:47:52 AM	11.51	58140	1.40	0.62	38
8/24/2021	2:48:52 AM	11.51	58200	1.40	0.62	38
8/24/2021	2:49:52 AM	11.51	58260	1.40	0.62	38
8/24/2021	2:50:52 AM	11.51	58320	1.40	0.62	38
8/24/2021	2:51:52 AM	11.51	58380	1.40	0.62	38
8/24/2021	2:52:52 AM	11.51	58440	1.40	0.62	38
8/24/2021	2:53:52 AM	11.51	58500	1.40	0.62	38
8/24/2021	2:54:52 AM	11.51	58560	1.40	0.61	39
8/24/2021	2:55:52 AM	11.52	58620	1.39	0.61	39
8/24/2021	2:56:52 AM	11.52	58680	1.39	0.61	39
8/24/2021	2:57:52 AM	11.52	58740	1.39	0.61	39
8/24/2021	2:58:52 AM	11.52	58800	1.39	0.61	39
8/24/2021	2:59:52 AM	11.52	58860	1.39	0.61	39
8/24/2021	3:00:52 AM	11.52	58920	1.39	0.61	39
8/24/2021	3:01:52 AM	11.52	58980	1.39	0.61	39
8/24/2021	3:02:52 AM	11.52	59040	1.39	0.61	39
8/24/2021	3:03:52 AM	11.52	59100	1.39	0.61	39
8/24/2021	3:04:52 AM	11.52	59160	1.39	0.61	39
8/24/2021	3:05:52 AM	11.52	59220	1.39	0.61	39
8/24/2021	3:06:52 AM	11.52	59280	1.39	0.61	39
8/24/2021	3:07:52 AM	11.52	59340	1.39	0.61	39
8/24/2021	3:08:52 AM	11.52	59400	1.39	0.61	39
8/24/2021	3:09:52 AM	11.53	59460	1.38	0.61	39
8/24/2021	3:10:52 AM	11.53	59520	1.38	0.61	39
8/24/2021	3:11:52 AM	11.53	59580	1.38	0.61	39
8/24/2021	3:12:52 AM	11.53	59640	1.38	0.61	39
8/24/2021	3:13:52 AM	11.53	59700	1.38	0.61	39
8/24/2021	3:14:52 AM	11.53	59760	1.38	0.61	39
8/24/2021	3:15:52 AM	11.53	59820	1.38	0.61	39
8/24/2021	3:16:52 AM	11.53	59880	1.38	0.61	39
8/24/2021	3:17:52 AM	11.53	59940	1.38	0.61	39
8/24/2021	3:18:52 AM	11.53	60000	1.38	0.61	39
8/24/2021	3:19:52 AM	11.53	60060	1.38	0.61	39
8/24/2021	3:20:52 AM	11.53	60120	1.38	0.61	39
8/24/2021	3:21:52 AM	11.53	60180	1.38	0.61	39
8/24/2021	3:22:52 AM	11.53	60240	1.38	0.61	39
8/24/2021	3:23:52 AM	11.54	60300	1.37	0.61	39
8/24/2021	3:24:52 AM	11.54	60360	1.37	0.61	39
8/24/2021	3:25:52 AM	11.54	60420	1.37	0.61	39
8/24/2021	3:26:52 AM	11.54	60480	1.37	0.60	40
8/24/2021	3:27:52 AM	11.54	60540	1.37	0.60	40
8/24/2021	3:28:52 AM	11.54	60600	1.37	0.60	40
8/24/2021	3:29:52 AM	11.54	60660	1.37	0.60	40
8/24/2021	3:30:52 AM	11.54	60720	1.37	0.60	40
8/24/2021	3:31:52 AM	11.54	60780	1.37	0.60	40
8/24/2021	3:32:52 AM	11.54	60840	1.37	0.60	40
8/24/2021	3:33:52 AM	11.54	60900	1.37	0.60	40
8/24/2021	3:34:52 AM	11.54	60960	1.37	0.60	40
8/24/2021	3:35:52 AM	11.54	61020	1.37	0.60	40

8/24/2021	3:36:52 AM	11.54	61080	1.37	0.60	40
8/24/2021	3:37:52 AM	11.55	61140	1.36	0.60	40
8/24/2021	3:38:52 AM	11.55	61200	1.36	0.60	40
8/24/2021	3:39:52 AM	11.55	61260	1.36	0.60	40
8/24/2021	3:40:52 AM	11.55	61320	1.36	0.60	40
8/24/2021	3:41:52 AM	11.55	61380	1.36	0.60	40
8/24/2021	3:42:52 AM	11.55	61440	1.36	0.60	40
8/24/2021	3:43:52 AM	11.55	61500	1.36	0.60	40
8/24/2021	3:44:52 AM	11.55	61560	1.36	0.60	40
8/24/2021	3:45:52 AM	11.55	61620	1.36	0.60	40
8/24/2021	3:46:52 AM	11.55	61680	1.36	0.60	40
8/24/2021	3:47:52 AM	11.55	61740	1.36	0.60	40
8/24/2021	3:48:52 AM	11.55	61800	1.36	0.60	40
8/24/2021	3:49:52 AM	11.55	61860	1.36	0.60	40
8/24/2021	3:50:52 AM	11.55	61920	1.36	0.60	40
8/24/2021	3:51:52 AM	11.55	61980	1.36	0.60	40
8/24/2021	3:52:52 AM	11.55	62040	1.36	0.60	40
8/24/2021	3:53:52 AM	11.56	62100	1.35	0.60	40
8/24/2021	3:54:52 AM	11.56	62160	1.35	0.60	40
8/24/2021	3:55:52 AM	11.56	62220	1.35	0.60	40
8/24/2021	3:56:52 AM	11.56	62280	1.35	0.60	40
8/24/2021	3:57:52 AM	11.56	62340	1.35	0.60	40
8/24/2021	3:58:52 AM	11.56	62400	1.35	0.60	40
8/24/2021	3:59:52 AM	11.56	62460	1.35	0.60	40
8/24/2021	4:00:52 AM	11.56	62520	1.35	0.59	41
8/24/2021	4:01:52 AM	11.56	62580	1.35	0.59	41
8/24/2021	4:02:52 AM	11.56	62640	1.35	0.59	41
8/24/2021	4:03:52 AM	11.56	62700	1.35	0.59	41
8/24/2021	4:04:52 AM	11.56	62760	1.35	0.59	41
8/24/2021	4:05:52 AM	11.56	62820	1.35	0.59	41
8/24/2021	4:06:52 AM	11.56	62880	1.35	0.59	41
8/24/2021	4:07:52 AM	11.57	62940	1.34	0.59	41
8/24/2021	4:08:52 AM	11.57	63000	1.34	0.59	41
8/24/2021	4:09:52 AM	11.57	63060	1.34	0.59	41
8/24/2021	4:10:52 AM	11.57	63120	1.34	0.59	41
8/24/2021	4:11:52 AM	11.57	63180	1.34	0.59	41
8/24/2021	4:12:52 AM	11.57	63240	1.34	0.59	41
8/24/2021	4:13:52 AM	11.57	63300	1.34	0.59	41
8/24/2021	4:14:52 AM	11.57	63360	1.34	0.59	41
8/24/2021	4:15:52 AM	11.57	63420	1.34	0.59	41
8/24/2021	4:16:52 AM	11.57	63480	1.34	0.59	41
8/24/2021	4:17:52 AM	11.57	63540	1.34	0.59	41
8/24/2021	4:18:52 AM	11.57	63600	1.34	0.59	41
8/24/2021	4:19:52 AM	11.57	63660	1.34	0.59	41
8/24/2021	4:20:52 AM	11.57	63720	1.34	0.59	41
8/24/2021	4:21:52 AM	11.57	63780	1.34	0.59	41
8/24/2021	4:22:52 AM	11.58	63840	1.33	0.59	41
8/24/2021	4:23:52 AM	11.58	63900	1.33	0.59	41
8/24/2021	4:24:52 AM	11.58	63960	1.33	0.59	41
8/24/2021	4:25:52 AM	11.58	64020	1.33	0.59	41
8/24/2021	4:26:52 AM	11.58	64080	1.33	0.59	41
8/24/2021	4:27:52 AM	11.58	64140	1.33	0.59	41
8/24/2021	4:28:52 AM	11.58	64200	1.33	0.59	41
8/24/2021	4:29:52 AM	11.58	64260	1.33	0.59	41
8/24/2021	4:30:52 AM	11.58	64320	1.33	0.59	41
8/24/2021	4:31:52 AM	11.58	64380	1.33	0.58	42
8/24/2021	4:32:52 AM	11.58	64440	1.33	0.58	42
8/24/2021	4:33:52 AM	11.58	64500	1.33	0.58	42
8/24/2021	4:34:52 AM	11.58	64560	1.33	0.58	42
8/24/2021	4:35:52 AM	11.59	64620	1.32	0.58	42
8/24/2021	4:36:52 AM	11.59	64680	1.32	0.58	42
8/24/2021	4:37:52 AM	11.59	64740	1.32	0.58	42
8/24/2021	4:38:52 AM	11.59	64800	1.32	0.58	42
8/24/2021	4:39:52 AM	11.59	64860	1.32	0.58	42
8/24/2021	4:40:52 AM	11.59	64920	1.32	0.58	42
8/24/2021	4:41:52 AM	11.59	64980	1.32	0.58	42
8/24/2021	4:42:52 AM	11.59	65040	1.32	0.58	42
8/24/2021	4:43:52 AM	11.59	65100	1.32	0.58	42
8/24/2021	4:44:52 AM	11.59	65160	1.32	0.58	42
8/24/2021	4:45:52 AM	11.59	65220	1.32	0.58	42
8/24/2021	4:46:52 AM	11.59	65280	1.32	0.58	42
8/24/2021	4:47:52 AM	11.59	65340	1.32	0.58	42
8/24/2021	4:48:52 AM	11.59	65400	1.32	0.58	42
8/24/2021	4:49:52 AM	11.59	65460	1.32	0.58	42
8/24/2021	4:50:52 AM	11.59	65520	1.32	0.58	42
8/24/2021	4:51:52 AM	11.59	65580	1.32	0.58	42
8/24/2021	4:52:52 AM	11.60	65640	1.31	0.58	42
8/24/2021	4:53:52 AM	11.60	65700	1.31	0.58	42
8/24/2021	4:54:52 AM	11.60	65760	1.31	0.58	42

8/24/2021	4:55:52 AM	11.60	65820	1.31	0.58	42
8/24/2021	4:56:52 AM	11.60	65880	1.31	0.58	42
8/24/2021	4:57:52 AM	11.60	65940	1.31	0.58	42
8/24/2021	4:58:52 AM	11.60	66000	1.31	0.58	42
8/24/2021	4:59:52 AM	11.60	66060	1.31	0.58	42
8/24/2021	5:00:52 AM	11.60	66120	1.31	0.58	42
8/24/2021	5:01:52 AM	11.60	66180	1.31	0.58	42
8/24/2021	5:02:52 AM	11.60	66240	1.31	0.58	42
8/24/2021	5:03:52 AM	11.60	66300	1.31	0.58	42
8/24/2021	5:04:52 AM	11.60	66360	1.31	0.58	42
8/24/2021	5:05:52 AM	11.60	66420	1.31	0.58	42
8/24/2021	5:06:52 AM	11.61	66480	1.30	0.57	43
8/24/2021	5:07:52 AM	11.61	66540	1.30	0.57	43
8/24/2021	5:08:52 AM	11.61	66600	1.30	0.57	43
8/24/2021	5:09:52 AM	11.61	66660	1.30	0.57	43
8/24/2021	5:10:52 AM	11.61	66720	1.30	0.57	43
8/24/2021	5:11:52 AM	11.61	66780	1.30	0.57	43
8/24/2021	5:12:52 AM	11.61	66840	1.30	0.57	43
8/24/2021	5:13:52 AM	11.61	66900	1.30	0.57	43
8/24/2021	5:14:52 AM	11.61	66960	1.30	0.57	43
8/24/2021	5:15:52 AM	11.61	67020	1.30	0.57	43
8/24/2021	5:16:52 AM	11.61	67080	1.30	0.57	43
8/24/2021	5:17:52 AM	11.61	67140	1.30	0.57	43
8/24/2021	5:18:52 AM	11.61	67200	1.30	0.57	43
8/24/2021	5:19:52 AM	11.61	67260	1.30	0.57	43
8/24/2021	5:20:52 AM	11.61	67320	1.30	0.57	43
8/24/2021	5:21:52 AM	11.62	67380	1.29	0.57	43
8/24/2021	5:22:52 AM	11.62	67440	1.29	0.57	43
8/24/2021	5:23:52 AM	11.62	67500	1.29	0.57	43
8/24/2021	5:24:52 AM	11.62	67560	1.29	0.57	43
8/24/2021	5:25:52 AM	11.62	67620	1.29	0.57	43
8/24/2021	5:26:52 AM	11.62	67680	1.29	0.57	43
8/24/2021	5:27:52 AM	11.62	67740	1.29	0.57	43
8/24/2021	5:28:52 AM	11.62	67800	1.29	0.57	43
8/24/2021	5:29:52 AM	11.62	67860	1.29	0.57	43
8/24/2021	5:30:52 AM	11.62	67920	1.29	0.57	43
8/24/2021	5:31:52 AM	11.62	67980	1.29	0.57	43
8/24/2021	5:32:52 AM	11.62	68040	1.29	0.57	43
8/24/2021	5:33:52 AM	11.62	68100	1.29	0.57	43
8/24/2021	5:34:52 AM	11.62	68160	1.29	0.57	43
8/24/2021	5:35:52 AM	11.63	68220	1.28	0.57	43
8/24/2021	5:36:52 AM	11.63	68280	1.28	0.57	43
8/24/2021	5:37:52 AM	11.63	68340	1.28	0.57	43
8/24/2021	5:38:52 AM	11.63	68400	1.28	0.57	43
8/24/2021	5:39:52 AM	11.63	68460	1.28	0.56	44
8/24/2021	5:40:52 AM	11.63	68520	1.28	0.56	44
8/24/2021	5:41:52 AM	11.63	68580	1.28	0.56	44
8/24/2021	5:42:52 AM	11.63	68640	1.28	0.56	44
8/24/2021	5:43:52 AM	11.63	68700	1.28	0.56	44
8/24/2021	5:44:52 AM	11.63	68760	1.28	0.56	44
8/24/2021	5:45:52 AM	11.63	68820	1.28	0.56	44
8/24/2021	5:46:52 AM	11.63	68880	1.28	0.56	44
8/24/2021	5:47:52 AM	11.63	68940	1.28	0.56	44
8/24/2021	5:48:52 AM	11.63	69000	1.28	0.56	44
8/24/2021	5:49:52 AM	11.64	69060	1.27	0.56	44
8/24/2021	5:50:52 AM	11.64	69120	1.27	0.56	44
8/24/2021	5:51:52 AM	11.64	69180	1.27	0.56	44
8/24/2021	5:52:52 AM	11.64	69240	1.27	0.56	44
8/24/2021	5:53:52 AM	11.64	69300	1.27	0.56	44
8/24/2021	5:54:52 AM	11.64	69360	1.27	0.56	44
8/24/2021	5:55:52 AM	11.64	69420	1.27	0.56	44
8/24/2021	5:56:52 AM	11.64	69480	1.27	0.56	44
8/24/2021	5:57:52 AM	11.64	69540	1.27	0.56	44
8/24/2021	5:58:52 AM	11.64	69600	1.27	0.56	44
8/24/2021	5:59:52 AM	11.64	69660	1.27	0.56	44
8/24/2021	6:00:52 AM	11.64	69720	1.27	0.56	44
8/24/2021	6:01:52 AM	11.64	69780	1.27	0.56	44
8/24/2021	6:02:52 AM	11.64	69840	1.27	0.56	44
8/24/2021	6:03:52 AM	11.65	69900	1.26	0.56	44
8/24/2021	6:04:52 AM	11.65	69960	1.26	0.56	44
8/24/2021	6:05:52 AM	11.65	70020	1.26	0.56	44
8/24/2021	6:06:52 AM	11.65	70080	1.26	0.56	44
8/24/2021	6:07:52 AM	11.65	70140	1.26	0.56	44
8/24/2021	6:08:52 AM	11.65	70200	1.26	0.56	44
8/24/2021	6:09:52 AM	11.65	70260	1.26	0.56	44
8/24/2021	6:10:52 AM	11.65	70320	1.26	0.56	44
8/24/2021	6:11:52 AM	11.65	70380	1.26	0.55	45
8/24/2021	6:12:52 AM	11.65	70440	1.26	0.55	45
8/24/2021	6:13:52 AM	11.65	70500	1.26	0.55	45

8/24/2021	6:14:52 AM	11.65	70560	1.26	0.55	45
8/24/2021	6:15:52 AM	11.65	70620	1.26	0.55	45
8/24/2021	6:16:52 AM	11.65	70680	1.26	0.55	45
8/24/2021	6:17:52 AM	11.66	70740	1.25	0.55	45
8/24/2021	6:18:52 AM	11.66	70800	1.25	0.55	45
8/24/2021	6:19:52 AM	11.66	70860	1.25	0.55	45
8/24/2021	6:20:52 AM	11.66	70920	1.25	0.55	45
8/24/2021	6:21:52 AM	11.66	70980	1.25	0.55	45
8/24/2021	6:22:52 AM	11.66	71040	1.25	0.55	45
8/24/2021	6:23:52 AM	11.66	71100	1.25	0.55	45
8/24/2021	6:24:52 AM	11.66	71160	1.25	0.55	45
8/24/2021	6:25:52 AM	11.66	71220	1.25	0.55	45
8/24/2021	6:26:52 AM	11.66	71280	1.25	0.55	45
8/24/2021	6:27:52 AM	11.66	71340	1.25	0.55	45
8/24/2021	6:28:52 AM	11.66	71400	1.25	0.55	45
8/24/2021	6:29:52 AM	11.66	71460	1.25	0.55	45
8/24/2021	6:30:52 AM	11.66	71520	1.25	0.55	45
8/24/2021	6:31:52 AM	11.66	71580	1.25	0.55	45
8/24/2021	6:32:52 AM	11.67	71640	1.24	0.55	45
8/24/2021	6:33:52 AM	11.67	71700	1.24	0.55	45
8/24/2021	6:34:52 AM	11.67	71760	1.24	0.55	45
8/24/2021	6:35:52 AM	11.67	71820	1.24	0.55	45
8/24/2021	6:36:52 AM	11.67	71880	1.24	0.55	45
8/24/2021	6:37:52 AM	11.67	71940	1.24	0.55	45
8/24/2021	6:38:52 AM	11.67	72000	1.24	0.55	45
8/24/2021	6:39:52 AM	11.67	72060	1.24	0.55	45
8/24/2021	6:40:52 AM	11.67	72120	1.24	0.55	45
8/24/2021	6:41:52 AM	11.67	72180	1.24	0.55	45
8/24/2021	6:42:52 AM	11.67	72240	1.24	0.55	45
8/24/2021	6:43:52 AM	11.67	72300	1.24	0.55	45
8/24/2021	6:44:52 AM	11.67	72360	1.24	0.54	46
8/24/2021	6:45:52 AM	11.67	72420	1.24	0.54	46
8/24/2021	6:46:52 AM	11.67	72480	1.24	0.54	46
8/24/2021	6:47:52 AM	11.68	72540	1.23	0.54	46
8/24/2021	6:48:52 AM	11.68	72600	1.23	0.54	46
8/24/2021	6:49:52 AM	11.68	72660	1.23	0.54	46
8/24/2021	6:50:52 AM	11.68	72720	1.23	0.54	46
8/24/2021	6:51:52 AM	11.68	72780	1.23	0.54	46
8/24/2021	6:52:52 AM	11.68	72840	1.23	0.54	46
8/24/2021	6:53:52 AM	11.68	72900	1.23	0.54	46
8/24/2021	6:54:52 AM	11.68	72960	1.23	0.54	46
8/24/2021	6:55:52 AM	11.68	73020	1.23	0.54	46
8/24/2021	6:56:52 AM	11.68	73080	1.23	0.54	46
8/24/2021	6:57:52 AM	11.68	73140	1.23	0.54	46
8/24/2021	6:58:52 AM	11.68	73200	1.23	0.54	46
8/24/2021	6:59:52 AM	11.68	73260	1.23	0.54	46
8/24/2021	7:00:52 AM	11.68	73320	1.23	0.54	46
8/24/2021	7:01:52 AM	11.69	73380	1.23	0.54	46
8/24/2021	7:02:52 AM	11.69	73440	1.22	0.54	46
8/24/2021	7:03:52 AM	11.69	73500	1.22	0.54	46
8/24/2021	7:04:52 AM	11.69	73560	1.22	0.54	46
8/24/2021	7:05:52 AM	11.69	73620	1.22	0.54	46
8/24/2021	7:06:52 AM	11.69	73680	1.22	0.54	46
8/24/2021	7:07:52 AM	11.69	73740	1.22	0.54	46
8/24/2021	7:08:52 AM	11.69	73800	1.22	0.54	46
8/24/2021	7:09:52 AM	11.69	73860	1.22	0.54	46
8/24/2021	7:10:52 AM	11.69	73920	1.22	0.54	46
8/24/2021	7:11:52 AM	11.69	73980	1.22	0.54	46
8/24/2021	7:12:52 AM	11.69	74040	1.22	0.54	46
8/24/2021	7:13:52 AM	11.69	74100	1.22	0.54	46
8/24/2021	7:14:52 AM	11.69	74160	1.22	0.54	46
8/24/2021	7:15:52 AM	11.70	74220	1.21	0.54	46
8/24/2021	7:16:52 AM	11.70	74280	1.21	0.53	47
8/24/2021	7:17:52 AM	11.70	74340	1.21	0.53	47
8/24/2021	7:18:52 AM	11.70	74400	1.21	0.53	47
8/24/2021	7:19:52 AM	11.70	74460	1.21	0.53	47
8/24/2021	7:20:52 AM	11.70	74520	1.21	0.53	47
8/24/2021	7:21:52 AM	11.70	74580	1.21	0.53	47
8/24/2021	7:22:52 AM	11.70	74640	1.21	0.53	47
8/24/2021	7:23:52 AM	11.70	74700	1.21	0.53	47
8/24/2021	7:24:52 AM	11.70	74760	1.21	0.53	47
8/24/2021	7:25:52 AM	11.70	74820	1.21	0.53	47
8/24/2021	7:26:52 AM	11.70	74880	1.21	0.53	47
8/24/2021	7:27:52 AM	11.70	74940	1.21	0.53	47
8/24/2021	7:28:52 AM	11.70	75000	1.21	0.53	47
8/24/2021	7:29:52 AM	11.70	75060	1.21	0.53	47
8/24/2021	7:30:52 AM	11.70	75120	1.21	0.53	47
8/24/2021	7:31:52 AM	11.71	75180	1.20	0.53	47
8/24/2021	7:32:52 AM	11.71	75240	1.20	0.53	47

8/24/2021	7:33:52 AM	11.71	75300	1.20	0.53	47
8/24/2021	7:34:52 AM	11.71	75360	1.20	0.53	47
8/24/2021	7:35:52 AM	11.71	75420	1.20	0.53	47
8/24/2021	7:36:52 AM	11.71	75480	1.20	0.53	47
8/24/2021	7:37:52 AM	11.71	75540	1.20	0.53	47
8/24/2021	7:38:52 AM	11.71	75600	1.20	0.53	47
8/24/2021	7:39:52 AM	11.71	75660	1.20	0.53	47
8/24/2021	7:40:52 AM	11.71	75720	1.20	0.53	47
8/24/2021	7:41:52 AM	11.71	75780	1.20	0.53	47
8/24/2021	7:42:52 AM	11.71	75840	1.20	0.53	47
8/24/2021	7:43:52 AM	11.71	75900	1.20	0.53	47
8/24/2021	7:44:52 AM	11.72	75960	1.20	0.53	47
8/24/2021	7:45:52 AM	11.72	76020	1.19	0.53	47
8/24/2021	7:46:52 AM	11.72	76080	1.19	0.53	47
8/24/2021	7:47:52 AM	11.72	76140	1.19	0.53	47
8/24/2021	7:48:52 AM	11.72	76200	1.19	0.53	47
8/24/2021	7:49:52 AM	11.72	76260	1.19	0.53	47
8/24/2021	7:50:52 AM	11.72	76320	1.19	0.52	48
8/24/2021	7:51:52 AM	11.72	76380	1.19	0.52	48
8/24/2021	7:52:52 AM	11.72	76440	1.19	0.52	48
8/24/2021	7:53:52 AM	11.72	76500	1.19	0.52	48
8/24/2021	7:54:52 AM	11.72	76560	1.19	0.52	48
8/24/2021	7:55:52 AM	11.72	76620	1.19	0.52	48
8/24/2021	7:56:52 AM	11.72	76680	1.19	0.52	48
8/24/2021	7:57:52 AM	11.72	76740	1.19	0.52	48
8/24/2021	7:58:52 AM	11.73	76800	1.19	0.52	48
8/24/2021	7:59:52 AM	11.73	76860	1.18	0.52	48
8/24/2021	8:00:52 AM	11.73	76920	1.18	0.52	48
8/24/2021	8:01:52 AM	11.73	76980	1.18	0.52	48
8/24/2021	8:02:52 AM	11.73	77040	1.18	0.52	48
8/24/2021	8:03:52 AM	11.73	77100	1.18	0.52	48
8/24/2021	8:04:52 AM	11.73	77160	1.18	0.52	48
8/24/2021	8:05:52 AM	11.73	77220	1.18	0.52	48
8/24/2021	8:06:52 AM	11.73	77280	1.18	0.52	48
8/24/2021	8:07:52 AM	11.73	77340	1.18	0.52	48
8/24/2021	8:08:52 AM	11.73	77400	1.18	0.52	48
8/24/2021	8:09:52 AM	11.73	77460	1.18	0.52	48
8/24/2021	8:10:52 AM	11.73	77520	1.18	0.52	48
8/24/2021	8:11:52 AM	11.73	77580	1.18	0.52	48
8/24/2021	8:12:52 AM	11.73	77640	1.18	0.52	48
8/24/2021	8:13:52 AM	11.73	77700	1.18	0.52	48
8/24/2021	8:14:52 AM	11.73	77760	1.18	0.52	48
8/24/2021	8:15:52 AM	11.73	77820	1.18	0.52	48
8/24/2021	8:16:52 AM	11.74	77880	1.17	0.52	48
8/24/2021	8:17:52 AM	11.74	77940	1.17	0.52	48
8/24/2021	8:18:52 AM	11.74	78000	1.17	0.52	48
8/24/2021	8:19:52 AM	11.74	78060	1.17	0.52	48
8/24/2021	8:20:52 AM	11.74	78120	1.17	0.52	48
8/24/2021	8:21:52 AM	11.74	78180	1.17	0.52	48
8/24/2021	8:22:52 AM	11.74	78240	1.17	0.52	48
8/24/2021	8:23:52 AM	11.74	78300	1.17	0.52	48
8/24/2021	8:24:52 AM	11.74	78360	1.17	0.52	48
8/24/2021	8:25:52 AM	11.74	78420	1.17	0.52	48
8/24/2021	8:26:52 AM	11.74	78480	1.17	0.51	49
8/24/2021	8:27:52 AM	11.74	78540	1.17	0.51	49
8/24/2021	8:28:52 AM	11.74	78600	1.17	0.51	49
8/24/2021	8:29:52 AM	11.74	78660	1.17	0.51	49
8/24/2021	8:30:52 AM	11.74	78720	1.17	0.51	49
8/24/2021	8:31:52 AM	11.75	78780	1.16	0.51	49
8/24/2021	8:32:52 AM	11.75	78840	1.16	0.51	49
8/24/2021	8:33:52 AM	11.75	78900	1.16	0.51	49
8/24/2021	8:34:52 AM	11.75	78960	1.16	0.51	49
8/24/2021	8:35:52 AM	11.75	79020	1.16	0.51	49
8/24/2021	8:36:52 AM	11.75	79080	1.16	0.51	49
8/24/2021	8:37:52 AM	11.75	79140	1.16	0.51	49
8/24/2021	8:38:52 AM	11.75	79200	1.16	0.51	49
8/24/2021	8:39:52 AM	11.75	79260	1.16	0.51	49
8/24/2021	8:40:52 AM	11.75	79320	1.16	0.51	49
8/24/2021	8:41:52 AM	11.75	79380	1.16	0.51	49
8/24/2021	8:42:52 AM	11.75	79440	1.16	0.51	49
8/24/2021	8:43:52 AM	11.75	79500	1.16	0.51	49
8/24/2021	8:44:52 AM	11.75	79560	1.16	0.51	49
8/24/2021	8:45:52 AM	11.75	79620	1.16	0.51	49
8/24/2021	8:46:52 AM	11.75	79680	1.16	0.51	49
8/24/2021	8:47:52 AM	11.76	79740	1.15	0.51	49
8/24/2021	8:48:52 AM	11.76	79800	1.15	0.51	49
8/24/2021	8:49:52 AM	11.76	79860	1.15	0.51	49
8/24/2021	8:50:52 AM	11.76	79920	1.15	0.51	49
8/24/2021	8:51:52 AM	11.76	79980	1.15	0.51	49

8/24/2021	8:52:52 AM	11.76	80040	1.15	0.51	49
8/24/2021	8:53:52 AM	11.76	80100	1.15	0.51	49
8/24/2021	8:54:52 AM	11.76	80160	1.15	0.51	49
8/24/2021	8:55:52 AM	11.76	80220	1.15	0.51	49
8/24/2021	8:56:52 AM	11.76	80280	1.15	0.51	49
8/24/2021	8:57:52 AM	11.76	80340	1.15	0.51	49
8/24/2021	8:58:52 AM	11.76	80400	1.15	0.51	49
8/24/2021	8:59:52 AM	11.76	80460	1.15	0.51	49
8/24/2021	9:00:52 AM	11.76	80520	1.15	0.51	49
8/24/2021	9:01:52 AM	11.76	80580	1.15	0.51	49
8/24/2021	9:02:52 AM	11.76	80640	1.15	0.51	49
8/24/2021	9:03:52 AM	11.76	80700	1.15	0.50	50
8/24/2021	9:04:52 AM	11.76	80760	1.15	0.50	50
8/24/2021	9:05:52 AM	11.76	80820	1.15	0.50	50
8/24/2021	9:06:52 AM	11.77	80880	1.14	0.50	50
8/24/2021	9:07:52 AM	11.77	80940	1.14	0.50	50
8/24/2021	9:08:52 AM	11.77	81000	1.14	0.50	50
8/24/2021	9:09:52 AM	11.77	81060	1.14	0.50	50
8/24/2021	9:10:52 AM	11.77	81120	1.14	0.50	50
8/24/2021	9:11:52 AM	11.77	81180	1.14	0.50	50
8/24/2021	9:12:52 AM	11.77	81240	1.14	0.50	50
8/24/2021	9:13:52 AM	11.77	81300	1.14	0.50	50
8/24/2021	9:14:52 AM	11.77	81360	1.14	0.50	50
8/24/2021	9:15:52 AM	11.77	81420	1.14	0.50	50
8/24/2021	9:16:52 AM	11.77	81480	1.14	0.50	50
8/24/2021	9:17:52 AM	11.77	81540	1.14	0.50	50
8/24/2021	9:18:52 AM	11.77	81600	1.14	0.50	50
8/24/2021	9:19:52 AM	11.77	81660	1.14	0.50	50
8/24/2021	9:20:52 AM	11.77	81720	1.14	0.50	50
8/24/2021	9:21:52 AM	11.77	81780	1.14	0.50	50
8/24/2021	9:22:52 AM	11.78	81840	1.13	0.50	50
8/24/2021	9:23:52 AM	11.78	81900	1.13	0.50	50
8/24/2021	9:24:52 AM	11.78	81960	1.13	0.50	50
8/24/2021	9:25:52 AM	11.78	82020	1.13	0.50	50
8/24/2021	9:26:52 AM	11.78	82080	1.13	0.50	50
8/24/2021	9:27:52 AM	11.78	82140	1.13	0.50	50
8/24/2021	9:28:52 AM	11.78	82200	1.13	0.50	50
8/24/2021	9:29:52 AM	11.78	82260	1.13	0.50	50
8/24/2021	9:30:52 AM	11.78	82320	1.13	0.50	50
8/24/2021	9:31:52 AM	11.78	82380	1.13	0.50	50
8/24/2021	9:32:52 AM	11.78	82440	1.13	0.50	50
8/24/2021	9:33:52 AM	11.78	82500	1.13	0.50	50
8/24/2021	9:34:52 AM	11.78	82560	1.13	0.50	50
8/24/2021	9:35:52 AM	11.78	82620	1.13	0.50	50
8/24/2021	9:36:52 AM	11.78	82680	1.13	0.50	50
8/24/2021	9:37:52 AM	11.79	82740	1.12	0.50	50
8/24/2021	9:38:52 AM	11.79	82800	1.12	0.50	50
8/24/2021	9:39:52 AM	11.79	82860	1.12	0.49	51
8/24/2021	9:40:52 AM	11.79	82920	1.12	0.49	51
8/24/2021	9:41:52 AM	11.79	82980	1.12	0.49	51
8/24/2021	9:42:52 AM	11.79	83040	1.12	0.49	51
8/24/2021	9:43:52 AM	11.79	83100	1.12	0.49	51
8/24/2021	9:44:52 AM	11.79	83160	1.12	0.49	51
8/24/2021	9:45:52 AM	11.79	83220	1.12	0.49	51
8/24/2021	9:46:52 AM	11.79	83280	1.12	0.49	51
8/24/2021	9:47:52 AM	11.79	83340	1.12	0.49	51
8/24/2021	9:48:52 AM	11.79	83400	1.12	0.49	51
8/24/2021	9:49:52 AM	11.79	83460	1.12	0.49	51
8/24/2021	9:50:52 AM	11.79	83520	1.12	0.49	51
8/24/2021	9:51:52 AM	11.79	83580	1.12	0.49	51
8/24/2021	9:52:52 AM	11.79	83640	1.12	0.49	51
8/24/2021	9:53:52 AM	11.80	83700	1.11	0.49	51
8/24/2021	9:54:52 AM	11.80	83760	1.11	0.49	51
8/24/2021	9:55:52 AM	11.80	83820	1.11	0.49	51
8/24/2021	9:56:52 AM	11.80	83880	1.11	0.49	51
8/24/2021	9:57:52 AM	11.80	83940	1.11	0.49	51
8/24/2021	9:58:52 AM	11.80	84000	1.11	0.49	51
8/24/2021	9:59:52 AM	11.80	84060	1.11	0.49	51
8/24/2021	10:00:52 AM	11.80	84120	1.11	0.49	51
8/24/2021	10:01:52 AM	11.80	84180	1.11	0.49	51
8/24/2021	10:02:52 AM	11.80	84240	1.11	0.49	51
8/24/2021	10:03:52 AM	11.80	84300	1.11	0.49	51
8/24/2021	10:04:52 AM	11.80	84360	1.11	0.49	51
8/24/2021	10:05:52 AM	11.80	84420	1.11	0.49	51
8/24/2021	10:06:52 AM	11.80	84480	1.11	0.49	51
8/24/2021	10:07:52 AM	11.80	84540	1.11	0.49	51
8/24/2021	10:08:52 AM	11.80	84600	1.11	0.49	51
8/24/2021	10:09:52 AM	11.80	84660	1.11	0.49	51
8/24/2021	10:10:52 AM	11.80	84720	1.11	0.49	51

8/24/2021	10:11:52 AM	11.80	84780	1.11	0.49	51
8/24/2021	10:12:52 AM	11.81	84840	1.10	0.49	51
8/24/2021	10:13:52 AM	11.81	84900	1.10	0.49	51
8/24/2021	10:14:52 AM	11.81	84960	1.10	0.49	51
8/24/2021	10:15:52 AM	11.81	85020	1.10	0.49	51
8/24/2021	10:16:52 AM	11.81	85080	1.10	0.49	51
8/24/2021	10:17:52 AM	11.81	85140	1.10	0.49	51
8/24/2021	10:18:52 AM	11.81	85200	1.10	0.49	51
8/24/2021	10:19:52 AM	11.81	85260	1.10	0.48	52
8/24/2021	10:20:52 AM	11.81	85320	1.10	0.48	52
8/24/2021	10:21:52 AM	11.81	85380	1.10	0.48	52
8/24/2021	10:22:52 AM	11.81	85440	1.10	0.48	52
8/24/2021	10:23:52 AM	11.81	85500	1.10	0.48	52
8/24/2021	10:24:52 AM	11.81	85560	1.10	0.48	52
8/24/2021	10:25:52 AM	11.81	85620	1.10	0.48	52
8/24/2021	10:26:52 AM	11.81	85680	1.10	0.48	52
8/24/2021	10:27:52 AM	11.81	85740	1.10	0.48	52
8/24/2021	10:28:52 AM	11.81	85800	1.10	0.48	52
8/24/2021	10:29:52 AM	11.82	85860	1.10	0.48	52
8/24/2021	10:30:52 AM	11.82	85920	1.09	0.48	52
8/24/2021	10:31:52 AM	11.82	85980	1.09	0.48	52
8/24/2021	10:32:52 AM	11.82	86040	1.09	0.48	52
8/24/2021	10:33:52 AM	11.82	86100	1.09	0.48	52
8/24/2021	10:34:52 AM	11.82	86160	1.09	0.48	52
8/24/2021	10:35:52 AM	11.82	86220	1.09	0.48	52
8/24/2021	10:36:52 AM	11.82	86280	1.09	0.48	52
8/24/2021	10:37:52 AM	11.82	86340	1.09	0.48	52
8/24/2021	10:38:52 AM	11.82	86400	1.09	0.48	52
8/24/2021	10:39:52 AM	11.82	86460	1.09	0.48	52
8/24/2021	10:40:52 AM	11.82	86520	1.09	0.48	52
8/24/2021	10:41:52 AM	11.82	86580	1.09	0.48	52
8/24/2021	10:42:52 AM	11.82	86640	1.09	0.48	52
8/24/2021	10:43:52 AM	11.82	86700	1.09	0.48	52
8/24/2021	10:44:52 AM	11.82	86760	1.09	0.48	52
8/24/2021	10:45:52 AM	11.82	86820	1.09	0.48	52
8/24/2021	10:46:52 AM	11.82	86880	1.09	0.48	52
8/24/2021	10:47:52 AM	11.83	86940	1.08	0.48	52
8/24/2021	10:48:52 AM	11.83	87000	1.08	0.48	52
8/24/2021	10:49:52 AM	11.83	87060	1.08	0.48	52
8/24/2021	10:50:52 AM	11.83	87120	1.08	0.48	52
8/24/2021	10:51:52 AM	11.83	87180	1.08	0.48	52
8/24/2021	10:52:52 AM	11.83	87240	1.08	0.48	52
8/24/2021	10:53:52 AM	11.83	87300	1.08	0.48	52
8/24/2021	10:54:52 AM	11.83	87360	1.08	0.48	52
8/24/2021	10:55:52 AM	11.83	87420	1.08	0.48	52
8/24/2021	10:56:52 AM	11.83	87480	1.08	0.48	52
8/24/2021	10:57:52 AM	11.83	87540	1.08	0.48	52
8/24/2021	10:58:52 AM	11.83	87600	1.08	0.47	53
8/24/2021	10:59:52 AM	11.83	87660	1.08	0.47	53
8/24/2021	11:00:52 AM	11.83	87720	1.08	0.47	53
8/24/2021	11:01:52 AM	11.83	87780	1.08	0.47	53
8/24/2021	11:02:52 AM	11.83	87840	1.08	0.47	53
8/24/2021	11:03:52 AM	11.83	87900	1.08	0.47	53
8/24/2021	11:04:52 AM	11.84	87960	1.07	0.47	53
8/24/2021	11:05:52 AM	11.84	88020	1.07	0.47	53
8/24/2021	11:06:52 AM	11.84	88080	1.07	0.47	53
8/24/2021	11:07:52 AM	11.84	88140	1.07	0.47	53
8/24/2021	11:08:52 AM	11.84	88200	1.07	0.47	53
8/24/2021	11:09:52 AM	11.84	88260	1.07	0.47	53
8/24/2021	11:10:52 AM	11.84	88320	1.07	0.47	53
8/24/2021	11:11:52 AM	11.84	88380	1.07	0.47	53
8/24/2021	11:12:52 AM	11.84	88440	1.07	0.47	53
8/24/2021	11:13:52 AM	11.84	88500	1.07	0.47	53
8/24/2021	11:14:52 AM	11.84	88560	1.07	0.47	53
8/24/2021	11:15:52 AM	11.84	88620	1.07	0.47	53
8/24/2021	11:16:52 AM	11.84	88680	1.07	0.47	53
8/24/2021	11:17:52 AM	11.84	88740	1.07	0.47	53
8/24/2021	11:18:52 AM	11.84	88800	1.07	0.47	53
8/24/2021	11:19:52 AM	11.84	88860	1.07	0.47	53
8/24/2021	11:20:52 AM	11.84	88920	1.07	0.47	53
8/24/2021	11:21:52 AM	11.84	88980	1.07	0.47	53
8/24/2021	11:22:52 AM	11.84	89040	1.07	0.47	53
8/24/2021	11:23:52 AM	11.84	89100	1.07	0.47	53
8/24/2021	11:24:52 AM	11.84	89160	1.07	0.47	53
8/24/2021	11:25:52 AM	11.85	89220	1.06	0.47	53
8/24/2021	11:26:52 AM	11.85	89280	1.06	0.47	53
8/24/2021	11:27:52 AM	11.85	89340	1.06	0.47	53
8/24/2021	11:28:52 AM	11.85	89400	1.06	0.47	53
8/24/2021	11:29:52 AM	11.85	89460	1.06	0.47	53

8/24/2021	11:30:52 AM	11.85	89520	1.06	0.47	53
8/24/2021	11:31:52 AM	11.85	89580	1.06	0.47	53
8/24/2021	11:32:52 AM	11.85	89640	1.06	0.47	53
8/24/2021	11:33:52 AM	11.85	89700	1.06	0.47	53
8/24/2021	11:34:52 AM	11.85	89760	1.06	0.47	53
8/24/2021	11:35:52 AM	11.85	89820	1.06	0.47	53
8/24/2021	11:36:52 AM	11.85	89880	1.06	0.47	53
8/24/2021	11:37:52 AM	11.85	89940	1.06	0.47	53
8/24/2021	11:38:52 AM	11.85	90000	1.06	0.47	53
8/24/2021	11:39:52 AM	11.85	90060	1.06	0.47	53
8/24/2021	11:40:52 AM	11.85	90120	1.06	0.47	53
8/24/2021	11:41:52 AM	11.85	90180	1.06	0.47	53
8/24/2021	11:42:52 AM	11.85	90240	1.06	0.47	53
8/24/2021	11:43:52 AM	11.85	90300	1.06	0.46	54
8/24/2021	11:44:52 AM	11.86	90360	1.05	0.46	54
8/24/2021	11:45:52 AM	11.86	90420	1.05	0.46	54
8/24/2021	11:46:52 AM	11.86	90480	1.05	0.46	54
8/24/2021	11:47:52 AM	11.86	90540	1.05	0.46	54
8/24/2021	11:48:52 AM	11.86	90600	1.05	0.46	54
8/24/2021	11:49:52 AM	11.86	90660	1.05	0.46	54
8/24/2021	11:50:52 AM	11.86	90720	1.05	0.46	54
8/24/2021	11:51:52 AM	11.86	90780	1.05	0.46	54
8/24/2021	11:52:52 AM	11.86	90840	1.05	0.46	54
8/24/2021	11:53:52 AM	11.86	90900	1.05	0.46	54
8/24/2021	11:54:52 AM	11.86	90960	1.05	0.46	54
8/24/2021	11:55:52 AM	11.86	91020	1.05	0.46	54
8/24/2021	11:56:52 AM	11.86	91080	1.05	0.46	54
8/24/2021	11:57:52 AM	11.86	91140	1.05	0.46	54
8/24/2021	11:58:52 AM	11.86	91200	1.05	0.46	54
8/24/2021	11:59:52 AM	11.86	91260	1.05	0.46	54
8/24/2021	12:00:52 PM	11.86	91320	1.05	0.46	54
8/24/2021	12:01:52 PM	11.86	91380	1.05	0.46	54
8/24/2021	12:02:52 PM	11.86	91440	1.05	0.46	54
8/24/2021	12:03:52 PM	11.86	91500	1.05	0.46	54
8/24/2021	12:04:52 PM	11.86	91560	1.05	0.46	54
8/24/2021	12:05:52 PM	11.87	91620	1.04	0.46	54
8/24/2021	12:06:52 PM	11.87	91680	1.04	0.46	54
8/24/2021	12:07:52 PM	11.87	91740	1.04	0.46	54
8/24/2021	12:08:52 PM	11.87	91800	1.04	0.46	54
8/24/2021	12:09:52 PM	11.87	91860	1.04	0.46	54
8/24/2021	12:10:52 PM	11.87	91920	1.04	0.46	54
8/24/2021	12:11:52 PM	11.87	91980	1.04	0.46	54
8/24/2021	12:12:52 PM	11.87	92040	1.04	0.46	54
8/24/2021	12:13:52 PM	11.87	92100	1.04	0.46	54
8/24/2021	12:14:52 PM	11.87	92160	1.04	0.46	54
8/24/2021	12:15:52 PM	11.87	92220	1.04	0.46	54
8/24/2021	12:16:52 PM	11.87	92280	1.04	0.46	54
8/24/2021	12:17:52 PM	11.87	92340	1.04	0.46	54
8/24/2021	12:18:52 PM	11.87	92400	1.04	0.46	54
8/24/2021	12:19:52 PM	11.87	92460	1.04	0.46	54
8/24/2021	12:20:52 PM	11.87	92520	1.04	0.46	54
8/24/2021	12:21:52 PM	11.87	92580	1.04	0.46	54
8/24/2021	12:22:52 PM	11.87	92640	1.04	0.46	54
8/24/2021	12:23:52 PM	11.88	92700	1.03	0.46	54
8/24/2021	12:24:52 PM	11.88	92760	1.03	0.46	54
8/24/2021	12:25:52 PM	11.88	92820	1.03	0.46	54
8/24/2021	12:26:52 PM	11.88	92880	1.03	0.46	54
8/24/2021	12:27:52 PM	11.88	92940	1.03	0.46	54
8/24/2021	12:28:52 PM	11.88	93000	1.03	0.45	55
8/24/2021	12:29:52 PM	11.88	93060	1.03	0.45	55
8/24/2021	12:30:52 PM	11.88	93120	1.03	0.45	55
8/24/2021	12:31:52 PM	11.88	93180	1.03	0.45	55
8/24/2021	12:32:52 PM	11.88	93240	1.03	0.45	55
8/24/2021	12:33:52 PM	11.88	93300	1.03	0.45	55
8/24/2021	12:34:52 PM	11.88	93360	1.03	0.45	55
8/24/2021	12:35:52 PM	11.88	93420	1.03	0.45	55
8/24/2021	12:36:52 PM	11.88	93480	1.03	0.45	55
8/24/2021	12:37:52 PM	11.88	93540	1.03	0.45	55
8/24/2021	12:38:52 PM	11.88	93600	1.03	0.45	55
8/24/2021	12:39:52 PM	11.88	93660	1.03	0.45	55
8/24/2021	12:40:52 PM	11.88	93720	1.03	0.45	55
8/24/2021	12:41:52 PM	11.88	93780	1.03	0.45	55
8/24/2021	12:42:52 PM	11.88	93840	1.03	0.45	55
8/24/2021	12:43:52 PM	11.89	93900	1.03	0.45	55
8/24/2021	12:44:52 PM	11.89	93960	1.02	0.45	55
8/24/2021	12:45:52 PM	11.89	94020	1.02	0.45	55
8/24/2021	12:46:52 PM	11.89	94080	1.02	0.45	55
8/24/2021	12:47:52 PM	11.89	94140	1.02	0.45	55
8/24/2021	12:48:52 PM	11.89	94200	1.02	0.45	55

8/24/2021	12:49:52 PM	11.89	94260	1.02	0.45	55
8/24/2021	12:50:52 PM	11.89	94320	1.02	0.45	55
8/24/2021	12:51:52 PM	11.89	94380	1.02	0.45	55
8/24/2021	12:52:52 PM	11.89	94440	1.02	0.45	55
8/24/2021	12:53:52 PM	11.89	94500	1.02	0.45	55
8/24/2021	12:54:52 PM	11.89	94560	1.02	0.45	55
8/24/2021	12:55:52 PM	11.89	94620	1.02	0.45	55
8/24/2021	12:56:52 PM	11.89	94680	1.02	0.45	55
8/24/2021	12:57:52 PM	11.89	94740	1.02	0.45	55
8/24/2021	12:58:52 PM	11.90	94800	1.01	0.45	55
8/24/2021	12:59:52 PM	11.90	94860	1.01	0.45	55
8/24/2021	1:00:52 PM	11.90	94920	1.01	0.45	55
8/24/2021	1:01:52 PM	11.90	94980	1.01	0.45	55
8/24/2021	1:02:52 PM	11.90	95040	1.01	0.45	55
8/24/2021	1:03:52 PM	11.90	95100	1.01	0.45	55
8/24/2021	1:04:52 PM	11.90	95160	1.01	0.45	55
8/24/2021	1:05:52 PM	11.90	95220	1.01	0.45	55
8/24/2021	1:06:52 PM	11.90	95280	1.01	0.45	55
8/24/2021	1:07:52 PM	11.90	95340	1.01	0.44	56
8/24/2021	1:08:52 PM	11.90	95400	1.01	0.44	56
8/24/2021	1:09:52 PM	11.90	95460	1.01	0.44	56
8/24/2021	1:10:52 PM	11.90	95520	1.01	0.44	56
8/24/2021	1:11:52 PM	11.90	95580	1.01	0.44	56
8/24/2021	1:12:52 PM	11.90	95640	1.01	0.44	56
8/24/2021	1:13:52 PM	11.90	95700	1.01	0.44	56
8/24/2021	1:14:52 PM	11.90	95760	1.01	0.44	56
8/24/2021	1:15:52 PM	11.91	95820	1.00	0.44	56
8/24/2021	1:16:52 PM	11.91	95880	1.00	0.44	56
8/24/2021	1:17:52 PM	11.91	95940	1.00	0.44	56
8/24/2021	1:18:52 PM	11.91	96000	1.00	0.44	56
8/24/2021	1:19:52 PM	11.91	96060	1.00	0.44	56
8/24/2021	1:20:52 PM	11.91	96120	1.00	0.44	56
8/24/2021	1:21:52 PM	11.91	96180	1.00	0.44	56
8/24/2021	1:22:52 PM	11.91	96240	1.00	0.44	56
8/24/2021	1:23:52 PM	11.91	96300	1.00	0.44	56
8/24/2021	1:24:52 PM	11.91	96360	1.00	0.44	56
8/24/2021	1:25:52 PM	11.91	96420	1.00	0.44	56
8/24/2021	1:26:52 PM	11.91	96480	1.00	0.44	56
8/24/2021	1:27:52 PM	11.91	96540	1.00	0.44	56
8/24/2021	1:28:52 PM	11.91	96600	1.00	0.44	56
8/24/2021	1:29:52 PM	11.91	96660	1.00	0.44	56
8/24/2021	1:30:52 PM	11.91	96720	1.00	0.44	56
8/24/2021	1:31:52 PM	11.92	96780	1.00	0.44	56
8/24/2021	1:32:52 PM	11.92	96840	0.99	0.44	56
8/24/2021	1:33:52 PM	11.92	96900	0.99	0.44	56
8/24/2021	1:34:52 PM	11.92	96960	0.99	0.44	56
8/24/2021	1:35:52 PM	11.92	97020	0.99	0.44	56
8/24/2021	1:36:52 PM	11.92	97080	0.99	0.44	56
8/24/2021	1:37:52 PM	11.92	97140	0.99	0.44	56
8/24/2021	1:38:52 PM	11.92	97200	0.99	0.44	56
8/24/2021	1:39:52 PM	11.92	97260	0.99	0.44	56
8/24/2021	1:40:52 PM	11.92	97320	0.99	0.44	56
8/24/2021	1:41:52 PM	11.92	97380	0.99	0.44	56
8/24/2021	1:42:52 PM	11.92	97440	0.99	0.44	56
8/24/2021	1:43:52 PM	11.92	97500	0.99	0.44	56
8/24/2021	1:44:52 PM	11.92	97560	0.99	0.44	56
8/24/2021	1:45:52 PM	11.92	97620	0.99	0.44	56
8/24/2021	1:46:52 PM	11.92	97680	0.99	0.43	57
8/24/2021	1:47:52 PM	11.92	97740	0.99	0.43	57
8/24/2021	1:48:52 PM	11.92	97800	0.99	0.43	57
8/24/2021	1:49:52 PM	11.93	97860	0.98	0.43	57
8/24/2021	1:50:52 PM	11.93	97920	0.98	0.43	57
8/24/2021	1:51:52 PM	11.93	97980	0.98	0.43	57
8/24/2021	1:52:52 PM	11.93	98040	0.98	0.43	57
8/24/2021	1:53:52 PM	11.93	98100	0.98	0.43	57
8/24/2021	1:54:52 PM	11.93	98160	0.98	0.43	57
8/24/2021	1:55:52 PM	11.93	98220	0.98	0.43	57
8/24/2021	1:56:52 PM	11.93	98280	0.98	0.43	57
8/24/2021	1:57:52 PM	11.93	98340	0.98	0.43	57
8/24/2021	1:58:52 PM	11.93	98400	0.98	0.43	57
8/24/2021	1:59:52 PM	11.93	98460	0.98	0.43	57
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8/24/2021	2:01:52 PM	11.93	98580	0.98	0.43	57
8/24/2021	2:02:52 PM	11.93	98640	0.98	0.43	57
8/24/2021	2:03:52 PM	11.94	98700	0.97	0.43	57
8/24/2021	2:04:52 PM	11.94	98760	0.97	0.43	57
8/24/2021	2:05:52 PM	11.94	98820	0.97	0.43	57
8/24/2021	2:06:52 PM	11.94	98880	0.97	0.43	57
8/24/2021	2:07:52 PM	11.94	98940	0.97	0.43	57

8/24/2021	2:08:52 PM	11.94	99000	0.97	0.43	57
8/24/2021	2:09:52 PM	11.94	99060	0.97	0.43	57
8/24/2021	2:10:52 PM	11.94	99120	0.97	0.43	57
8/24/2021	2:11:52 PM	11.94	99180	0.97	0.43	57
8/24/2021	2:12:52 PM	11.94	99240	0.97	0.43	57
8/24/2021	2:13:52 PM	11.94	99300	0.97	0.43	57
8/24/2021	2:14:52 PM	11.94	99360	0.97	0.43	57
8/24/2021	2:15:52 PM	11.94	99420	0.97	0.43	57
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8/24/2021	2:17:52 PM	11.94	99540	0.97	0.43	57
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8/24/2021	2:19:52 PM	11.95	99660	0.96	0.42	58
8/24/2021	2:20:52 PM	11.95	99720	0.96	0.42	58
8/24/2021	2:21:52 PM	11.95	99780	0.96	0.42	58
8/24/2021	2:22:52 PM	11.95	99840	0.96	0.42	58
8/24/2021	2:23:52 PM	11.95	99900	0.96	0.42	58
8/24/2021	2:24:52 PM	11.95	99960	0.96	0.42	58
8/24/2021	2:25:52 PM	11.95	100020	0.96	0.42	58
8/24/2021	2:26:52 PM	11.95	100080	0.96	0.42	58
8/24/2021	2:27:52 PM	11.95	100140	0.96	0.42	58
8/24/2021	2:28:52 PM	11.95	100200	0.96	0.42	58
8/24/2021	2:29:52 PM	11.95	100260	0.96	0.42	58
8/24/2021	2:30:52 PM	11.95	100320	0.96	0.42	58
8/24/2021	2:31:52 PM	11.95	100380	0.96	0.42	58
8/24/2021	2:32:52 PM	11.95	100440	0.96	0.42	58
8/24/2021	2:33:52 PM	11.95	100500	0.96	0.42	58
8/24/2021	2:34:52 PM	11.96	100560	0.95	0.42	58
8/24/2021	2:35:52 PM	11.96	100620	0.95	0.42	58
8/24/2021	2:36:52 PM	11.96	100680	0.95	0.42	58
8/24/2021	2:37:52 PM	11.96	100740	0.95	0.42	58
8/24/2021	2:38:52 PM	11.96	100800	0.95	0.42	58
8/24/2021	2:39:52 PM	11.96	100860	0.95	0.42	58
8/24/2021	2:40:52 PM	11.96	100920	0.95	0.42	58
8/24/2021	2:41:52 PM	11.96	100980	0.95	0.42	58
8/24/2021	2:42:52 PM	11.96	101040	0.95	0.42	58
8/24/2021	2:43:52 PM	11.96	101100	0.95	0.42	58
8/24/2021	2:44:52 PM	11.96	101160	0.95	0.42	58
8/24/2021	2:45:52 PM	11.96	101220	0.95	0.42	58
8/24/2021	2:46:52 PM	11.96	101280	0.95	0.42	58
8/24/2021	2:47:52 PM	11.96	101340	0.95	0.42	58
8/24/2021	2:48:52 PM	11.96	101400	0.95	0.42	58
8/24/2021	2:49:52 PM	11.96	101460	0.95	0.42	58
8/24/2021	2:50:52 PM	11.96	101520	0.95	0.42	58
8/24/2021	2:51:52 PM	11.96	101580	0.95	0.42	58
8/24/2021	2:52:52 PM	11.97	101640	0.94	0.42	58
8/24/2021	2:53:52 PM	11.97	101700	0.94	0.42	58
8/24/2021	2:54:52 PM	11.97	101760	0.94	0.42	58
8/24/2021	2:55:52 PM	11.97	101820	0.94	0.42	58
8/24/2021	2:56:52 PM	11.97	101880	0.94	0.42	58
8/24/2021	2:57:52 PM	11.97	101940	0.94	0.42	58
8/24/2021	2:58:52 PM	11.97	102000	0.94	0.41	59
8/24/2021	2:59:52 PM	11.97	102060	0.94	0.41	59
8/24/2021	3:00:52 PM	11.97	102120	0.94	0.41	59
8/24/2021	3:01:52 PM	11.97	102180	0.94	0.41	59
8/24/2021	3:02:52 PM	11.97	102240	0.94	0.41	59
8/24/2021	3:03:52 PM	11.97	102300	0.94	0.41	59
8/24/2021	3:04:52 PM	11.97	102360	0.94	0.41	59
8/24/2021	3:05:52 PM	11.97	102420	0.94	0.41	59
8/24/2021	3:06:52 PM	11.97	102480	0.94	0.41	59
8/24/2021	3:07:52 PM	11.97	102540	0.94	0.41	59
8/24/2021	3:08:52 PM	11.97	102600	0.94	0.41	59
8/24/2021	3:09:52 PM	11.97	102660	0.94	0.41	59
8/24/2021	3:10:52 PM	11.97	102720	0.94	0.41	59
8/24/2021	3:11:52 PM	11.97	102780	0.94	0.41	59
8/24/2021	3:12:52 PM	11.97	102840	0.94	0.41	59
8/24/2021	3:13:52 PM	11.98	102900	0.93	0.41	59
8/24/2021	3:14:52 PM	11.98	102960	0.93	0.41	59
8/24/2021	3:15:52 PM	11.98	103020	0.93	0.41	59
8/24/2021	3:16:52 PM	11.98	103080	0.93	0.41	59
8/24/2021	3:17:52 PM	11.98	103140	0.93	0.41	59
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8/24/2021	3:19:52 PM	11.98	103260	0.93	0.41	59
8/24/2021	3:20:52 PM	11.98	103320	0.93	0.41	59
8/24/2021	3:21:52 PM	11.98	103380	0.93	0.41	59
8/24/2021	3:22:52 PM	11.98	103440	0.93	0.41	59
8/24/2021	3:23:52 PM	11.98	103500	0.93	0.41	59
8/24/2021	3:24:52 PM	11.98	103560	0.93	0.41	59
8/24/2021	3:25:52 PM	11.98	103620	0.93	0.41	59
8/24/2021	3:26:52 PM	11.98	103680	0.93	0.41	59

8/24/2021	3:27:52 PM	11.98	103740	0.93	0.41	59
8/24/2021	3:28:52 PM	11.98	103800	0.93	0.41	59
8/24/2021	3:29:52 PM	11.99	103860	0.92	0.41	59
8/24/2021	3:30:52 PM	11.99	103920	0.92	0.41	59
8/24/2021	3:31:52 PM	11.99	103980	0.92	0.41	59
8/24/2021	3:32:52 PM	11.99	104040	0.92	0.41	59
8/24/2021	3:33:52 PM	11.99	104100	0.92	0.41	59
8/24/2021	3:34:52 PM	11.99	104160	0.92	0.41	59
8/24/2021	3:35:52 PM	11.99	104220	0.92	0.41	59
8/24/2021	3:36:52 PM	11.99	104280	0.92	0.41	59
8/24/2021	3:37:52 PM	11.99	104340	0.92	0.41	59
8/24/2021	3:38:52 PM	11.99	104400	0.92	0.41	59
8/24/2021	3:39:52 PM	11.99	104460	0.92	0.41	59
8/24/2021	3:40:52 PM	11.99	104520	0.92	0.40	60
8/24/2021	3:41:52 PM	11.99	104580	0.92	0.40	60
8/24/2021	3:42:52 PM	11.99	104640	0.92	0.40	60
8/24/2021	3:43:52 PM	11.99	104700	0.92	0.40	60
8/24/2021	3:44:52 PM	11.99	104760	0.92	0.40	60
8/24/2021	3:45:52 PM	11.99	104820	0.92	0.40	60
8/24/2021	3:46:52 PM	12.00	104880	0.91	0.40	60
8/24/2021	3:47:52 PM	12.00	104940	0.91	0.40	60
8/24/2021	3:48:52 PM	12.00	105000	0.91	0.40	60
8/24/2021	3:49:52 PM	12.00	105060	0.91	0.40	60
8/24/2021	3:50:52 PM	12.00	105120	0.91	0.40	60
8/24/2021	3:51:52 PM	12.00	105180	0.91	0.40	60
8/24/2021	3:52:52 PM	12.00	105240	0.91	0.40	60
8/24/2021	3:53:52 PM	12.00	105300	0.91	0.40	60
8/24/2021	3:54:52 PM	12.00	105360	0.91	0.40	60
8/24/2021	3:55:52 PM	12.00	105420	0.91	0.40	60
8/24/2021	3:56:52 PM	12.00	105480	0.91	0.40	60
8/24/2021	3:57:52 PM	12.00	105540	0.91	0.40	60
8/24/2021	3:58:52 PM	12.00	105600	0.91	0.40	60
8/24/2021	3:59:52 PM	12.00	105660	0.91	0.40	60
8/24/2021	4:00:52 PM	12.00	105720	0.91	0.40	60
8/24/2021	4:01:52 PM	12.00	105780	0.91	0.40	60
8/24/2021	4:02:52 PM	12.00	105840	0.91	0.40	60
8/24/2021	4:03:52 PM	12.00	105900	0.91	0.40	60
8/24/2021	4:04:52 PM	12.00	105960	0.91	0.40	60
8/24/2021	4:05:52 PM	12.01	106020	0.90	0.40	60
8/24/2021	4:06:52 PM	12.01	106080	0.90	0.40	60
8/24/2021	4:07:52 PM	12.01	106140	0.90	0.40	60
8/24/2021	4:08:52 PM	12.01	106200	0.90	0.40	60
8/24/2021	4:09:52 PM	12.01	106260	0.90	0.40	60
8/24/2021	4:10:52 PM	12.01	106320	0.90	0.40	60
8/24/2021	4:11:52 PM	12.01	106380	0.90	0.40	60
8/24/2021	4:12:52 PM	12.01	106440	0.90	0.40	60
8/24/2021	4:13:52 PM	12.01	106500	0.90	0.40	60
8/24/2021	4:14:52 PM	12.01	106560	0.90	0.40	60
8/24/2021	4:15:52 PM	12.01	106620	0.90	0.40	60
8/24/2021	4:16:52 PM	12.01	106680	0.90	0.40	60
8/24/2021	4:17:52 PM	12.01	106740	0.90	0.40	60
8/24/2021	4:18:52 PM	12.01	106800	0.90	0.40	60
8/24/2021	4:19:52 PM	12.01	106860	0.90	0.40	60
8/24/2021	4:20:52 PM	12.01	106920	0.90	0.40	60
8/24/2021	4:21:52 PM	12.01	106980	0.90	0.39	61
8/24/2021	4:22:52 PM	12.01	107040	0.90	0.39	61
8/24/2021	4:23:52 PM	12.02	107100	0.89	0.39	61
8/24/2021	4:24:52 PM	12.02	107160	0.89	0.39	61
8/24/2021	4:25:52 PM	12.02	107220	0.89	0.39	61
8/24/2021	4:26:52 PM	12.02	107280	0.89	0.39	61
8/24/2021	4:27:52 PM	12.02	107340	0.89	0.39	61
8/24/2021	4:28:52 PM	12.02	107400	0.89	0.39	61
8/24/2021	4:29:52 PM	12.02	107460	0.89	0.39	61
8/24/2021	4:30:52 PM	12.02	107520	0.89	0.39	61
8/24/2021	4:31:52 PM	12.02	107580	0.89	0.39	61
8/24/2021	4:32:52 PM	12.02	107640	0.89	0.39	61
8/24/2021	4:33:52 PM	12.02	107700	0.89	0.39	61
8/24/2021	4:34:52 PM	12.02	107760	0.89	0.39	61
8/24/2021	4:35:52 PM	12.02	107820	0.89	0.39	61
8/24/2021	4:36:52 PM	12.02	107880	0.89	0.39	61
8/24/2021	4:37:52 PM	12.02	107940	0.89	0.39	61
8/24/2021	4:38:52 PM	12.02	108000	0.89	0.39	61
8/24/2021	4:39:52 PM	12.02	108060	0.89	0.39	61
8/24/2021	4:40:52 PM	12.03	108120	0.88	0.39	61
8/24/2021	4:41:52 PM	12.03	108180	0.88	0.39	61
8/24/2021	4:42:52 PM	12.03	108240	0.88	0.39	61
8/24/2021	4:43:52 PM	12.03	108300	0.88	0.39	61
8/24/2021	4:44:52 PM	12.03	108360	0.88	0.39	61
8/24/2021	4:45:52 PM	12.03	108420	0.88	0.39	61

8/24/2021	4:46:52 PM	12.03	108480	0.88	0.39	61
8/24/2021	4:47:52 PM	12.03	108540	0.88	0.39	61
8/24/2021	4:48:52 PM	12.03	108600	0.88	0.39	61
8/24/2021	4:49:52 PM	12.03	108660	0.88	0.39	61
8/24/2021	4:50:52 PM	12.03	108720	0.88	0.39	61
8/24/2021	4:51:52 PM	12.03	108780	0.88	0.39	61
8/24/2021	4:52:52 PM	12.03	108840	0.88	0.39	61
8/24/2021	4:53:52 PM	12.03	108900	0.88	0.39	61
8/24/2021	4:54:52 PM	12.03	108960	0.88	0.39	61
8/24/2021	4:55:52 PM	12.03	109020	0.88	0.39	61
8/24/2021	4:56:52 PM	12.03	109080	0.88	0.39	61
8/24/2021	4:57:52 PM	12.03	109140	0.88	0.39	61
8/24/2021	4:58:52 PM	12.04	109200	0.87	0.39	61
8/24/2021	4:59:52 PM	12.04	109260	0.87	0.39	61
8/24/2021	5:00:52 PM	12.04	109320	0.87	0.38	62
8/24/2021	5:01:52 PM	12.04	109380	0.87	0.38	62
8/24/2021	5:02:52 PM	12.04	109440	0.87	0.38	62
8/24/2021	5:03:52 PM	12.04	109500	0.87	0.38	62
8/24/2021	5:04:52 PM	12.04	109560	0.87	0.38	62
8/24/2021	5:05:52 PM	12.04	109620	0.87	0.38	62
8/24/2021	5:06:52 PM	12.04	109680	0.87	0.38	62
8/24/2021	5:07:52 PM	12.04	109740	0.87	0.38	62
8/24/2021	5:08:52 PM	12.04	109800	0.87	0.38	62
8/24/2021	5:09:52 PM	12.04	109860	0.87	0.38	62
8/24/2021	5:10:52 PM	12.04	109920	0.87	0.38	62
8/24/2021	5:11:52 PM	12.04	109980	0.87	0.38	62
8/24/2021	5:12:52 PM	12.04	110040	0.87	0.38	62
8/24/2021	5:13:52 PM	12.04	110100	0.87	0.38	62
8/24/2021	5:14:52 PM	12.04	110160	0.87	0.38	62
8/24/2021	5:15:52 PM	12.04	110220	0.87	0.38	62
8/24/2021	5:16:52 PM	12.04	110280	0.87	0.38	62
8/24/2021	5:17:52 PM	12.04	110340	0.87	0.38	62
8/24/2021	5:18:52 PM	12.04	110400	0.87	0.38	62
8/24/2021	5:19:52 PM	12.05	110460	0.86	0.38	62
8/24/2021	5:20:52 PM	12.05	110520	0.86	0.38	62
8/24/2021	5:21:52 PM	12.05	110580	0.86	0.38	62
8/24/2021	5:22:52 PM	12.05	110640	0.86	0.38	62
8/24/2021	5:23:52 PM	12.05	110700	0.86	0.38	62
8/24/2021	5:24:52 PM	12.05	110760	0.86	0.38	62
8/24/2021	5:25:52 PM	12.05	110820	0.86	0.38	62
8/24/2021	5:26:52 PM	12.05	110880	0.86	0.38	62
8/24/2021	5:27:52 PM	12.05	110940	0.86	0.38	62
8/24/2021	5:28:52 PM	12.05	111000	0.86	0.38	62
8/24/2021	5:29:52 PM	12.05	111060	0.86	0.38	62
8/24/2021	5:30:52 PM	12.05	111120	0.86	0.38	62
8/24/2021	5:31:52 PM	12.05	111180	0.86	0.38	62
8/24/2021	5:32:52 PM	12.05	111240	0.86	0.38	62
8/24/2021	5:33:52 PM	12.05	111300	0.86	0.38	62
8/24/2021	5:34:52 PM	12.05	111360	0.86	0.38	62
8/24/2021	5:35:52 PM	12.05	111420	0.86	0.38	62
8/24/2021	5:36:52 PM	12.05	111480	0.86	0.38	62
8/24/2021	5:37:52 PM	12.05	111540	0.86	0.38	62
8/24/2021	5:38:52 PM	12.05	111600	0.86	0.38	62
8/24/2021	5:39:52 PM	12.05	111660	0.86	0.38	62
8/24/2021	5:40:52 PM	12.06	111720	0.85	0.38	62
8/24/2021	5:41:52 PM	12.06	111780	0.85	0.38	62
8/24/2021	5:42:52 PM	12.06	111840	0.85	0.38	62
8/24/2021	5:43:52 PM	12.06	111900	0.85	0.38	62
8/24/2021	5:44:52 PM	12.06	111960	0.85	0.38	62
8/24/2021	5:45:52 PM	12.06	112020	0.85	0.38	62
8/24/2021	5:46:52 PM	12.06	112080	0.85	0.38	62
8/24/2021	5:47:52 PM	12.06	112140	0.85	0.38	62
8/24/2021	5:48:52 PM	12.06	112200	0.85	0.37	63
8/24/2021	5:49:52 PM	12.06	112260	0.85	0.37	63
8/24/2021	5:50:52 PM	12.06	112320	0.85	0.37	63
8/24/2021	5:51:52 PM	12.06	112380	0.85	0.37	63
8/24/2021	5:52:52 PM	12.06	112440	0.85	0.37	63
8/24/2021	5:53:52 PM	12.06	112500	0.85	0.37	63
8/24/2021	5:54:52 PM	12.06	112560	0.85	0.37	63
8/24/2021	5:55:52 PM	12.06	112620	0.85	0.37	63
8/24/2021	5:56:52 PM	12.06	112680	0.85	0.37	63
8/24/2021	5:57:52 PM	12.06	112740	0.85	0.37	63
8/24/2021	5:58:52 PM	12.07	112800	0.85	0.37	63
8/24/2021	5:59:52 PM	12.07	112860	0.84	0.37	63
8/24/2021	6:00:52 PM	12.07	112920	0.84	0.37	63
8/24/2021	6:01:52 PM	12.07	112980	0.84	0.37	63
8/24/2021	6:02:52 PM	12.07	113040	0.84	0.37	63
8/24/2021	6:03:52 PM	12.07	113100	0.84	0.37	63
8/24/2021	6:04:52 PM	12.07	113160	0.84	0.37	63

8/24/2021	6:05:52 PM	12.07	113220	0.84	0.37	63
8/24/2021	6:06:52 PM	12.07	113280	0.84	0.37	63
8/24/2021	6:07:52 PM	12.07	113340	0.84	0.37	63
8/24/2021	6:08:52 PM	12.07	113400	0.84	0.37	63
8/24/2021	6:09:52 PM	12.07	113460	0.84	0.37	63
8/24/2021	6:10:52 PM	12.07	113520	0.84	0.37	63
8/24/2021	6:11:52 PM	12.07	113580	0.84	0.37	63
8/24/2021	6:12:52 PM	12.07	113640	0.84	0.37	63
8/24/2021	6:13:52 PM	12.07	113700	0.84	0.37	63
8/24/2021	6:14:52 PM	12.07	113760	0.84	0.37	63
8/24/2021	6:15:52 PM	12.07	113820	0.84	0.37	63
8/24/2021	6:16:52 PM	12.08	113880	0.83	0.37	63
8/24/2021	6:17:52 PM	12.08	113940	0.83	0.37	63
8/24/2021	6:18:52 PM	12.08	114000	0.83	0.37	63
8/24/2021	6:19:52 PM	12.08	114060	0.83	0.37	63
8/24/2021	6:20:52 PM	12.08	114120	0.83	0.37	63
8/24/2021	6:21:52 PM	12.08	114180	0.83	0.37	63
8/24/2021	6:22:52 PM	12.08	114240	0.83	0.37	63
8/24/2021	6:23:52 PM	12.08	114300	0.83	0.37	63
8/24/2021	6:24:52 PM	12.08	114360	0.83	0.37	63
8/24/2021	6:25:52 PM	12.08	114420	0.83	0.37	63
8/24/2021	6:26:52 PM	12.08	114480	0.83	0.37	63
8/24/2021	6:27:52 PM	12.08	114540	0.83	0.36	64
8/24/2021	6:28:52 PM	12.08	114600	0.83	0.36	64
8/24/2021	6:29:52 PM	12.08	114660	0.83	0.36	64
8/24/2021	6:30:52 PM	12.08	114720	0.83	0.36	64
8/24/2021	6:31:52 PM	12.08	114780	0.83	0.36	64
8/24/2021	6:32:52 PM	12.08	114840	0.83	0.36	64
8/24/2021	6:33:52 PM	12.09	114900	0.82	0.36	64
8/24/2021	6:34:52 PM	12.09	114960	0.82	0.36	64
8/24/2021	6:35:52 PM	12.09	115020	0.82	0.36	64
8/24/2021	6:36:52 PM	12.09	115080	0.82	0.36	64
8/24/2021	6:37:52 PM	12.09	115140	0.82	0.36	64
8/24/2021	6:38:52 PM	12.09	115200	0.82	0.36	64
8/24/2021	6:39:52 PM	12.09	115260	0.82	0.36	64
8/24/2021	6:40:52 PM	12.09	115320	0.82	0.36	64
8/24/2021	6:41:52 PM	12.09	115380	0.82	0.36	64
8/24/2021	6:42:52 PM	12.09	115440	0.82	0.36	64
8/24/2021	6:43:52 PM	12.09	115500	0.82	0.36	64
8/24/2021	6:44:52 PM	12.09	115560	0.82	0.36	64
8/24/2021	6:45:52 PM	12.09	115620	0.82	0.36	64
8/24/2021	6:46:52 PM	12.09	115680	0.82	0.36	64
8/24/2021	6:47:52 PM	12.09	115740	0.82	0.36	64
8/24/2021	6:48:52 PM	12.09	115800	0.82	0.36	64
8/24/2021	6:49:52 PM	12.09	115860	0.82	0.36	64
8/24/2021	6:50:52 PM	12.10	115920	0.81	0.36	64
8/24/2021	6:51:52 PM	12.10	115980	0.81	0.36	64
8/24/2021	6:52:52 PM	12.10	116040	0.81	0.36	64
8/24/2021	6:53:52 PM	12.10	116100	0.81	0.36	64
8/24/2021	6:54:52 PM	12.10	116160	0.81	0.36	64
8/24/2021	6:55:52 PM	12.10	116220	0.81	0.36	64
8/24/2021	6:56:52 PM	12.10	116280	0.81	0.36	64
8/24/2021	6:57:52 PM	12.10	116340	0.81	0.36	64
8/24/2021	6:58:52 PM	12.10	116400	0.81	0.36	64
8/24/2021	6:59:52 PM	12.10	116460	0.81	0.36	64
8/24/2021	7:00:52 PM	12.10	116520	0.81	0.36	64
8/24/2021	7:01:52 PM	12.10	116580	0.81	0.36	64
8/24/2021	7:02:52 PM	12.10	116640	0.81	0.36	64
8/24/2021	7:03:52 PM	12.10	116700	0.81	0.35	65
8/24/2021	7:04:52 PM	12.11	116760	0.80	0.35	65
8/24/2021	7:05:52 PM	12.11	116820	0.80	0.35	65
8/24/2021	7:06:52 PM	12.11	116880	0.80	0.35	65
8/24/2021	7:07:52 PM	12.11	116940	0.80	0.35	65
8/24/2021	7:08:52 PM	12.11	117000	0.80	0.35	65
8/24/2021	7:09:52 PM	12.11	117060	0.80	0.35	65
8/24/2021	7:10:52 PM	12.11	117120	0.80	0.35	65
8/24/2021	7:11:52 PM	12.11	117180	0.80	0.35	65
8/24/2021	7:12:52 PM	12.11	117240	0.80	0.35	65
8/24/2021	7:13:52 PM	12.11	117300	0.80	0.35	65
8/24/2021	7:14:52 PM	12.11	117360	0.80	0.35	65
8/24/2021	7:15:52 PM	12.11	117420	0.80	0.35	65
8/24/2021	7:16:52 PM	12.11	117480	0.80	0.35	65
8/24/2021	7:17:52 PM	12.11	117540	0.80	0.35	65
8/24/2021	7:18:52 PM	12.11	117600	0.80	0.35	65
8/24/2021	7:19:52 PM	12.11	117660	0.80	0.35	65
8/24/2021	7:20:52 PM	12.11	117720	0.80	0.35	65
8/24/2021	7:21:52 PM	12.12	117780	0.79	0.35	65
8/24/2021	7:22:52 PM	12.12	117840	0.79	0.35	65
8/24/2021	7:23:52 PM	12.12	117900	0.79	0.35	65

8/24/2021	7:24:52 PM	12.12	117960	0.79	0.35	65
8/24/2021	7:25:52 PM	12.12	118020	0.79	0.35	65
8/24/2021	7:26:52 PM	12.12	118080	0.79	0.35	65
8/24/2021	7:27:52 PM	12.12	118140	0.79	0.35	65
8/24/2021	7:28:52 PM	12.12	118200	0.79	0.35	65
8/24/2021	7:29:52 PM	12.12	118260	0.79	0.35	65
8/24/2021	7:30:52 PM	12.12	118320	0.79	0.35	65
8/24/2021	7:31:52 PM	12.12	118380	0.79	0.35	65
8/24/2021	7:32:52 PM	12.12	118440	0.79	0.35	65
8/24/2021	7:33:52 PM	12.12	118500	0.79	0.35	65
8/24/2021	7:34:52 PM	12.12	118560	0.79	0.35	65
8/24/2021	7:35:52 PM	12.12	118620	0.79	0.35	65
8/24/2021	7:36:52 PM	12.13	118680	0.78	0.35	65
8/24/2021	7:37:52 PM	12.13	118740	0.78	0.35	65
8/24/2021	7:38:52 PM	12.13	118800	0.78	0.35	65
8/24/2021	7:39:52 PM	12.13	118860	0.78	0.34	66
8/24/2021	7:40:52 PM	12.13	118920	0.78	0.34	66
8/24/2021	7:41:52 PM	12.13	118980	0.78	0.34	66
8/24/2021	7:42:52 PM	12.13	119040	0.78	0.34	66
8/24/2021	7:43:52 PM	12.13	119100	0.78	0.34	66
8/24/2021	7:44:52 PM	12.13	119160	0.78	0.34	66
8/24/2021	7:45:52 PM	12.13	119220	0.78	0.34	66
8/24/2021	7:46:52 PM	12.13	119280	0.78	0.34	66
8/24/2021	7:47:52 PM	12.13	119340	0.78	0.34	66
8/24/2021	7:48:52 PM	12.13	119400	0.78	0.34	66
8/24/2021	7:49:52 PM	12.13	119460	0.78	0.34	66
8/24/2021	7:50:52 PM	12.13	119520	0.78	0.34	66
8/24/2021	7:51:52 PM	12.14	119580	0.77	0.34	66
8/24/2021	7:52:52 PM	12.14	119640	0.77	0.34	66
8/24/2021	7:53:52 PM	12.14	119700	0.77	0.34	66
8/24/2021	7:54:52 PM	12.14	119760	0.77	0.34	66
8/24/2021	7:55:52 PM	12.14	119820	0.77	0.34	66
8/24/2021	7:56:52 PM	12.14	119880	0.77	0.34	66
8/24/2021	7:57:52 PM	12.14	119940	0.77	0.34	66
8/24/2021	7:58:52 PM	12.14	120000	0.77	0.34	66
8/24/2021	7:59:52 PM	12.14	120060	0.77	0.34	66
8/24/2021	8:00:52 PM	12.14	120120	0.77	0.34	66
8/24/2021	8:01:52 PM	12.14	120180	0.77	0.34	66
8/24/2021	8:02:52 PM	12.14	120240	0.77	0.34	66
8/24/2021	8:03:52 PM	12.14	120300	0.77	0.34	66
8/24/2021	8:04:52 PM	12.14	120360	0.77	0.34	66
8/24/2021	8:05:52 PM	12.15	120420	0.76	0.34	66
8/24/2021	8:06:52 PM	12.15	120480	0.76	0.34	66
8/24/2021	8:07:52 PM	12.15	120540	0.76	0.34	66
8/24/2021	8:08:52 PM	12.15	120600	0.76	0.34	66
8/24/2021	8:09:52 PM	12.15	120660	0.76	0.34	66
8/24/2021	8:10:52 PM	12.15	120720	0.76	0.34	66
8/24/2021	8:11:52 PM	12.15	120780	0.76	0.34	66
8/24/2021	8:12:52 PM	12.15	120840	0.76	0.33	67
8/24/2021	8:13:52 PM	12.15	120900	0.76	0.33	67
8/24/2021	8:14:52 PM	12.15	120960	0.76	0.33	67
8/24/2021	8:15:52 PM	12.15	121020	0.76	0.33	67
8/24/2021	8:16:52 PM	12.15	121080	0.76	0.33	67
8/24/2021	8:17:52 PM	12.15	121140	0.76	0.33	67
8/24/2021	8:18:52 PM	12.15	121200	0.76	0.33	67
8/24/2021	8:19:52 PM	12.15	121260	0.76	0.33	67
8/24/2021	8:20:52 PM	12.15	121320	0.76	0.33	67
8/24/2021	8:21:52 PM	12.16	121380	0.75	0.33	67
8/24/2021	8:22:52 PM	12.16	121440	0.75	0.33	67
8/24/2021	8:23:52 PM	12.16	121500	0.75	0.33	67
8/24/2021	8:24:52 PM	12.16	121560	0.75	0.33	67
8/24/2021	8:25:52 PM	12.16	121620	0.75	0.33	67
8/24/2021	8:26:52 PM	12.16	121680	0.75	0.33	67
8/24/2021	8:27:52 PM	12.16	121740	0.75	0.33	67
8/24/2021	8:28:52 PM	12.16	121800	0.75	0.33	67
8/24/2021	8:29:52 PM	12.16	121860	0.75	0.33	67
8/24/2021	8:30:52 PM	12.16	121920	0.75	0.33	67
8/24/2021	8:31:52 PM	12.16	121980	0.75	0.33	67
8/24/2021	8:32:52 PM	12.16	122040	0.75	0.33	67
8/24/2021	8:33:52 PM	12.16	122100	0.75	0.33	67
8/24/2021	8:34:52 PM	12.16	122160	0.75	0.33	67
8/24/2021	8:35:52 PM	12.16	122220	0.75	0.33	67
8/24/2021	8:36:52 PM	12.16	122280	0.75	0.33	67
8/24/2021	8:37:52 PM	12.16	122340	0.75	0.33	67
8/24/2021	8:38:52 PM	12.17	122400	0.74	0.33	67
8/24/2021	8:39:52 PM	12.17	122460	0.74	0.33	67
8/24/2021	8:40:52 PM	12.17	122520	0.74	0.33	67
8/24/2021	8:41:52 PM	12.17	122580	0.74	0.33	67
8/24/2021	8:42:52 PM	12.17	122640	0.74	0.33	67

8/24/2021	8:43:52 PM	12.17	122700	0.74	0.33	67
8/24/2021	8:44:52 PM	12.17	122760	0.74	0.33	67
8/24/2021	8:45:52 PM	12.17	122820	0.74	0.33	67
8/24/2021	8:46:52 PM	12.17	122880	0.74	0.33	67
8/24/2021	8:47:52 PM	12.17	122940	0.74	0.33	67
8/24/2021	8:48:52 PM	12.17	123000	0.74	0.33	67
8/24/2021	8:49:52 PM	12.17	123060	0.74	0.32	68
8/24/2021	8:50:52 PM	12.17	123120	0.74	0.32	68
8/24/2021	8:51:52 PM	12.17	123180	0.74	0.32	68
8/24/2021	8:52:52 PM	12.17	123240	0.74	0.32	68
8/24/2021	8:53:52 PM	12.17	123300	0.74	0.32	68
8/24/2021	8:54:52 PM	12.18	123360	0.73	0.32	68
8/24/2021	8:55:52 PM	12.18	123420	0.73	0.32	68
8/24/2021	8:56:52 PM	12.18	123480	0.73	0.32	68
8/24/2021	8:57:52 PM	12.18	123540	0.73	0.32	68
8/24/2021	8:58:52 PM	12.18	123600	0.73	0.32	68
8/24/2021	8:59:52 PM	12.18	123660	0.73	0.32	68
8/24/2021	9:00:52 PM	12.18	123720	0.73	0.32	68
8/24/2021	9:01:52 PM	12.18	123780	0.73	0.32	68
8/24/2021	9:02:52 PM	12.18	123840	0.73	0.32	68
8/24/2021	9:03:52 PM	12.18	123900	0.73	0.32	68
8/24/2021	9:04:52 PM	12.18	123960	0.73	0.32	68
8/24/2021	9:05:52 PM	12.18	124020	0.73	0.32	68
8/24/2021	9:06:52 PM	12.18	124080	0.73	0.32	68
8/24/2021	9:07:52 PM	12.18	124140	0.73	0.32	68
8/24/2021	9:08:52 PM	12.18	124200	0.73	0.32	68
8/24/2021	9:09:52 PM	12.18	124260	0.73	0.32	68
8/24/2021	9:10:52 PM	12.18	124320	0.73	0.32	68
8/24/2021	9:11:52 PM	12.19	124380	0.72	0.32	68
8/24/2021	9:12:52 PM	12.19	124440	0.72	0.32	68
8/24/2021	9:13:52 PM	12.19	124500	0.72	0.32	68
8/24/2021	9:14:52 PM	12.19	124560	0.72	0.32	68
8/24/2021	9:15:52 PM	12.19	124620	0.72	0.32	68
8/24/2021	9:16:52 PM	12.19	124680	0.72	0.32	68
8/24/2021	9:17:52 PM	12.19	124740	0.72	0.32	68
8/24/2021	9:18:52 PM	12.19	124800	0.72	0.32	68
8/24/2021	9:19:52 PM	12.19	124860	0.72	0.32	68
8/24/2021	9:20:52 PM	12.19	124920	0.72	0.32	68
8/24/2021	9:21:52 PM	12.19	124980	0.72	0.32	68
8/24/2021	9:22:52 PM	12.19	125040	0.72	0.32	68
8/24/2021	9:23:52 PM	12.19	125100	0.72	0.32	68
8/24/2021	9:24:52 PM	12.19	125160	0.72	0.32	68
8/24/2021	9:25:52 PM	12.19	125220	0.72	0.32	68
8/24/2021	9:26:52 PM	12.19	125280	0.72	0.32	68
8/24/2021	9:27:52 PM	12.19	125340	0.72	0.32	68
8/24/2021	9:28:52 PM	12.20	125400	0.71	0.31	69
8/24/2021	9:29:52 PM	12.20	125460	0.71	0.31	69
8/24/2021	9:30:52 PM	12.20	125520	0.71	0.31	69
8/24/2021	9:31:52 PM	12.20	125580	0.71	0.31	69
8/24/2021	9:32:52 PM	12.20	125640	0.71	0.31	69
8/24/2021	9:33:52 PM	12.20	125700	0.71	0.31	69
8/24/2021	9:34:52 PM	12.20	125760	0.71	0.31	69
8/24/2021	9:35:52 PM	12.20	125820	0.71	0.31	69
8/24/2021	9:36:52 PM	12.20	125880	0.71	0.31	69
8/24/2021	9:37:52 PM	12.20	125940	0.71	0.31	69
8/24/2021	9:38:52 PM	12.20	126000	0.71	0.31	69
8/24/2021	9:39:52 PM	12.20	126060	0.71	0.31	69
8/24/2021	9:40:52 PM	12.20	126120	0.71	0.31	69
8/24/2021	9:41:52 PM	12.20	126180	0.71	0.31	69
8/24/2021	9:42:52 PM	12.20	126240	0.71	0.31	69
8/24/2021	9:43:52 PM	12.20	126300	0.71	0.31	69
8/24/2021	9:44:52 PM	12.21	126360	0.70	0.31	69
8/24/2021	9:45:52 PM	12.21	126420	0.70	0.31	69
8/24/2021	9:46:52 PM	12.21	126480	0.70	0.31	69
8/24/2021	9:47:52 PM	12.21	126540	0.70	0.31	69
8/24/2021	9:48:52 PM	12.21	126600	0.70	0.31	69
8/24/2021	9:49:52 PM	12.21	126660	0.70	0.31	69
8/24/2021	9:50:52 PM	12.21	126720	0.70	0.31	69
8/24/2021	9:51:52 PM	12.21	126780	0.70	0.31	69
8/24/2021	9:52:52 PM	12.21	126840	0.70	0.31	69
8/24/2021	9:53:52 PM	12.21	126900	0.70	0.31	69
8/24/2021	9:54:52 PM	12.21	126960	0.70	0.31	69
8/24/2021	9:55:52 PM	12.21	127020	0.70	0.31	69
8/24/2021	9:56:52 PM	12.21	127080	0.70	0.31	69
8/24/2021	9:57:52 PM	12.21	127140	0.70	0.31	69
8/24/2021	9:58:52 PM	12.21	127200	0.70	0.31	69
8/24/2021	9:59:52 PM	12.21	127260	0.70	0.31	69
8/24/2021	10:00:52 PM	12.22	127320	0.69	0.31	69
8/24/2021	10:01:52 PM	12.22	127380	0.69	0.31	69

8/25/2021	12:40:52 AM	12.30	136920	0.61	0.27	73
8/25/2021	12:41:52 AM	12.30	136980	0.61	0.27	73
8/25/2021	12:42:52 AM	12.30	137040	0.61	0.27	73
8/25/2021	12:43:52 AM	12.31	137100	0.61	0.27	73
8/25/2021	12:44:52 AM	12.31	137160	0.60	0.27	73
8/25/2021	12:45:52 AM	12.31	137220	0.60	0.27	73
8/25/2021	12:46:52 AM	12.31	137280	0.60	0.27	73
8/25/2021	12:47:52 AM	12.31	137340	0.60	0.27	73
8/25/2021	12:48:52 AM	12.31	137400	0.60	0.27	73
8/25/2021	12:49:52 AM	12.31	137460	0.60	0.27	73
8/25/2021	12:50:52 AM	12.31	137520	0.60	0.26	74
8/25/2021	12:51:52 AM	12.31	137580	0.60	0.26	74
8/25/2021	12:52:52 AM	12.31	137640	0.60	0.26	74
8/25/2021	12:53:52 AM	12.31	137700	0.60	0.26	74
8/25/2021	12:54:52 AM	12.31	137760	0.60	0.26	74
8/25/2021	12:55:52 AM	12.31	137820	0.60	0.26	74
8/25/2021	12:56:52 AM	12.31	137880	0.60	0.26	74
8/25/2021	12:57:52 AM	12.31	137940	0.60	0.26	74
8/25/2021	12:58:52 AM	12.31	138000	0.60	0.26	74
8/25/2021	12:59:52 AM	12.31	138060	0.60	0.26	74
8/25/2021	1:00:52 AM	12.32	138120	0.59	0.26	74
8/25/2021	1:01:52 AM	12.32	138180	0.59	0.26	74
8/25/2021	1:02:52 AM	12.32	138240	0.59	0.26	74
8/25/2021	1:03:52 AM	12.32	138300	0.59	0.26	74
8/25/2021	1:04:52 AM	12.32	138360	0.59	0.26	74
8/25/2021	1:05:52 AM	12.32	138420	0.59	0.26	74
8/25/2021	1:06:52 AM	12.32	138480	0.59	0.26	74
8/25/2021	1:07:52 AM	12.32	138540	0.59	0.26	74
8/25/2021	1:08:52 AM	12.32	138600	0.59	0.26	74
8/25/2021	1:09:52 AM	12.32	138660	0.59	0.26	74
8/25/2021	1:10:52 AM	12.32	138720	0.59	0.26	74
8/25/2021	1:11:52 AM	12.32	138780	0.59	0.26	74
8/25/2021	1:12:52 AM	12.32	138840	0.59	0.26	74
8/25/2021	1:13:52 AM	12.32	138900	0.59	0.26	74
8/25/2021	1:14:52 AM	12.33	138960	0.59	0.26	74
8/25/2021	1:15:52 AM	12.33	139020	0.58	0.26	74
8/25/2021	1:16:52 AM	12.33	139080	0.58	0.26	74
8/25/2021	1:17:52 AM	12.33	139140	0.58	0.26	74
8/25/2021	1:18:52 AM	12.33	139200	0.58	0.26	74
8/25/2021	1:19:52 AM	12.33	139260	0.58	0.26	74
8/25/2021	1:20:52 AM	12.33	139320	0.58	0.26	74
8/25/2021	1:21:52 AM	12.33	139380	0.58	0.26	74
8/25/2021	1:22:52 AM	12.33	139440	0.58	0.26	74
8/25/2021	1:23:52 AM	12.33	139500	0.58	0.26	74
8/25/2021	1:24:52 AM	12.33	139560	0.58	0.26	74
8/25/2021	1:25:52 AM	12.33	139620	0.58	0.26	74
8/25/2021	1:26:52 AM	12.33	139680	0.58	0.25	75
8/25/2021	1:27:52 AM	12.33	139740	0.58	0.25	75
8/25/2021	1:28:52 AM	12.33	139800	0.58	0.25	75
8/25/2021	1:29:52 AM	12.33	139860	0.58	0.25	75
8/25/2021	1:30:52 AM	12.33	139920	0.58	0.25	75
8/25/2021	1:31:52 AM	12.33	139980	0.58	0.25	75
8/25/2021	1:32:52 AM	12.34	140040	0.57	0.25	75
8/25/2021	1:33:52 AM	12.34	140100	0.57	0.25	75
8/25/2021	1:34:52 AM	12.34	140160	0.57	0.25	75
8/25/2021	1:35:52 AM	12.34	140220	0.57	0.25	75
8/25/2021	1:36:52 AM	12.34	140280	0.57	0.25	75
8/25/2021	1:37:52 AM	12.34	140340	0.57	0.25	75
8/25/2021	1:38:52 AM	12.34	140400	0.57	0.25	75
8/25/2021	1:39:52 AM	12.34	140460	0.57	0.25	75
8/25/2021	1:40:52 AM	12.34	140520	0.57	0.25	75
8/25/2021	1:41:52 AM	12.34	140580	0.57	0.25	75
8/25/2021	1:42:52 AM	12.34	140640	0.57	0.25	75
8/25/2021	1:43:52 AM	12.34	140700	0.57	0.25	75
8/25/2021	1:44:52 AM	12.34	140760	0.57	0.25	75
8/25/2021	1:45:52 AM	12.34	140820	0.57	0.25	75
8/25/2021	1:46:52 AM	12.34	140880	0.57	0.25	75
8/25/2021	1:47:52 AM	12.34	140940	0.57	0.25	75
8/25/2021	1:48:52 AM	12.34	141000	0.57	0.25	75
8/25/2021	1:49:52 AM	12.34	141060	0.57	0.25	75
8/25/2021	1:50:52 AM	12.34	141120	0.57	0.25	75
8/25/2021	1:51:52 AM	12.34	141180	0.57	0.25	75
8/25/2021	1:52:52 AM	12.34	141240	0.57	0.25	75
8/25/2021	1:53:52 AM	12.35	141300	0.56	0.25	75
8/25/2021	1:54:52 AM	12.35	141360	0.56	0.25	75
8/25/2021	1:55:52 AM	12.35	141420	0.56	0.25	75
8/25/2021	1:56:52 AM	12.35	141480	0.56	0.25	75
8/25/2021	1:57:52 AM	12.35	141540	0.56	0.25	75
8/25/2021	1:58:52 AM	12.35	141600	0.56	0.25	75

8/25/2021	1:59:52 AM	12.35	141660	0.56	0.25	75
8/25/2021	2:00:52 AM	12.35	141720	0.56	0.25	75
8/25/2021	2:01:52 AM	12.35	141780	0.56	0.25	75
8/25/2021	2:02:52 AM	12.35	141840	0.56	0.25	75
8/25/2021	2:03:52 AM	12.35	141900	0.56	0.25	75
8/25/2021	2:04:52 AM	12.35	141960	0.56	0.25	75
8/25/2021	2:05:52 AM	12.35	142020	0.56	0.25	75
8/25/2021	2:06:52 AM	12.35	142080	0.56	0.25	75
8/25/2021	2:07:52 AM	12.35	142140	0.56	0.25	75
8/25/2021	2:08:52 AM	12.35	142200	0.56	0.24	76
8/25/2021	2:09:52 AM	12.36	142260	0.55	0.24	76
8/25/2021	2:10:52 AM	12.36	142320	0.55	0.24	76
8/25/2021	2:11:52 AM	12.36	142380	0.55	0.24	76
8/25/2021	2:12:52 AM	12.36	142440	0.55	0.24	76
8/25/2021	2:13:52 AM	12.36	142500	0.55	0.24	76
8/25/2021	2:14:52 AM	12.36	142560	0.55	0.24	76
8/25/2021	2:15:52 AM	12.36	142620	0.55	0.24	76
8/25/2021	2:16:52 AM	12.36	142680	0.55	0.24	76
8/25/2021	2:17:52 AM	12.36	142740	0.55	0.24	76
8/25/2021	2:18:52 AM	12.36	142800	0.55	0.24	76
8/25/2021	2:19:52 AM	12.36	142860	0.55	0.24	76
8/25/2021	2:20:52 AM	12.36	142920	0.55	0.24	76
8/25/2021	2:21:52 AM	12.36	142980	0.55	0.24	76
8/25/2021	2:22:52 AM	12.36	143040	0.55	0.24	76
8/25/2021	2:23:52 AM	12.36	143100	0.55	0.24	76
8/25/2021	2:24:52 AM	12.36	143160	0.55	0.24	76
8/25/2021	2:25:52 AM	12.36	143220	0.55	0.24	76
8/25/2021	2:26:52 AM	12.36	143280	0.55	0.24	76
8/25/2021	2:27:52 AM	12.36	143340	0.55	0.24	76
8/25/2021	2:28:52 AM	12.36	143400	0.55	0.24	76
8/25/2021	2:29:52 AM	12.37	143460	0.55	0.24	76
8/25/2021	2:30:52 AM	12.37	143520	0.54	0.24	76
8/25/2021	2:31:52 AM	12.37	143580	0.54	0.24	76
8/25/2021	2:32:52 AM	12.37	143640	0.54	0.24	76
8/25/2021	2:33:52 AM	12.37	143700	0.54	0.24	76
8/25/2021	2:34:52 AM	12.37	143760	0.54	0.24	76
8/25/2021	2:35:52 AM	12.37	143820	0.54	0.24	76
8/25/2021	2:36:52 AM	12.37	143880	0.54	0.24	76
8/25/2021	2:37:52 AM	12.37	143940	0.54	0.24	76
8/25/2021	2:38:52 AM	12.37	144000	0.54	0.24	76
8/25/2021	2:39:52 AM	12.37	144060	0.54	0.24	76
8/25/2021	2:40:52 AM	12.37	144120	0.54	0.24	76
8/25/2021	2:41:52 AM	12.37	144180	0.54	0.24	76
8/25/2021	2:42:52 AM	12.37	144240	0.54	0.24	76
8/25/2021	2:43:52 AM	12.37	144300	0.54	0.24	76
8/25/2021	2:44:52 AM	12.37	144360	0.54	0.24	76
8/25/2021	2:45:52 AM	12.37	144420	0.54	0.24	76
8/25/2021	2:46:52 AM	12.38	144480	0.53	0.24	76
8/25/2021	2:47:52 AM	12.38	144540	0.53	0.24	76
8/25/2021	2:48:52 AM	12.38	144600	0.53	0.23	77
8/25/2021	2:49:52 AM	12.38	144660	0.53	0.23	77
8/25/2021	2:50:52 AM	12.38	144720	0.53	0.23	77
8/25/2021	2:51:52 AM	12.38	144780	0.53	0.23	77
8/25/2021	2:52:52 AM	12.38	144840	0.53	0.23	77
8/25/2021	2:53:52 AM	12.38	144900	0.53	0.23	77
8/25/2021	2:54:52 AM	12.38	144960	0.53	0.23	77
8/25/2021	2:55:52 AM	12.38	145020	0.53	0.23	77
8/25/2021	2:56:52 AM	12.38	145080	0.53	0.23	77
8/25/2021	2:57:52 AM	12.38	145140	0.53	0.23	77
8/25/2021	2:58:52 AM	12.38	145200	0.53	0.23	77
8/25/2021	2:59:52 AM	12.38	145260	0.53	0.23	77
8/25/2021	3:00:52 AM	12.38	145320	0.53	0.23	77
8/25/2021	3:01:52 AM	12.38	145380	0.53	0.23	77
8/25/2021	3:02:52 AM	12.38	145440	0.53	0.23	77
8/25/2021	3:03:52 AM	12.38	145500	0.53	0.23	77
8/25/2021	3:04:52 AM	12.39	145560	0.52	0.23	77
8/25/2021	3:05:52 AM	12.39	145620	0.52	0.23	77
8/25/2021	3:06:52 AM	12.39	145680	0.52	0.23	77
8/25/2021	3:07:52 AM	12.39	145740	0.52	0.23	77
8/25/2021	3:08:52 AM	12.39	145800	0.52	0.23	77
8/25/2021	3:09:52 AM	12.39	145860	0.52	0.23	77
8/25/2021	3:10:52 AM	12.39	145920	0.52	0.23	77
8/25/2021	3:11:52 AM	12.39	145980	0.52	0.23	77
8/25/2021	3:12:52 AM	12.39	146040	0.52	0.23	77
8/25/2021	3:13:52 AM	12.39	146100	0.52	0.23	77
8/25/2021	3:14:52 AM	12.39	146160	0.52	0.23	77
8/25/2021	3:15:52 AM	12.39	146220	0.52	0.23	77
8/25/2021	3:16:52 AM	12.39	146280	0.52	0.23	77
8/25/2021	3:17:52 AM	12.39	146340	0.52	0.23	77

8/25/2021	3:18:52 AM	12.39	146400	0.52	0.23	77
8/25/2021	3:19:52 AM	12.40	146460	0.52	0.23	77
8/25/2021	3:20:52 AM	12.40	146520	0.51	0.23	77
8/25/2021	3:21:52 AM	12.40	146580	0.51	0.23	77
8/25/2021	3:22:52 AM	12.40	146640	0.51	0.23	77
8/25/2021	3:23:52 AM	12.40	146700	0.51	0.23	77
8/25/2021	3:24:52 AM	12.40	146760	0.51	0.23	77
8/25/2021	3:25:52 AM	12.40	146820	0.51	0.23	77
8/25/2021	3:26:52 AM	12.40	146880	0.51	0.23	77
8/25/2021	3:27:52 AM	12.40	146940	0.51	0.22	78
8/25/2021	3:28:52 AM	12.40	147000	0.51	0.22	78
8/25/2021	3:29:52 AM	12.40	147060	0.51	0.22	78
8/25/2021	3:30:52 AM	12.40	147120	0.51	0.22	78
8/25/2021	3:31:52 AM	12.40	147180	0.51	0.22	78
8/25/2021	3:32:52 AM	12.40	147240	0.51	0.22	78
8/25/2021	3:33:52 AM	12.40	147300	0.51	0.22	78
8/25/2021	3:34:52 AM	12.40	147360	0.51	0.22	78
8/25/2021	3:35:52 AM	12.40	147420	0.51	0.22	78
8/25/2021	3:36:52 AM	12.40	147480	0.51	0.22	78
8/25/2021	3:37:52 AM	12.41	147540	0.50	0.22	78
8/25/2021	3:38:52 AM	12.41	147600	0.50	0.22	78
8/25/2021	3:39:52 AM	12.41	147660	0.50	0.22	78
8/25/2021	3:40:52 AM	12.41	147720	0.50	0.22	78
8/25/2021	3:41:52 AM	12.41	147780	0.50	0.22	78
8/25/2021	3:42:52 AM	12.41	147840	0.50	0.22	78
8/25/2021	3:43:52 AM	12.41	147900	0.50	0.22	78
8/25/2021	3:44:52 AM	12.41	147960	0.50	0.22	78
8/25/2021	3:45:52 AM	12.41	148020	0.50	0.22	78
8/25/2021	3:46:52 AM	12.41	148080	0.50	0.22	78
8/25/2021	3:47:52 AM	12.41	148140	0.50	0.22	78
8/25/2021	3:48:52 AM	12.41	148200	0.50	0.22	78
8/25/2021	3:49:52 AM	12.41	148260	0.50	0.22	78
8/25/2021	3:50:52 AM	12.41	148320	0.50	0.22	78
8/25/2021	3:51:52 AM	12.41	148380	0.50	0.22	78
8/25/2021	3:52:52 AM	12.41	148440	0.50	0.22	78
8/25/2021	3:53:52 AM	12.41	148500	0.50	0.22	78
8/25/2021	3:54:52 AM	12.42	148560	0.49	0.22	78
8/25/2021	3:55:52 AM	12.42	148620	0.49	0.22	78
8/25/2021	3:56:52 AM	12.42	148680	0.49	0.22	78
8/25/2021	3:57:52 AM	12.42	148740	0.49	0.22	78
8/25/2021	3:58:52 AM	12.42	148800	0.49	0.22	78
8/25/2021	3:59:52 AM	12.42	148860	0.49	0.22	78
8/25/2021	4:00:52 AM	12.42	148920	0.49	0.22	78
8/25/2021	4:01:52 AM	12.42	148980	0.49	0.22	78
8/25/2021	4:02:52 AM	12.42	149040	0.49	0.22	78
8/25/2021	4:03:52 AM	12.42	149100	0.49	0.22	78
8/25/2021	4:04:52 AM	12.42	149160	0.49	0.22	78
8/25/2021	4:05:52 AM	12.42	149220	0.49	0.22	78
8/25/2021	4:06:52 AM	12.42	149280	0.49	0.22	78
8/25/2021	4:07:52 AM	12.42	149340	0.49	0.21	79
8/25/2021	4:08:52 AM	12.42	149400	0.49	0.21	79
8/25/2021	4:09:52 AM	12.42	149460	0.49	0.21	79
8/25/2021	4:10:52 AM	12.42	149520	0.49	0.21	79
8/25/2021	4:11:52 AM	12.42	149580	0.49	0.21	79
8/25/2021	4:12:52 AM	12.43	149640	0.48	0.21	79
8/25/2021	4:13:52 AM	12.43	149700	0.48	0.21	79
8/25/2021	4:14:52 AM	12.43	149760	0.48	0.21	79
8/25/2021	4:15:52 AM	12.43	149820	0.48	0.21	79
8/25/2021	4:16:52 AM	12.43	149880	0.48	0.21	79
8/25/2021	4:17:52 AM	12.43	149940	0.48	0.21	79
8/25/2021	4:18:52 AM	12.43	150000	0.48	0.21	79
8/25/2021	4:19:52 AM	12.43	150060	0.48	0.21	79
8/25/2021	4:20:52 AM	12.43	150120	0.48	0.21	79
8/25/2021	4:21:52 AM	12.43	150180	0.48	0.21	79
8/25/2021	4:22:52 AM	12.43	150240	0.48	0.21	79
8/25/2021	4:23:52 AM	12.43	150300	0.48	0.21	79
8/25/2021	4:24:52 AM	12.43	150360	0.48	0.21	79
8/25/2021	4:25:52 AM	12.43	150420	0.48	0.21	79
8/25/2021	4:26:52 AM	12.43	150480	0.48	0.21	79
8/25/2021	4:27:52 AM	12.43	150540	0.48	0.21	79
8/25/2021	4:28:52 AM	12.43	150600	0.48	0.21	79
8/25/2021	4:29:52 AM	12.43	150660	0.48	0.21	79
8/25/2021	4:30:52 AM	12.44	150720	0.48	0.21	79
8/25/2021	4:31:52 AM	12.44	150780	0.47	0.21	79
8/25/2021	4:32:52 AM	12.44	150840	0.47	0.21	79
8/25/2021	4:33:52 AM	12.44	150900	0.47	0.21	79
8/25/2021	4:34:52 AM	12.44	150960	0.47	0.21	79
8/25/2021	4:35:52 AM	12.44	151020	0.47	0.21	79
8/25/2021	4:36:52 AM	12.44	151080	0.47	0.21	79

8/25/2021	4:37:52 AM	12.44	151140	0.47	0.21	79
8/25/2021	4:38:52 AM	12.44	151200	0.47	0.21	79
8/25/2021	4:39:52 AM	12.44	151260	0.47	0.21	79
8/25/2021	4:40:52 AM	12.44	151320	0.47	0.21	79
8/25/2021	4:41:52 AM	12.44	151380	0.47	0.21	79
8/25/2021	4:42:52 AM	12.44	151440	0.47	0.21	79
8/25/2021	4:43:52 AM	12.44	151500	0.47	0.21	79
8/25/2021	4:44:52 AM	12.44	151560	0.47	0.21	79
8/25/2021	4:45:52 AM	12.44	151620	0.47	0.21	79
8/25/2021	4:46:52 AM	12.44	151680	0.47	0.21	79
8/25/2021	4:47:52 AM	12.44	151740	0.47	0.21	79
8/25/2021	4:48:52 AM	12.44	151800	0.47	0.21	79
8/25/2021	4:49:52 AM	12.44	151860	0.47	0.21	79
8/25/2021	4:50:52 AM	12.44	151920	0.47	0.21	79
8/25/2021	4:51:52 AM	12.45	151980	0.46	0.20	80
8/25/2021	4:52:52 AM	12.45	152040	0.46	0.20	80
8/25/2021	4:53:52 AM	12.45	152100	0.46	0.20	80
8/25/2021	4:54:52 AM	12.45	152160	0.46	0.20	80
8/25/2021	4:55:52 AM	12.45	152220	0.46	0.20	80
8/25/2021	4:56:52 AM	12.45	152280	0.46	0.20	80
8/25/2021	4:57:52 AM	12.45	152340	0.46	0.20	80
8/25/2021	4:58:52 AM	12.45	152400	0.46	0.20	80
8/25/2021	4:59:52 AM	12.45	152460	0.46	0.20	80
8/25/2021	5:00:52 AM	12.45	152520	0.46	0.20	80
8/25/2021	5:01:52 AM	12.45	152580	0.46	0.20	80
8/25/2021	5:02:52 AM	12.45	152640	0.46	0.20	80
8/25/2021	5:03:52 AM	12.45	152700	0.46	0.20	80
8/25/2021	5:04:52 AM	12.45	152760	0.46	0.20	80
8/25/2021	5:05:52 AM	12.45	152820	0.46	0.20	80
8/25/2021	5:06:52 AM	12.45	152880	0.46	0.20	80
8/25/2021	5:07:52 AM	12.46	152940	0.45	0.20	80
8/25/2021	5:08:52 AM	12.46	153000	0.45	0.20	80
8/25/2021	5:09:52 AM	12.46	153060	0.45	0.20	80
8/25/2021	5:10:52 AM	12.46	153120	0.45	0.20	80
8/25/2021	5:11:52 AM	12.46	153180	0.45	0.20	80
8/25/2021	5:12:52 AM	12.46	153240	0.45	0.20	80
8/25/2021	5:13:52 AM	12.46	153300	0.45	0.20	80
8/25/2021	5:14:52 AM	12.46	153360	0.45	0.20	80
8/25/2021	5:15:52 AM	12.46	153420	0.45	0.20	80
8/25/2021	5:16:52 AM	12.46	153480	0.45	0.20	80
8/25/2021	5:17:52 AM	12.46	153540	0.45	0.20	80
8/25/2021	5:18:52 AM	12.46	153600	0.45	0.20	80
8/25/2021	5:19:52 AM	12.46	153660	0.45	0.20	80
8/25/2021	5:20:52 AM	12.46	153720	0.45	0.20	80
8/25/2021	5:21:52 AM	12.46	153780	0.45	0.20	80
8/25/2021	5:22:52 AM	12.46	153840	0.45	0.20	80
8/25/2021	5:23:52 AM	12.46	153900	0.45	0.20	80
8/25/2021	5:24:52 AM	12.46	153960	0.45	0.20	80
8/25/2021	5:25:52 AM	12.46	154020	0.45	0.20	80
8/25/2021	5:26:52 AM	12.46	154080	0.45	0.20	80
8/25/2021	5:27:52 AM	12.47	154140	0.44	0.20	80
8/25/2021	5:28:52 AM	12.47	154200	0.44	0.20	80
8/25/2021	5:29:52 AM	12.47	154260	0.44	0.20	80
8/25/2021	5:30:52 AM	12.47	154320	0.44	0.20	80
8/25/2021	5:31:52 AM	12.47	154380	0.44	0.20	80
8/25/2021	5:32:52 AM	12.47	154440	0.44	0.20	80
8/25/2021	5:33:52 AM	12.47	154500	0.44	0.19	81
8/25/2021	5:34:52 AM	12.47	154560	0.44	0.19	81
8/25/2021	5:35:52 AM	12.47	154620	0.44	0.19	81
8/25/2021	5:36:52 AM	12.47	154680	0.44	0.19	81
8/25/2021	5:37:52 AM	12.47	154740	0.44	0.19	81
8/25/2021	5:38:52 AM	12.47	154800	0.44	0.19	81
8/25/2021	5:39:52 AM	12.47	154860	0.44	0.19	81
8/25/2021	5:40:52 AM	12.47	154920	0.44	0.19	81
8/25/2021	5:41:52 AM	12.47	154980	0.44	0.19	81
8/25/2021	5:42:52 AM	12.47	155040	0.44	0.19	81
8/25/2021	5:43:52 AM	12.47	155100	0.44	0.19	81
8/25/2021	5:44:52 AM	12.47	155160	0.44	0.19	81
8/25/2021	5:45:52 AM	12.48	155220	0.43	0.19	81
8/25/2021	5:46:52 AM	12.48	155280	0.43	0.19	81
8/25/2021	5:47:52 AM	12.48	155340	0.43	0.19	81
8/25/2021	5:48:52 AM	12.48	155400	0.43	0.19	81
8/25/2021	5:49:52 AM	12.48	155460	0.43	0.19	81
8/25/2021	5:50:52 AM	12.48	155520	0.43	0.19	81
8/25/2021	5:51:52 AM	12.48	155580	0.43	0.19	81
8/25/2021	5:52:52 AM	12.48	155640	0.43	0.19	81
8/25/2021	5:53:52 AM	12.48	155700	0.43	0.19	81
8/25/2021	5:54:52 AM	12.48	155760	0.43	0.19	81
8/25/2021	5:55:52 AM	12.48	155820	0.43	0.19	81

8/25/2021	5:56:52 AM	12.48	155880	0.43	0.19	81
8/25/2021	5:57:52 AM	12.48	155940	0.43	0.19	81
8/25/2021	5:58:52 AM	12.48	156000	0.43	0.19	81
8/25/2021	5:59:52 AM	12.48	156060	0.43	0.19	81
8/25/2021	6:00:52 AM	12.48	156120	0.43	0.19	81
8/25/2021	6:01:52 AM	12.49	156180	0.43	0.19	81
8/25/2021	6:02:52 AM	12.49	156240	0.42	0.19	81
8/25/2021	6:03:52 AM	12.49	156300	0.42	0.19	81
8/25/2021	6:04:52 AM	12.49	156360	0.42	0.19	81
8/25/2021	6:05:52 AM	12.49	156420	0.42	0.19	81
8/25/2021	6:06:52 AM	12.49	156480	0.42	0.19	81
8/25/2021	6:07:52 AM	12.49	156540	0.42	0.19	81
8/25/2021	6:08:52 AM	12.49	156600	0.42	0.19	81
8/25/2021	6:09:52 AM	12.49	156660	0.42	0.19	81
8/25/2021	6:10:52 AM	12.49	156720	0.42	0.18	82
8/25/2021	6:11:52 AM	12.49	156780	0.42	0.18	82
8/25/2021	6:12:52 AM	12.49	156840	0.42	0.18	82
8/25/2021	6:13:52 AM	12.49	156900	0.42	0.18	82
8/25/2021	6:14:52 AM	12.49	156960	0.42	0.18	82
8/25/2021	6:15:52 AM	12.49	157020	0.42	0.18	82
8/25/2021	6:16:52 AM	12.49	157080	0.42	0.18	82
8/25/2021	6:17:52 AM	12.49	157140	0.42	0.18	82
8/25/2021	6:18:52 AM	12.49	157200	0.42	0.18	82
8/25/2021	6:19:52 AM	12.49	157260	0.42	0.18	82
8/25/2021	6:20:52 AM	12.50	157320	0.41	0.18	82
8/25/2021	6:21:52 AM	12.50	157380	0.41	0.18	82
8/25/2021	6:22:52 AM	12.50	157440	0.41	0.18	82
8/25/2021	6:23:52 AM	12.50	157500	0.41	0.18	82
8/25/2021	6:24:52 AM	12.50	157560	0.41	0.18	82
8/25/2021	6:25:52 AM	12.50	157620	0.41	0.18	82
8/25/2021	6:26:52 AM	12.50	157680	0.41	0.18	82
8/25/2021	6:27:52 AM	12.50	157740	0.41	0.18	82
8/25/2021	6:28:52 AM	12.50	157800	0.41	0.18	82
8/25/2021	6:29:52 AM	12.50	157860	0.41	0.18	82
8/25/2021	6:30:52 AM	12.50	157920	0.41	0.18	82
8/25/2021	6:31:52 AM	12.50	157980	0.41	0.18	82
8/25/2021	6:32:52 AM	12.50	158040	0.41	0.18	82
8/25/2021	6:33:52 AM	12.50	158100	0.41	0.18	82
8/25/2021	6:34:52 AM	12.50	158160	0.41	0.18	82
8/25/2021	6:35:52 AM	12.50	158220	0.41	0.18	82
8/25/2021	6:36:52 AM	12.50	158280	0.41	0.18	82
8/25/2021	6:37:52 AM	12.50	158340	0.41	0.18	82
8/25/2021	6:38:52 AM	12.50	158400	0.41	0.18	82
8/25/2021	6:39:52 AM	12.50	158460	0.41	0.18	82
8/25/2021	6:40:52 AM	12.50	158520	0.41	0.18	82
8/25/2021	6:41:52 AM	12.50	158580	0.41	0.18	82
8/25/2021	6:42:52 AM	12.51	158640	0.40	0.18	82
8/25/2021	6:43:52 AM	12.51	158700	0.40	0.18	82
8/25/2021	6:44:52 AM	12.51	158760	0.40	0.18	82
8/25/2021	6:45:52 AM	12.51	158820	0.40	0.18	82
8/25/2021	6:46:52 AM	12.51	158880	0.40	0.18	82
8/25/2021	6:47:52 AM	12.51	158940	0.40	0.18	82
8/25/2021	6:48:52 AM	12.51	159000	0.40	0.18	82
8/25/2021	6:49:52 AM	12.51	159060	0.40	0.18	82
8/25/2021	6:50:52 AM	12.51	159120	0.40	0.17	83
8/25/2021	6:51:52 AM	12.51	159180	0.40	0.17	83
8/25/2021	6:52:52 AM	12.51	159240	0.40	0.17	83
8/25/2021	6:53:52 AM	12.51	159300	0.40	0.17	83
8/25/2021	6:54:52 AM	12.51	159360	0.40	0.17	83
8/25/2021	6:55:52 AM	12.52	159420	0.40	0.17	83
8/25/2021	6:56:52 AM	12.52	159480	0.39	0.17	83
8/25/2021	6:57:52 AM	12.52	159540	0.39	0.17	83
8/25/2021	6:58:52 AM	12.52	159600	0.39	0.17	83
8/25/2021	6:59:52 AM	12.52	159660	0.39	0.17	83
8/25/2021	7:00:52 AM	12.52	159720	0.39	0.17	83
8/25/2021	7:01:52 AM	12.52	159780	0.39	0.17	83
8/25/2021	7:02:52 AM	12.52	159840	0.39	0.17	83
8/25/2021	7:03:52 AM	12.52	159900	0.39	0.17	83
8/25/2021	7:04:52 AM	12.52	159960	0.39	0.17	83
8/25/2021	7:05:52 AM	12.52	160020	0.39	0.17	83
8/25/2021	7:06:52 AM	12.52	160080	0.39	0.17	83
8/25/2021	7:07:52 AM	12.52	160140	0.39	0.17	83
8/25/2021	7:08:52 AM	12.52	160200	0.39	0.17	83
8/25/2021	7:09:52 AM	12.52	160260	0.39	0.17	83
8/25/2021	7:10:52 AM	12.52	160320	0.39	0.17	83
8/25/2021	7:11:52 AM	12.52	160380	0.39	0.17	83
8/25/2021	7:12:52 AM	12.53	160440	0.38	0.17	83
8/25/2021	7:13:52 AM	12.53	160500	0.38	0.17	83
8/25/2021	7:14:52 AM	12.53	160560	0.38	0.17	83

8/25/2021	7:15:52 AM	12.53	160620	0.38	0.17	83
8/25/2021	7:16:52 AM	12.53	160680	0.38	0.17	83
8/25/2021	7:17:52 AM	12.53	160740	0.38	0.17	83
8/25/2021	7:18:52 AM	12.53	160800	0.38	0.17	83
8/25/2021	7:19:52 AM	12.53	160860	0.38	0.17	83
8/25/2021	7:20:52 AM	12.53	160920	0.38	0.17	83
8/25/2021	7:21:52 AM	12.53	160980	0.38	0.17	83
8/25/2021	7:22:52 AM	12.53	161040	0.38	0.17	83
8/25/2021	7:23:52 AM	12.53	161100	0.38	0.17	83
8/25/2021	7:24:52 AM	12.53	161160	0.38	0.17	83
8/25/2021	7:25:52 AM	12.53	161220	0.38	0.17	83
8/25/2021	7:26:52 AM	12.53	161280	0.38	0.17	83
8/25/2021	7:27:52 AM	12.53	161340	0.38	0.17	83
8/25/2021	7:28:52 AM	12.53	161400	0.38	0.17	83
8/25/2021	7:29:52 AM	12.54	161460	0.38	0.17	83
8/25/2021	7:30:52 AM	12.54	161520	0.37	0.16	84
8/25/2021	7:31:52 AM	12.54	161580	0.37	0.16	84
8/25/2021	7:32:52 AM	12.54	161640	0.37	0.16	84
8/25/2021	7:33:52 AM	12.54	161700	0.37	0.16	84
8/25/2021	7:34:52 AM	12.54	161760	0.37	0.16	84
8/25/2021	7:35:52 AM	12.54	161820	0.37	0.16	84
8/25/2021	7:36:52 AM	12.54	161880	0.37	0.16	84
8/25/2021	7:37:52 AM	12.54	161940	0.37	0.16	84
8/25/2021	7:38:52 AM	12.54	162000	0.37	0.16	84
8/25/2021	7:39:52 AM	12.54	162060	0.37	0.16	84
8/25/2021	7:40:52 AM	12.54	162120	0.37	0.16	84
8/25/2021	7:41:52 AM	12.54	162180	0.37	0.16	84
8/25/2021	7:42:52 AM	12.54	162240	0.37	0.16	84
8/25/2021	7:43:52 AM	12.54	162300	0.37	0.16	84
8/25/2021	7:44:52 AM	12.54	162360	0.37	0.16	84
8/25/2021	7:45:52 AM	12.54	162420	0.37	0.16	84
8/25/2021	7:46:52 AM	12.54	162480	0.37	0.16	84
8/25/2021	7:47:52 AM	12.54	162540	0.37	0.16	84
8/25/2021	7:48:52 AM	12.54	162600	0.37	0.16	84
8/25/2021	7:49:52 AM	12.55	162660	0.36	0.16	84
8/25/2021	7:50:52 AM	12.55	162720	0.36	0.16	84
8/25/2021	7:51:52 AM	12.55	162780	0.36	0.16	84
8/25/2021	7:52:52 AM	12.55	162840	0.36	0.16	84
8/25/2021	7:53:52 AM	12.55	162900	0.36	0.16	84
8/25/2021	7:54:52 AM	12.55	162960	0.36	0.16	84
8/25/2021	7:55:52 AM	12.55	163020	0.36	0.16	84
8/25/2021	7:56:52 AM	12.55	163080	0.36	0.16	84
8/25/2021	7:57:52 AM	12.55	163140	0.36	0.16	84
8/25/2021	7:58:52 AM	12.55	163200	0.36	0.16	84
8/25/2021	7:59:52 AM	12.55	163260	0.36	0.16	84
8/25/2021	8:00:52 AM	12.55	163320	0.36	0.16	84
8/25/2021	8:01:52 AM	12.55	163380	0.36	0.16	84
8/25/2021	8:02:52 AM	12.55	163440	0.36	0.16	84
8/25/2021	8:03:52 AM	12.55	163500	0.36	0.16	84
8/25/2021	8:04:52 AM	12.55	163560	0.36	0.16	84
8/25/2021	8:05:52 AM	12.55	163620	0.36	0.16	84
8/25/2021	8:06:52 AM	12.55	163680	0.36	0.16	84
8/25/2021	8:07:52 AM	12.55	163740	0.36	0.16	84
8/25/2021	8:08:52 AM	12.56	163800	0.35	0.16	84
8/25/2021	8:09:52 AM	12.56	163860	0.35	0.16	84
8/25/2021	8:10:52 AM	12.56	163920	0.35	0.16	84
8/25/2021	8:11:52 AM	12.56	163980	0.35	0.16	84
8/25/2021	8:12:52 AM	12.56	164040	0.35	0.16	84
8/25/2021	8:13:52 AM	12.56	164100	0.35	0.15	85
8/25/2021	8:14:52 AM	12.56	164160	0.35	0.15	85
8/25/2021	8:15:52 AM	12.56	164220	0.35	0.15	85
8/25/2021	8:16:52 AM	12.56	164280	0.35	0.15	85
8/25/2021	8:17:52 AM	12.56	164340	0.35	0.15	85
8/25/2021	8:18:52 AM	12.56	164400	0.35	0.15	85
8/25/2021	8:19:52 AM	12.56	164460	0.35	0.15	85
8/25/2021	8:20:52 AM	12.56	164520	0.35	0.15	85
8/25/2021	8:21:52 AM	12.56	164580	0.35	0.15	85
8/25/2021	8:22:52 AM	12.56	164640	0.35	0.15	85
8/25/2021	8:23:52 AM	12.56	164700	0.35	0.15	85
8/25/2021	8:24:52 AM	12.56	164760	0.35	0.15	85
8/25/2021	8:25:52 AM	12.56	164820	0.35	0.15	85
8/25/2021	8:26:52 AM	12.56	164880	0.35	0.15	85
8/25/2021	8:27:52 AM	12.57	164940	0.35	0.15	85
8/25/2021	8:28:52 AM	12.57	165000	0.34	0.15	85
8/25/2021	8:29:52 AM	12.57	165060	0.34	0.15	85
8/25/2021	8:30:52 AM	12.57	165120	0.34	0.15	85
8/25/2021	8:31:52 AM	12.57	165180	0.34	0.15	85
8/25/2021	8:32:52 AM	12.57	165240	0.34	0.15	85
8/25/2021	8:33:52 AM	12.57	165300	0.34	0.15	85

8/25/2021	8:34:52 AM	12.57	165360	0.34	0.15	85
8/25/2021	8:35:52 AM	12.57	165420	0.34	0.15	85
8/25/2021	8:36:52 AM	12.57	165480	0.34	0.15	85
8/25/2021	8:37:52 AM	12.57	165540	0.34	0.15	85
8/25/2021	8:38:52 AM	12.57	165600	0.34	0.15	85
8/25/2021	8:39:52 AM	12.57	165660	0.34	0.15	85
8/25/2021	8:40:52 AM	12.57	165720	0.34	0.15	85
8/25/2021	8:41:52 AM	12.57	165780	0.34	0.15	85
8/25/2021	8:42:52 AM	12.57	165840	0.34	0.15	85
8/25/2021	8:43:52 AM	12.57	165900	0.34	0.15	85
8/25/2021	8:44:52 AM	12.57	165960	0.34	0.15	85
8/25/2021	8:45:52 AM	12.57	166020	0.34	0.15	85
8/25/2021	8:46:52 AM	12.57	166080	0.34	0.15	85
8/25/2021	8:47:52 AM	12.57	166140	0.34	0.15	85
8/25/2021	8:48:52 AM	12.58	166200	0.34	0.15	85
8/25/2021	8:49:52 AM	12.58	166260	0.33	0.15	85
8/25/2021	8:50:52 AM	12.58	166320	0.33	0.15	85
8/25/2021	8:51:52 AM	12.58	166380	0.33	0.15	85
8/25/2021	8:52:52 AM	12.58	166440	0.33	0.15	85
8/25/2021	8:53:52 AM	12.58	166500	0.33	0.15	85
8/25/2021	8:54:52 AM	12.58	166560	0.33	0.15	85
8/25/2021	8:55:52 AM	12.58	166620	0.33	0.15	85
8/25/2021	8:56:52 AM	12.58	166680	0.33	0.15	85
8/25/2021	8:57:52 AM	12.58	166740	0.33	0.15	85
8/25/2021	8:58:52 AM	12.58	166800	0.33	0.15	85
8/25/2021	8:59:52 AM	12.58	166860	0.33	0.15	85
8/25/2021	9:00:52 AM	12.58	166920	0.33	0.15	85
8/25/2021	9:01:52 AM	12.58	166980	0.33	0.15	85
8/25/2021	9:02:52 AM	12.58	167040	0.33	0.15	85
8/25/2021	9:03:52 AM	12.58	167100	0.33	0.15	85
8/25/2021	9:04:52 AM	12.58	167160	0.33	0.15	85
8/25/2021	9:05:52 AM	12.58	167220	0.33	0.14	86
8/25/2021	9:06:52 AM	12.58	167280	0.33	0.14	86
8/25/2021	9:07:52 AM	12.58	167340	0.33	0.14	86
8/25/2021	9:08:52 AM	12.58	167400	0.33	0.14	86
8/25/2021	9:09:52 AM	12.58	167460	0.33	0.14	86
8/25/2021	9:10:52 AM	12.58	167520	0.33	0.14	86
8/25/2021	9:11:52 AM	12.58	167580	0.33	0.14	86
8/25/2021	9:12:52 AM	12.58	167640	0.33	0.14	86
8/25/2021	9:13:52 AM	12.59	167700	0.32	0.14	86
8/25/2021	9:14:52 AM	12.59	167760	0.32	0.14	86
8/25/2021	9:15:52 AM	12.59	167820	0.32	0.14	86
8/25/2021	9:16:52 AM	12.59	167880	0.32	0.14	86
8/25/2021	9:17:52 AM	12.59	167940	0.32	0.14	86
8/25/2021	9:18:52 AM	12.59	168000	0.32	0.14	86
8/25/2021	9:19:52 AM	12.59	168060	0.32	0.14	86
8/25/2021	9:20:52 AM	12.59	168120	0.32	0.14	86
8/25/2021	9:21:52 AM	12.59	168180	0.32	0.14	86
8/25/2021	9:22:52 AM	12.59	168240	0.32	0.14	86
8/25/2021	9:23:52 AM	12.59	168300	0.32	0.14	86
8/25/2021	9:24:52 AM	12.59	168360	0.32	0.14	86
8/25/2021	9:25:52 AM	12.59	168420	0.32	0.14	86
8/25/2021	9:26:52 AM	12.59	168480	0.32	0.14	86
8/25/2021	9:27:52 AM	12.59	168540	0.32	0.14	86
8/25/2021	9:28:52 AM	12.59	168600	0.32	0.14	86
8/25/2021	9:29:52 AM	12.60	168660	0.31	0.14	86
8/25/2021	9:30:52 AM	12.60	168720	0.31	0.14	86
8/25/2021	9:31:52 AM	12.60	168780	0.31	0.14	86
8/25/2021	9:32:52 AM	12.60	168840	0.31	0.14	86
8/25/2021	9:33:52 AM	12.60	168900	0.31	0.14	86
8/25/2021	9:34:52 AM	12.60	168960	0.31	0.14	86
8/25/2021	9:35:52 AM	12.60	169020	0.31	0.14	86
8/25/2021	9:36:52 AM	12.60	169080	0.31	0.14	86
8/25/2021	9:37:52 AM	12.60	169140	0.31	0.14	86
8/25/2021	9:38:52 AM	12.60	169200	0.31	0.14	86
8/25/2021	9:39:52 AM	12.60	169260	0.31	0.14	86
8/25/2021	9:40:52 AM	12.60	169320	0.31	0.14	86
8/25/2021	9:41:52 AM	12.60	169380	0.31	0.14	86
8/25/2021	9:42:52 AM	12.60	169440	0.31	0.14	86
8/25/2021	9:43:52 AM	12.60	169500	0.31	0.14	86
8/25/2021	9:44:52 AM	12.60	169560	0.31	0.13	87
8/25/2021	9:45:52 AM	12.60	169620	0.31	0.13	87
8/25/2021	9:46:52 AM	12.61	169680	0.31	0.13	87
8/25/2021	9:47:52 AM	12.61	169740	0.30	0.13	87
8/25/2021	9:48:52 AM	12.61	169800	0.30	0.13	87
8/25/2021	9:49:52 AM	12.61	169860	0.30	0.13	87
8/25/2021	9:50:52 AM	12.61	169920	0.30	0.13	87
8/25/2021	9:51:52 AM	12.61	169980	0.30	0.13	87
8/25/2021	9:52:52 AM	12.61	170040	0.30	0.13	87

8/25/2021	12:31:52 PM	12.68	179580	0.23	0.10	90
8/25/2021	12:32:52 PM	12.68	179640	0.23	0.10	90
8/25/2021	12:33:52 PM	12.68	179700	0.23	0.10	90
8/25/2021	12:34:52 PM	12.68	179760	0.23	0.10	90
8/25/2021	12:35:52 PM	12.68	179820	0.23	0.10	90
8/25/2021	12:36:52 PM	12.68	179880	0.23	0.10	90
8/25/2021	12:37:52 PM	12.68	179940	0.23	0.10	90
8/25/2021	12:38:52 PM	12.68	180000	0.23	0.10	90
8/25/2021	12:39:52 PM	12.68	180060	0.23	0.10	90
8/25/2021	12:40:52 PM	12.68	180120	0.23	0.10	90
8/25/2021	12:41:52 PM	12.68	180180	0.23	0.10	90
8/25/2021	12:42:52 PM	12.68	180240	0.23	0.10	90
8/25/2021	12:43:52 PM	12.68	180300	0.23	0.10	90
8/25/2021	12:44:52 PM	12.68	180360	0.23	0.10	90
8/25/2021	12:45:52 PM	12.68	180420	0.23	0.10	90
8/25/2021	12:46:52 PM	12.68	180480	0.23	0.10	90
8/25/2021	12:47:52 PM	12.68	180540	0.23	0.10	90
8/25/2021	12:48:52 PM	12.69	180600	0.22	0.10	90
8/25/2021	12:49:52 PM	12.69	180660	0.23	0.10	90
8/25/2021	12:50:52 PM	12.69	180720	0.22	0.10	90
8/25/2021	12:51:52 PM	12.69	180780	0.22	0.10	90
8/25/2021	12:52:52 PM	12.69	180840	0.22	0.10	90
8/25/2021	12:53:52 PM	12.69	180900	0.22	0.10	90
8/25/2021	12:54:52 PM	12.69	180960	0.22	0.10	90
8/25/2021	12:55:52 PM	12.69	181020	0.22	0.10	90
8/25/2021	12:56:52 PM	12.69	181080	0.22	0.10	90
8/25/2021	12:57:52 PM	12.69	181140	0.22	0.10	90
8/25/2021	12:58:52 PM	12.69	181200	0.22	0.10	90
8/25/2021	12:59:52 PM	12.69	181260	0.22	0.10	90
8/25/2021	1:00:52 PM	12.69	181320	0.22	0.10	90
8/25/2021	1:01:52 PM	12.69	181380	0.22	0.10	90
8/25/2021	1:02:52 PM	12.69	181440	0.22	0.10	90
8/25/2021	1:03:52 PM	12.69	181500	0.22	0.10	90
8/25/2021	1:04:52 PM	12.69	181560	0.22	0.10	90
8/25/2021	1:05:52 PM	12.69	181620	0.22	0.10	90
8/25/2021	1:06:52 PM	12.69	181680	0.22	0.10	90
8/25/2021	1:07:52 PM	12.69	181740	0.22	0.10	90
8/25/2021	1:08:52 PM	12.69	181800	0.22	0.09	91
8/25/2021	1:09:52 PM	12.69	181860	0.22	0.09	91
8/25/2021	1:10:52 PM	12.70	181920	0.21	0.09	91
8/25/2021	1:11:52 PM	12.70	181980	0.21	0.09	91
8/25/2021	1:12:52 PM	12.70	182040	0.21	0.09	91
8/25/2021	1:13:52 PM	12.70	182100	0.21	0.09	91
8/25/2021	1:14:52 PM	12.70	182160	0.21	0.09	91
8/25/2021	1:15:52 PM	12.70	182220	0.21	0.09	91
8/25/2021	1:16:52 PM	12.70	182280	0.21	0.09	91
8/25/2021	1:17:52 PM	12.70	182340	0.21	0.09	91
8/25/2021	1:18:52 PM	12.70	182400	0.21	0.09	91
8/25/2021	1:19:52 PM	12.70	182460	0.21	0.09	91
8/25/2021	1:20:52 PM	12.70	182520	0.21	0.09	91
8/25/2021	1:21:52 PM	12.70	182580	0.21	0.09	91
8/25/2021	1:22:52 PM	12.70	182640	0.21	0.09	91
8/25/2021	1:23:52 PM	12.70	182700	0.21	0.09	91
8/25/2021	1:24:52 PM	12.70	182760	0.21	0.09	91
8/25/2021	1:25:52 PM	12.70	182820	0.21	0.09	91
8/25/2021	1:26:52 PM	12.70	182880	0.21	0.09	91
8/25/2021	1:27:52 PM	12.70	182940	0.21	0.09	91
8/25/2021	1:28:52 PM	12.70	183000	0.21	0.09	91
8/25/2021	1:29:52 PM	12.70	183060	0.21	0.09	91
8/25/2021	1:30:52 PM	12.70	183120	0.21	0.09	91
8/25/2021	1:31:52 PM	12.70	183180	0.21	0.09	91
8/25/2021	1:32:52 PM	12.70	183240	0.21	0.09	91
8/25/2021	1:33:52 PM	12.71	183300	0.20	0.09	91
8/25/2021	1:34:52 PM	12.71	183360	0.20	0.09	91
8/25/2021	1:35:52 PM	12.71	183420	0.20	0.09	91
8/25/2021	1:36:52 PM	12.71	183480	0.20	0.09	91
8/25/2021	1:37:52 PM	12.71	183540	0.20	0.09	91
8/25/2021	1:38:52 PM	12.71	183600	0.20	0.09	91
8/25/2021	1:39:52 PM	12.71	183660	0.20	0.09	91
8/25/2021	1:40:52 PM	12.71	183720	0.20	0.09	91
8/25/2021	1:41:52 PM	12.71	183780	0.20	0.09	91
8/25/2021	1:42:52 PM	12.71	183840	0.20	0.09	91
8/25/2021	1:43:52 PM	12.71	183900	0.20	0.09	91
8/25/2021	1:44:52 PM	12.71	183960	0.20	0.09	91
8/25/2021	1:45:52 PM	12.71	184020	0.20	0.09	91
8/25/2021	1:46:52 PM	12.71	184080	0.20	0.09	91
8/25/2021	1:47:52 PM	12.71	184140	0.20	0.09	91
8/25/2021	1:48:52 PM	12.71	184200	0.20	0.09	91
8/25/2021	1:49:52 PM	12.71	184260	0.20	0.09	91

8/25/2021	1:50:52 PM	12.71	184320	0.20	0.09	91
8/25/2021	1:51:52 PM	12.71	184380	0.20	0.09	91
8/25/2021	1:52:52 PM	12.71	184440	0.20	0.09	91
8/25/2021	1:53:52 PM	12.71	184500	0.20	0.09	91
8/25/2021	1:54:52 PM	12.71	184560	0.20	0.09	91
8/25/2021	1:55:52 PM	12.72	184620	0.19	0.09	91
8/25/2021	1:56:52 PM	12.72	184680	0.19	0.09	91
8/25/2021	1:57:52 PM	12.72	184740	0.19	0.09	91
8/25/2021	1:58:52 PM	12.72	184800	0.19	0.09	91
8/25/2021	1:59:52 PM	12.72	184860	0.19	0.08	92
8/25/2021	2:00:52 PM	12.72	184920	0.19	0.08	92
8/25/2021	2:01:52 PM	12.72	184980	0.19	0.08	92
8/25/2021	2:02:52 PM	12.72	185040	0.19	0.08	92
8/25/2021	2:03:52 PM	12.72	185100	0.19	0.08	92
8/25/2021	2:04:52 PM	12.72	185160	0.19	0.08	92
8/25/2021	2:05:52 PM	12.72	185220	0.19	0.08	92
8/25/2021	2:06:52 PM	12.72	185280	0.19	0.08	92
8/25/2021	2:07:52 PM	12.72	185340	0.19	0.08	92
8/25/2021	2:08:52 PM	12.72	185400	0.19	0.08	92
8/25/2021	2:09:52 PM	12.72	185460	0.19	0.08	92
8/25/2021	2:10:52 PM	12.72	185520	0.19	0.08	92
8/25/2021	2:11:52 PM	12.72	185580	0.19	0.08	92
8/25/2021	2:12:52 PM	12.72	185640	0.19	0.08	92
8/25/2021	2:13:52 PM	12.72	185700	0.19	0.08	92
8/25/2021	2:14:52 PM	12.72	185760	0.19	0.08	92
8/25/2021	2:15:52 PM	12.72	185820	0.19	0.08	92
8/25/2021	2:16:52 PM	12.72	185880	0.19	0.08	92
8/25/2021	2:17:52 PM	12.72	185940	0.19	0.08	92
8/25/2021	2:18:52 PM	12.72	186000	0.19	0.08	92
8/25/2021	2:19:52 PM	12.72	186060	0.19	0.08	92
8/25/2021	2:20:52 PM	12.72	186120	0.19	0.08	92
8/25/2021	2:21:52 PM	12.72	186180	0.19	0.08	92
8/25/2021	2:22:52 PM	12.72	186240	0.19	0.08	92
8/25/2021	2:23:52 PM	12.73	186300	0.19	0.08	92
8/25/2021	2:24:52 PM	12.73	186360	0.18	0.08	92
8/25/2021	2:25:52 PM	12.73	186420	0.18	0.08	92
8/25/2021	2:26:52 PM	12.73	186480	0.18	0.08	92
8/25/2021	2:27:52 PM	12.73	186540	0.18	0.08	92
8/25/2021	2:28:52 PM	12.73	186600	0.18	0.08	92
8/25/2021	2:29:52 PM	12.73	186660	0.18	0.08	92
8/25/2021	2:30:52 PM	12.73	186720	0.18	0.08	92
8/25/2021	2:31:52 PM	12.73	186780	0.18	0.08	92
8/25/2021	2:32:52 PM	12.73	186840	0.18	0.08	92
8/25/2021	2:33:52 PM	12.73	186900	0.18	0.08	92
8/25/2021	2:34:52 PM	12.73	186960	0.18	0.08	92
8/25/2021	2:35:52 PM	12.73	187020	0.18	0.08	92
8/25/2021	2:36:52 PM	12.73	187080	0.18	0.08	92
8/25/2021	2:37:52 PM	12.73	187140	0.18	0.08	92
8/25/2021	2:38:52 PM	12.73	187200	0.18	0.08	92
8/25/2021	2:39:52 PM	12.73	187260	0.18	0.08	92
8/25/2021	2:40:52 PM	12.73	187320	0.18	0.08	92
8/25/2021	2:41:52 PM	12.73	187380	0.18	0.08	92
8/25/2021	2:42:52 PM	12.73	187440	0.18	0.08	92
8/25/2021	2:43:52 PM	12.73	187500	0.18	0.08	92
8/25/2021	2:44:52 PM	12.74	187560	0.17	0.08	92
8/25/2021	2:45:52 PM	12.74	187620	0.17	0.08	92
8/25/2021	2:46:52 PM	12.74	187680	0.17	0.08	92
8/25/2021	2:47:52 PM	12.74	187740	0.17	0.08	92
8/25/2021	2:48:52 PM	12.74	187800	0.17	0.08	92
8/25/2021	2:49:52 PM	12.74	187860	0.17	0.08	92
8/25/2021	2:50:52 PM	12.74	187920	0.17	0.08	92
8/25/2021	2:51:52 PM	12.74	187980	0.17	0.08	92
8/25/2021	2:52:52 PM	12.74	188040	0.17	0.08	92
8/25/2021	2:53:52 PM	12.74	188100	0.17	0.08	92
8/25/2021	2:54:52 PM	12.74	188160	0.17	0.07	93
8/25/2021	2:55:52 PM	12.74	188220	0.17	0.07	93
8/25/2021	2:56:52 PM	12.74	188280	0.17	0.07	93
8/25/2021	2:57:52 PM	12.74	188340	0.17	0.07	93
8/25/2021	2:58:52 PM	12.74	188400	0.17	0.07	93
8/25/2021	2:59:52 PM	12.74	188460	0.17	0.07	93
8/25/2021	3:00:52 PM	12.74	188520	0.17	0.07	93
8/25/2021	3:01:52 PM	12.74	188580	0.17	0.07	93
8/25/2021	3:02:52 PM	12.74	188640	0.17	0.07	93
8/25/2021	3:03:52 PM	12.74	188700	0.17	0.07	93
8/25/2021	3:04:52 PM	12.74	188760	0.17	0.07	93
8/25/2021	3:05:52 PM	12.74	188820	0.17	0.07	93
8/25/2021	3:06:52 PM	12.75	188880	0.16	0.07	93
8/25/2021	3:07:52 PM	12.75	188940	0.16	0.07	93
8/25/2021	3:08:52 PM	12.75	189000	0.16	0.07	93

8/25/2021	3:09:52 PM	12.75	189060	0.16	0.07	93
8/25/2021	3:10:52 PM	12.75	189120	0.16	0.07	93
8/25/2021	3:11:52 PM	12.75	189180	0.16	0.07	93
8/25/2021	3:12:52 PM	12.75	189240	0.16	0.07	93
8/25/2021	3:13:52 PM	12.75	189300	0.16	0.07	93
8/25/2021	3:14:52 PM	12.75	189360	0.16	0.07	93
8/25/2021	3:15:52 PM	12.75	189420	0.16	0.07	93
8/25/2021	3:16:52 PM	12.75	189480	0.16	0.07	93
8/25/2021	3:17:52 PM	12.75	189540	0.16	0.07	93
8/25/2021	3:18:52 PM	12.75	189600	0.16	0.07	93
8/25/2021	3:19:52 PM	12.75	189660	0.16	0.07	93
8/25/2021	3:20:52 PM	12.75	189720	0.16	0.07	93
8/25/2021	3:21:52 PM	12.75	189780	0.16	0.07	93
8/25/2021	3:22:52 PM	12.75	189840	0.16	0.07	93
8/25/2021	3:23:52 PM	12.75	189900	0.16	0.07	93
8/25/2021	3:24:52 PM	12.75	189960	0.16	0.07	93
8/25/2021	3:25:52 PM	12.75	190020	0.16	0.07	93
8/25/2021	3:26:52 PM	12.75	190080	0.16	0.07	93
8/25/2021	3:27:52 PM	12.75	190140	0.16	0.07	93
8/25/2021	3:28:52 PM	12.75	190200	0.16	0.07	93
8/25/2021	3:29:52 PM	12.75	190260	0.16	0.07	93
8/25/2021	3:30:52 PM	12.76	190320	0.15	0.07	93
8/25/2021	3:31:52 PM	12.76	190380	0.15	0.07	93
8/25/2021	3:32:52 PM	12.76	190440	0.15	0.07	93
8/25/2021	3:33:52 PM	12.76	190500	0.15	0.07	93
8/25/2021	3:34:52 PM	12.76	190560	0.15	0.07	93
8/25/2021	3:35:52 PM	12.76	190620	0.15	0.07	93
8/25/2021	3:36:52 PM	12.76	190680	0.15	0.07	93
8/25/2021	3:37:52 PM	12.76	190740	0.15	0.07	93
8/25/2021	3:38:52 PM	12.76	190800	0.15	0.07	93
8/25/2021	3:39:52 PM	12.76	190860	0.15	0.07	93
8/25/2021	3:40:52 PM	12.76	190920	0.15	0.07	93
8/25/2021	3:41:52 PM	12.76	190980	0.15	0.07	93
8/25/2021	3:42:52 PM	12.76	191040	0.15	0.07	93
8/25/2021	3:43:52 PM	12.76	191100	0.15	0.07	93
8/25/2021	3:44:52 PM	12.76	191160	0.15	0.07	93
8/25/2021	3:45:52 PM	12.76	191220	0.15	0.07	93
8/25/2021	3:46:52 PM	12.76	191280	0.15	0.07	93
8/25/2021	3:47:52 PM	12.76	191340	0.15	0.06	94
8/25/2021	3:48:52 PM	12.76	191400	0.15	0.06	94
8/25/2021	3:49:52 PM	12.76	191460	0.15	0.06	94
8/25/2021	3:50:52 PM	12.76	191520	0.15	0.06	94
8/25/2021	3:51:52 PM	12.76	191580	0.15	0.06	94
8/25/2021	3:52:52 PM	12.76	191640	0.15	0.06	94

Rising Head Test - MW21-03
Hvorslev Method (1951)
315 Mìwàte Private, West Chaudière Island, Ottawa, Ontario
OTT-00250193-P0

