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March 1, 2022
File: PE1114-LET.03

Southwell Homes Ltd.
195 Julie Anne Crescent
Carleton Place, Ontario
K7C 4M5

Attention: **Mr. John Richard Southwell**

Subject: **Environmental Action Plan**
Supplemental Groundwater Sampling Program
116-122 Old Mill Lane
Appleton, Ontario

Dear Sir,

As per the Environmental Action Plan (Report No. PE1114-MEMO.13, dated November 14, 2017) Paterson Group (Paterson) carried out a Supplemental Groundwater Sampling Program at the aforementioned site. The purpose of the sampling program was to confirm the groundwater quality at the subject property and update the findings of the March and June 2018 groundwater sampling events, as per comments provided by Stantec Consulting Ltd. on May 10, 2018. The findings of the supplemental groundwater sampling program are summarized in the following report.

Background Information

The subject property is located at the western end of Old Mill Lane, south of the Mississippi River, in Appleton, Ontario. The site currently consists of vacant, undeveloped land, whereas the surrounding lands consist of vacant land or provincially significant wetlands, with some residential land to the east and south. The subject site and surrounding properties are serviced with private potable wells and septic systems.

An environmental remediation program was carried out for the subject property during the interim of April 2007 through October 2010, and two (2) records of site condition (RSCs) were subsequently filed in the Environmental Site Registry (ESR): RSC #97711 covers the bulk of the subject site and RSC #102721 is for the 30 m buffer area along the banks of the Mississippi River. The environmental condition of the subject property at the time the RSCs were filed, was in accordance with the then applicable 2004 MOECC Table 1 and Table 2 standards.

The current groundwater results at the subject property will be compared to both the 2004 MOECC Table 1 and Table 2 standards, as well as the contemporary MECP Table 6 and Table 8 standards, currently applicable to the property.

Subsurface Investigation (2018)

Prior to conducting the 2018 subsurface investigation, Paterson confirmed that the monitoring wells installed in 2008 (MW1-08, MW2-08, MW4-08 and MW5-08) were no longer present on the subject property. These wells were decommissioned during the site remediation program.

On March 16, 2018, two boreholes (BH1-18 and BH2-18) were placed on the subject property, within the former remedial area along the bank of the Mississippi River (area of former mill building). The boreholes were extended to depths of approximately 10.6 m and 7.1 m below existing grade, respectively. The boreholes were completed using a track-mounted CME 55 Power Auger drill rig, under the full time supervision of Paterson personnel. The boreholes were advanced into the bedrock, using a diamond coring system, and completed with monitoring well installations to access the groundwater table.

The borehole locations are identified on Drawing PE1114-8 – Test Hole Location Plan, appended to this report. The depths at which the split spoon and rock core samples were obtained from the test holes are shown as **"SS"** and **"RC"** on the Soil Profile and Test Data sheets, attached to this report.

Monitoring Well Installation

Groundwater monitoring wells were installed in BH1-18 and BH2-18, the locations of which can be seen on the attached Test Hole Location Plan. Typical monitoring well construction details are described below;

- Slotted 32 mm diameter PVC screen at base of borehole
- 32 mm diameter PVC riser pipe from the top of the screen to ground surface.
- No.3 Silica sand backfill within annular space around the screen.
- Bentonite above sand pack to just below ground surface.
- PVC riser.

Refer to the Soil Profile and Test Data sheets attached for the actual well construction details for BH1 and BH2.

Groundwater monitoring wells were developed upon installation using dedicated purging equipment (footvalves and dedicated polytubing). A minimum of three well volumes were removed from the monitoring wells or until the monitoring well was dry.

Subsurface Profile

Fill material from ground surface to depths of approximately 7.0 m and 1.8 m below grade, was identified at BH1-18 and BH2-18, respectively. A thin layer of topsoil was identified at grade, at BH2-18. The fill material consisted of topsoil or silty sand mixed with gravel, cobbles, and boulders. This fill was a result of backfilling the remediation excavation with clean imported pit run from an aggregate pit. The specific details of the soil profile at the test hole locations are presented on the attached Soil Profile and Test Data sheets.

Groundwater Sampling (2018 & 2021)

Groundwater sampling protocols were followed using the MECP document entitled, *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, dated May 1996. Standing water was purged from each monitoring well prior to the recovery of the groundwater samples using dedicated sampling equipment. The samples were then stored in coolers to reduce possible analyte volatilization during their transportation.

Groundwater sampling was carried out at BH1-18 and BH2-18 on March 27 and June 7, 2018. These samples were submitted for analysis of BTEX and/or PHC (F_1-F_4) parameters.

A third groundwater sampling event was carried out more recently on December 7 and December 8, 2021, which also included the test wells installed as part of the hydrogeological investigation (TW1-TW3). These samples were submitted for analysis of BTEX, PAHs, metals, PCBs, as well as dioxins/furans parameters.

Field Measurement of Water Quality Parameters

Prior to groundwater sampling, water quality parameters (temperature, electrical conductivity, and pH) were measured in the field using a multi-parameter analyzer. The wells were purged prior to sampling until at least three well volumes had been removed or until the well was purged dry. The field parameter values were measured after each of the three well volumes were removed from the monitoring well, until field chemistry parameters had stabilized (within 10% of the two previous measured values). The groundwater quality pen was cleaned using distilled water after each time it was used to record groundwater parameters.

The field chemistry values measured during the June 2018 sampling event are summarized below in Table 1.

Table 1
Field Measurement of Water Quality Parameters
June 7, 2018

Parameter	BH1-18	BH2-18
Temperature (°C)	8.7	9.2
pH (units)	7.6	7.5
Electrical Conductivity (mS/cm)	12.1	12.3

Analytical Test Results

Groundwater Standards

The site condition standards for the subject property were obtained from Table 6 and Table 8 of the document entitled, *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, prepared by the Ministry of the Environment, Conservation and Parks (MECP), and dated April 15, 2011. The selected MECP standards are based on the following considerations:

- ❒ Shallow soil conditions;
- ❒ Coarse-grained soil conditions;
- ❒ Potable groundwater conditions;
- ❒ Residential land use.

It should be noted that all lands within a 30 m buffer area along the river shoreline and the limit of the adjacent wetland are qualified as a sensitive area. The location of BH2-18 lies within this 30 m buffer area, for which the MECP Table 8 standards are deemed to be applicable. For the remainder of the subject site, the MECP Table 6 standards are deemed to be applicable based on the future residential land use and potable groundwater conditions of the site.

Paracel Laboratories (Paracel), of Ottawa, Ontario, performed the laboratory analysis on the samples submitted for analytical testing. Paracel is a member of the Standards Council of Canada/Canadian Association for Laboratory Accreditation (SCC/CALA) and is accredited and certified by the SCC/CALA for specific tests registered with the association.

Groundwater

Groundwater samples were collected from the monitoring wells installed in BH1-18 and BH2-18 on March 27 and June 7, 2018 and submitted for laboratory analysis of BTEX and PHC (F_1-F_4) parameters.

No visual or olfactory indications of any petroleum hydrocarbons were observed in the groundwater samples recovered during the sampling event.

The results of the analytical testing are presented below in Table 2, as well as on the laboratory certificates of analysis appended to this report.

Table 2
Analytical Test Results – Groundwater
BTEX & PHCs (F_1-F_4)

Parameter	MDL (µg/L)	Groundwater Samples (µg/L)				MECP Table 8 Standards (µg/L)	MECP Table 6 Standards (µg/L)
		March 27, 2018		June 7, 2018			
		BH1-18-GW1	BH2-18-GW1*	BH1-18-GW2	BH2-18-GW2*		
Benzene	0.5	nt	nt	nd	nd	5.0	0.5
Ethylbenzene	0.5	nt	nt	nd	nd	2.4	2.4
Toluene	0.5	nt	nt	nd	nd	22	24
Xylenes (Total)	0.5	nt	nt	nd	nd	300	72
PHC F_1	25	nd	nd	nd	nd	420	420
PHC F_2	100	nd	nd	nd	nd	150	150
PHC F_3	100	nd	nd	nd	nd	500	500
PHC F_4	100	nd	nd	nd	nd	500	500

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- *** -** Situated within the 30 m buffer of the Mississippi River, therefore MECP Table 8 standards apply
- Underlined – Results exceed selected MECP Table 8 standards.
- **Bold & Underlined** – Results exceed selected MECP 6 standards.

No BTEX or PHC parameters were detected above the laboratory method detection limits in the groundwater samples analysed during the March or June sampling events. The groundwater samples are in compliance with the MECP Table 8 and MECP Table 6 standards, as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

A third groundwater sampling event was carried out on December 7 and December 8, 2021. At that time, groundwater samples were collected from the monitoring wells installed in BH1-18 and BH2-18, as well as from three potable drinking water test wells (TW1-TW3) which had been installed on-site in 2015, and submitted for laboratory analysis of BTEX, PAHs, metals, PCBs, as well as dioxins/furans parameters.

No visual or olfactory indications of any petroleum hydrocarbons were observed in the groundwater samples recovered during the sampling events.

The results of the analytical testing are presented below in Tables 3 to 7, as well as on the laboratory certificates of analysis appended to this report.

Table 3
Analytical Test Results – Groundwater
BTEX

Parameter	MDL (µg/L)	Groundwater Samples (µg/L) December 7 & December 8, 2021					MECP Table 8 Standards (µg/L)	MECP Table 6 Standards (µg/L)
		BH1	BH2*	TW1	TW2*	TW3		
Benzene	0.5	nd	nd	nd	nd	nd	5.0	0.5
Ethylbenzene	0.5	nd	nd	nd	nd	nd	2.4	2.4
Toluene	0.5	nd	nd	nd	nd	nd	22	24
Xylenes (Total)	0.5	nd	nd	nd	nd	nd	300	72

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- *** -** Situated within the 30 m buffer of the Mississippi River, therefore MECP Table 8 standards apply
- Underlined – Results exceed selected MECP Table 8 standards.
- **Bold & Underlined** – Results exceed selected MECP 6 standards.

No BTEX parameters were detected in any of the groundwater samples analyzed. The results are in compliance with the MECP Table 8 and MECP Table 6 standards as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

Table 4
Analytical Test Results – Groundwater
PAHs

Parameter	MDL (µg/L)	Groundwater Samples (µg/L)					MECP Table 8 Standards (µg/L)	MECP Table 6 Standards (µg/L)
		December 7 & December 8, 2021						
		BH1	BH2*	TW1	TW2*	TW3		
Acenaphthene	0.1	nd	nd	nd	nd	nd	4.1	4.1
Acenaphthylene	0.1	nd	nd	nd	nd	nd	1	1
Anthracene	0.1	nd	nd	nd	nd	nd	1	1
Benzo[a]anthracene	0.1	nd	nd	nd	nd	nd	1	1
Benzo[a]pyrene	0.01	nd	nd	nd	nd	nd	0.01	0.01
Benzo[b]fluoranthene	0.05	nd	nd	nd	nd	nd	0.1	0.1
Benzo[g,h,i]perylene	0.1	nd	nd	nd	nd	nd	0.2	0.2
Benzo[k]fluoranthene	0.05	nd	nd	nd	nd	nd	0.1	0.1
Chrysene	0.05	nd	nd	nd	nd	nd	0.1	0.1
Dibenzo[a,h]anthracene	0.1	nd	nd	nd	nd	nd	0.2	0.2
Fluoranthene	0.1	nd	nd	nd	nd	nd	0.41	0.41
Fluorene	0.1	nd	nd	nd	nd	nd	120	120
Indeno[1,2,3-cd]pyrene	0.1	nd	nd	nd	nd	nd	0.2	0.2
1-Methylnaphthalene	0.1	nd	nd	nd	nd	nd	3.2	3.2
2-Methylnaphthalene	0.1	nd	nd	nd	nd	nd	3.2	3.2
Methylnaphthalene (1&2)	0.1	nd	nd	nd	nd	nd	3.2	3.2
Naphthalene	0.1	nd	nd	nd	nd	nd	11	7
Phenanthrene	0.1	nd	nd	nd	nd	nd	1	1
Pyrene	0.1	nd	nd	nd	nd	nd	4.1	4.1

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- *** -** Situated within the 30 m buffer of the Mississippi River, therefore MECP Table 8 standards apply
- Underlined – Results exceed selected MECP Table 8 standards.
- **Bold & Underlined** – Results exceed selected MECP 6 standards.

No PAH parameters were detected in any of the groundwater samples analyzed. The results are in compliance with the MECP Table 8 and MECP Table 6 standards as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

Table 5
Analytical Test Results – Groundwater
Metals

Parameter	MDL (µg/L)	Groundwater Samples (µg/L)					MECP Table 8 Standards (µg/L)	MECP Table 6 Standards (µg/L)
		December 7 & December 8, 2021						
		BH1	BH2*	TW1	TW2	TW3		
Antimony	0.5	nd	nd	nd	nd	nd	6	6
Arsenic	1	nd	nd	nd	nd	nd	25	25
Barium	10	250	220	210	240	230	1,000	1,000
Beryllium	0.5	nd	nd	nd	nd	nd	4	4
Boron	10	70	50	150	130	130	5,000	5,000
Cadmium	0.1	nd	nd	nd	nd	nd	2.1	2.1
Chromium	1	nd	nd	nd	nd	nd	50	50
Chromium VI	10	nd	nd	nd	nd	nd	25	25
Cobalt	0.2	0.2	nd	0.2	nd	nd	3.8	3.8
Copper	1	nd	nd	2	2	2	69	69
Lead	1	nd	nd	nd	nd	nd	10	10
Mercury	0.1	nd	nd	nd	nd	nd	0.29	0.1
Molybdenum	5	nd	nd	nd	nd	nd	70	70
Nickel	5	nd	nd	nd	nd	nd	100	100
Selenium	1	nd	nd	nd	nd	nd	10	10
Silver	0.1	nd	nd	nd	nd	nd	1.2	1.2
Sodium	2,000	12,000	8,000	27,000	22,000	28,000	490,000	490,000
Thallium	0.1	nd	nd	nd	nd	nd	2	2
Uranium	1	2	2	2	2	3	20	20
Vanadium	1	2	nd	nd	nd	nd	6.2	6.2
Zinc	10	nd	nd	nd	nd	nd	890	890

Notes:

- MDL – Method Detection Limit
- nd – not detected above the MDL
- *** -** Situated within the 30 m buffer of the Mississippi River, therefore MECP Table 8 standards apply
- Underlined – Results exceed selected MECP Table 8 standards.
- **Bold & Underlined** – Results exceed selected MECP 6 standards.

All detected metal parameters are in compliance with the MECP Table 8 and MECP Table 6 standards as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

Table 6
Analytical Test Results – Groundwater
PCBs

Parameter	MDL (µg/L)	Groundwater Samples (µg/L) December 7 & December 8, 2021					MECP Table 8 Standards (µg/L)	MECP Table 6 Standards (µg/L)
		BH1	BH2*	TW1	TW2*	TW3		
PCBs	0.1	nd	nd	nd	nd	nd	0.2	0.2

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- *** -** Situated within the 30 m buffer of the Mississippi River, therefore MECP Table 8 standards apply
- Underlined – Results exceed selected MECP Table 8 standards.
- **Bold & Underlined** – Results exceed selected MECP 6 standards.

No PCB parameters were detected in any of the groundwater samples analyzed. The results are in compliance with the MECP Table 8 and MECP Table 6 standards as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

Table 7
Analytical Test Results – Groundwater
Dioxins & Furans

Parameter	Groundwater Samples (pg/L) December 7 & December 8, 2021					MECP Table 8 Standards (pg/L)	MECP Table 6 Standards (pg/L)
	BH1	BH2*	TW1	TW2*	TW3		
Dioxins & Furans (Toxic Equivalency Value - TEQ)	0.18	0.26	0.0033	0.36	0.16	15	15

Notes:
- *** -** Situated within the 30 m buffer of the Mississippi River, therefore MECP Table 8 standards apply
- Underlined – Results exceed selected MECP Table 8 standards.
- **Bold & Underlined** – Results exceed selected MECP 6 standards.

All reported dioxin and furans toxicity equivalent values are in compliance with the MECP Table 8 and MECP Table 6 standards as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

Assessment

A supplemental groundwater sampling program was completed for the subject property, as per the 2017 Environmental Action Plan prepared by Paterson, as well as the comments noted in Stantec's review.

Previously installed monitoring wells MW1-08, MW2-08, MW4-08 and MW5-08, situated within the former remedial area along the bank of the Mississippi River, are no longer present on the subject site. On March 16, 2018, two boreholes (BH1-18 and BH2-18) were drilled on the subject site, in the vicinity of the former monitoring wells and mill building.

The boreholes were drilled into the bedrock and instrumented with groundwater monitoring wells upon their completion.

Groundwater samples from BH1-18 and BH2-18 were recovered on March 27, 2018 and submitted for analysis of petroleum hydrocarbon (PHCs F_1-F_4) parameters. No visual or olfactory indications (such as a hydrocarbon sheen) were noted in the groundwater during the sampling event. A second groundwater sampling event was conducted on June 7, 2018. At this time, groundwater samples recovered from BH1-18 and BH2-18 were submitted for analysis of benzene, toluene, ethylbenzene and xylene (BTEX) and PHC parameters. The groundwater samples were in compliance with the MECP Table 8 and MECP Table 6 standards, as well as the previous 2004 MOECC Table 1 and Table 2 standards used for the subject site in the RSC.

A third groundwater sampling event was carried out on December 7 and December 8, 2021. At that time, groundwater samples were collected from the monitoring wells installed in BH1-18 and BH2-18, as well as from three potable drinking water test wells (TW1-TW3) which had been installed on-site in 2015, and submitted for laboratory analysis of BTEX, PAHs, metals, PCBs, as well as dioxins/furans parameters. No visual or olfactory indications of any petroleum hydrocarbons were observed in the groundwater samples recovered during the sampling event. Based on the analytical test results, the groundwater samples are in compliance with the MECP Table 8 and MECP Table 6 standards, as well as the 2004 MOECC Table 1 and Table 2 standards.

Based on the findings of the groundwater sampling programs, it is our opinion that the groundwater has not been impacted by past on-site activities.

Recommendations

Soil Management

As per the Environmental Action Plan issued by Paterson Group in November 2017, it is recommended that any soil remaining on-site be assessed by Paterson personnel at the time of site redevelopment, to ensure compliance with the applicable MECP soil standards. The soil management plan is appended to this report.

Monitoring Wells

If the monitoring wells installed onsite are not going to be used in the future, they should be abandoned according to Ontario Regulation 903. At this time however, it is recommended these wells not be abandoned, in case future groundwater monitoring is required.

Statement of Limitations

The client should be aware that any information pertaining to the soils and all test hole logs are furnished as a matter of general information only and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the test holes themselves.

This report was prepared for the sole use of Southwell Homes Ltd. Permission from Southwell Homes Ltd. and Paterson will be required to release this report to any other party.

We trust that information meets your immediate requirements.

Paterson Group Inc.

Nick Sullivan, B.Sc.

Mark D'Arcy, P.Eng., QP_{ESA}

Report Distribution

- Southwell Homes Ltd.
- Paterson Group

Attachments

- Soil Management Plan
- Soil Profile and Test Data Sheets
- Symbols and Terms
- Analytical Test Results
- Drawing PE1114-8 – Test Hole Location Plan

Soil Management Plan

Applying Standards for Material Classification

The testing and beneficial reuse of site generated material will be evaluated and approved by Paterson personnel under the direction of a Qualified Person (QP). An environmental engineer will evaluate the suitability of material reused at the subject site.

- Based on the results of remedial program, it is not expected that material exceeding applicable standards will be encountered, however, if any excavated material exceeds the 2004 MOECC Table 2 standards, it will be removed from site for disposal at an approved waste disposal facility. Prior to sending such soil to the approved waste disposal facility, a soil sample will be collected and will be submitted for a Toxicity Characteristic Leaching Procedure (TCLP). Following approval from the approved waste disposal facility, any such soil will be transported directly to the facility.

  If encountered, any inert deleterious fill material (concrete) will be loaded into trucks and transferred to an approved waste disposal facility.

- Excavated material that is in compliance with the site standards may be reused on-site for backfilling or grading purposes, provided it is acceptable from a geotechnical perspective. If such soil cannot be reused on-site, the soil may be disposed of at an alternate site provided that the receiving site will accept the material.

Soil Identification Personnel

Paterson personnel will assist with the identification and testing of the soil.

Paterson will provide a representative under the supervision of the Qualified Person (QP) to visually inspect soil conditions and take soil samples for analysis upon request. A geotechnical engineer will be provided to assess the suitability of material used as backfill within the excavations.

Testing and Parameters for Soil Placed on Lots

Prior to any soil being placed on proposed lots, a sampling program will be carried out to recover representative soil samples for the analysis of selected parameters. Laboratory results are typically available within five business days.

Communication Procedure/Unexpected Impacts

If any of the soil encountered during excavation activities displays characteristic signs of contamination (i.e. odour, colour), samples will be submitted for confirmatory analysis. The contaminants of concern identified in the previous remedial program will include metals and PHCs. Material that is believed to be impacted will be segregated on-site until test results are received confirming its quality. If suspected impacted soil will be temporarily stockpiled on-site.

Southwell Homes Ltd. will be notified by Paterson immediately after identifying potentially impacted material.

Waste Disposal Facility

All excess material that does not comply with the selected site standards will be hauled to an approved waste disposal facility, otherwise all soil will be reused on-site.

patersongroup Consulting Engineers

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

Groundwater Sampling Program
Former Appletex Mill
Appleton, Ontario

DATUM

REMARKS

FILE NO. PE1114

HOLE NO. BH 1-18

BORINGS BY CME 55 Power Auger **DATE** March 16, 2018

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	
TOPSOIL 0.10		SS	1	42	15		
		SS	2	50	13	1	
		RC	1	86			
		RC	2	10		2	
FILL: Brown silty sand, some gravel, cobbles and boulders, trace concrete		RC	3	10		3	
						4	
						5	
						6	
7.01						7	
		RC	4	100	48		
BEDROCK: Grey limestone		RC	5	100	52	8	
						9	
		RC	6	100	72	10	
10.64							
End of Borehole							
(GWL @ 8.46m - June 7, 2018)							

Photo Ionization Detector

● Volatile Organic Rdg. (ppm)

○ **Lower Explosive Limit %**

20 40 60 80

100 200 300 400 500

RKI Eagle Rdg. (ppm)

▲ Full Gas Resp. △ Methane Elim.

Monitoring Well Construction

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SOIL PROFILE AND TEST DATA

Groundwater Sampling Program
Former Appletex Mill
Appleton, Ontario

DATUM

REMARKS

FILE NO. PE1114

HOLE NO. BH 2-18

BORINGS BY CME 55 Power Auger **DATE** March 16, 2018

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	
FILL: Topsoil with organics, trace gravel, cobbles and boulders		RC	1	100	52	1	
1.83		RC	2	100	94	2	
		RC	3	100	68	3	
BEDROCK: Grey limestone		RC	4	100	93	4	
		RC	5	100	92	5	
7.11						6	
End of Borehole						7	
(GWL @ 3.35m - June 7, 2018)							

Photo Ionization Detector

● Volatile Organic Rdg. (ppm)

○ **Lower Explosive Limit %**

20 40 60 80

Monitoring Well Construction

100 200 300 400 500

RKI Eagle Rdg. (ppm)

▲ Full Gas Resp. △ Methane Elim.

SYMBOLS AND TERMS

SOIL DESCRIPTION

Behavioural properties, such as structure and strength, take precedence over particle gradation in describing soils. Terminology describing soil structure are as follows:

Desiccated	-	having visible signs of weathering by oxidation of clay minerals, shrinkage cracks, etc.
Fissured	-	having cracks, and hence a blocky structure.
Varved	-	composed of regular alternating layers of silt and clay.
Stratified	-	composed of alternating layers of different soil types, e.g. silt and sand or silt and clay.
Well-Graded	-	Having wide range in grain sizes and substantial amounts of all intermediate particle sizes (see Grain Size Distribution).
Uniformly-Graded	-	Predominantly of one grain size (see Grain Size Distribution).

The standard terminology to describe the relative strength of cohesionless soils is the compactness condition, usually inferred from the results of the Standard Penetration Test (SPT) 'N' value. The SPT N value is the number of blows of a 63.5 kg hammer, falling 760 mm, required to drive a 51 mm O.D. split spoon sampler 300 mm into the soil after an initial penetration of 150 mm. An SPT N value of "P" denotes that the split-spoon sampler was pushed 300 mm into the soil without the use of a falling hammer.

Compactness Condition	'N' Value	Relative Density %
Very Loose	<4	<15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	>50	>85

The standard terminology to describe the strength of cohesive soils is the consistency, which is based on the undisturbed undrained shear strength as measured by the in situ or laboratory shear vane tests, unconfined compression tests, or occasionally by the Standard Penetration Test (SPT). Note that the typical correlations of undrained shear strength to SPT N value (tabulated below) tend to underestimate the consistency for sensitive silty clays, so Paterson reviews the applicable split spoon samples in the laboratory to provide a more representative consistency value based on tactile examination.

Consistency	Undrained Shear Strength (kPa)	'N' Value
Very Soft	<12	<2
Soft	12-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very Stiff	100-200	15-30
Hard	>200	>30

SYMBOLS AND TERMS (continued)

SOIL DESCRIPTION (continued)

Cohesive soils can also be classified according to their "sensitivity". The sensitivity, S_t, is the ratio between the undisturbed undrained shear strength and the remoulded undrained shear strength of the soil. The classes of sensitivity may be defined as follows:

Low Sensitivity:	$S_t < 2$
Medium Sensitivity:	$2 < S_t < 4$
Sensitive:	$4 < S_t < 8$
Extra Sensitive:	$8 < S_t < 16$
Quick Clay:	$S_t > 16$

ROCK DESCRIPTION

The structural description of the bedrock mass is based on the Rock Quality Designation (RQD).

The RQD classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be a result of closely-spaced discontinuities (resulting from shearing, jointing, faulting, or weathering) in the rock mass and are not counted. RQD is ideally determined from NQ or larger size core. However, it can be used on smaller core sizes, such as BQ, if the bulk of the fractures caused by drilling stresses (called "mechanical breaks") are easily distinguishable from the normal in situ fractures.

RQD %	**ROCK QUALITY**
90-100	Excellent, intact, very sound
75-90	Good, massive, moderately jointed or sound
50-75	Fair, blocky and seamy, fractured
25-50	Poor, shattered and very seamy or blocky, severely fractured
0-25	Very poor, crushed, very severely fractured

SAMPLE TYPES

SS	-	Split spoon sample (obtained in conjunction with the performing of the Standard Penetration Test (SPT))
TW	-	Thin wall tube or Shelby tube, generally recovered using a piston sampler
G	-	"Grab" sample from test pit or surface materials
AU	-	Auger sample or bulk sample
WS	-	Wash sample
RC	-	Rock core sample (Core bit size BQ, NQ, HQ, etc.). Rock core samples are obtained with the use of standard diamond drilling bits.

SYMBOLS AND TERMS (continued)

PLASTICITY LIMITS AND GRAIN SIZE DISTRIBUTION

WC%	-	Natural water content or water content of sample, %
LL	-	Liquid Limit, % (water content above which soil behaves as a liquid)
PL	-	Plastic Limit, % (water content above which soil behaves plastically)
PI	-	Plasticity Index, % (difference between LL and PL)
Dxx	-	Grain size at which xx% of the soil, by weight, is of finer grain sizes These grain size descriptions are not used below 0.075 mm grain size
D10	-	Grain size at which 10% of the soil is finer (effective grain size)
D60	-	Grain size at which 60% of the soil is finer
Cc	-	Concavity coefficient = $(D30)^2$ / (D10 x D60)
Cu	-	Uniformity coefficient = D60 / D10

Cc and Cu are used to assess the grading of sands and gravels:
Well-graded gravels have: $1 < Cc < 3$ and $Cu > 4$
Well-graded sands have: $1 < Cc < 3$ and $Cu > 6$
Sands and gravels not meeting the above requirements are poorly-graded or uniformly-graded.
Cc and Cu are not applicable for the description of soils with more than 10% silt and clay
(more than 10% finer than 0.075 mm or the #200 sieve)

CONSOLIDATION TEST

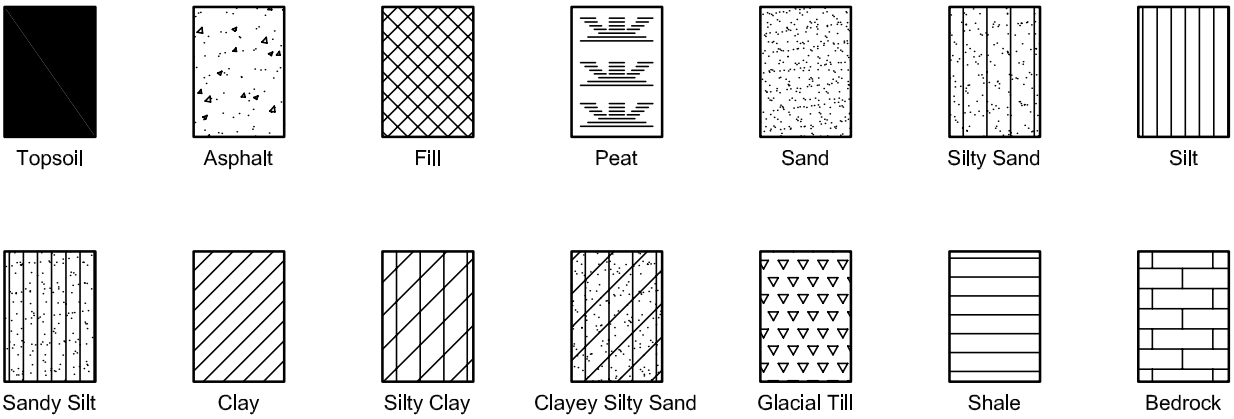
p'_o	-	Present effective overburden pressure at sample depth
p'_c	-	Preconsolidation pressure of (maximum past pressure on) sample
Ccr	-	Recompression index (in effect at pressures below p'_c)
Cc	-	Compression index (in effect at pressures above p'_c)
OC Ratio		Overconsolidaton ratio = p'_c / p'_o
Void Ratio		Initial sample void ratio = volume of voids / volume of solids
Wo	-	Initial water content (at start of consolidation test)

PERMEABILITY TEST

k	-	Coefficient of permeability or hydraulic conductivity is a measure of the ability of water to flow through the sample. The value of k is measured at a specified unit weight for (remoulded) cohesionless soil samples, because its value will vary with the unit weight or density of the sample during the test.

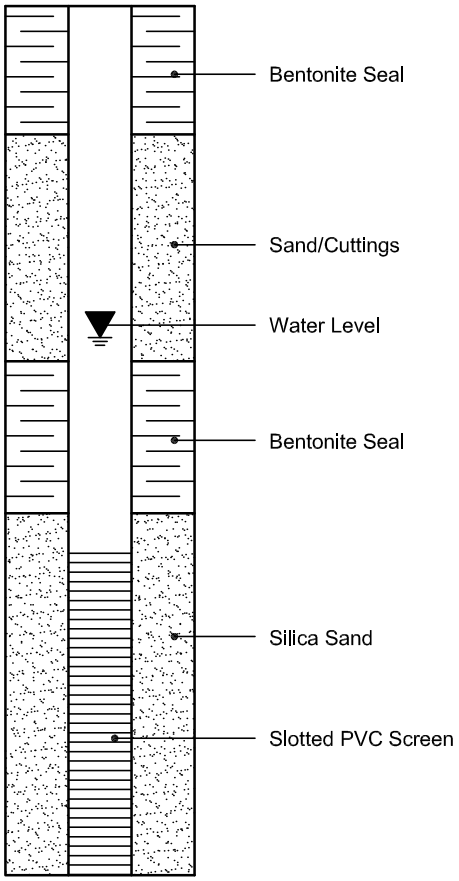
SYMBOLS AND TERMS (continued)

STRATA PLOT

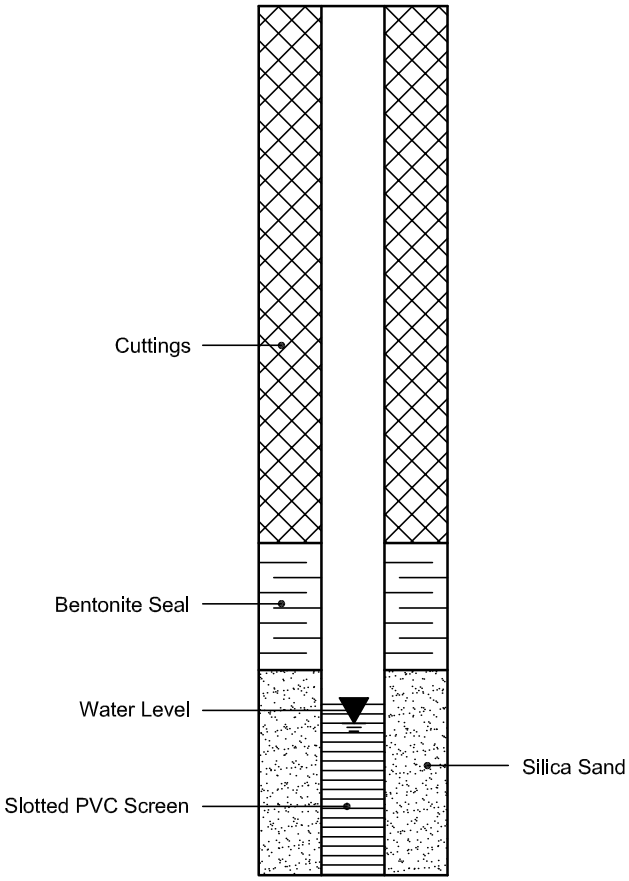


MONITORING WELL AND PIEZOMETER CONSTRUCTION

MONITORING WELL CONSTRUCTION



PIEZOMETER CONSTRUCTION



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Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Karyn Munch

Client PO: 24115
Project: PE1114
Custody: 117267

Report Date: 11-Jun-2018
Order Date: 8-Jun-2018

Order #: 1823674

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

Paracel ID	Client ID
1823674-01	BH1-18-GW2
1823674-02	BH2-18-GW2

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 24115

Report Date: 11-Jun-2018
Order Date: 8-Jun-2018
Project Description: PE1114

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	9-Jun-18	9-Jun-18
PHC F1	CWS Tier 1 - P&T GC-FID	9-Jun-18	9-Jun-18
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	8-Jun-18	10-Jun-18

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 24115

Report Date: 11-Jun-2018

Order Date: 8-Jun-2018

Project Description: PE1114

	Client ID:	BH1-18-GW2	BH2-18-GW2	-	-
	Sample Date:	06/07/2018 09:00	06/07/2018 09:00	-	-
	Sample ID:	1823674-01	1823674-02	-	-
	MDL/Units	Water	Water	-	-
Volatiles					
Benzene	0.5 ug/L	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-
Toluene	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	-	-
Toluene-d8	Surrogate	87.7%	88.6%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-
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	-	-

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 24115

Report Date: 11-Jun-2018
Order Date: 8-Jun-2018
Project Description: PE1114

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						
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	*72.3*		*ug/L*		*90.3*	*50-140*			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 24115

Report Date: 11-Jun-2018
Order Date: 8-Jun-2018
Project Description: PE1114

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
Volatiles									
Benzene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: Toluene-d8	*72.6*		*ug/L*		*90.7*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2220	25	ug/L		111	68-117			
F2 PHCs (C10-C16)	1740	100	ug/L		96.5	60-140			
F3 PHCs (C16-C34)	4840	100	ug/L		130	60-140			
F4 PHCs (C34-C50)	3080	100	ug/L		124	60-140			
Volatiles									
Benzene	30.9	0.5	ug/L		77.4	60-130			
Ethylbenzene	29.8	0.5	ug/L		74.6	60-130			
Toluene	33.6	0.5	ug/L		84.0	60-130			
m,p-Xylenes	65.8	0.5	ug/L		82.2	60-130			
o-Xylene	30.3	0.5	ug/L		75.6	60-130			
Surrogate: Toluene-d8	*66.0*		*ug/L*		*82.5*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

PARACEL LABORATORIES LTD.

Paracel ID: 1823674

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Chain of Custody
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Page ___ of ___

Client Name: Paterson Group Inc.	Project Reference: PE1114
Contact Name: Kaitlyn Munch.	Quote #
Address: 154 Colonnade Road S.	PO # 24115
Telephone: 613-226-7381	Email Address: kmunch@patersongroup.ca

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular
Date Required: _____

Criteria: ☑ O. Reg. 153/04 (As Amended) Table 2 ☐ 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: 1823674

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)							
1	BH1-18-GW2	GW		3	June 7/18		✓													✓
2	BH2-18-GW2	GW		3	June 7/18		✓													✓
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Comments: 1 day TAT as per Donna. No surcharge

Method of Delivery: Courier

Relinquished By (Sign):	Received by Driver/Depot: M. Fraser	Received at Lab: SUNEEPORN DOK MAI
Relinquished By (Print): K Munch	Date/Time: 08/06/18 10 00	Date/Time: JUN 08, 2018 12.30
Date/Time: June 9/18	Temperature: °C N.A.	Temperature: 16.7 °C

Verified By: [signature] Date/Time: Jun 8 2018 12:42

pH Verified [ ] By: _____

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-66404-1
Client Project/Site: 1968225-PH4398

For:
Eurofins Environment Testing Canada
146 Colonnade Road, No. 8
Ottawa, Ontario K2E 7Y1

Attn: Rebecca Koshy

Marrissa Williams

Authorized for release by:
12/15/2021 5:59:21 PM

Marrissa Williams, Project Manager
(717)556-7246
Marrissa.Williams@eurofinset.com

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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

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Marrissa Williams

Marrissa Williams
Project Manager
12/15/2021 5:59:21 PM

Case Narrative

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Job ID: 410-66404-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-66404-1

Receipt
The sample was received on 12/10/2021 9:56 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 11.6°C

Receipt Exceptions
The following sample was received at the laboratory outside the required temperature criteria: 1600428-TW1 (410-66404-1). The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

Dioxin
Method 1613B: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals. 1600428-TW1 (410-66404-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-66404-1	1600428-TW1	Water	12/07/21 00:00	12/10/21 09:56

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Client Sample ID: 1600428-TW1

Date Collected: 12/07/21 00:00
Date Received: 12/10/21 09:56

Lab Sample ID: 410-66404-1

Matrix: Water

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND	cn	27	3.3	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,4,6,7,8-HpCDF	ND	cn	27	0.068	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,4,7,8-HxCDD	ND	cn	27	0.12	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,4,7,8-HxCDF	ND	cn	27	0.69	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,4,7,8,9-HpCDF	**0.31**	**J I cn**	27	0.096	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,6,7,8-HxCDD	ND	cn	27	0.12	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,6,7,8-HxCDF	ND	cn	27	0.70	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,7,8-PeCDD	ND	cn	27	0.19	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,7,8-PeCDF	ND	cn	27	0.14	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,7,8,9-HxCDD	ND	cn	27	0.12	pg/L		12/13/21 16:35	12/14/21 13:50	1
1,2,3,7,8,9-HxCDF	ND	cn	27	0.85	pg/L		12/13/21 16:35	12/14/21 13:50	1
2,3,4,6,7,8-HxCDF	ND	cn	27	0.69	pg/L		12/13/21 16:35	12/14/21 13:50	1
2,3,4,7,8-PeCDF	ND	cn	27	0.11	pg/L		12/13/21 16:35	12/14/21 13:50	1
2,3,7,8-TCDD	ND	cn	4.3	0.20	pg/L		12/13/21 16:35	12/14/21 13:50	1
2,3,7,8-TCDF	ND	cn	5.4	0.14	pg/L		12/13/21 16:35	12/14/21 13:50	1
OCDD	**0.75**	**J I cn**	120	0.17	pg/L		12/13/21 16:35	12/14/21 13:50	1
OCDF	ND	cn	54	0.15	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total HpCDD	ND	cn	27	3.3	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total HpCDF	**0.31**	**J I B cn**	27	0.082	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total HxCDD	**0.61**	**J I B cn**	27	0.12	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total HxCDF	ND	cn	27	0.85	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total PeCDD	ND	cn	27	0.19	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total PeCDF	**0.89**	**J I B cn**	27	0.12	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total TCDD	ND	cn	5.4	0.20	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total TCDF	**0.60**	**J I cn**	5.4	0.14	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total PCDD	**1.4**	**J I B cn**	5.4	0.79	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total PCDF	**1.8**	**J I B cn**	5.4	0.27	pg/L		12/13/21 16:35	12/14/21 13:50	1
Total PCDD/PCDF	**3.2**	**J I B cn**	5.4	0.53	pg/L		12/13/21 16:35	12/14/21 13:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*81*	*cn*	*23 - 140*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*94*	*cn*	*28 - 143*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*	*cn*	*32 - 141*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,4,7,8-HxCDF	*92*	*cn*	*26 - 152*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*	*cn*	*26 - 138*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*	*cn*	*28 - 130*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,6,7,8-HxCDF	*93*	*cn*	*26 - 123*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,7,8-PeCDD	*61*	*cn*	*25 - 181*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,7,8-PeCDF	*65*	*cn*	*24 - 185*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,7,8,9-HxCDD	*82*	*cn*	*28 - 130*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*	*cn*	*29 - 147*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-2,3,4,6,7,8-HxCDF	*85*	*cn*	*28 - 136*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-2,3,4,7,8-PeCDF	*66*	*cn*	*21 - 178*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-2,3,7,8-TCDD	*70*	*cn*	*25 - 164*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-2,3,7,8-TCDF	*70*	*cn*	*24 - 169*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-OCDD	*87*	*cn*	*17 - 157*	*12/13/21 16:35*	*12/14/21 13:50*	*1*
13C-OCDF	*89*	*cn*	*17 - 157*	*12/13/21 16:35*	*12/14/21 13:50*	*1*

Toxicity Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Client Sample ID: 1600428-TW1

Lab Sample ID: 410-66404-1

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
1,2,3,4,6,7,8-HpCDD	ND	cn	27	3.3	pg/L	0.01	0.00	1613B
1,2,3,4,6,7,8-HpCDF	ND	cn	27	0.068	pg/L	0.01	0.00	1613B
1,2,3,4,7,8-HxCDD	ND	cn	27	0.12	pg/L	0.1	0.00	1613B
1,2,3,4,7,8-HxCDF	ND	cn	27	0.69	pg/L	0.1	0.00	1613B
1,2,3,4,7,8,9-HpCDF	**0.31**	**J I cn**	27	0.096	pg/L	0.01	**0.0031**	1613B
1,2,3,6,7,8-HxCDD	ND	cn	27	0.12	pg/L	0.1	0.00	1613B
1,2,3,6,7,8-HxCDF	ND	cn	27	0.70	pg/L	0.1	0.00	1613B
1,2,3,7,8-PeCDD	ND	cn	27	0.19	pg/L	1	0.00	1613B
1,2,3,7,8-PeCDF	ND	cn	27	0.14	pg/L	0.03	0.00	1613B
1,2,3,7,8,9-HxCDD	ND	cn	27	0.12	pg/L	0.1	0.00	1613B
1,2,3,7,8,9-HxCDF	ND	cn	27	0.85	pg/L	0.1	0.00	1613B
2,3,4,6,7,8-HxCDF	ND	cn	27	0.69	pg/L	0.1	0.00	1613B
2,3,4,7,8-PeCDF	ND	cn	27	0.11	pg/L	0.3	0.00	1613B
2,3,7,8-TCDD	ND	cn	4.3	0.20	pg/L	1	0.00	1613B
2,3,7,8-TCDF	ND	cn	5.4	0.14	pg/L	0.1	0.00	1613B
OCDD	**0.75**	**J I cn**	120	0.17	pg/L	0.0003	**0.00023**	1613B
OCDF	ND	cn	54	0.15	pg/L	0.0003	0.00	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
Total Toxic Dioxins and Furans					pg/L		0.0033	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Lab Sample ID: MB 410-204823/1-A
Matrix: Water
Analysis Batch: 205076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 204823

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		25	0.80	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,4,6,7,8-HpCDF	0.563	J I	25	0.079	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,4,7,8-HxCDD	ND		25	0.14	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,4,7,8-HxCDF	ND		25	0.47	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,4,7,8,9-HpCDF	ND		25	0.11	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,6,7,8-HxCDD	ND		25	0.14	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,6,7,8-HxCDF	2.57	J I	25	0.43	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,7,8-PeCDD	0.623	J I	25	0.21	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,7,8-PeCDF	ND		25	0.15	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,7,8,9-HxCDD	ND		25	0.15	pg/L		12/13/21 16:35	12/14/21 13:01	1
1,2,3,7,8,9-HxCDF	ND		25	0.58	pg/L		12/13/21 16:35	12/14/21 13:01	1
2,3,4,6,7,8-HxCDF	ND		25	0.47	pg/L		12/13/21 16:35	12/14/21 13:01	1
2,3,4,7,8-PeCDF	ND		25	0.13	pg/L		12/13/21 16:35	12/14/21 13:01	1
2,3,7,8-TCDD	ND		4.0	0.22	pg/L		12/13/21 16:35	12/14/21 13:01	1
2,3,7,8-TCDF	ND		5.0	0.18	pg/L		12/13/21 16:35	12/14/21 13:01	1
OCDD	ND		110	0.19	pg/L		12/13/21 16:35	12/14/21 13:01	1
OCDF	ND		50	0.16	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total HpCDD	ND		25	0.80	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total HpCDF	0.563	J I	25	0.094	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total HxCDD	1.28	J I	25	0.14	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total HxCDF	2.57	J I	25	0.49	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total PeCDD	0.623	J I	25	0.21	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total PeCDF	1.19	J I	25	0.14	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total TCDD	ND		5.0	0.22	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total TCDF	ND		5.0	0.18	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total PCDD	1.90	J I	5.0	0.31	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total PCDF	4.32	J I	5.0	0.21	pg/L		12/13/21 16:35	12/14/21 13:01	1
Total PCDD/PCDF	6.22	I	5.0	0.26	pg/L		12/13/21 16:35	12/14/21 13:01	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*73*		*23 - 140*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*28 - 143*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*72*		*32 - 141*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*26 - 152*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*81*		*26 - 138*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*77*		*28 - 130*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,6,7,8-HxCDF	*87*		*26 - 123*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,7,8-PeCDD	*54*		*25 - 181*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,7,8-PeCDF	*60*		*24 - 185*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,7,8,9-HxCDD	*70*		*28 - 130*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-2,3,4,6,7,8-HxCDF	*73*		*28 - 136*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-2,3,7,8-TCDD	*65*		*25 - 164*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-2,3,7,8-TCDF	*59*		*24 - 169*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-OCDD	*79*		*17 - 157*	*12/13/21 16:35*	*12/14/21 13:01*	*1*
13C-OCDF	*83*		*17 - 157*	*12/13/21 16:35*	*12/14/21 13:01*	*1*

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters) (Continued)

Lab Sample ID: LCS 410-204823/2-A
Matrix: Water
Analysis Batch: 205076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 204823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,4,6,7,8-HpCDD	1000	970		pg/L		97	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	991		pg/L		99	82 - 122
1,2,3,4,7,8-HxCDD	1000	1040		pg/L		104	70 - 164
1,2,3,4,7,8-HxCDF	1000	1040		pg/L		104	72 - 134
1,2,3,4,7,8,9-HpCDF	1000	967		pg/L		97	78 - 138
1,2,3,6,7,8-HxCDD	1000	1020		pg/L		102	76 - 134
1,2,3,6,7,8-HxCDF	1000	1000		pg/L		100	84 - 130
1,2,3,7,8-PeCDD	1000	1060		pg/L		106	70 - 142
1,2,3,7,8-PeCDF	1000	1040		pg/L		104	80 - 134
1,2,3,7,8,9-HxCDD	1000	1070		pg/L		107	64 - 162
1,2,3,7,8,9-HxCDF	1000	1010		pg/L		101	78 - 130
2,3,4,6,7,8-HxCDF	1000	996		pg/L		100	70 - 156
2,3,4,7,8-PeCDF	1000	1040		pg/L		104	68 - 160
2,3,7,8-TCDD	200	199		pg/L		100	67 - 158
2,3,7,8-TCDF	200	208		pg/L		104	75 - 158
OCDD	2000	1950		pg/L		97	78 - 144
OCDF	2000	2060		pg/L		103	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*21 - 158*
13C-1,2,3,4,7,8-HxCDD	*69*		*21 - 193*
13C-1,2,3,4,7,8-HxCDF	*75*		*19 - 202*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*20 - 186*
13C-1,2,3,6,7,8-HxCDD	*74*		*25 - 163*
13C-1,2,3,6,7,8-HxCDF	*79*		*21 - 159*
13C-1,2,3,7,8-PeCDD	*53*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*58*		*21 - 192*
13C-1,2,3,7,8,9-HxCDD	*66*		*25 - 163*
13C-1,2,3,7,8,9-HxCDF	*71*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*71*		*22 - 176*
13C-2,3,4,7,8-PeCDF	*60*		*13 - 328*
13C-2,3,7,8-TCDD	*64*		*20 - 175*
13C-2,3,7,8-TCDF	*62*		*22 - 152*
13C-OCDD	*74*		*13 - 199*
13C-OCDF	*75*		*13 - 199*

QC Association Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Specialty Organics

Prep Batch: 204823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-66404-1	1600428-TW1	Total/NA	Water	1613B	
MB 410-204823/1-A	Method Blank	Total/NA	Water	1613B	
LCS 410-204823/2-A	Lab Control Sample	Total/NA	Water	1613B	

Analysis Batch: 205076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-66404-1	1600428-TW1	Total/NA	Water	1613B	204823
MB 410-204823/1-A	Method Blank	Total/NA	Water	1613B	204823
LCS 410-204823/2-A	Lab Control Sample	Total/NA	Water	1613B	204823

Lab Chronicle

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Client Sample ID: 1600428-TW1

Date Collected: 12/07/21 00:00
Date Received: 12/10/21 09:56

Lab Sample ID: 410-66404-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			204823	12/13/21 16:35	X5YV	ELLE
Total/NA	Analysis	1613B		1	205076	12/14/21 13:50	RGA5	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Isotope Dilution Summary

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (23-140)	HpCDF (28-143)	HxCDD (32-141)	HxCDF (26-152)	HpCDF2 (26-138)	HxDD (28-130)	HxDF (26-123)	PeCDD (25-181)
410-66404-1	1600428-TW1	81 cn	94 cn	84 cn	92 cn	92 cn	86 cn	93 cn	61 cn
MB 410-204823/1-A	Method Blank	73	86	72	79	81	77	87	54

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (24-185)	13CHxCD (28-130)	HxCF (29-147)	13CHxCF (28-136)	PeCF (21-178)	TCDD (25-164)	TCDF (24-169)	OCDD (17-157)
410-66404-1	1600428-TW1	65 cn	82 cn	85 cn	85 cn	66 cn	70 cn	70 cn	87 cn
MB 410-204823/1-A	Method Blank	60	70	74	73	57	65	59	79

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OCDF (17-157)
410-66404-1	1600428-TW1	89 cn
MB 410-204823/1-A	Method Blank	83

Surrogate Legend

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
13CHxCD = 13C-1,2,3,7,8,9-HxCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (26-166)	HpCDF (21-158)	HxCDD (21-193)	HxCDF (19-202)	HpCDF2 (20-186)	HxDD (25-163)	HxDF (21-159)	PeCDD (21-227)
LCS 410-204823/2-A	Lab Control Sample	67	77	69	75	75	74	79	53

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (21-192)	13CHxCD (25-163)	HxCF (17-205)	13CHxCF (22-176)	PeCF (13-328)	TCDD (20-175)	TCDF (22-152)	OCDD (13-199)
LCS 410-204823/2-A	Lab Control Sample	58	66	71	71	60	64	62	74

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OCDF (13-199)
LCS 410-204823/2-A	Lab Control Sample	75

Surrogate Legend

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

Isotope Dilution Summary

Client: Eurofins Environment Testing Canada
Job ID: 410-66404-1
Project/Site: 1968225-PH4398

HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
13CHxCD = 13C-1,2,3,7,8,9-HxCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Accreditation/Certification Summary

Client: Eurofins Environment Testing Canada
Job ID: 410-66404-1
Project/Site: 1968225-PH4398

Laboratory: Eurofins Lancaster Laboratories Env, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22
A2LA	ISO/IEC 17025	0001.01	11-30-22
Alaska	State	PA00009	06-30-22
Alaska (UST)	State	17-027	02-28-22
Arizona	State	AZ0780	03-12-22
Arkansas DEQ	State	88-0660	08-10-22
California	State	2792	02-02-22
Colorado	State	PA00009	06-30-22
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-22
Delaware (DW)	State	N/A	02-01-22
Florida	NELAP	E87997	06-30-22
Georgia (DW)	State	C048	01-31-22
Hawaii	State	N/A	01-31-22
Illinois	NELAP	200027	01-31-23
Iowa	State	361	03-02-22
Kansas	NELAP	E-10151	10-31-22
Kentucky (DW)	State	KY90088	01-01-22
Kentucky (UST)	State	1.01	11-30-22
Kentucky (WW)	State	KY90088	12-31-21
Louisiana	NELAP	02055	06-30-22
Maine	State	2019012	03-12-22
Maryland	State	100	06-30-22
Massachusetts	State	M-PA009	06-30-22
Michigan	State	9930	01-31-22
Minnesota	NELAP	042-999-487	12-31-22
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-22
Nebraska	State	NE-OS-32-17	01-31-22
New Hampshire	NELAP	2730	01-10-22
New Jersey	NELAP	PA011	06-30-22
New York	NELAP	10670	04-01-22
North Carolina (DW)	State	42705	07-31-22
North Carolina (WW/SW)	State	521	12-31-21
North Dakota	State	R-205	01-31-22
Oklahoma	NELAP	R-205	08-31-22
Oregon	NELAP	PA200001	09-11-22
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-22
Rhode Island	State	LAO00338	01-31-22
South Carolina	State	89002002	01-31-22
Tennessee	State	02838	01-31-22
Texas	NELAP	T104704194-21-40	08-31-22
Utah	NELAP	PA000092019-16	03-01-22
Vermont	State	VT - 36037	10-28-22
Virginia	NELAP	460182	06-14-22
Washington	State	C457	04-12-22
West Virginia (DW)	State	9906 C	12-31-21
West Virginia DEP	State	055	12-31-21
Wyoming	State	8TMS-L	01-31-22

Accreditation/Certification Summary

Client: Eurofins Environment Testing Canada
Job ID: 410-66404-1
Project/Site: 1968225-PH4398

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	1.01	11-30-22

eurofins 216338

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727

410-66404 Chain of Custody

CLIENT INFORMATION

Company: Eurofins Ottawa
Contact: Rebecca Roshy
Address:
Telephone: Cell:
Email: #1:
Email: #2:
Project: 1968225-PH4398 Quote #:

INVOICE INFORM

Company:
Contact: Email:
Address: Email: #2:
Telephone: PO #:

YES ☐ NO ☐)

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☐ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.

**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☐ ODWSOG (Use DW CoC if analyzing drinking water)
☐ PWQO
☐ O.Reg 347
☐ Other:

☐ O. Reg 153

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full paramter list only Yes ☐ No ☐

Table # ____, Coarse / Fine, Surface / subsurface
Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils

Table # _____Full depth/Strat/Ceiling/mSPLP Leachate
Type: Com-Ind /Res-Park /Agri/All Other
Category: Surface /Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	Dioxins Furans	RN# (Lab Use Only)
1600428 -TW1	7/12/2021	W	2								✓	

PRINT / SIGN / DATE/TIME / TEMP (°C)

	PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:				
Relinquished By:	Rebecca Leah Foreman	RF	8/12/21 12/10/21 0956	8°
Received By:				

COMMENTS:

CUSTODY SEAL: ☐ YES ☑ NO Ice packs submit ☐ Yes ☑ No

401 Magnetic Drive, Unit #1, North York, ON, M3J 3H9 - Telephone: 416-661-5287 • 380 Vansickle Road, Unit #630, St. Catharines, ON, L2S 0B5 - Telephone: 905-680-8887 • 608 Norris Court, Kingston, ON, K7P 2R9 - Telephone: 613-634-9307

Page ___ of ___

TAT3 Cooler Temp 11.1°

AFSTDCOC.8

Copies: White - Laboratory, Yellow - Sampler

12/15/2021

Login Sample Receipt Checklist

Client: Eurofins Environment Testing Canada

Job Number: 410-66404-1

Login Number: 66404
List Number: 1
Creator: Bryan, Debra A

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	No ice present, no attempt to chill
Cooler Temperature is acceptable (</=6C, not frozen).	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	True	
WV: Container Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	

Definitions/Glossary

Client: Eurofins Environment Testing Canada
Project/Site: 1968225-PH4398

Job ID: 410-66404-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-67026-1
Client Project/Site: P968398-PH9398

For:
Eurofins Environment Testing Canada
146 Colonnade Road, No. 8
Ottawa, Ontario K2E 7Y1

Attn: Rebecca Koshy

Marrissa Williams

Authorized for release by:
12/21/2021 8:12:57 AM

Marrissa Williams, Project Manager
(717)556-7246
Marrissa.Williams@eurofinset.com

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Marrissa Williams

Marrissa Williams
Project Manager
12/21/2021 8:12:57 AM

Job ID: 410-67026-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-67026-1

Receipt
The samples were received on 12/15/2021 9:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 13.8°C

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: P968398-PH9398 1600846-tw2 (410-67026-1), P968398-PH9398 1600847-tw3 (410-67026-2), P968398-PH9398 1600848-BH1 (410-67026-3) and P968398-PH9398 1600848-BH2 (410-67026-4). The laboratory was instructed to proceed with analysis.

Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

Dioxin
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-67026-1	P968398-PH9398 1600846-tw2	Water	12/08/21 00:00	12/15/21 09:37
410-67026-2	P968398-PH9398 1600847-tw3	Water	12/08/21 00:00	12/15/21 09:37
410-67026-3	P968398-PH9398 1600848-BH1	Water	12/08/21 00:00	12/15/21 09:37
410-67026-4	P968398-PH9398 1600848-BH2	Water	12/08/21 00:00	12/15/21 09:37

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600846-tw2
Date Collected: 12/08/21 00:00
Date Received: 12/15/21 09:37

Lab Sample ID: 410-67026-1
Matrix: Water

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		31	0.31	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,4,6,7,8-HpCDF	**0.37**	**J I**	31	0.029	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,4,7,8-HxCDD	ND		31	0.048	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,4,7,8-HxCDF	**0.48**	**J I B**	31	0.16	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,4,7,8,9-HpCDF	ND		31	0.043	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,6,7,8-HxCDD	**0.23**	**J I B**	31	0.046	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,6,7,8-HxCDF	ND		31	0.15	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,7,8-PeCDD	ND		31	0.075	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,7,8-PeCDF	**0.56**	**J I B**	31	0.10	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,7,8,9-HxCDD	**0.26**	**J I**	31	0.043	pg/L		12/16/21 15:00	12/17/21 14:59	1
1,2,3,7,8,9-HxCDF	**0.54**	**J I B**	31	0.18	pg/L		12/16/21 15:00	12/17/21 14:59	1
2,3,4,6,7,8-HxCDF	ND		31	0.14	pg/L		12/16/21 15:00	12/17/21 14:59	1
2,3,4,7,8-PeCDF	ND		31	0.083	pg/L		12/16/21 15:00	12/17/21 14:59	1
2,3,7,8-TCDD	**0.19**	**J I**	5.0	0.10	pg/L		12/16/21 15:00	12/17/21 14:59	1
2,3,7,8-TCDF	ND		6.2	0.051	pg/L		12/16/21 15:00	12/17/21 14:59	1
OCDD	**2.5**	**J I B**	140	0.075	pg/L		12/16/21 15:00	12/17/21 14:59	1
OCDF	ND		62	0.071	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total HpCDD	ND		31	0.31	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total HpCDF	**0.37**	**J I B**	31	0.036	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total HxCDD	**1.2**	**J I B**	31	0.046	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total HxCDF	**1.0**	**J I B**	31	0.16	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total PeCDD	**0.64**	**J B**	31	0.075	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total PeCDF	**0.91**	**J I B**	31	0.091	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total TCDD	**0.19**	**J I B**	6.2	0.10	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total TCDF	**0.59**	**J I B**	6.2	0.051	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total PCDD	**4.5**	**J I B**	6.2	0.12	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total PCDF	**2.9**	**J I B**	6.2	0.082	pg/L		12/16/21 15:00	12/17/21 14:59	1
Total PCDD/PCDF	**7.4**	**I**	6.2	0.10	pg/L		12/16/21 15:00	12/17/21 14:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*68*		*23 - 140*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*28 - 143*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,4,7,8-HxCDF	*71*		*26 - 152*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*57*		*26 - 138*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*28 - 130*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,6,7,8-HxCDF	*72*		*26 - 123*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,7,8-PeCDD	*59*		*25 - 181*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,7,8-PeCDF	*64*		*24 - 185*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,7,8,9-HxCDD	*71*		*28 - 130*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-1,2,3,7,8,9-HxCDF	*63*		*29 - 147*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*28 - 136*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-2,3,4,7,8-PeCDF	*63*		*21 - 178*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-2,3,7,8-TCDD	*67*		*25 - 164*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-OCDD	*69*		*17 - 157*	*12/16/21 15:00*	*12/17/21 14:59*	*1*
13C-OCDF	*59*		*17 - 157*	*12/16/21 15:00*	*12/17/21 14:59*	*1*

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600847-tw3
Date Collected: 12/08/21 00:00
Date Received: 12/15/21 09:37

Lab Sample ID: 410-67026-2
Matrix: Water

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	**1.3**	**J I B**	26	0.060	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,4,6,7,8-HpCDF	ND		26	0.025	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,4,7,8-HxCDD	ND		26	0.042	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,4,7,8-HxCDF	ND		26	0.026	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,4,7,8,9-HpCDF	ND		26	0.036	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,6,7,8-HxCDD	ND		26	0.038	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,6,7,8-HxCDF	ND		26	0.027	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,7,8-PeCDD	ND		26	0.092	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,7,8-PeCDF	**0.51**	**J I B**	26	0.049	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,7,8,9-HxCDD	ND		26	0.037	pg/L		12/16/21 15:00	12/17/21 15:51	1
1,2,3,7,8,9-HxCDF	ND		26	0.033	pg/L		12/16/21 15:00	12/17/21 15:51	1
2,3,4,6,7,8-HxCDF	ND		26	0.026	pg/L		12/16/21 15:00	12/17/21 15:51	1
2,3,4,7,8-PeCDF	ND		26	0.037	pg/L		12/16/21 15:00	12/17/21 15:51	1
2,3,7,8-TCDD	**0.13**	**J I**	4.1	0.078	pg/L		12/16/21 15:00	12/17/21 15:51	1
2,3,7,8-TCDF	ND		5.2	0.054	pg/L		12/16/21 15:00	12/17/21 15:51	1
OCDD	ND		110	0.060	pg/L		12/16/21 15:00	12/17/21 15:51	1
OCDF	**0.087**	**J I B**	52	0.057	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total HpCDD	**1.3**	**J I B**	26	0.060	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total HpCDF	ND		26	0.036	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total HxCDD	**1.8**	**J I B**	26	0.039	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total HxCDF	ND		26	0.033	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total PeCDD	**0.93**	**J I B**	26	0.092	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total PeCDF	**0.51**	**J I B**	26	0.043	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total TCDD	**1.3**	**J I B**	5.2	0.078	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total TCDF	**0.17**	**J I B**	5.2	0.054	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total PCDD	**5.3**	**I B**	5.2	0.066	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total PCDF	**0.77**	**J I B**	5.2	0.044	pg/L		12/16/21 15:00	12/17/21 15:51	1
Total PCDD/PCDF	**6.1**	**I**	5.2	0.055	pg/L		12/16/21 15:00	12/17/21 15:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*68*		*23 - 140*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*28 - 143*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*61*		*26 - 138*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,6,7,8-HxCDD	*74*		*28 - 130*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,6,7,8-HxCDF	*72*		*26 - 123*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,7,8,9-HxCDD	*70*		*28 - 130*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-1,2,3,7,8,9-HxCDF	*63*		*29 - 147*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*28 - 136*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-2,3,4,7,8-PeCDF	*62*		*21 - 178*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-2,3,7,8-TCDF	*59*		*24 - 169*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-OCDD	*75*		*17 - 157*	*12/16/21 15:00*	*12/17/21 15:51*	*1*
13C-OCDF	*64*		*17 - 157*	*12/16/21 15:00*	*12/17/21 15:51*	*1*

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600848-BH1
Date Collected: 12/08/21 00:00
Date Received: 12/15/21 09:37

Lab Sample ID: 410-67026-3
Matrix: Water

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	1.9	J I B	32	0.31	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,4,6,7,8-HpCDF	0.25	J I	32	0.034	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,4,7,8-HxCDD	0.66	J I	32	0.052	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,4,7,8-HxCDF	ND		32	0.12	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,4,7,8,9-HpCDF	ND		32	0.050	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,6,7,8-HxCDD	ND		32	0.053	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,6,7,8-HxCDF	0.41	J I B	32	0.12	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,7,8-PeCDD	ND		32	0.087	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,7,8-PeCDF	0.34	J I B	32	0.062	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,7,8,9-HxCDD	ND		32	0.052	pg/L		12/16/21 15:00	12/17/21 16:40	1
1,2,3,7,8,9-HxCDF	0.42	J I B	32	0.13	pg/L		12/16/21 15:00	12/17/21 16:40	1
2,3,4,6,7,8-HxCDF	ND		32	0.12	pg/L		12/16/21 15:00	12/17/21 16:40	1
2,3,4,7,8-PeCDF	ND		32	0.050	pg/L		12/16/21 15:00	12/17/21 16:40	1
2,3,7,8-TCDD	ND		5.1	0.10	pg/L		12/16/21 15:00	12/17/21 16:40	1
2,3,7,8-TCDF	ND		6.4	0.070	pg/L		12/16/21 15:00	12/17/21 16:40	1
OCDD	14	J B	140	0.086	pg/L		12/16/21 15:00	12/17/21 16:40	1
OCDF	0.82	J I B	64	0.078	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total HpCDD	1.9	J I B	32	0.31	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total HpCDF	0.42	J I B	32	0.042	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total HxCDD	3.8	J I B	32	0.052	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total HxCDF	0.83	J I B	32	0.12	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total PeCDD	0.38	J B	32	0.087	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total PeCDF	0.34	J I B	32	0.056	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total TCDD	0.13	J I B	6.4	0.10	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total TCDF	ND		6.4	0.070	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total PCDD	20	I B	6.4	0.13	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total PCDF	2.4	J I B	6.4	0.074	pg/L		12/16/21 15:00	12/17/21 16:40	1
Total PCDD/PCDF	22	I	6.4	0.10	pg/L		12/16/21 15:00	12/17/21 16:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*58*		*23 - 140*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*56*		*28 - 143*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,4,7,8-HxCDD	*60*		*32 - 141*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,4,7,8-HxCDF	*60*		*26 - 152*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*51*		*26 - 138*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,6,7,8-HxCDD	*64*		*28 - 130*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,6,7,8-HxCDF	*61*		*26 - 123*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,7,8-PeCDD	*51*		*25 - 181*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,7,8-PeCDF	*53*		*24 - 185*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,7,8,9-HxCDD	*61*		*28 - 130*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-1,2,3,7,8,9-HxCDF	*55*		*29 - 147*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-2,3,4,6,7,8-HxCDF	*59*		*28 - 136*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-2,3,4,7,8-PeCDF	*54*		*21 - 178*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-2,3,7,8-TCDD	*54*		*25 - 164*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-2,3,7,8-TCDF	*52*		*24 - 169*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-OCDD	*59*		*17 - 157*	*12/16/21 15:00*	*12/17/21 16:40*	*1*
13C-OCDF	*52*		*17 - 157*	*12/16/21 15:00*	*12/17/21 16:40*	*1*

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600848-BH2
Date Collected: 12/08/21 00:00
Date Received: 12/15/21 09:37

Lab Sample ID: 410-67026-4
Matrix: Water

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	1.8	J I B	26	0.21	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,4,6,7,8-HpCDF	0.24	J I	26	0.028	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,4,7,8-HxCDD	ND		26	0.046	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,4,7,8-HxCDF	ND		26	0.12	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,4,7,8,9-HpCDF	ND		26	0.037	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,6,7,8-HxCDD	ND		26	0.041	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,6,7,8-HxCDF	0.27	J I B	26	0.12	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,7,8-PeCDD	ND		26	0.11	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,7,8-PeCDF	0.40	J I B	26	0.050	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,7,8,9-HxCDD	0.38	J I	26	0.043	pg/L		12/16/21 15:00	12/17/21 17:29	1
1,2,3,7,8,9-HxCDF	0.54	J I B	26	0.14	pg/L		12/16/21 15:00	12/17/21 17:29	1
2,3,4,6,7,8-HxCDF	ND		26	0.11	pg/L		12/16/21 15:00	12/17/21 17:29	1
2,3,4,7,8-PeCDF	0.37	J I B	26	0.042	pg/L		12/16/21 15:00	12/17/21 17:29	1
2,3,7,8-TCDD	ND		4.2	0.086	pg/L		12/16/21 15:00	12/17/21 17:29	1
2,3,7,8-TCDF	ND		5.3	0.055	pg/L		12/16/21 15:00	12/17/21 17:29	1
OCDD	1.4	J I B	120	0.090	pg/L		12/16/21 15:00	12/17/21 17:29	1
OCDF	ND		53	0.082	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total HpCDD	1.8	J I B	26	0.21	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total HpCDF	0.47	J I B	26	0.033	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total HxCDD	0.88	J I B	26	0.044	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total HxCDF	0.82	J I B	26	0.12	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total PeCDD	0.65	J I B	26	0.11	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total PeCDF	0.77	J I B	26	0.046	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total TCDD	1.1	J I B	5.3	0.086	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total TCDF	0.14	J I B	5.3	0.055	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total PCDD	5.8	I B	5.3	0.11	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total PCDF	2.2	J I B	5.3	0.067	pg/L		12/16/21 15:00	12/17/21 17:29	1
Total PCDD/PCDF	8.0	I	5.3	0.087	pg/L		12/16/21 15:00	12/17/21 17:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*52*		*23 - 140*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*50*		*28 - 143*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,4,7,8-HxCDD	*54*		*32 - 141*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,4,7,8-HxCDF	*54*		*26 - 152*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*48*		*26 - 138*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,6,7,8-HxCDD	*57*		*28 - 130*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,6,7,8-HxCDF	*54*		*26 - 123*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,7,8-PeCDD	*45*		*25 - 181*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,7,8-PeCDF	*52*		*24 - 185*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,7,8,9-HxCDD	*53*		*28 - 130*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-1,2,3,7,8,9-HxCDF	*49*		*29 - 147*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-2,3,4,6,7,8-HxCDF	*51*		*28 - 136*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-2,3,4,7,8-PeCDF	*49*		*21 - 178*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-2,3,7,8-TCDD	*50*		*25 - 164*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-2,3,7,8-TCDF	*51*		*24 - 169*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-OCDD	*60*		*17 - 157*	*12/16/21 15:00*	*12/17/21 17:29*	*1*
13C-OCDF	*52*		*17 - 157*	*12/16/21 15:00*	*12/17/21 17:29*	*1*

Toxicity Summary

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600846-tw2

Lab Sample ID: 410-67026-1

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
1,2,3,4,6,7,8-HpCDD	ND		31	0.31	pg/L	0.01	0.00	1613B
1,2,3,4,6,7,8-HpCDF	**0.37**	**J I**	31	0.029	pg/L	0.01	**0.0037**	1613B
1,2,3,4,7,8-HxCDD	ND		31	0.048	pg/L	0.1	0.00	1613B
1,2,3,4,7,8-HxCDF	**0.48**	**J I B**	31	0.16	pg/L	0.1	**0.048**	1613B
1,2,3,4,7,8,9-HpCDF	ND		31	0.043	pg/L	0.01	0.00	1613B
1,2,3,6,7,8-HxCDD	**0.23**	**J I B**	31	0.046	pg/L	0.1	**0.023**	1613B
1,2,3,6,7,8-HxCDF	ND		31	0.15	pg/L	0.1	0.00	1613B
1,2,3,7,8-PeCDD	ND		31	0.075	pg/L	1	0.00	1613B
1,2,3,7,8-PeCDF	**0.56**	**J I B**	31	0.10	pg/L	0.03	**0.017**	1613B
1,2,3,7,8,9-HxCDD	**0.26**	**J I**	31	0.043	pg/L	0.1	**0.026**	1613B
1,2,3,7,8,9-HxCDF	**0.54**	**J I B**	31	0.18	pg/L	0.1	**0.054**	1613B
2,3,4,6,7,8-HxCDF	ND		31	0.14	pg/L	0.1	0.00	1613B
2,3,4,7,8-PeCDF	ND		31	0.083	pg/L	0.3	0.00	1613B
2,3,7,8-TCDD	**0.19**	**J I**	5.0	0.10	pg/L	1	**0.19**	1613B
2,3,7,8-TCDF	ND		6.2	0.051	pg/L	0.1	0.00	1613B
OCDD	**2.5**	**J I B**	140	0.075	pg/L	0.0003	**0.00075**	1613B
OCDF	ND		62	0.071	pg/L	0.0003	0.00	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
Total Toxic Dioxins and Furans					pg/L		0.36	TEQ

Client Sample ID: P968398-PH9398 1600847-tw3

Lab Sample ID: 410-67026-2

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
1,2,3,4,6,7,8-HpCDD	**1.3**	**J I B**	26	0.060	pg/L	0.01	**0.013**	1613B
1,2,3,4,6,7,8-HpCDF	ND		26	0.025	pg/L	0.01	0.00	1613B
1,2,3,4,7,8-HxCDD	ND		26	0.042	pg/L	0.1	0.00	1613B
1,2,3,4,7,8-HxCDF	ND		26	0.026	pg/L	0.1	0.00	1613B
1,2,3,4,7,8,9-HpCDF	ND		26	0.036	pg/L	0.01	0.00	1613B
1,2,3,6,7,8-HxCDD	ND		26	0.038	pg/L	0.1	0.00	1613B
1,2,3,6,7,8-HxCDF	ND		26	0.027	pg/L	0.1	0.00	1613B
1,2,3,7,8-PeCDD	ND		26	0.092	pg/L	1	0.00	1613B
1,2,3,7,8-PeCDF	**0.51**	**J I B**	26	0.049	pg/L	0.03	**0.015**	1613B
1,2,3,7,8,9-HxCDD	ND		26	0.037	pg/L	0.1	0.00	1613B
1,2,3,7,8,9-HxCDF	ND		26	0.033	pg/L	0.1	0.00	1613B
2,3,4,6,7,8-HxCDF	ND		26	0.026	pg/L	0.1	0.00	1613B
2,3,4,7,8-PeCDF	ND		26	0.037	pg/L	0.3	0.00	1613B
2,3,7,8-TCDD	**0.13**	**J I**	4.1	0.078	pg/L	1	**0.13**	1613B
2,3,7,8-TCDF	ND		5.2	0.054	pg/L	0.1	0.00	1613B
OCDD	ND		110	0.060	pg/L	0.0003	0.00	1613B
OCDF	**0.087**	**J I B**	52	0.057	pg/L	0.0003	**0.000026**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: P968398-PH9398 1600847-tw3 (Continued)

Lab Sample ID: 410-67026-2

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
Total Toxic Dioxins and Furans					pg/L		0.16	TEQ

Client Sample ID: P968398-PH9398 1600848-BH1

Lab Sample ID: 410-67026-3

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
1,2,3,4,6,7,8-HpCDD	**1.9**	**J I B**	32	0.31	pg/L	0.01	**0.019**	1613B
1,2,3,4,6,7,8-HpCDF	**0.25**	**J I**	32	0.034	pg/L	0.01	**0.0025**	1613B
1,2,3,4,7,8-HxCDD	**0.66**	**J I**	32	0.052	pg/L	0.1	**0.066**	1613B
1,2,3,4,7,8-HxCDF	ND		32	0.12	pg/L	0.1	0.00	1613B
1,2,3,4,7,8,9-HpCDF	ND		32	0.050	pg/L	0.01	0.00	1613B
1,2,3,6,7,8-HxCDD	ND		32	0.053	pg/L	0.1	0.00	1613B
1,2,3,6,7,8-HxCDF	**0.41**	**J I B**	32	0.12	pg/L	0.1	**0.041**	1613B
1,2,3,7,8-PeCDD	ND		32	0.087	pg/L	1	0.00	1613B
1,2,3,7,8-PeCDF	**0.34**	**J I B**	32	0.062	pg/L	0.03	**0.010**	1613B
1,2,3,7,8,9-HxCDD	ND		32	0.052	pg/L	0.1	0.00	1613B
1,2,3,7,8,9-HxCDF	**0.42**	**J I B**	32	0.13	pg/L	0.1	**0.042**	1613B
2,3,4,6,7,8-HxCDF	ND		32	0.12	pg/L	0.1	0.00	1613B
2,3,4,7,8-PeCDF	ND		32	0.050	pg/L	0.3	0.00	1613B
2,3,7,8-TCDD	ND		5.1	0.10	pg/L	1	0.00	1613B
2,3,7,8-TCDF	ND		6.4	0.070	pg/L	0.1	0.00	1613B
OCDD	**14**	**J B**	140	0.086	pg/L	0.0003	**0.0042**	1613B
OCDF	**0.82**	**J I B**	64	0.078	pg/L	0.0003	**0.00025**	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
Total Toxic Dioxins and Furans					pg/L		0.18	TEQ

Client Sample ID: P968398-PH9398 1600848-BH2

Lab Sample ID: 410-67026-4

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
1,2,3,4,6,7,8-HpCDD	**1.8**	**J I B**	26	0.21	pg/L	0.01	**0.018**	1613B
1,2,3,4,6,7,8-HpCDF	**0.24**	**J I**	26	0.028	pg/L	0.01	**0.0024**	1613B
1,2,3,4,7,8-HxCDD	ND		26	0.046	pg/L	0.1	0.00	1613B
1,2,3,4,7,8-HxCDF	ND		26	0.12	pg/L	0.1	0.00	1613B
1,2,3,4,7,8,9-HpCDF	ND		26	0.037	pg/L	0.01	0.00	1613B
1,2,3,6,7,8-HxCDD	ND		26	0.041	pg/L	0.1	0.00	1613B
1,2,3,6,7,8-HxCDF	**0.27**	**J I B**	26	0.12	pg/L	0.1	**0.027**	1613B
1,2,3,7,8-PeCDD	ND		26	0.11	pg/L	1	0.00	1613B
1,2,3,7,8-PeCDF	**0.40**	**J I B**	26	0.050	pg/L	0.03	**0.012**	1613B
1,2,3,7,8,9-HxCDD	**0.38**	**J I**	26	0.043	pg/L	0.1	**0.038**	1613B
1,2,3,7,8,9-HxCDF	**0.54**	**J I B**	26	0.14	pg/L	0.1	**0.054**	1613B
2,3,4,6,7,8-HxCDF	ND		26	0.11	pg/L	0.1	0.00	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600848-BH2 (Continued)

Lab Sample ID: 410-67026-4

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
2,3,4,7,8-PeCDF	0.37	J I B	26	0.042	pg/L	0.3	0.11	1613B
2,3,7,8-TCDD	ND		4.2	0.086	pg/L	1	0.00	1613B
2,3,7,8-TCDF	ND		5.3	0.055	pg/L	0.1	0.00	1613B
OCDD	1.4	J I B	120	0.090	pg/L	0.0003	0.00042	1613B
OCDF	ND		53	0.082	pg/L	0.0003	0.00	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = 0 TEF	WHO 2005 ND = 0 TEQ	Method
Total Toxic Dioxins and Furans					pg/L		0.26	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Lab Sample ID: MB 410-206460/1-A
Matrix: Water
Analysis Batch: 206661

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 206460

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	2.21	J I	25	0.29	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,4,6,7,8-HpCDF	ND		25	0.028	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,4,7,8-HxCDD	ND		25	0.047	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,4,7,8-HxCDF	0.713	J I	25	0.071	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,4,7,8,9-HpCDF	0.526	J	25	0.040	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,6,7,8-HxCDD	0.388	J I	25	0.044	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,6,7,8-HxCDF	0.267	J I	25	0.073	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,7,8-PeCDD	0.495	J I	25	0.076	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,7,8-PeCDF	0.763	J I	25	0.071	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,7,8,9-HxCDD	ND		25	0.049	pg/L		12/16/21 15:00	12/17/21 14:11	1
1,2,3,7,8,9-HxCDF	0.907	J	25	0.090	pg/L		12/16/21 15:00	12/17/21 14:11	1
2,3,4,6,7,8-HxCDF	0.647	J I	25	0.079	pg/L		12/16/21 15:00	12/17/21 14:11	1
2,3,4,7,8-PeCDF	0.426	J I	25	0.065	pg/L		12/16/21 15:00	12/17/21 14:11	1
2,3,7,8-TCDD	ND		4.0	0.13	pg/L		12/16/21 15:00	12/17/21 14:11	1
2,3,7,8-TCDF	0.138	J I	5.0	0.059	pg/L		12/16/21 15:00	12/17/21 14:11	1
OCDD	1.54	J I	110	0.076	pg/L		12/16/21 15:00	12/17/21 14:11	1
OCDF	0.984	J I	50	0.063	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total HpCDD	2.21	J I	25	0.29	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total HpCDF	0.526	J	25	0.034	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total HxCDD	1.35	J I	25	0.047	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total HxCDF	2.91	J I	25	0.078	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total PeCDD	0.495	J I	25	0.076	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total PeCDF	1.60	J I	25	0.068	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total TCDD	0.923	J I	5.0	0.13	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total TCDF	0.733	J I	5.0	0.059	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total PCDD	6.52	I	5.0	0.12	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total PCDF	6.75	I	5.0	0.060	pg/L		12/16/21 15:00	12/17/21 14:11	1
Total PCDD/PCDF	ND		5.0	0.092	pg/L		12/16/21 15:00	12/17/21 14:11	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*62*		*23 - 140*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*28 - 143*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,4,7,8-HxCDD	*65*		*32 - 141*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,4,7,8-HxCDF	*67*		*26 - 152*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*59*		*26 - 138*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,6,7,8-HxCDF	*70*		*26 - 123*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,7,8-PeCDD	*53*		*25 - 181*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,7,8,9-HxCDD	*59*		*28 - 130*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-1,2,3,7,8,9-HxCDF	*57*		*29 - 147*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-2,3,4,6,7,8-HxCDF	*56*		*28 - 136*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-2,3,4,7,8-PeCDF	*54*		*21 - 178*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-2,3,7,8-TCDD	*56*		*25 - 164*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-2,3,7,8-TCDF	*55*		*24 - 169*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-OCDD	*67*		*17 - 157*	*12/16/21 15:00*	*12/17/21 14:11*	*1*
13C-OCDF	*60*		*17 - 157*	*12/16/21 15:00*	*12/17/21 14:11*	*1*

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters) (Continued)

Lab Sample ID: LCS 410-206460/2-A
Matrix: Water
Analysis Batch: 206661

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 206460

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,3,4,6,7,8-HpCDD			1000	987		pg/L		99	70 - 140		
1,2,3,4,6,7,8-HpCDF			1000	951		pg/L		95	82 - 122		
1,2,3,4,7,8-HxCDD			1000	1000		pg/L		100	70 - 164		
1,2,3,4,7,8-HxCDF			1000	944		pg/L		94	72 - 134		
1,2,3,4,7,8,9-HpCDF			1000	989		pg/L		99	78 - 138		
1,2,3,6,7,8-HxCDD			1000	955		pg/L		96	76 - 134		
1,2,3,6,7,8-HxCDF			1000	954		pg/L		95	84 - 130		
1,2,3,7,8-PeCDD			1000	1080		pg/L		108	70 - 142		
1,2,3,7,8-PeCDF			1000	1050		pg/L		105	80 - 134		
1,2,3,7,8,9-HxCDD			1000	963		pg/L		96	64 - 162		
1,2,3,7,8,9-HxCDF			1000	975		pg/L		97	78 - 130		
2,3,4,6,7,8-HxCDF			1000	956		pg/L		96	70 - 156		
2,3,4,7,8-PeCDF			1000	1030		pg/L		103	68 - 160		
2,3,7,8-TCDD			200	176		pg/L		88	67 - 158		
2,3,7,8-TCDF			200	203		pg/L		101	75 - 158		
OCDD			2000	1950		pg/L		98	78 - 144		
OCDF			2000	1990		pg/L		99	63 - 170		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*69*		*21 - 158*
13C-1,2,3,4,7,8-HxCDD	*69*		*21 - 193*
13C-1,2,3,4,7,8-HxCDF	*78*		*19 - 202*
13C-1,2,3,4,7,8,9-HpCDF	*63*		*20 - 186*
13C-1,2,3,6,7,8-HxCDD	*73*		*25 - 163*
13C-1,2,3,6,7,8-HxCDF	*81*		*21 - 159*
13C-1,2,3,7,8-PeCDD	*64*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*83*		*21 - 192*
13C-1,2,3,7,8,9-HxCDD	*73*		*25 - 163*
13C-1,2,3,7,8,9-HxCDF	*67*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*74*		*22 - 176*
13C-2,3,4,7,8-PeCDF	*71*		*13 - 328*
13C-2,3,7,8-TCDD	*71*		*20 - 175*
13C-2,3,7,8-TCDF	*72*		*22 - 152*
13C-OCDD	*76*		*13 - 199*
13C-OCDF	*67*		*13 - 199*

QC Association Summary

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Specialty Organics

Prep Batch: 206460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-67026-1	P968398-PH9398 1600846-tw2	Total/NA	Water	1613B	
410-67026-2	P968398-PH9398 1600847-tw3	Total/NA	Water	1613B	
410-67026-3	P968398-PH9398 1600848-BH1	Total/NA	Water	1613B	
410-67026-4	P968398-PH9398 1600848-BH2	Total/NA	Water	1613B	
MB 410-206460/1-A	Method Blank	Total/NA	Water	1613B	
LCS 410-206460/2-A	Lab Control Sample	Total/NA	Water	1613B	

Analysis Batch: 206661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-67026-1	P968398-PH9398 1600846-tw2	Total/NA	Water	1613B	206460
410-67026-2	P968398-PH9398 1600847-tw3	Total/NA	Water	1613B	206460
410-67026-3	P968398-PH9398 1600848-BH1	Total/NA	Water	1613B	206460
410-67026-4	P968398-PH9398 1600848-BH2	Total/NA	Water	1613B	206460
MB 410-206460/1-A	Method Blank	Total/NA	Water	1613B	206460
LCS 410-206460/2-A	Lab Control Sample	Total/NA	Water	1613B	206460

Lab Chronicle

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Client Sample ID: P968398-PH9398 1600846-tw2

Lab Sample ID: 410-67026-1

Date Collected: 12/08/21 00:00
Matrix: Water
Date Received: 12/15/21 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			206460	12/16/21 15:00	CPV9	ELLE
Total/NA	Analysis	1613B		1	206661	12/17/21 14:59	UA2A	ELLE

Client Sample ID: P968398-PH9398 1600847-tw3

Lab Sample ID: 410-67026-2

Date Collected: 12/08/21 00:00
Matrix: Water
Date Received: 12/15/21 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			206460	12/16/21 15:00	CPV9	ELLE
Total/NA	Analysis	1613B		1	206661	12/17/21 15:51	UA2A	ELLE

Client Sample ID: P968398-PH9398 1600848-BH1

Lab Sample ID: 410-67026-3

Date Collected: 12/08/21 00:00
Matrix: Water
Date Received: 12/15/21 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			206460	12/16/21 15:00	CPV9	ELLE
Total/NA	Analysis	1613B		1	206661	12/17/21 16:40	UA2A	ELLE

Client Sample ID: P968398-PH9398 1600848-BH2

Lab Sample ID: 410-67026-4

Date Collected: 12/08/21 00:00
Matrix: Water
Date Received: 12/15/21 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			206460	12/16/21 15:00	CPV9	ELLE
Total/NA	Analysis	1613B		1	206661	12/17/21 17:29	UA2A	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Isotope Dilution Summary

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HpCDD	HpCDF	HxCDD	HxCDF	HpCDF2	HxDD	HxDF	PeCDD
Lab Sample ID	Client Sample ID	(23-140)	(28-143)	(32-141)	(26-152)	(26-138)	(28-130)	(26-123)	(25-181)
410-67026-1	P968398-PH9398 1600846-tw2	68	64	70	71	57	71	72	59
410-67026-2	P968398-PH9398 1600847-tw3	68	67	70	68	61	74	72	60
410-67026-3	P968398-PH9398 1600848-BH1	58	56	60	60	51	64	61	51
410-67026-4	P968398-PH9398 1600848-BH2	52	50	54	54	48	57	54	45
MB 410-206460/1-A	Method Blank	62	66	65	67	59	68	70	53

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PeCDF	13CHxCD	HxCF	13CHxCF	PeCF	TCDD	TCDF	OCDD
Lab Sample ID	Client Sample ID	(24-185)	(28-130)	(29-147)	(28-136)	(21-178)	(25-164)	(24-169)	(17-157)
410-67026-1	P968398-PH9398 1600846-tw2	64	71	63	68	63	67	64	69
410-67026-2	P968398-PH9398 1600847-tw3	62	70	63	68	62	64	59	75
410-67026-3	P968398-PH9398 1600848-BH1	53	61	55	59	54	54	52	59
410-67026-4	P968398-PH9398 1600848-BH2	52	53	49	51	49	50	51	60
MB 410-206460/1-A	Method Blank	62	59	57	56	54	56	55	67

		Percent Isotope Dilution Recovery (Acceptance Limits)
		OCDF
Lab Sample ID	Client Sample ID	(17-157)
410-67026-1	P968398-PH9398 1600846-tw2	59
410-67026-2	P968398-PH9398 1600847-tw3	64
410-67026-3	P968398-PH9398 1600848-BH1	52
410-67026-4	P968398-PH9398 1600848-BH2	52
MB 410-206460/1-A	Method Blank	60

Surrogate Legend

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
13CHxCD = 13C-1,2,3,7,8,9-HxCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HpCDD	HpCDF	HxCDD	HxCDF	HpCDF2	HxDD	HxDF	PeCDD
Lab Sample ID	Client Sample ID	(26-166)	(21-158)	(21-193)	(19-202)	(20-186)	(25-163)	(21-159)	(21-227)
LCS 410-206460/2-A	Lab Control Sample	70	69	69	78	63	73	81	64

Isotope Dilution Summary

Client: Eurofins Environment Testing Canada
Job ID: 410-67026-1
Project/Site: P968398-PH9398

Method: 1613B - 2,3,7,8-TCDD Only (Drinking Waters) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (21-192)	13CHxCD (25-163)	HxCF (17-205)	13CHxCF (22-176)	PeCF (13-328)	TCDD (20-175)	TCDF (22-152)	OCDD (13-199)
LCS 410-206460/2-A	Lab Control Sample	83	73	67	74	71	71	72	76

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OCDF (13-199)
LCS 410-206460/2-A	Lab Control Sample	67

Surrogate Legend

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
13CHxCD = 13C-1,2,3,7,8,9-HxCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Accreditation/Certification Summary

Client: Eurofins Environment Testing Canada
Job ID: 410-67026-1
Project/Site: P968398-PH9398

Laboratory: Eurofins Lancaster Laboratories Env, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22
A2LA	ISO/IEC 17025	0001.01	11-30-22
Alaska	State	PA00009	06-30-22
Alaska (UST)	State	17-027	02-28-22
Arizona	State	AZ0780	03-12-22
Arkansas DEQ	State	88-0660	08-10-22
California	State	2792	02-02-22
Colorado	State	PA00009	06-30-22
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-22
Delaware (DW)	State	N/A	02-01-22
Florida	NELAP	E87997	06-30-22
Georgia (DW)	State	C048	01-31-22
Hawaii	State	N/A	01-31-22
Illinois	NELAP	200027	01-31-23
Iowa	State	361	03-02-22
Kansas	NELAP	E-10151	10-31-22
Kentucky (DW)	State	KY90088	01-01-22
Kentucky (UST)	State	1.01	11-30-22
Kentucky (WW)	State	KY90088	12-31-21
Louisiana	NELAP	02055	06-30-22
Maine	State	2019012	03-12-22
Maryland	State	100	06-30-22
Massachusetts	State	M-PA009	06-30-22
Michigan	State	9930	01-31-22
Minnesota	NELAP	042-999-487	12-31-22
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-22
Nebraska	State	NE-OS-32-17	01-31-22
New Hampshire	NELAP	2730	01-10-22
New Jersey	NELAP	PA011	06-30-22
New York	NELAP	10670	04-01-22
North Carolina (DW)	State	42705	07-31-22
North Carolina (WW/SW)	State	521	12-31-21
North Dakota	State	R-205	01-31-22
Oklahoma	NELAP	R-205	08-31-22
Oregon	NELAP	PA200001	09-11-22
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-22
Rhode Island	State	LAO00338	01-31-22
South Carolina	State	89002002	01-31-22
Tennessee	State	02838	01-31-22
Texas	NELAP	T104704194-21-40	08-31-22
Utah	NELAP	PA000092019-16	03-01-22
Vermont	State	VT - 36037	10-28-22
Virginia	NELAP	460182	06-14-22
Washington	State	C457	04-12-22
West Virginia (DW)	State	9906 C	12-31-21
West Virginia DEP	State	055	12-31-21
Wyoming	State	8TMS-L	01-31-22

Accreditation/Certification Summary

Client: Eurofins Environment Testing Canada
Job ID: 410-67026-1
Project/Site: P968398-PH9398

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	1.01	11-30-22

eurofins 216339

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

410-67026 Chain of Custody

CLIENT INFORMATION

Company: Eurofins Ottawa

Contact:

Address:

Telephone: Cell:

Email: #1:

Email: #2:

Project: 1968398 - PH4398 Quote #:

INVOICE INFORMATION (SAME AS CLIENT

Company: Fax:

Contact: Email: #1:

Address: Email: #2:

Telephone: PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☐ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.
**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:_____
☐ Storm Sewer, City:_____
☐ ODWSOG (Use DW CoC if analyzing drinking water)
☐ PWQO
☐ O.Reg 347
☐ Other:_____

☐ O. Reg 153
The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full paramter list only Yes ☐ No ☐
Table # ____, Coarse / Fine, Surface / subsurface
Type: Com-ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils
Table # _____Full depth/Strat/Ceiling/mSPLP Leachate
Type: Com-Ind /Res-Park /Agri/All Other
Category: Surface /Subsurface

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganic	Metals only	Dioxins & Furans	RN# (Lab Use Only)
1600846 - TW2	08/12/2021	W	2								/	
1600847 - TW3	↓	↓	↓								/	
1600848 - BH1											/	
1600849 - BH2											/	

PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:			
Relinquished By: Renata Secades		13/12/2021	10°
Received By: Leah Foreman		12/15/21 0937	

COMMENTS:

CUSTODY SEAL: ☐ YES ☐ NO Ice packs submit ☐ Yes ☐ No

401 Magnetic Drive, Unit #1, North York, ON, M3J 3H9 - Telephone: 416-661-5287 • 380 Vansickle Road, Unit #630, St. Catharines, ON, L2R 0B5 - Telephone: 905-680-8887 • 608 Norris Court, Kingston, ON, K7P 2R9 - Telephone: 613-634-9307

Login Sample Receipt Checklist

Client: Eurofins Environment Testing Canada

Job Number: 410-67026-1

Login Number: 67026

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Dawodu, Habibah

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	No ice present, no attempt to chill
Cooler Temperature is acceptable (</=6C, not frozen).	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No time on COC or sample containers.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	

Client: Eurofins Environment Testing Canada
Project/Site: P968398-PH9398

Job ID: 410-67026-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Certificate of Analysis

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

Dear Kirby Magee-Dittburner:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____
Long Qu, Organics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: http://www.cala.ca/scopes/2602.pdf.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (license #2318). A copy of the license is available upon request.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official provincial or federal guideline as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

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Certificate of Analysis

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

				Lab I.D.	1600428
				Sample Matrix	GW
				Sample Type	
				Sampling Date	2021-12-07
				Sample I.D.	TW1
Group	**Analyte**	**MRL**	**Units**	**Guideline**	
Metals	Ag	0.0001	mg/L		<0.0001
	As	0.001	mg/L		<0.001
	B	0.01	mg/L		0.15
	Ba	0.01	mg/L		0.21
	Be	0.0005	mg/L		<0.0005
	Cd	0.0001	mg/L		<0.0001
	Co	0.0002	mg/L		0.0002
	Cr	0.001	mg/L		<0.001
	Cr(VI)	0.01	mg/L		<0.01
	Cu	0.001	mg/L		0.002
	Hg	0.0001	mg/L		<0.0001
	Mo	0.005	mg/L		<0.005
	Na	2	mg/L		27
	Ni	0.005	mg/L		<0.005
	Pb	0.001	mg/L		<0.001
	Sb	0.0005	mg/L		<0.0005
	Se	0.001	mg/L		<0.001
	Tl	0.0001	mg/L		<0.0001
	U	0.001	mg/L		0.002
	V	0.001	mg/L		<0.001
	Zn	0.01	mg/L		<0.01
PAH	1+2-methylnaphthalene	0.1	ug/L		<0.1
	1-methylnaphthalene	0.1	ug/L		<0.1
	2-methylnaphthalene	0.1	ug/L		<0.1
	Acenaphthene	0.1	ug/L		<0.1

Guideline = *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

eurofins | Environment Testing

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

				Lab I.D.	1600428
				Sample Matrix	GW
				Sample Type	
				Sampling Date	2021-12-07
				Sample I.D.	TW1
Group	**Analyte**	**MRL**	**Units**	**Guideline**	
PAH	Acenaphthylene	0.1	ug/L		<0.1
	Anthracene	0.1	ug/L		<0.1
	Benzo(a)anthracene	0.1	ug/L		<0.1
	Benzo(a)pyrene	0.01	ug/L		<0.01
	Benzo(b)fluoranthene	0.05	ug/L		<0.05
	Benzo(g,h,i)perylene	0.1	ug/L		<0.1
	Benzo(k)fluoranthene	0.05	ug/L		<0.05
	Chrysene	0.05	ug/L		<0.05
	Dibenzo(a,h)anthracene	0.1	ug/L		<0.1
	Fluoranthene	0.1	ug/L		<0.1
	Fluorene	0.1	ug/L		<0.1
	Indeno(1,2,3-c,d)pyrene	0.1	ug/L		<0.1
	Naphthalene	0.1	ug/L		<0.1
	Phenanthrene	0.1	ug/L		<0.1
	Pyrene	0.1	ug/L		<0.1
PCB Surrogate	Decachlorobiphenyl	0	%		90
PCBs	Aroclor 1016	0.1	ug/L		<0.1
	Aroclor 1242	0.1	ug/L		<0.1
	Aroclor 1248	0.1	ug/L		<0.1
	Aroclor 1254	0.1	ug/L		<0.1
	Aroclor 1260	0.1	ug/L		<0.1
	Polychlorinated Biphenyls (PCBs)	0.1	ug/L		<0.1
VOCs Surrogates	Toluene-d8	0	%		100
Volatiles	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5

Guideline = *** = Guideline Exceedence**

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Certificate of Analysis

eurofins | Environment Testing

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

				Lab I.D.	1600428
				Sample Matrix	GW
				Sample Type	
				Sampling Date	2021-12-07
				Sample I.D.	TW1
Group	**Analyte**	**MRL**	**Units**	**Guideline**	
Volatiles	m/p-xylene	0.4	ug/L		<0.4
	o-xylene	0.4	ug/L		<0.4
	Toluene	0.5	ug/L		<0.5
	Xylene; total	0.5	ug/L		<0.5

Guideline = *** = Guideline Exceedence**

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Certificate of Analysis

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 413207 **Analysis/Extraction Date** 2021-12-10 **Analyst** C M **Method** P 8270			
Methlynaphthalene, 1-	<0.1 ug/L	100	50-140
Methlynaphthalene, 2-	<0.1 ug/L	100	50-140
Acenaphthene	<0.1 ug/L	102	50-140
Acenaphthylene	<0.1 ug/L	100	50-140
Anthracene	<0.1 ug/L	100	50-140
Benz[a]anthracene	<0.1 ug/L	84	50-140
Benzo[a]pyrene	<0.01 ug/L	95	50-140
Benzo[b]fluoranthene	<0.05 ug/L	99	50-140
Benzo[ghi]perylene	<0.1 ug/L	100	50-140
Benzo[k]fluoranthene	<0.05 ug/L	104	50-140
Chrysene	<0.05 ug/L	111	50-140
Dibenz[a h]anthracene	<0.1 ug/L	82	50-140
Fluoranthene	<0.1 ug/L	94	50-140
Fluorene	<0.1 ug/L	96	50-140
Indeno[1 2 3-cd]pyrene	<0.1 ug/L	92	50-140
Naphthalene	<0.1 ug/L	104	50-140

Guideline = *** = Guideline Exceedence**

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Certificate of Analysis

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Phenanthrene	<0.1 ug/L	102	50-140
Pyrene	<0.1 ug/L	94	50-140
Run No 413771 **Analysis/Extraction Date** 2021-12-09 **Analyst** SD **Method** EPA 200.8			
Silver	<0.0001 mg/L	114	80-120
Arsenic	<0.001 mg/L	102	80-120
Boron (total)	<0.01 mg/L	113	80-120
Barium	<0.01 mg/L	101	80-120
Beryllium	<0.0005 mg/L	116	80-120
Cadmium	<0.0001 mg/L	107	80-120
Cobalt	<0.0002 mg/L	106	80-120
Chromium Total	<0.001 mg/L	106	80-120
Copper	<0.001 mg/L	111	80-120
Mercury	<0.0001 mg/L	90	80-120
Molybdenum	<0.005 mg/L	100	80-120
Nickel	<0.005 mg/L	110	80-120
Lead	<0.001 mg/L	103	80-120
Antimony	<0.0005 mg/L	79	80-120

Guideline = *** = Guideline Exceedence**

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Certificate of Analysis

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Selenium	<0.001 mg/L	108	80-120
Thallium	<0.0001 mg/L	102	80-120
Uranium	<0.001 mg/L	98	80-120
Vanadium	<0.001 mg/L	104	80-120
Zinc	<0.01 mg/L	114	80-120
Run No 413825 **Analysis/Extraction Date** 2021-12-10 **Analyst** YH **Method** EPA 8260			
Benzene	<0.5 ug/L	88	60-130
Ethylbenzene	<0.5 ug/L	82	60-130
m/p-xylene	<0.4 ug/L	84	60-130
o-xylene	<0.4 ug/L	91	60-130
Toluene	<0.5 ug/L	88	60-130
Run No 413834 **Analysis/Extraction Date** 2021-12-10 **Analyst** YH **Method** EPA 8260			
Xylene Mixture			
Run No 413856 **Analysis/Extraction Date** 2021-12-10 **Analyst** Z S **Method** M SM3120B-3500C			
Sodium	<2 mg/L	103	82-118

Guideline = *** = Guideline Exceedence**

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Certificate of Analysis

eurofins | Environment Testing

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#:
Invoice to: Paterson Group

Report Number: 1968225
Date Submitted: 2021-12-07
Date Reported: 2021-12-21
Project: PH4398
COC #: 883921

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 413883 **Analysis/Extraction Date** 2021-12-10 **Analyst** SKH **Method** SM 3500-Cr B			
Chromium VI	<0.01 mg/L	94	80-120
Run No 413950 **Analysis/Extraction Date** 2021-12-10 **Analyst** R G **Method** EPA 8081B			
Aroclor 1016	<0.1 ug/L	120	
Aroclor 1242	<0.1 ug/L	120	60-140
Aroclor 1248	<0.1 ug/L	120	60-140
Aroclor 1254	<0.1 ug/L	120	60-140
Aroclor 1260	<0.1 ug/L	120	60-140
Polychlorinated Biphenyls	<0.1 ug/L	120	60-140
Run No 413968 **Analysis/Extraction Date** 2021-12-13 **Analyst** C M **Method** P 8270			
1+2-methylnaphthalene			

Guideline = *** = Guideline Exceedence**

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Certificate of Analysis

Environment Testing

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
Invoice to: Paterson Group
PO#: 33461

Report Number:	1968398
Date Submitted:	2021-12-09
Date Reported:	2021-12-21
Project:	PH4398
COC #:	884073
Temperature (C):	19
Custody Seal:	

Dear Kirby Magee-Dittburner:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Long Qu, Organics Supervisor

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated
.
Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accrteditation. The scope is available at http://www.cala.ca/scopes/2602.pdf

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Certificate of Analysis

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#: 33461
Invoice to: Paterson Group

Report Number: 1968398
Date Submitted: 2021-12-09
Date Reported: 2021-12-21
Project: PH4398
COC #: 884073

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

Results relate only to the parameters tested on the samples submitted.
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Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#: 33461
Invoice to: Paterson Group

Report Number: 1968398
Date Submitted: 2021-12-09
Date Reported: 2021-12-21
Project: PH4398
COC #: 884073

Guideline = O.Reg 153-T1-Groundwater

Metals

Lab I.D.	1600846	1600847	1600848	1600849
Sample Matrix	GW153	GW153	GW153	GW153
Sample Type				
Sample Date	2021-12-08	2021-12-08	2021-12-08	2021-12-08
Sampling Time				
Sample I.D.	TW2	TW3	BH1	BH2

Analyte	Batch No	MRL	Units	Guideline				
Antimony	413977	0.5	ug/L	STD 1.5	<0.5	<0.5	<0.5	<0.5
Arsenic	413977	1	ug/L	STD 13	<1	<1	<1	<1
Barium	413977	10	ug/L	STD 610	240	230	250	220
Beryllium	413977	0.5	ug/L	STD 0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	413977	10	ug/L	STD 1700	130	130	70	50
Cadmium	413977	0.1	ug/L	STD 0.5	<0.1	<0.1	<0.1	<0.1
Chromium Total	413977	1	ug/L	STD 11	<1	<1	<1	<1
Chromium VI	413883	10	ug/L	STD 25	<10	<10	<10	<10
Cobalt	413977	0.2	ug/L	STD 3.8	<0.2	<0.2	0.2	<0.2
Copper	413977	1	ug/L	STD 5	2	2	<1	<1
Lead	413977	1	ug/L	STD 1.9	<1	<1	<1	<1
Mercury	414089	0.1	ug/L	STD 0.1	<0.1	<0.1	<0.1	
	414172	0.1	ug/L	STD 0.1				<0.1
Molybdenum	413977	5	ug/L	STD 23	<5	<5	<5	<5
Nickel	413977	5	ug/L	STD 14	<5	<5	<5	<5
Selenium	413977	1	ug/L	STD 5	<1	<1	<1	<1
Silver	413977	0.1	ug/L	STD 0.3	<0.1	<0.1	<0.1	<0.1
Sodium	413967	2000	ug/L	STD 490000	22000	28000	12000	8000
Thallium	413977	0.1	ug/L	STD 0.5	<0.1	<0.1	<0.1	<0.1
Uranium	413977	1	ug/L	STD 8.9	2	3	2	2
Vanadium	413977	1	ug/L	STD 3.9	<1	<1	2	<1
Zinc	413977	10	ug/L	STD 160	<10	<10	<10	<10

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K2E 7T7
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PAH

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.			
					1600846 GW153 2021-12-08 TW2	1600847 GW153 2021-12-08 TW3	1600848 GW153 2021-12-08 BH1	1600849 GW153 2021-12-08 BH2
1+2-methylnaphthalene	414118	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Acenaphthene	413207	0.1	ug/L	STD 4.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	413207	0.1	ug/L	STD 1	<0.1	<0.1	<0.1	<0.1
Anthracene	413207	0.1	ug/L	STD 0.1	<0.1	<0.1	<0.1	<0.1
Benz[a]anthracene	413207	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1
Benzo[a]pyrene	413207	0.01	ug/L	STD 0.01	<0.01	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	413207	0.05	ug/L	STD 0.1	<0.05	<0.05	<0.05	<0.05
Benzo[ghi]perylene	413207	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1
Benzo[k]fluoranthene	413207	0.05	ug/L	STD 0.1	<0.05	<0.05	<0.05	<0.05
Chrysene	413207	0.05	ug/L	STD 0.1	<0.05	<0.05	<0.05	<0.05
Dibenz[a h]anthracene	413207	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1
Fluoranthene	413207	0.1	ug/L	STD 0.4	<0.1	<0.1	<0.1	<0.1
Fluorene	413207	0.1	ug/L	STD 120	<0.1	<0.1	<0.1	<0.1
Indeno[1 2 3-cd]pyrene	413207	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1
Methlynaphthalene, 1-	413207	0.1	ug/L	STD 2	<0.1	<0.1	<0.1	<0.1
Methlynaphthalene, 2-	413207	0.1	ug/L	STD 2	<0.1	<0.1	<0.1	<0.1
Naphthalene	413207	0.1	ug/L	STD 7	<0.1	<0.1	<0.1	<0.1
Phenanthrene	413207	0.1	ug/L	STD 0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	413207	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1

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Volatiles

Analyte	Batch No	MRL	Units	Guideline	1600846 GW153 2021-12-08 TW2	1600847 GW153 2021-12-08 TW3	1600848 GW153 2021-12-08 BH1	1600849 GW153 2021-12-08 BH2
Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.								
Benzene	413921	0.5	ug/L	STD 0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	413921	0.5	ug/L	STD 0.5	<0.5	<0.5	<0.5	<0.5
Toluene	413921	0.5	ug/L	STD 0.8	<0.5	<0.5	<0.5	<0.5
Xylene Mixture	413921	0.5	ug/L	STD 72	<0.5	<0.5	<0.5	<0.5
Xylene, m/p-	413921	0.4	ug/L		<0.4	<0.4	<0.4	<0.4
Xylene, o-	413921	0.4	ug/L		<0.4	<0.4	<0.4	<0.4

PCBs

Analyte	Batch No	MRL	Units	Guideline	1600846 GW153 2021-12-08 TW2	1600847 GW153 2021-12-08 TW3	1600848 GW153 2021-12-08 BH1	1600849 GW153 2021-12-08 BH2
Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.								
Aroclor 1016	414140	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Aroclor 1242	414140	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Aroclor 1248	414140	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Aroclor 1254	414140	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Aroclor 1260	414140	0.1	ug/L		<0.1	<0.1	<0.1	<0.1
Polychlorinated Biphenyls	414140	0.1	ug/L	STD 0.2	<0.1	<0.1	<0.1	<0.1

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Guideline = O.Reg 153-T1-Groundwater

PCB Surrogate

Analyte	Batch No	MRL	Units	Guideline	1600846 GW153 2021-12-08 TW2	1600847 GW153 2021-12-08 TW3	1600848 GW153 2021-12-08 BH1	1600849 GW153 2021-12-08 BH2
					Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.			
Decachlorobiphenyl	414143	0	%		69	117	69	62

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	1600846 GW153 2021-12-08 TW2	1600847 GW153 2021-12-08 TW3	1600848 GW153 2021-12-08 BH1	1600849 GW153 2021-12-08 BH2
					Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.			
Toluene-d8	413921	0	%		98	97	100	99

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Project: PH4398
COC #: 884073

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
413207	Methlynaphthalene, 1-	<0.1 ug/L	100	50-140		50-140		0-30
413207	Methlynaphthalene, 2-	<0.1 ug/L	100	50-140		50-140		0-30
413207	Acenaphthene	<0.1 ug/L	102	50-140		50-140		0-30
413207	Acenaphthylene	<0.1 ug/L	100	50-140		50-140		0-30
413207	Anthracene	<0.1 ug/L	100	50-140		50-140		0-30
413207	Benz[a]anthracene	<0.1 ug/L	84	50-140		50-140		0-30
413207	Benzo[a]pyrene	<0.01 ug/L	95	50-140		50-140		0-30
413207	Benzo[b]fluoranthene	<0.05 ug/L	99	50-140		50-140		0-30
413207	Benzo[ghi]perylene	<0.1 ug/L	100	50-140		50-140		0-30
413207	Benzo[k]fluoranthene	<0.05 ug/L	104	50-140		50-140		0-30
413207	Chrysene	<0.05 ug/L	111	50-140		50-140		0-30
413207	Dibenz[a h]anthracene	<0.1 ug/L	82	50-140		50-140		0-30
413207	Fluoranthene	<0.1 ug/L	94	50-140		50-140		0-30
413207	Fluorene	<0.1 ug/L	96	50-140		50-140		0-30
413207	Indeno[1 2 3-cd]pyrene	<0.1 ug/L	92	50-140		50-140		0-30
413207	Naphthalene	<0.1 ug/L	104	50-140		50-140		0-30
413207	Phenanthrene	<0.1 ug/L	102	50-140		50-140		0-30
413207	Pyrene	<0.1 ug/L	94	50-140		50-140		0-30
413883	Chromium VI	<10 ug/L	94	80-120	88	70-130	0	0-35
413921	Benzene	<0.5 ug/L	88	60-130	101	50-140	0	0-30
413921	Ethylbenzene	<0.5 ug/L	82	60-130	90	50-140	0	0-30
413921	Xylene, m/p-	<0.4 ug/L	84	60-130	97	50-140	0	0-30
413921	Xylene, o-	<0.4 ug/L	91	60-130	97	50-140	0	0-30
413921	Toluene	<0.5 ug/L	88	60-130	102	50-140	0	0-30
413921	Xylene Mixture	<0.5 ug/L						
413967	Sodium	<2000 ug/L	108	82-118	80	80-120	0	0-20
413977	Silver	<0.1 ug/L	111	80-120	124	70-130	17	0-20
413977	Arsenic	<1 ug/L	101	80-120	116	70-130	0	0-20
413977	Boron (total)	<10 ug/L	110	80-120		80-120	0	0-20
413977	Barium	<10 ug/L	90	80-120	13	70-130	0	0-20
413977	Beryllium	<0.5 ug/L	116	80-120	120	70-130	0	0-20
413977	Cadmium	<0.1 ug/L	105	80-120	122	70-130	0	0-20
413977	Cobalt	<0.2 ug/L	97	80-120	97	70-130	0	0-20

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K2E 7T7
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COC #: 884073

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
413977	Chromium Total	<1 ug/L	96	80-120	103	70-130	0	0-20
413977	Copper	<1 ug/L	102	80-120	92	70-130	2	0-20
413977	Molybdenum	<5 ug/L	94	80-120	103	70-130	0	0-20
413977	Nickel	<5 ug/L	106	80-120	100	70-130	0	0-20
413977	Lead	<1 ug/L	89	80-120	93	70-130	0	0-20
413977	Antimony	<0.5 ug/L	107	80-120	111	70-130	0	0-20
413977	Selenium	<1 ug/L	114	80-120	142	70-130	0	0-20
413977	Thallium	<0.1 ug/L	91	80-120	96	70-130	0	0-20
413977	Uranium	<1 ug/L	92	80-120	107	70-130	0	0-20
413977	Vanadium	<1 ug/L	98	80-120	107	70-130	0	0-20
413977	Zinc	<10 ug/L	113	80-120	137	70-130	0	0-20
414089	Mercury	<0.1 ug/L	98	76-123	96	70-130	0	0-20
414118	1+2-methylnaphthalene							
414140	Aroclor 1016	<0.1 ug/L	120		N/A		N/A	
414140	Aroclor 1242	<0.1 ug/L	120	60-140	N/A	60-140	N/A	0-30
414140	Aroclor 1248	<0.1 ug/L	120	60-140	N/A	60-140	N/A	0-30
414140	Aroclor 1254	<0.1 ug/L	120	60-140	N/A	60-140	N/A	0-30
414140	Aroclor 1260	<0.1 ug/L	120	60-140	N/A	60-140	N/A	0-30
414140	Polychlorinated Biphenyls	<0.1 ug/L	120	60-140		60-140		0-30
414172	Mercury	<0.1 ug/L	118	76-123	91	70-130	0	0-20

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Report Number: 1968398
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COC #: 884073

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
413207	Methlynaphthalene, 1-	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Methlynaphthalene, 2-	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Acenaphthene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Acenaphthylene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Anthracene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Benz[a]anthracene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Benzo[a]pyrene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Benzo[b]fluoranthene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Benzo[ghi]perylene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Benzo[k]fluoranthene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Chrysene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Dibenz[a h]anthracene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Fluoranthene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Fluorene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Indeno[1 2 3-cd]pyrene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Naphthalene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Phenanthrene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413207	Pyrene	GC-MS	2021-12-14	2021-12-14	C_M	P 8270
413883	Chromium VI		2021-12-10	2021-12-10	SKH	SM 3500-Cr B
413921	Benzene	GC-MS	2021-12-03	2021-12-11	YH	EPA 8260
413921	Ethylbenzene	GC-MS	2021-12-03	2021-12-11	YH	EPA 8260
413921	Xylene, m/p-	GC-MS	2021-12-03	2021-12-11	YH	EPA 8260
413921	Xylene, o-	GC-MS	2021-12-03	2021-12-11	YH	EPA 8260
413921	Toluene	GC-MS	2021-12-03	2021-12-11	YH	EPA 8260
413921	Xylene Mixture	GC-MS	2021-12-13	2021-12-13	YH	EPA 8260
413967	Sodium	ICP-OES	2021-12-13	2021-12-13	Z_S	M SM3120B-3500C
413977	Silver	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Arsenic	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Boron (total)	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Barium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Beryllium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Cadmium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Cobalt	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8

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Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
413977	Chromium Total	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Copper	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Molybdenum	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Nickel	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Lead	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Antimony	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Selenium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Thallium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Uranium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Vanadium	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
413977	Zinc	ICAPQ-MS	2021-12-13	2021-12-13	SD	EPA 200.8
414089	Mercury	CV AA	2021-12-14	2021-12-14	AaN	M SM3112B-3500B
414118	1+2-methylnaphthalene	GC-MS	2021-12-15	2021-12-15	C_M	P 8270
414140	Aroclor 1016	GC/ECD	2021-12-14	2021-12-15	ZoB	EPA 8081B
414140	Aroclor 1242	GC/ECD	2021-12-14	2021-12-15	ZoB	EPA 8081B
414140	Aroclor 1248	GC/ECD	2021-12-14	2021-12-15	ZoB	EPA 8081B
414140	Aroclor 1254	GC/ECD	2021-12-14	2021-12-15	ZoB	EPA 8081B
414140	Aroclor 1260	GC/ECD	2021-12-14	2021-12-15	ZoB	EPA 8081B
414140	Polychlorinated Biphenyls	GC/ECD	2021-12-14	2021-12-15	ZoB	EPA 8081B
414172	Mercury	CV AA	2021-12-15	2021-12-15	AaN	M SM3112B-3500B

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Paterson Group
154 Colonnade Rd. South
Nepean, ON
K2E 7T7
Attention: Mr. Kirby Magee-Dittburner
PO#: 33461
Invoice to: Paterson Group

Report Number: 1968398
Date Submitted: 2021-12-09
Date Reported: 2021-12-21
Project: PH4398
COC #: 884073

CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:

   - nC6 and nC10 response factors within 30% of response factor for toluene;
   - nC10, nC16, and nC34 response factors within 10% of each other;
   - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
   - Linearity is within 15%.

7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

eurofins 884073

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

Eurofins Workorder #: 1968398

CLIENT INFORMATION

Company: Paterson Group
Contact: Kirby Magee-Dittburner
Address: 154 Colonnade Road South
Telephone: 613-218-3444 Cell:
Email: #1: eardley@patersongroup.ca, mlaflamme@patersongroup.ca
Email: #2: kmageedittburner@patersongroup.ca
Project: PH4398 Quote #:

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☑ NO ☐)

Company:
Contact:
Address:
Telephone:
Fax:
Email: #1:
Email: #2:
PO #: 33461

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☑ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.

**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City: Ottawa
☐ Storm Sewer, City: Ottawa
☐ ODWSOG
☐ PWQO
☐ O. Reg 347/558
☐ Other:
☐ None

☒ O. Reg 153
Table # ____, Course / Fine, Surface / subsurface.
Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment
☐ Excess Soil, Table: ____ Type: ____

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 ☐ Yes ☐ No

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Sample Details / Sample Analysis Required

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	See attached paper	Subdivision Supply Bacti 2 (Ec/TC only)	TSS	pH	Total Metals	Hg	Chromium 6	Dioxins & Furans		RN# (Lab Use Only)
Field Filtered -->																				
TW2	December 8, 2021	GW	1	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☐	1600846
TW3	December 8, 2021	GW	1	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☐	47
BH1	December 8, 2021	GW	1	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☐	48
BH2	December 8, 2021	GW	1	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☐	49
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
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				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

	PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	Kirby Magee-Dittburner		December 8, 2021	
Relinquished By:	Kirby Magee-Dittburner		December 9, 2021	19.3
Received By:			12/09/21 1513	

COMMENTS:

CUSTODY SEAL: ☐ YES ☐ NO Ice packs submitted: ☐ Yes ☐ No

LEGEND:

- BOREHOLE WITH MONITORING WELL LOCATION (PATERSON GROUP REPORT ;PH4398)
- DESTROYED MONITORING WELL LOCATION (PATERSON GROUP REPORT ;PH4398)
- TEST WELL LOCATION (2015)
- MONITORING WELL LOCATION (BY OTHERS)
- TEST PIT LOCATION (2008)
- AUGER HOLE LOCATION (2015)
- EXPOSED BEDROCK

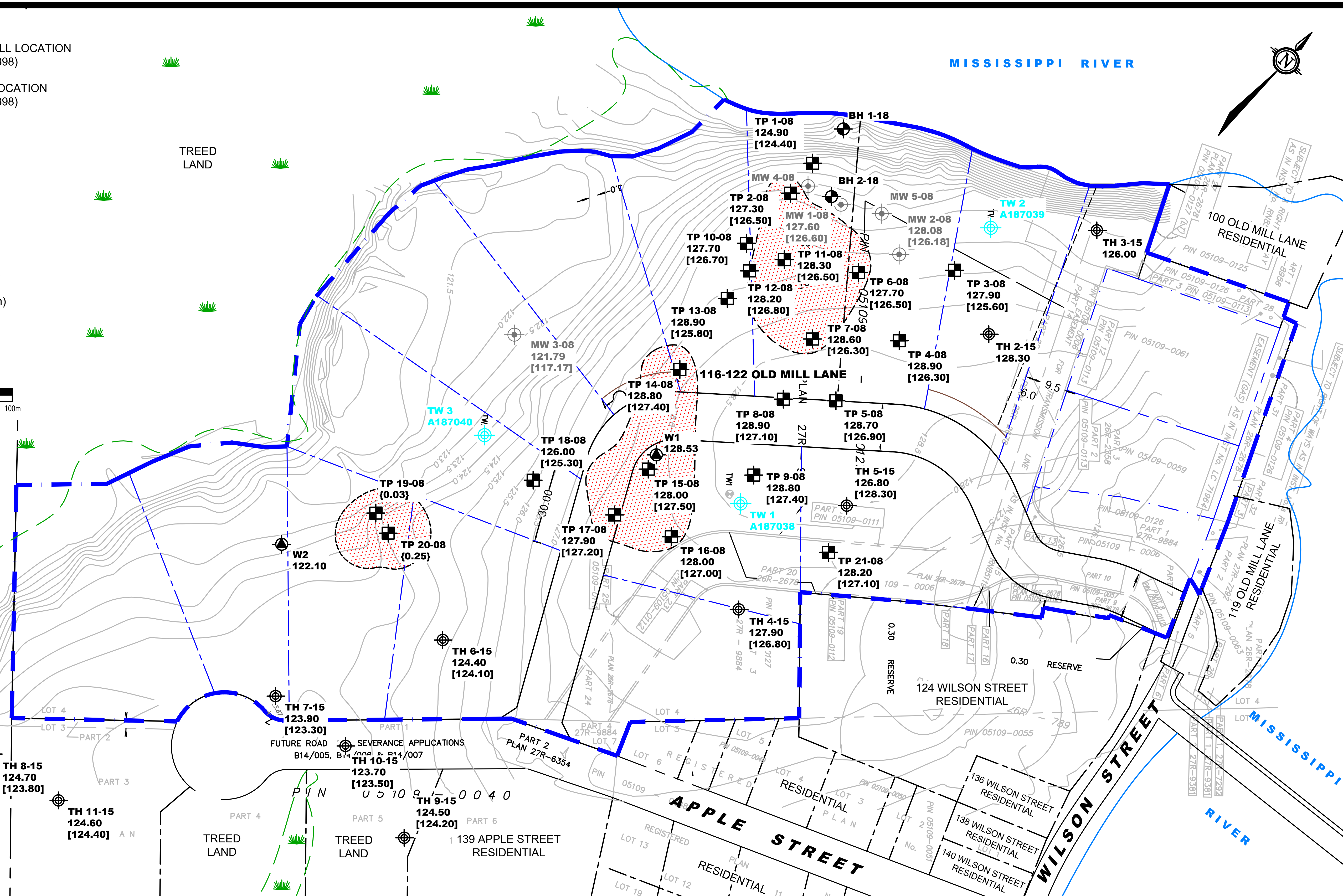
121.79 GROUND SURFACE ELEVATION (m)

[117.17] BEDROCK SURFACE ELEVATION (m)

{0.25} DEPTH TO BEDROCK (m)

CONCEPTUAL PLAN PROVIDED BY NOVATECH

SCALE: 1:1500



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

NO.	REVISIONS	DATE	INITIAL

SOUTHWELL HOMES LTD.

SUPPLEMENTAL GROUNDWATER SAMPLING PROGRAM
116-122 OLD MILL LANE

APPLETON, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:1500	Date: 02/2022
Drawn by: JM	Report No.: PE1114-LET.03
Checked by: NS	Dwg. No.: PE1114-8
Approved by: MSD	Revision No.:

11x17

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