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NOVA SCOTIA LANDS INC.

Harbourside Commercial Park 2020 Long Term Maintenance and Monitoring Groundwater Event

Final Report

February 2021 – 14-1360-2500

February 9, 2021

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Attention: Cory MacPhee, P.Eng.
Project Manager

Harbourside Commercial Park
2020 Long Term Maintenance and Monitoring Groundwater Event (Final Report)

Dear Mr. MacPhee:

Dillon Consulting Limited is pleased to submit the above referenced report for your review. Should you have any questions or comments, please contact the undersigned at nwambolt@dillon.ca, (902) 562-9880 extension 5206 (office) or (902) 565-8539 (cellular).

Yours sincerely,

DILLON CONSULTING LIMITED

Nadine J. Wambolt, B.Tech., CET
Project Manager

NJW:kme

Enclosure

Our file: 20-2862-1000

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Executive Summary

Nova Scotia Lands Inc. (NSLI) is a Crown Corporation of the Province of Nova Scotia responsible for the Long Term Maintenance and Monitoring Program (LTMM) implemented at Harbourside Commercial Park (HCP). NSLI retained Dillon Consulting Limited (Dillon) to conduct the LTMM program, which consists of an annual groundwater sampling program. The LTMM event was completed between December 2 and 10, 2020.

At the onset of the LTMM, the HCP groundwater monitoring program included 25 sampling wells. However, following the sale of three HCP properties to Membertou Development Corporation (Membertou), and following approval from Nova Scotia Environment (NSE) and NSLI, the 2017 LTMM program for HCP was reduced to include sampling of twelve monitor wells (including two added monitor wells). In 2018, seven of the twelve monitor wells scheduled for sampling had been decommissioned, destroyed or buried as a result of construction activity, thereby reducing the number of wells to be sampled at HCP to five. The 2020 LTMM included drilling of four new monitor wells strategically located on HCP to replace decommissioned/destroyed monitor wells (i.e., MCES-007-MW, SCU26-001-MW, SCU26-002-MW, SCU27-002-MW, SCU32-001-MWA, SCU32-002-MW, and SCU32-003-MW), while also considering NSLI environmental liabilities as related to future expected property sales. These four new monitor wells (i.e., SCU26-200-MW, SCU27-202-MW, SCU32-200-MW and MCES-207-MW) have been added to the LTMM program. Additionally, four monitor wells (i.e., MW20-1 to MW20-4) installed around a containment cell constructed along the southern portion of parcel identification designation number (PID No.) 15881741 (currently leased to Membertou) have also been added to the program to monitor downstream flow, and to evaluate functionality of the containment cell. The collection of water levels and the presence/absence of product at eight additional monitor/recovery wells (i.e., SCU31-002-MWA, SCU15-008-MWA/RW, SCU10-003-MW, RW1, RW2, SCU10-002-MW, SCU11-001-MWA and SCU11-001-MWB) is also included in the LTMM.

Analytical data were assessed in comparison to the July 2013 Nova Scotia Contaminated Sites Regulations (NS CSR) Tier I Environmental Quality Standards (EQS) for groundwater. Where Tier I EQS are not available (e.g., for most PAHs and for metals in groundwater at non-potable sites), the Ontario Ministry of the Environment, Conservation and Parks (MECP) Groundwater Standards for use under Ontario's Environmental Protection Act were used.

During the 2020 monitoring event, no groundwater concentrations above the Tier I EQS or the MECP standards were detected in the thirteen monitor wells sampled.

Of the eight monitor wells scheduled for water level and product checks, monitor well SCU10-004-MW exhibited a measurement of approximately 0.31 meters (m) of dense non-aqueous phase liquid (DNAPL) on the interface probe when removed from the well. Black product was observed on the interface probe (appeared to be from PVC wall of the well) when removed from SCU15-008-MWA/RW. Although

monitor wells SCU10-002-MW and SCU31-002-MWA did not exhibit measureable DNAPL or light non-aqueous phase liquid (LNAPL), the interface probe had what appeared to be black product on it when removed from the wells (appeared to come from the PVC walls of the wells). LNAPL or DNAPL were not detected in the remaining wells included in the LTMM.

The groundwater quality trend analysis for the 2020 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for select parameters with concentrations above the applicable guidelines. Trend analysis was completed for monitor well SCU10-004-MW, which showed fluctuating and decreasing trends for the selected indicator parameters. Other wells historically included as part of the trend analysis are no longer part of the LTMM program. Trend analysis for select new wells added to the 2020 LTMM program will be completed once sufficient data has been obtained.

This report was prepared by Dillon Consulting Limited for the sole benefit of our client, NSLI. The conclusions reflect Dillon's judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report or any reliance on or decisions made based on it are the responsibilities of such third parties. Dillon accepts no responsibilities for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

1.0 Introduction

Nova Scotia Lands (NSLI) is a Crown Corporation of the Province of Nova Scotia responsible for the Long Term Maintenance and Monitoring Program (LTMM) implemented at Harbourside Commercial Park (HCP) (Figure 1). NSLI retained Dillon Consulting Limited (Dillon) to conduct the LTMM program, which consists of an annual groundwater sampling program that has been ongoing at HCP since 2003. Environmental Site Assessments (ESAs) conducted to date throughout the HCP have identified several groundwater constituents of interest in excess of evaluation criteria (i.e., petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), mercury, various other metals and vinyl chloride).

At the onset of the LTMM, the HCP groundwater monitoring program included 25 sampling wells. However, following the sale of three HCP properties to Membertou Development Corporation (Membertou), and following approval from Nova Scotia Environment (NSE) and NSLI, the 2017 LTMM program for HCP was reduced to include sampling of twelve monitor wells (including two added monitor wells). In 2018, seven of the twelve monitor wells scheduled for sampling had been decommissioned, destroyed or buried as a result of construction activity, thereby reducing the number of wells to be sampled at HCP to five. The 2020 LTMM included drilling of four new monitor wells strategically located on HCP to replace decommissioned/destroyed monitor wells (i.e., MCES-007-MW, SCU26-001-MW, SCU26-002-MW, SCU27-002-MW, SCU32-001-MWA, SCU32-002-MW, and SCU32-003-MW), while also considering NSLI environmental liabilities as related to future expected property sales. These four new monitor wells (i.e., SCU26-200-MW, SCU27-202-MW, SCU32-200-MW and MCES-207-MW) have been added to the LTMM program. Additionally, four monitor wells (i.e., MW20-1 to MW20-4) installed around a containment cell constructed along the southern portion of parcel identification designation number (PID No.) 15881741 (currently leased to Membertou) have also been added to the program to monitor downstream flow, and to evaluate functionality of the containment cell.

This document details the 2020 groundwater monitoring event. Section 1.1 describes the scope of work. Methodologies are detailed in Section 2.0. Findings are presented in Section 3.0 and summarized in Section 4.0. Recommendations are provided in Section 5.0. Data tables and supporting information are found in appendices referenced throughout the document.

1.1 Scope of Work

The 2020 LTMM program for the HCP consists of an annual groundwater sampling program (Figure 2). In accordance with the request for proposal (RFP) NSLAND111, the annual groundwater monitoring program was planned to include sampling at five select monitor wells on the HCP site, and the collection of water levels and the presence/absence of product at eight additional monitor/recovery wells. As noted above, eight additional sampling wells were added to the 2020 program. In total, twenty-one wells (i.e., 13 sample wells and 8 water level/product check wells) were monitored as part of the

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HARBOURSIDE COMMERCIAL PARK

2020 GROUNDWATER MONITORING EVENT

SITE LOCATION

Figure 1

Harbourside Commercial Park

0 125 250 500 750 m

N
W E
S

MAP DRAWING INFORMATION:
Government of Canada, Natural Resources Canada,
Earth Science Sector, Center for Topographic Information.
Sydney 11 K/1, ESRI Basemap
Information current as of 1994.

Province of Nova Scotia Mapping

MAP CREATED BY: SCM
MAP CHECKED BY: NJW
MAP PROJECTION: NAD 1983 UTM Zone 20N

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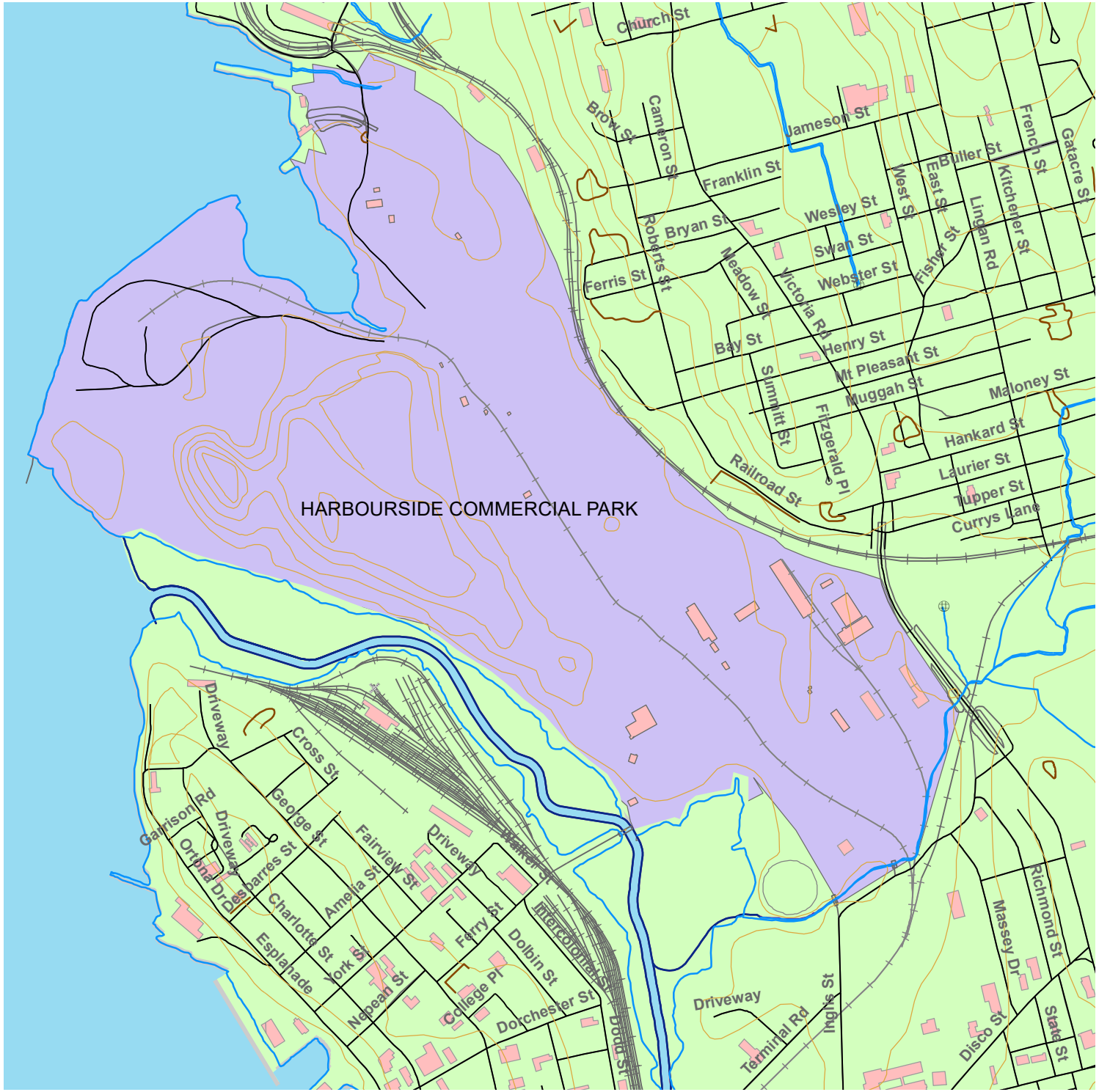
PROJECT: 20-2862

STATUS: FINAL

Date: 2021-01-26

Document Path: G:\GIS\141360\NSLI Figures\HCP 2020\Figure 1 Site Location HCP 2020.mxd



Document Path: G:\GIS\141360\NSLI Figures\HCP 2020\Figure 2 Study Areas HCP 2020.mxd

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HARBOURSIDE COMMERCIAL PARK

2020 GROUNDWATER MONITORING EVENT

STUDY AREA

FIGURE 2

- STREETS
- Watercourse
- Contour
- Harbourside Commercial Park
- Buildings
- Waterbody

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

MAP CREATED BY: SCM
MAP CHECKED BY: NJW
MAP PROJECTION: NAD 1983 UTM Zone 20N

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PROJECT: 14-1360
STATUS: FINAL
Date: 2021-01-28

program. Each of the thirteen monitor wells designated for sampling, one field duplicate sample, and a drill water sample were collected and analyzed for petroleum hydrocarbons (PHCs) (i.e., benzene, toluene, ethybenzene, xylenes (BTEX) and modified total petroleum hydrocarbons (TPH)), PAHs, metals and mercury. Two trip blank samples (for BTEX/TPH analysis only) were also included in the LTMM program for HCP.

2.0 Project Methodologies

Methodologies are provided in the following sub-sections:

- Section 2.1 Health and Safety Processes
- Section 2.2 Quality Control (QC) Processes
- Section 2.3 Groundwater Sampling
- Section 2.4 Data Compilation/Assessment

2.1 Health and Safety Processes

Dillon developed a site-specific health and safety plan (HSP) for groundwater monitoring. The HSP includes site specific information, such as, local emergency contact information and hospital routes, as well as, but not limited to the following:

- Identification of site activities and potential hazards;
- Utility locates;
- Description of safe work practices and procedures;
- Description of Personal Protective Equipment (PPE);
- Identification of safety training and first aid requirements;
- Identification of COVID-19 protocols and restrictions; and,
- Identification of emergency response procedures.

The project manager reviewed the HSP with field personnel prior to their mobilizing to the site. Field personnel were responsible for following the HSP, including conducting a job hazard analysis upon arrival to the site.

2.2 Quality Control Process

Data Quality Objectives (DQOs) and applicable Standard Operating Procedures (SOPs) were reviewed with the team prior to embarking on field work. Other QC measures included, but were not necessarily limited to, the following:

- Assignment of a coordinator to oversee field activities;
- Use of dedicated materials and equipment to reduce/prevent the potential of sample contamination;

- For equipment requiring use at multiple stations, appropriate decontamination prior to, and after, each deployment;
- Use of laboratory supplied sample bottles/containers;
- Collection of an appropriate number of duplicates and blanks;
- Proper storage of samples on ice in coolers immediately after collection;
- Transport of samples to the laboratory (see below) on a daily basis; and,
- Daily documentation/review of notes.

Duplicate and Blank Collection

One field duplicate, a drill water sample and two trip blanks were collected during the 2020 LTMM event. Relative percent differences were calculated between sample and associated field duplicate results, as discussed in Section 3.4.

Laboratory QC

Samples were delivered to Bureau Veritas (BV) Laboratories in Sydney, Nova Scotia for analysis. BV Laboratories are accredited through the Standard Council of Canada (SCC) and is a member of the Canadian Association for Laboratory Accreditation (CALA). BV also applied internal laboratory QC measures including:

- Laboratory duplicates;
- Matrix Spikes (MS);
- Spike Blanks (Process Recovery %); and,
- Method blanks.

Laboratory DQOs, including MS recoveries, process recoveries, relative percent differences, and holding times, were reviewed to assess the quality of the data.

2.3 Monitor Well Replacement

As noted above, the 2020 LTMM included the installation of four new monitor wells as follows:

- SCU26-200-MW: Shallow monitor well installed southwest of a Cape Breton-Victoria Regional Centre for Education Transportation Maintenance Facility.
- SCU27-202-MW: Deep monitor well installed in the vicinity of former monitor well SCU27-002-MW.
- SCU32-200-MW: Deep monitor well installed in the vicinity of former monitor wells SCU32-001-MWA, SCU32-002-MW and SCU32-003-MW.
- MCES-207-MW: Deep monitor well installed In the vicinity of former MCES-007-MW.

Logan Geotech Inc. was sub-contracted by Dillon to complete drilling activities, which were overseen by Dillon personnel. No soil samples were collected during the drilling program.

Between November 11 and 15, 2020, four boreholes were advanced. Each borehole was completed with a monitor well installation. Monitor well SCU26-200-MW was advanced to a depth of 10.67 meters below ground surface (mbgs); SCU27-202-MW was advanced to a depth of 30 mbgs; SCU32-200-MW was advanced to a depth of 16.5 mbgs and MCES-207-MW was advanced to a depth of 29 mbgs. Dillon personnel logged the subsurface conditions encountered at each borehole during the drilling process. Upon completion of the drilling, monitor wells were installed using 50 mm diameter, Schedule 40, PVC screen (0.025 cm slot) and casing with silica sand filter pack and bentonite seal. The wells were sealed with a j-plug and finished with a flushmount cover, with the exception of SCU26-200-MW, which was finished with an aboveground, PVC protective casing, cover and lock. Details of monitor well construction are presented in Appendix A.

Monitor wells MW20-1 to MW20-4 were also added to the annual groundwater monitoring program in 2020. These wells were installed by Gemtech in July 2020 on behalf of Membertou Development Corporation. The monitor well logs for MW20-1 and MW20-4 (provided to Dillon by NSLI) are also presented in Appendix A.

2.4 LTMM Groundwater Monitoring Program

The 2020 HCP program consists of thirteen monitor wells requiring sampling. The field component of the 2020 groundwater monitoring event involved the following activities:

- Measurement of hydraulic head levels;
- Low flow groundwater sample collection; and,
- Data compilation/assessment and reporting.

2.4.1 Measurement of Hydraulic Head Levels

The number of monitor wells measured for water levels was twenty-one (i.e., thirteen sampling and eight monitor/recovery wells that were checked for product). Depth to water and the presence of light non-aqueous phase liquid (LNAPL) and/or dense non-aqueous phase liquid (DNAPL) in wells were manually measured using an interface probe. Measurements were taken from established reference points and water level information was recorded on electronic field sampling sheets.

2.4.2 Groundwater Development

Prior to the completion of the 2020 LTMM groundwater sampling program, the four newly installed replacement monitor wells (i.e., SCU26-200-MW, SCU27-202-MW, SCU32-200-MW, and MCES-207-MW) and the four newly installed containment cell monitor wells (i.e., MW20-1, MW20-2, MW20-3 and MW20-4) were developed so that groundwater samples are representative of the current groundwater quality. Monitor well SCU27-202-MW was developed by hand (as high sediment load in the well prevented use of a pump) using Waterra tubing and a foot valve. Monitor wells SCU32-200-MW, SCU26-200-MW and MCES-207-MW, which were installed at depths beyond the capacity of a peristaltic pump, were developed/purged with a low flow 12 voltage stainless steel submersible pump (i.e., Monsoon

pump). Due to depth of the water table, monitor wells MW20-1 to MW20-4 were also developed using the stainless steel submersible pump. The pump was decontaminated prior to use in the first well and following purging of each well.

2.4.3 Sample Collection

Using a peristaltic pump or stainless steel submersible pump, groundwater was removed from the thirteen monitor wells sampled in the HCP area until select field parameters stabilized. The rate of flow (0.1 to 0.4 liters (L)/minute) at each well was controlled by an in-line valve. The water level was measured at 3-minute intervals; if the water level started to drop, the flow rate was reduced to attempt to maintain a constant head. The sample tube was connected to a flow-through cell containing a Horiba U-52 multi-parameter probe. The general stabilization of the following parameters was used as indication that water representative of the groundwater in the aquifer was being collected:

- pH (+/- 0.1 unit);
- Specific conductance (+ / - 3%);
- Temperature (+ / - 3%); and,
- Turbidity (+ / -10% for values greater than 1 NTU).

The time required for sampling generally ranged from 15 to 30 minutes, and typically 6 to 12 liters of water was removed. In instances where stabilization of turbidity provided some challenges, additional parameters including dissolved oxygen (DO) and oxidation reduction potential (ORP) were referenced to confirm stabilized conditions.

2.4.4 Groundwater Analysis

Pursuant to RFP NSLAND111 Groundwater Monitoring Services, groundwater samples were analyzed for PHCs, PAHs and metals, as listed below in Table 1. PHC and PAH sample bottles were filled with no head space. Metal aliquots were field filtered and preserved with nitric acid in order to maintain constituents in solution. Samples were delivered to BV in Sydney, Nova Scotia for analysis.

Table 1 Water Quality Analytical Suite of Parameters

PHC	PAHs		Metals (dissolved)	
Benzene	Acenaphthene	Naphthalene	Aluminum	Mercury (Total)
Toluene	Acenaphthylene	Perylene	Antimony	Molybdenum
Ethylbenzene	Anthracene	Phenanthrene	Arsenic	Nickel
Total Xylenes	Benzo(a)anthracene	Pyrene	Barium	Phosphorus
C6-C10 (Less BTEX)	Benzo(a)pyrene	1-Methylnaphthalene	Beryllium	Selenium
>C10-C16 Hydrocarbons	Benzo(b)fluoranthene	2-Methylnaphthalene	Bismuth	Silver
>C16-C21 Hydrocarbons	Benzo(j)fluoranthene		Boron	Strontium
>C21-<C32 Hydrocarbons	Benzo(k)fluoranthene		Cadmium	Thallium
Modified TPH (Tier I)	Benzo(g,h,i)perylene		Chromium	Tin
	Chrysene		Cobalt	Titanium
	Dibenz(a,h)anthracene		Copper	Uranium
	Fluoranthene		Iron	Vanadium
	Fluorene		Lead	Zinc
	Indeno(1,2,3-cd)pyrene		Manganese	

2.5 Data Compilation/Assessment

The laboratory provided analytical results in a database compatible format, alleviating potential errors associated with manual entry. Data tables generated as part of the 2020 program also include historical groundwater monitoring data. Based on historical data, the following parameters, with concentrations consistently observed above applicable standards, are used as indicator parameters for the HCP site:

- PAHs (i.e., anthracene and indeno(1,2,3-cd)pyrene); and,
- Metals (i.e., sodium, barium and/or selenium).

Trend analysis was not completed for PHCs, as benzene, toluene, ethylbenzene and xylene concentrations have remained below the Tier I EQS throughout the LTMM program. Further, modified total petroleum hydrocarbon (TPH) exceedances of the Tier I EQS have only been reported on three occasions at two monitor well locations (the last modified TPH exceedance was reported for SCU10-004-MW in 2015).

2.5.1 Regulatory Framework

Pursuant to RFP NSLAND111 Groundwater Monitoring Services, the remedial criteria used for this assessment were the Tier I Environmental Quality Standards (EQS) for groundwater established pursuant to the July 2013 Nova Scotia Contaminated Sites Regulations (NS CSR). The subject property is classified as having commercial receptors, non-potable groundwater usage and coarse-grained soil. Where Tier I EQS are not available (e.g., for most PAHs and metals in groundwater at non-potable sites), the Ontario Ministry of the Environment, Conservation and Parks (MECP) Groundwater Standards for use under Ontario's Environmental Protection Act were used.

2.5.2 Groundwater Quality Trend Analysis – Mann Kendall

Mann-Kendall analysis as a non-parametric statistic test routinely used to assess the stability of solute plume. At least four independent sampling events are required to evaluate groundwater quality trends via Mann-Kendall analysis. The Mann-Kendall test procedure starts by comparing the most recent round of water quality data with the results of earlier rounds. Non-detect data values are typically assigned a value that is half the laboratory detection limit. The Mann-Kendall test is not designed to account for seasonal variation in data, rather Mann-Kendall identified the trend of concentrations in individual wells for individual parameters (e.g., stable, fluctuating, decreasing, increasing).

Select parameters with concentrations above, or historically above, applicable guidelines were selected for Mann-Kendall analysis. These include PAH indicator parameters anthracene and indeno (1, 2, 3-cd) pyrene in monitor well SCU10-004-MW. Historically, Mann-Kendall analysis completed as part of the LTMM has included additional monitor wells and parameters; however, due to the reduced number of sampling wells included in the program during 2018 and 2019, trend analysis was only completed for SCU10-004-MW as part of the 2020 LTMM. Trend analysis for select replacement wells will be completed once sufficient data has been obtained.

Groundwater analytical data collected during historical monitoring events to the 2020 monitoring event were applied for performing the trend analysis. In certain situations, Mann-Kendall analysis results may be biased due to elevated laboratory detection limits. However, non-detected data used in the Mann-Kendall analysis of indicator parameters indicated that the influence of non-detected data is minimal. At least four rounds of groundwater monitoring data is required for Mann-Kendall analysis.

3.0 Results

Results are presented in the following subsections:

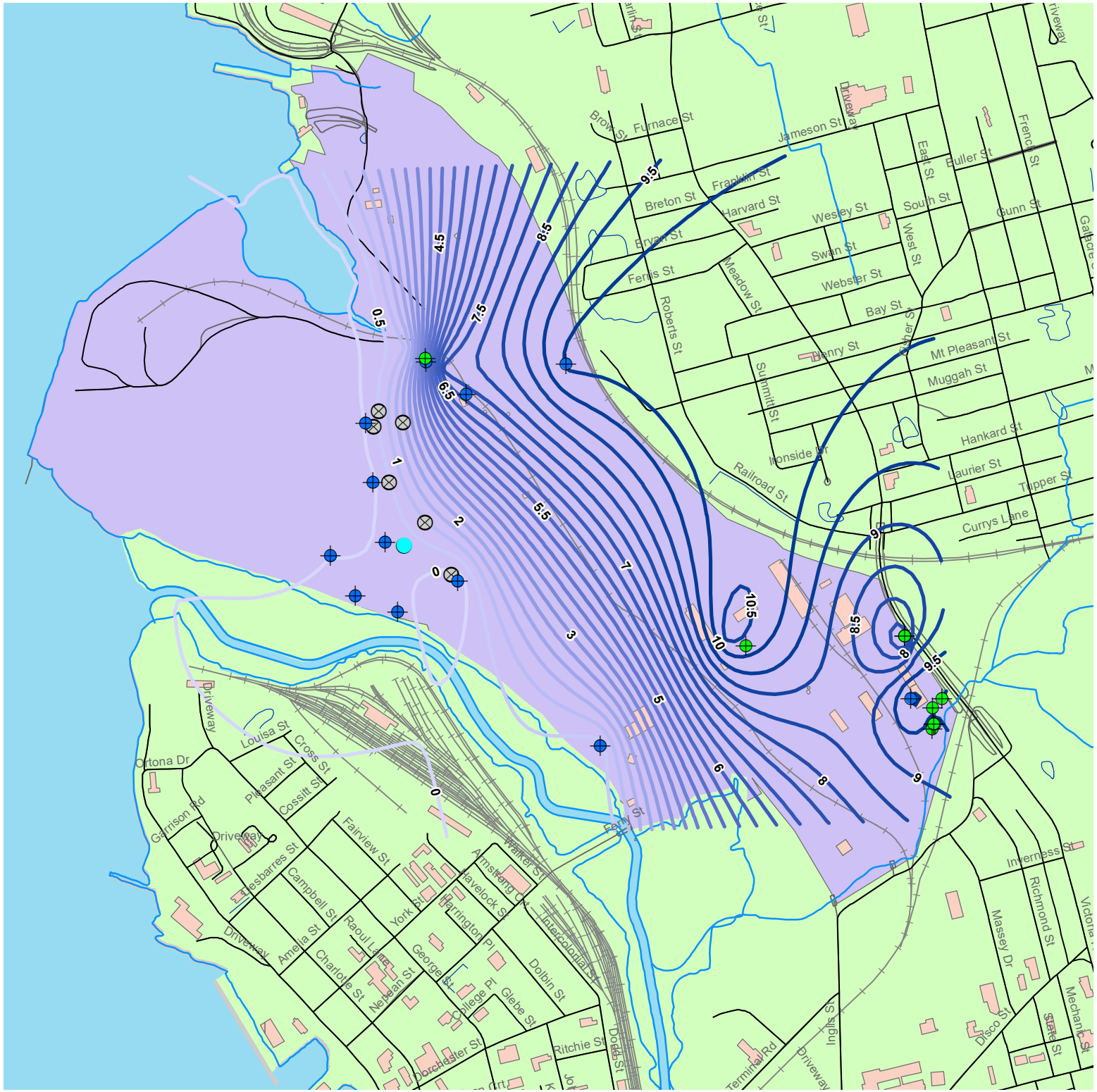
- Section 3.1 Weather Conditions and General Observations;
- Section 3.2 Groundwater Flow and Hydraulic Head Levels
- Section 3.3 HCP Findings
- Section 3.4 QC Summary

3.1 Weather Conditions and General Observations

The current meteorological station (i.e., Sydney A, Climate ID: 8205700/8205701) is an official in-situ station established by Environment Canada since 1941. Historical precipitation recordings for the Sydney area can be traced back as far as 1870. Comparison of the recordings at the Sydney A station indicates that precipitation of approximately 1250.5 millimeters (mm) was recorded for 2020, which is slightly less than the normal value of yearly precipitation of 1517 mm (i.e., as recorded between 1981 and 2010) (http://climate.weather.gc.ca). The total precipitation recorded between December 2 and 10, 2010 (the sampling period) was 42.4 mm.

3.2 Groundwater Flow and Hydraulic Head Levels

NSLI provided Dillon with elevation survey information for the majority of the monitor wells initially included in the LTMM program at the HCP site. The newly installed monitor wells, and the containment cell monitor wells, were surveyed as part of the 2020 LTMM program. Accordingly, the hydraulic heads of twenty-one monitor wells (i.e., the thirteen sample wells and eight monitor/recovery wells that were checked for product) were calculated to plot the equipotential groundwater contours for the 2020 monitoring event. The groundwater contours were applied to evaluate the groundwater flow pattern and direction within the unconsolidated till and/or fill unit (Figure 3). The available equipotential contour plot for the unconsolidated material (i.e., the fill/till) indicates that the groundwater flow direction is west toward Sydney Harbour.



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2020 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Fill TIII
FIGURE 3

Equipotential Groundwater Contours

- 6m — Groundwater Elevations are measured in meters above sea level (mASL)
- Active Water Level Only
- Active Sample and Water Level
- Decommissioned/Destroyed or Buried
- Harbourside Commercial Park

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

MAP CREATED BY: SCM
MAP CHECKED BY: NJW
MAP PROJECTION: NAD 1983 UTM Zone 20N

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PROJECT: 20-2862
STATUS: FINAL
Date: Jan 28 2021

3.3 HCP Findings

Historical environmental site assessments conducted to date throughout HCP (Figure 4) have identified elevated concentrations of organic and inorganic parameters in groundwater above the applicable guidelines (e.g., PHCs, PAHs, mercury, various other metals and vinyl chloride). As stated above, the 2020 LTMM for HCP included sampling at five existing and eight newly installed monitor wells on the HCP site, and the collection of water levels and the presence/absence of product at eight additional monitor/recovery wells.

During the 2020 monitoring event, no groundwater concentrations above the Tier I EQS or the MECP standards (the comparison criteria which are used when no Tier I EQS is available) were detected in the thirteen monitor wells sampled.

3.3.1 HCP Groundwater Quality

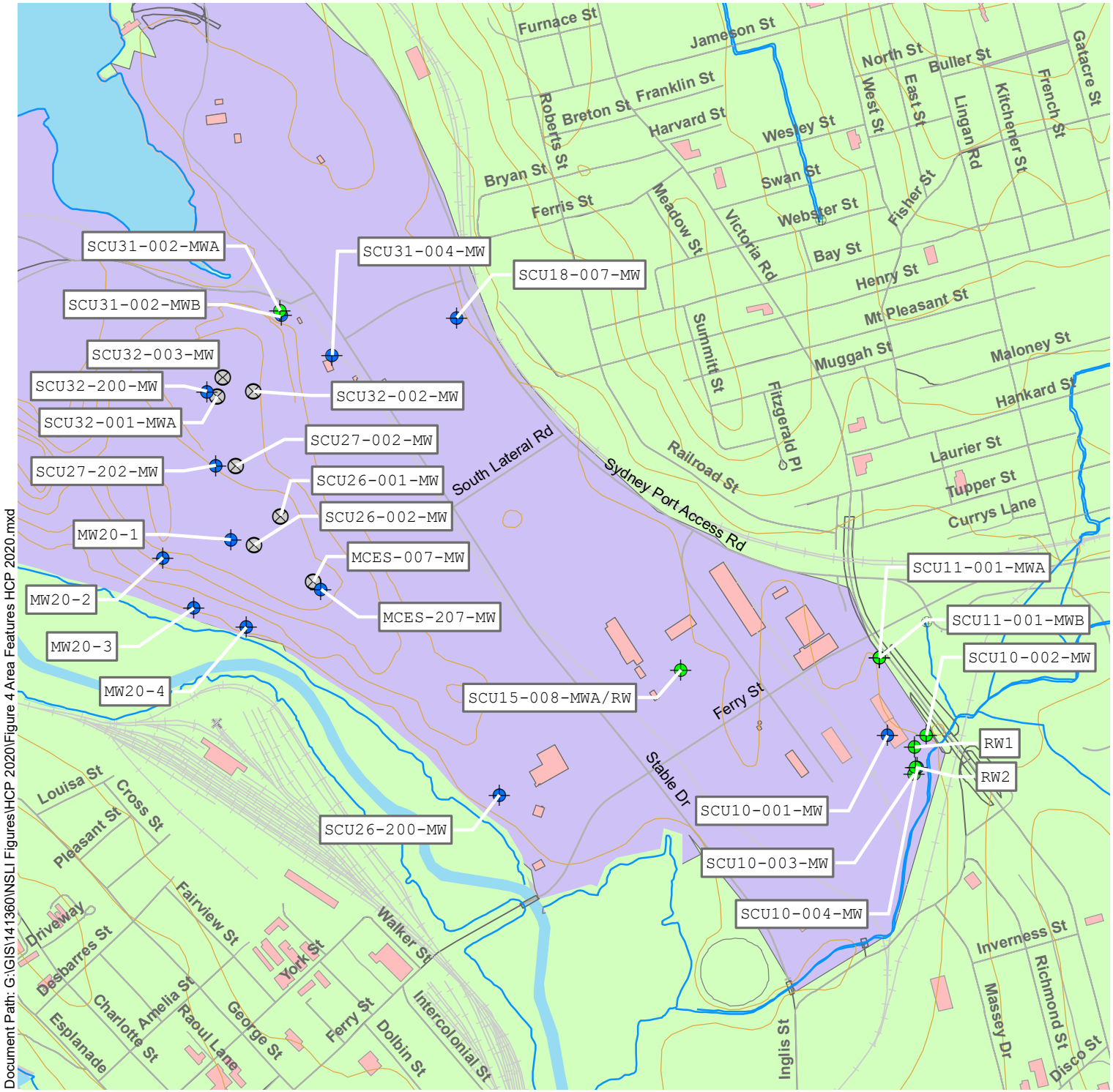
Analytical data, including available historical data for reference, are presented in Appendix B (i.e., Tables B-1 (PHCs), B-2 (PAHs) and B-3 (metals)). Table 2 summarizes the select indicator parameter concentrations for the only monitor well remaining in the LTMM that has historically exhibited concentrations above applicable comparison criteria.

Table 2 HCP – Summary of Indicator Parameter Concentrations

Well ID	Organic Parameter (ug/L)		
	Date	Anthracene	Indeno(1,2,3-cd)pyrene
MECP Table 3[1]		2.4	0.2
SCU10-004-MW	Nov 2010	2.4	0.09
	Oct 2011	13	0.74
	Nov 2012	38	0.75
	Dec 2013	4.0	0.072
	Dec 2015	1100	67
	Nov 2016	18	*<1.0*
	Dec 2017	5.6	0.12
	Nov 2018	2.3	0.099
	Dec 2019	1.3	0.18
	Dec 2020	8.2	0.16

Notes:
1. MECP, Table 3 Full Depth Generic Site Condition Standards, Non-potable Groundwater 2011.
2. There are no NSE Tier I EQS for Groundwater on a site with Coarse-Grained Soil, Non-potable Groundwater and Commercial/Industrial land use (2013) for anthracene or indeno(1,2,3-cd)pyrene.

Italics Laboratory detection limited elevated above comparison criteria.
BOLD Exceeds the MECP Table 3 standards.



Document Path: G:\GIS\141360\NSLI Figures\HCP 2020\Figure 4 Area Features HCP 2020.mxd

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HARBOURSIDE COMMERCIAL PARK

2020 GROUNDWATER MONITORING EVENT

AREA FEATURES

FIGURE 4

Monitoring Wells

- Active Water Level Only
- Active Sample and Water Level
- Decommissioned/Destroyed or Buried

Harbourside Commercial Park

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

MAP CREATED BY: SCM
MAP CHECKED BY: NJW
MAP PROJECTION: NAD 1983 UTM Zone 20N

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PROJECT: 20-2862
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Date: 2021-01-28

3.3.2 Product Check

Observations recorded in the field during LNAPL and DNAPL checks are presented in Table 3.

Table 3 HCP Summary of Product Check

Well ID	Product Type/Thickness	Field Observations
SCU10-002-MW	No Product Detected	Oil/water interface probe did not detect product; however, the probe had what appeared to be black product on it (appeared to be from PVC wall of the well), with a strong petroleum hydrocarbon odour when removed from the well.
SCU10-003-MW	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU10-004-MW*	DNAPL/~0.31m	Oil/water interface probe did not detect product; however, a measurement of approximately 0.31 m of DNAPL was observed on the interface probe when removed from the well.
SCU11-001-MWA	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU11-001-MWB	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU15-008-MWA/RW	LNAPL/~1mm	Oil/water interface probe did not detect product; however, the probe had what appeared to be black product on it when removed from the well. A bailer cut exhibited no LNAPL inside the bailer; however, what appeared to be LNAPL was observed on the outside of the bailer, attributed to the well PVC, which the product appeared to be sticking to.
SCU31-002-MWA	No Product Detected	Oil/water interface probe did not detect product; however, the interface probe had black product on it (appeared to be from PVC wall of the well) when removed. A strong petroleum hydrocarbon odour was noted.
RW1	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
RW2	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.

Notes:
1. * Denotes sampling well
2. mm - millimeters

3.3.3 Trend Analysis

The groundwater quality trend analysis for the 2020 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for select parameters with concentrations above the applicable guidelines. In 2017, monitor wells SCU27-002-MW and SCU32-003-MW contained concentration(s) of indicator parameters exhibiting an increasing or potentially increasing concentration trend (i.e., barium exhibited a potentially increasing trend in SCU27-002-MW

and selenium exhibited an increasing trend in SCU32-003-MW). Monitor wells SCU27-002-MW and SCU32-003-MW were decommissioned in 2018; therefore, trend analysis could not be completed as part of the LTMM program in the following years. Trend analysis of replacement wells added to the 2020 LTMM program will be completed once sufficient data has been obtained.

Results of Mann-Kendall analysis for monitor well SCU10-004-MW are presented below in Table 4 and on Figure 5. The Mann-Kendall analysis was conducted based on the available analytical data, including the 2020 analytical results. Mann Kendall results are presented in Appendix C.

Table 4 HCP – Trend Analysis Summary

Well ID	Parameters	Trend
SCU10-004-MW	Acenapthylene	Fluctuating
	Anthracene	Fluctuating
	Indeno(1,2,3-cd)pyrene	Fluctuating
	TPH	Decreasing

3.4 QC Summary

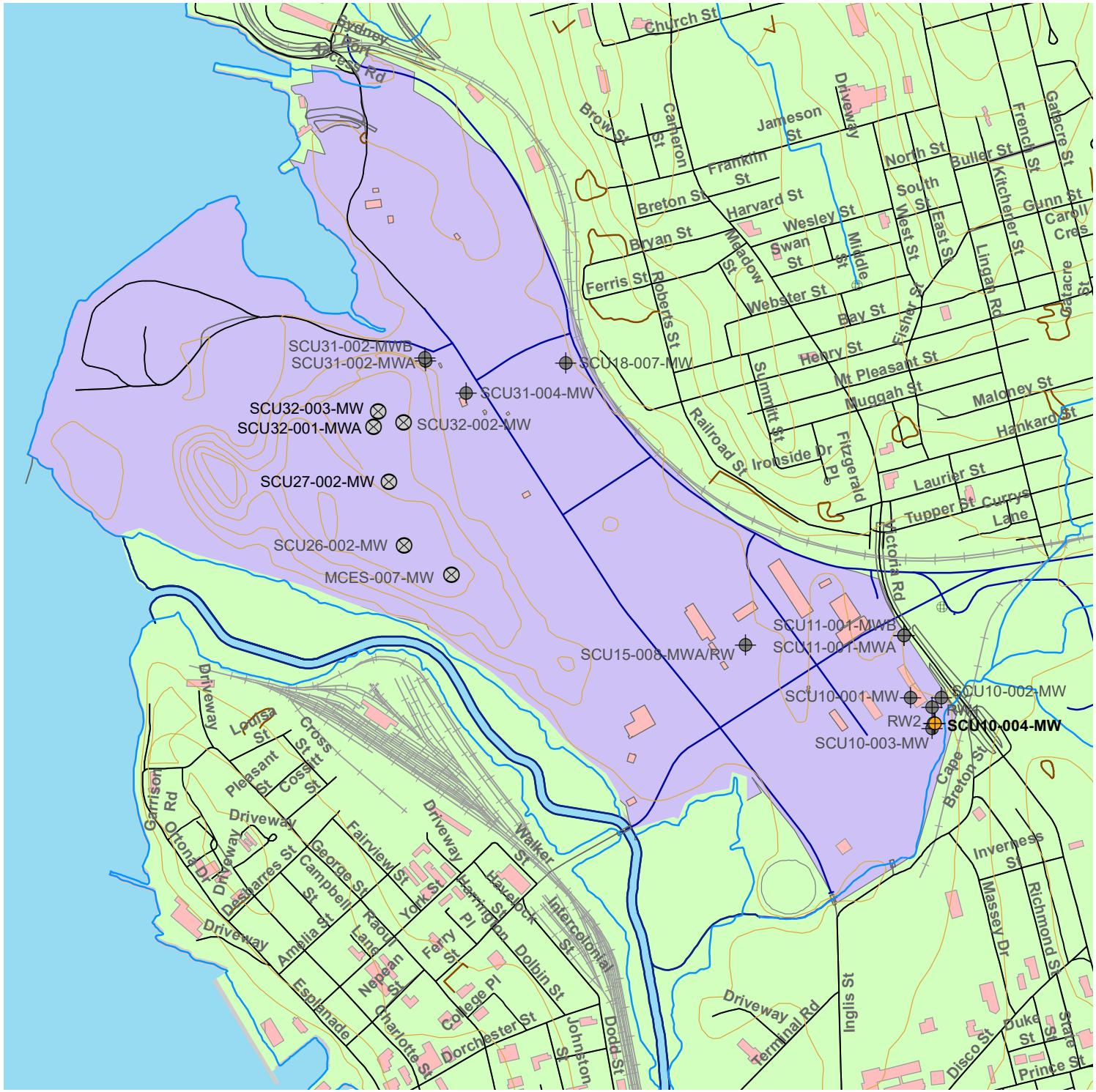
Supporting QC data are found in Appendix D. The results are discussed in the following five sub-sections:

- Section 3.4.1 Relative Percent Difference (RPD)
- Section 3.4.2 Laboratory Matrix Spikes, Spikes Blank and Method Blanks
- Section 3.4.3 Trip Blanks
- Section 3.4.4 Equipment Blanks
- Section 3.5.5 Holding Times

One field duplicate, two trip blanks, and one equipment blank (collected as part of the OHP and HE sampling program) were collected during the 2020 monitoring event, as presented in Table D-1 (Appendix D). Laboratory certificates of analysis are presented in Appendix E.

3.4.1 Relative Percent Difference

One field duplicate sample was analyzed and had results suitable for quantitative calculation of Relative Percent Difference (RPD). The RPD was not calculated for those parameters where one or both of the results associated with the original and/or field duplicate sample exhibited concentrations less than five times the RDL. Comparison of the field duplicate data to the original sample indicated the calculated RPDs were within established limits (i.e., less than 30% RPD), as presented in Tables D-2 to D-4 (Appendix D).



NS Lands
nova scotia lands

HARBOURSIDE COMMERCIAL PARK

2020 GROUNDWATER MONITORING EVENT

INDICATOR PARAMETER CONCENTRATION TREND

FIGURE 5

Trend Analysis

- Increasing/Potentially Increasing
- Fluctuating
- Stable
- Decreasing
- Monitoring Well
- Decommissioned/Destroyed or Buried
- Harbourside Commercial Park

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

MAP CREATED BY: SCM
MAP CHECKED BY: NW
MAP PROJECTION: NAD 1983 UTM Zone 20N

DILLON CONSULTING

PROJECT: 20-2862
Date: 2021-01-27

3.4.2 Laboratory Matrix Spikes, Spikes Blank and Method Blanks

The laboratory analytical certificates have been reviewed for quality assurance/quality control purposes. The laboratory completes quality control analysis including duplicates, blanks, spikes, surrogate recoveries and spiked blanks to assess accuracy and precision as well as the potential for bias, contamination and degradation or matrix effects. The laboratory quality control reports have identified the following minor issue:

- Matrix spike results were outside acceptance limit due to probable matrix interference for 1-methylnaphthalene, fluoranthene and naphthalene in MW20-2, and naphthalene in MW20-3.

Overall laboratory data quality is considered acceptable and the results representative with no identification of significant quality issues requiring further investigation or resampling. The quality assurance (QA) report is presented with the certificates of analysis in Appendix E.

3.4.3 Trip Blank

Petroleum hydrocarbons were not detected in the trip blanks.

3.4.4 Equipment Blank

One equipment blank (EB-01) was collected associated with OHP and HE. The field equipment used for the equipment blank was a stainless steel interface probe; which is the only piece of field equipment that interacts with each of the monitor wells (i.e., as each well has a dedicated pump or dedicated low flow tubing). The following PAH and metals were detected in the equipment blank sample:

- Acenaphthene (0.021 ug/L), aluminum (5.4 µg /L), cadmium 0.054 µg /L, calcium (110 µg /L), copper 120 µg /L), lead (16 µg /L), sodium (150 µg /L), zinc (230 µg /L).

The total dissolved solids (TDS) concentration of 9 mg/L in the equipment blank is exceptionally low and tells us that there was very little dissolved solids in the sample. Although one PAH parameter and select metal and general chemistry (inorganic) concentrations were detected in the equipment blank, concentrations of each of the parameters detected were below the applicable guidelines. Additionally, some concentrations found in the equipment blank when compared to monitor well sampled afterwards, CODT-206-MW, were below laboratory detection limits.

3.4.5 Drill Water

The drill water sample was collected from a potable source (i.e., on-site fire hydrant). The following metals were detected in the drill water sample:

- Barium (110 µg/L), cadmium (0.013 µg/L), calcium (26,000 µg/L), copper (4.2 µg/L), iron (230 µg/L), magnesium (4,400 µg/L), manganese (90 µg/L), phosphorus (120 µg/L), potassium (2,100 µg/L), sodium (31,000 µg/L), strontium (400 µg/L) and zinc (72 µg/L).

Although select metals and general chemistry parameters had detectable concentrations, the parameters were below applicable guidelines and also below the Guidelines for Canadian Drinking Water Quality. It should be noted that detectable concentrations of some metals are expected. PAHs and PHCs were not detected in the drill water.

3.4.6 Holding Times

Groundwater samples were submitted to the laboratory on each day of collection. Due to a laboratory shipping error (i.e., when BV shipped a portion of the groundwater samples from the Sydney lab to the Bedford lab they were delayed by the courier), five of the thirteen PAH samples (i.e., SCU32-200-MW, and MW20-1 to MW20-4) from HCP were analyzed 1 day past hold time (i.e., the hold time for PAHs in groundwater is 7 days and they were analyzed on the morning of day 8). The laboratory confirmed that the samples arrived in good condition and within an acceptable temperature range. As the five PAH samples analyzed just past hold time were collected from new wells added to the 2020 program, direct comparison of the data to historical data was not possible. However, review of the PAH data relative to historical data in the vicinity of these wells indicates that the PAH concentrations in these new wells are comparable, or higher than, historical former nearby monitor well PAH concentrations. Based on this, it is considered unlikely that the past hold time analysis impacted the data quality.

No other hold time issues were encountered.

4.0 Summary

The 2020 LTMM program for the HCP consists of an annual groundwater sampling program. In accordance with the request for proposal (RFP) NSLAND111, the annual groundwater monitoring program was initially planned to include sampling at five select monitor wells on the HCP site, and the collection of water levels and the presence/absence of product at eight additional monitor/recovery wells. In the fall of 2020, NSLI commissioned Dillon to oversee the installation of four new monitor wells strategically located on HCP to replace decommissioned/destroyed monitor wells (i.e., MCES-007-MW, SCU26-001-MW, SCU26-002-MW, SCU27-002-MW, SCU32-001-MWA, SCU32-002-MW, and SCU32-003-MW), while also considering NSLI environmental liabilities as related to future expected property sales. These four new monitor wells (i.e., SCU26-200-MW, SCU27-202-MW, SCU32-200-MW and MCES-207-MW) have been added to the LTMM program. Additionally, four monitor wells (i.e., MW20-1 to MW20-4) installed around a containment cell constructed along the southern portion of parcel identification designation number (PID No.) 15881741 (currently leased to Membertou) have also been added to the program to monitor downstream flow, and to evaluate functionality of the containment cell.

Findings of the 2020 LTMM were compared to July 2013 NS CSR Tier I EQS for groundwater. Where Tier I EQS were not available, MECP standards were used. During the 2020 monitoring event there were no groundwater concentrations above the Tier I EQS or the MECP standards.

Of the eight monitor wells scheduled for water level and product checks, monitor well SCU10-004-MW exhibited a measurement of approximately 0.31 meters (m) of dense non-aqueous phase liquid (DNAPL) on the interface probe when removed from the well. Black product was observed on the interface probe (appeared to be from PVC wall of the well) when removed from SCU15-008-MWA/RW. Although monitor wells SCU10-002-MW and SCU31-002-MWA did not exhibit measureable DNAPL or LNAPL, the interface probe had what appeared to be black product on it when removed from the wells (appeared to come from the PVC walls of the wells). LNAPL or DNAPL were not detected in the remaining wells included in the LTMM.

The groundwater quality trend analysis for the 2020 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for select parameters with concentrations above the applicable guidelines. In 2017, monitor wells SCU27-002-MW and SCU32-003-MW contained concentration(s) of indicator parameters exhibiting an increasing or potentially increasing concentration trend (i.e., barium exhibited a potentially increasing trend in SCU27-002-MW and selenium exhibited an increasing trend in SCU32-003-MW). Monitor wells SCU27-002-MW and SCU32-003-MW were decommissioned in 2018; therefore, trend analysis could not be completed as part of the LTMM program in the following years. Trend analysis of replacement wells added to the 2020 LTMM program will be completed once sufficient data has been obtained.

The available equipotential contour plot for the unconsolidated material (i.e., the fill/till) indicates that the groundwater flow direction is west toward Sydney Harbour.

5.0 Recommendations

The fall 2021 groundwater monitoring program will include sampling of thirteen monitor wells and collection of water level measurements from each sampling well and checking eight monitor/recovery wells for product.

It is recommended that the groundwater monitoring program continue to include sampling for PHCs, PAHs and metals parameters.

6.0 Disclaimer

This report was prepared exclusively for the purposes, project and site location outlined in the report. The report is based on information provided to, or obtained by Dillon Consulting Limited ("Dillon") as indicated in the report, and applies solely to site conditions existing at the time of the site investigation. Although a reasonable investigation was conducted by Dillon, Dillon's investigation was by no means exhaustive and cannot be construed as a certification of the absence of any contaminants from the site.

Rather, Dillon's report represents a reasonable review of available information within an agreed work scope, schedule and budget. It is therefore possible that currently unrecognized contamination or potentially hazardous materials may exist at the site, and that the levels of contamination or hazardous materials may vary across the site. Further review and updating of the report may be required as local and site conditions, and the regulatory and planning frameworks, change over time.

Appendix A

Monitor Well Logs

DILLON CONSULTING
Dillon Consulting Limited
275 Charlotte Street
Sydney, Nova Scotia,
B1P 1C6
(902) 562-9880
(902) 562-9890

SCU26-200-MW

Client: Nova Scotia Lands Inc.
Project: Harbourside Commercial Park (HCP) Replacement Wells
Project No.: 20-2862
Location: Harbourside Commercial Park
Drilling Co.: Logan Geotech
Drilling Method: Core Drilling
Supervised by: M Smith
Date Started: 20-11-14 Date Completed: 20-11-14

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction Stick-up 0.87m	Sample Method	Sample Number	Sample N Value	Sample Rec %	Sample IBL(ppm or %LEL)	Depth Scale (m)
0	**Slag and Gravel** Grey, loose and damp with porous cobble.	Fill (made ground)		Sand and Riser				30		0
1.0										1.0
2.0								30		2.0
3.0				Bentonite Seal						3.0
4.0								23.3		4.0
5.0										5.0
6.0				Sand and Riser				26.6		6.0
7.0								6.6		7.0
8.0				Sand and Screen				50		8.0
9.0										9.0
10.0										10.0
			10.67	End Cap						

DILLON MW NS LANDS OHP HE 2020.GPJ DILLON_MAY13_05.GDT 21-1-27

Static Water Level

LITHOLOGY SYMBOLS: Fill (made ground)

SAMPLE TYPE: Rock Core

* Indicates sample submitted for analysis

DILLON CONSULTING

Dillon Consulting Limited
275 Charlotte Street
Sydney, Nova Scotia,
B1P 1C6
(902) 562-9880
(902) 562-9890

SCU32-200-MW

Client: Nova Scotia Lands Inc.
Project: Harbourside Commercial Park (HCP) Replacement Wells
Project No.: 20-2862
Location: Harbourside Commercial Park
Drilling Co.: Logan Geotech
Drilling Method: Core Drilling
Supervised by: M Smith
Date Started: 20-11-15 Date Completed: 20-11-15

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction	Sample: Method	Sample: Number	Sample: N Value	Sample: Rec %	Sample: IBL(ppm or %LEL)	Depth Scale (m)
0	**Slag** Grey, fragmented, loose and damp.			Sand and Riser				-		0
1.0										1.0
2.0								-		2.0
3.0										3.0
4.0				Bentonite Grout Seal				26.6		4.0
5.0										5.0
6.0								60		6.0
7.0										7.0
8.0				Sand and Riser				43.3		8.0
9.0								-		9.0
10.0										10.0
11.0								-		11.0
12.0	Black with cobble at the end of the hole.		12.19	Sand and Screen						12.0
13.0								20		13.0
14.0										14.0
15.0								8.1		15.0
16.0			16.15	End Cap						16.0

DILLON MW NS LANDS OHP HE 2020.GPJ DILLON_MAY13_05.GDT 21-1-27

Static Water Level

LITHOLOGY SYMBOLS: Fill (made ground)

SAMPLE TYPE: Rock Core

* Indicates sample submitted for analysis

DILLON CONSULTING

Dillon Consulting Limited
275 Charlotte Street
Sydney, Nova Scotia,
B1P 1C6
(902) 562-9880
(902) 562-9890

SCU27-202-MW

Client: Nova Scotia Lands Inc.
Project No.: 20-2862
Drilling Co.: Logan Geotech
Supervised by: M Smith

Project: Harbourside Commercial Park (HCP) Replacement Wells
Location: Harbourside Commercial Park
Drilling Method: Core Drilling
Date Started: 19-10-4 Date Completed: 19-10-4

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction	Sample Method	Sample Number	Sample N Value	Sample Rec %	Sample IBL(ppm or %LEL)	Depth Scale (m)
1.0	**Slag** Grey, fragmented, loose and damp.			Sand and Riser				50		1.0
2.0								40		2.0
3.0			3.05					24.6		3.0
4.0	Pieces of steel from 3.05m to 4.57m.									4.0
5.0			4.57					100		5.0
6.0										6.0
7.0								66.6		7.0
8.0								-		8.0
9.0										9.0
10.0				Bentonite Grout Seal				-		10.0
11.0										11.0
12.0								-		12.0
13.0										13.0
14.0								-		14.0
15.0										15.0
16.0								-		16.0
17.0										17.0
18.0								-		18.0
19.0										19.0
20.0								-		20.0
21.0				Sand and Riser						21.0
22.0								-		22.0
23.0										23.0
24.0								-		24.0
25.0	**Bedrock** Reddish brown shale, highly fragmented.		24.38					100		25.0
26.0				Sand and Screen						26.0
27.0								26.6		27.0
28.0								100		28.0
29.0										29.0
30.0			30	End Cap				100		30.0

DILLON MW NS LANDS OHP HE 2020.GPJ DILLON_MAY13_05.GDT 21-1-27

Static Water Level

LITHOLOGY SYMBOLS: Fill (made ground); Shale

SAMPLE TYPE: Rock Core

* Indicates sample submitted for analysis

DILLON CONSULTING

Dillon Consulting Limited
275 Charlotte Street
Sydney, Nova Scotia,
B1P 1C6
(902) 562-9880
(902) 562-9890

MCES-207-MW

Client: Nova Scotia Lands Inc.
Project No.: 20-2862
Drilling Co.: Logan Geotech
Supervised by: M Smith

Project: Harbourside Commercial Park (HCP) Replacement Wells
Location: Harbourside Commercial Park
Drilling Method: Core Drilling
Date Started: 20-11-11 Date Completed: 20-11-12

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction	Sample: Method	Sample: Number	Sample: N Value	Sample: Rec %	Sample: IBL(ppm or %LEL)	Depth Scale (m)
1.0	**Slag** Dark grey, fragments, loose and damp.	Fill (made ground)		Sand and Riser				40		1.0
2.0								40		2.0
3.0										3.0
4.0								20		4.0
5.0								20		5.0
6.0										6.0
7.0								100		7.0
8.0								81.3		8.0
9.0			9							9.0
10.0	Pieces of steel from 9m to 12m.							100		10.0
11.0								66.6		11.0
12.0			12	Bentonite Grout Seal						12.0
13.0								100		13.0
14.0								80		14.0
15.0										15.0
16.0								60		16.0
17.0			16.5							17.0
18.0	Pieces of steel from 16.5m to 18m.		18					100		18.0
19.0								0		19.0
20.0										20.0
21.0								40		21.0
22.0	**Clay** Brown, compact and damp. with pieces of mussel shells.	Clay	21.2					0		22.0
23.0										23.0
24.0	**Cobble** Brown and fragmented.	Gravel	23.25	Sand and Riser				80		24.0
25.0								36		25.0
26.0	**Clay** Brown compact and damp with fragmented pieces of shale throughout.	Clay	25.9	Sand and Screen				100		26.0
27.0										27.0
28.0	**Bedrock** Brown shale, fragmented.	Shale	27.4					53.3		28.0
29.0			29	End Cap						29.0

Static Water Level

LITHOLOGY SYMBOLS: Fill (made ground), Gravel, Clay, Shale

SAMPLE TYPE: Rock Core

* Indicates sample submitted for analysis

DILLON MW NS LANDS OHP HE 2020.GPJ DILLON_MAY13_05.GDT 21-1-27

RECORD OF BOREHOLE MW20-1

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 1 OF 2
DATUM: Assumed
BORING DATE: Jul 29 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	PENETRATION RESISTANCE (N), BLOWS/0.3m / DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m / SHEAR STRENGTH (Cu), kPA (NATURAL, REMOULDED) / WATER CONTENT, % (W_P, W, W_L)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface									
		Loose to compact, grey to white slag gravel, some sand (FILL)			S1	SS	300	34			
1					S2	SS	75	8			
2											
		Loose to compact, grey to black silty sand, some gravel (TILL FILL)		2.40	S3	SS	400	34			
3											
4					S4	SS	100	8			Riser
5					S5	SS	400	8			
6					S6	SS	50	10			
7		Brick in tip			S7	SS	50	9			
8											
		Compact, dark brown silt, some sand and gravel (FILL)		8.50	S8	SS	200	28			Screen
9											
10											

10 20 30 40 50 60 70 80 90

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

RECORD OF BOREHOLE MW20-1

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 2 OF 2
DATUM: Assumed
BORING DATE: Jul 29 2020

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m
10		Compact to dense black gravel, some silt and sand		10.00	S9	SS	500	40
11		Loose, blue-grey sandy gravel		10.90	S10	SS	500	22
12					S11	SS	500	8
13		Loose black SILT, some sand		13.40	S12	SS	600	6
		Dense, grey silty sand, trace gravel and clay (TILL)		13.60	S13	SS	75	44
14								
15		End of borehole measured at 14.9mbgs		14.90				
16								
17								
18								
19								
20								

SAMPLES

PENETRATION RESISTANCE (N), BLOWS/0.3m
DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m
SHEAR STRENGTH (Cu), kPA
+ NATURAL ⊕ REMOULDED
WATER CONTENT, %
W_P W W_L
10 20 30 40 50 60 70 80 90

ADDITIONAL LAB. TESTING

PIEZOMETER OR STANDPIPE INSTALLATION

Screen

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEV. (m)
20/07/28	8.5 ▽	

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

RECORD OF BOREHOLE MW20-2

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 1 OF 2
DATUM: Assumed
BORING DATE: Jul 28 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	PENETRATION RESISTANCE (N), BLOWS/0.3m / DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m / SHEAR STRENGTH (Cu), kPA (+ NATURAL, ⊕ REMOULDED) / WATER CONTENT, % (W_P, W, W_L)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface									
		Compact, black silty sand with some gravel (FILL)			S1	SS	200	42			
1					S2	SS	150	13			
2											
3					S3	SS	300	10			Riser
		Plastic debris encountered from 2.5-5.3mbgs									
4					S4	SS	75	7			
5					S5	SS	300	8			
		Dense, white to dark grey, slag gravel with some sand (FILL)		5.30							
6					S6	SS	300	56			
7					S7	SS	300	70			
8											Screen
9					S8	SS	300	43			
10											

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

RECORD OF BOREHOLE MW20-2

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 2 OF 2
DATUM: Assumed
BORING DATE: Jul 28 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, mm	SAMPLES: BLOWS/0.3m	PENETRATION RESISTANCE (N), BLOWS/0.3m / DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m / SHEAR STRENGTH (Cu), kPA / WATER CONTENT, %	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10											
					S9	SS	75	45			
11											
					S10	SS	300	22			
12											
					S11	SS	600	21			Screen
13											
		Compact, black SILT, some sand and organic odour		13.50							
14											
					S12	SS	500	24			
15		Dense, grey silty sand, trace gravel and clay (TILL)		15.10	S13	SS	100	34			
16											
				16.20							
		End of borehole measured at 16.2mbgs									
17											
18											
19											
20											

PENETRATION RESISTANCE (N), BLOWS/0.3m
DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m
SHEAR STRENGTH (Cu), kPA: + NATURAL ⊕ REMOULDED
WATER CONTENT, %: W_P — W — W_L
10 20 30 40 50 60 70 80 90

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEV. (m)
20/07/28	9.7 ▽	

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

RECORD OF BOREHOLE MW20-3

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 1 OF 2
DATUM: Assumed
BORING DATE: Jul 27 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m
0		Ground Surface						
		Very loose, dark brown silty sand, some gravel (FILL)			S1	SS	200	4
1		Compact, dark brown, slag gravel, some sand (FILL)		0.90	S2	SS	100	24
					S3	SS	0	12
2		Loose to dense, white to blue, slag gravel, some sand (FILL)		2.40	S4	SS	400	100
3								
4					S5	SS	100	7
		Compact, grey sand, some silt and gravel (FILL)		4.70	S6	SS	400	18
5					S7	SS	50	100
6								
7		Wood debris			S8	SS	150	29
		Compact, white to blue silt, sand and some gravel (FILL)		7.65				
8		Compact to dense, grey, slag gravel, some sand (FILL)		8.50	S9	SS	250	22
9					S10	SS	200	100
10								

PENETRATION RESISTANCE (N), BLOWS/0.3m
DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m
SHEAR STRENGTH (Cu), kPA: + NATURAL ⊕ REMOULDED
WATER CONTENT, % W_P W W_L
10 20 30 40 50 60 70 80 90

ADDITIONAL LAB. TESTING

PIEZOMETER OR STANDPIPE INSTALLATION

Riser
Screen

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

RECORD OF BOREHOLE MW20-3

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 2 OF 2
DATUM: Assumed
BORING DATE: Jul 27 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, mm	SAMPLES: BLOWS/0.3m	PENETRATION RESISTANCE (N), BLOWS/0.3m; DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH (Cu), kPA (+ NATURAL, ⊕ REMOULDED); WATER CONTENT, % (W_P, W, W_L)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10									10 20 30 40 50 60 70 80 90		
11		Compact, blue to black, fine SAND, some silt		11.00	S11	SS	450	17	●		Screen
12		Grey silty sand, trace gravel and clay (TILL)		12.50	S12	SS	250	17	●		
13		End of borehole measured at 13mbgs		13.00							
14											
15											
16											
17											
18											
19											
20											

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEV. (m)
20/07/27	9.0 ▽	

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

RECORD OF BOREHOLE MW20-4

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

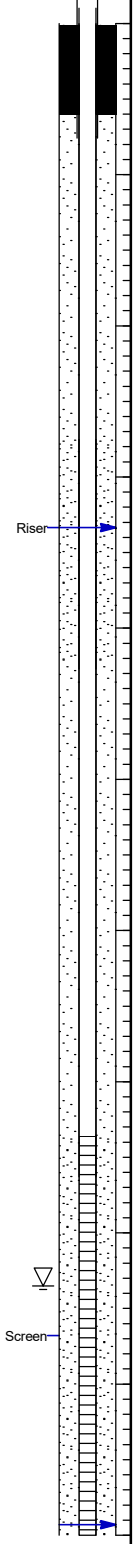
SHEET: 1 OF 2
DATUM: Assumed
BORING DATE: Jul 27 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m
0		Ground Surface						
		Loose, black silty sand and some gravel (FILL)			S1	SS	250	8
1								
		Concrete			S2	SS	75	100
2								
		Dense, grey, course sand, some gravel (FILL)		2.80	S3	SS	300	73
3		Compact to dense, grey silt and slag gravel, some sand (FILL)		3.20	S4	SS	200	53
4								
					S5	SS	25	24
5		Compact, black, slag gravel, some sand and trace silt (FILL)		4.90	S6	SS	300	29
6					S7	SS	100	13
					S8	SS	100	63
7								
					S9	SS	280	25
8		Compact black, slag gravel, trace sand (FILL)		7.80	S10	SS	100	29
9					S11	SS	50	32
		Compact, black SILT and organics		9.30	S12	SS	250	22
10								

PENETRATION RESISTANCE (N), BLOWS/0.3m
DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m
SHEAR STRENGTH (Cu), kPA: + NATURAL ⊕ REMOULDED
WATER CONTENT, % W_P W W_L
10 20 30 40 50 60 70 80 90

ADDITIONAL LAB. TESTING

PIEZOMETER OR STANDPIPE INSTALLATION



GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

RECORD OF BOREHOLE MW20-4

CLIENT: Membertou Development Corporation
PROJECT: Geotechnical Investigation
JOB#: 4475.10
LOCATION: Landfill Site, Sydney, Nova Scotia

SHEET: 2 OF 2
DATUM: Assumed
BORING DATE: Jul 27 2020

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	PENETRATION RESISTANCE (N), BLOWS/0.3m / DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m / SHEAR STRENGTH (Cu), kPA (+ NATURAL, ⊕ REMOULDED) / WATER CONTENT, % (W_P, W, W_L)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10									10 20 30 40 50 60 70 80 90		
		Loose to compact, black to blue, fine SAND, some silt		10.20	S13	SS	200	19			
11					S14	SS	300	32			Screen
		Loose, grey silty sand, some gravel and trace clay (TILL)		11.35							
12					S15	SS	300	18			
				12.50							
13		End of borehole measured at 12.5mbgs									
14											
15											
16											
17											
18											
19											
20											

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEV. (m)
20/07/27	9.3 ▽	

GEMTEC
Consulting Engineers and Scientists

LOGGED: SAL
CHECKED:

GEO - BOREHOLE LOG 4475.10.GPJ GEMTEC 2018.GDT 7/30/20

Appendix B

Analytical Tables

TABLE B-1
HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Water Level 2019)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	C32
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
SCU10-001-MW (1.83 m)	12-19-14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.060	<0.05	<0.1	<0.1	-
	12-11-15	<0.0010	<0.0010	<0.0010	<0.0020	0.012	-	<0.050	<0.050	<0.10	<0.10	-
	11-18-16	<0.0010	<0.0010	<0.0010	<0.0020	0.022	-	<0.050	<0.050	<0.10	<0.10	-
	12-4-17	<0.0010	<0.0010	<0.0010	<0.0020	0.027	-	<0.050	<0.050	<0.10	<0.10	-
	11-27-18	<0.0010	<0.0010	<0.0010	<0.0020	0.054 [9]	-	<0.050	<0.050	<0.10	<0.10	-
	12-06-19	<0.0010	<0.0010	<0.0010	<0.0020	<0.1	-	<0.050	<0.050	<0.10	<0.10	-
	12-02-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.051	<0.051	<0.090	<0.090	-
SCU10-004-MW (2.42 m)	11-21-09	1.0	0.22	0.17	4.2	<0.010	54	-	-	1.5	**56**	Yes
	11-22-09	0.017	0.002	0.003	0.012	0.02	0.4	-	-	<0.50	<0.50	Yes
	11-23-09	0.077	0.005	0.006	0.027	0.03	-	0.7	<0.20	<0.50	0.7	Yes
	11-24-09	0.057	0.006	0.006	0.053	0.09	-	1.8	0.24	<0.50	2.2	Yes
	11-25-09	0.18	0.097	0.074	0.35	0.79	-	13	2.2	1.0	17	Yes
	11-26-09	0.11	0.011	0.013	0.062	0.16	-	1.9	0.14	<0.10	2.2	Yes
	12-19-14	NM	NM	NM	NM	NM	-	NM	NM	NM	NM	-
	12-11-15	0.20	0.13	0.081	0.37	0.54	-	42	12	8.0	**63**	Yes
	11-18-16	0.27	0.30	0.15	0.81	1.0	-	15	0.64	0.19	17	Yes
	12-4-17	0.10	0.028	0.021	0.11	0.16	-	4.7	0.30	0.14	5.4	Yes
	11-27-18[FD]	0.034	0.016	0.010	0.051	0.062	-	1.6	0.17	0.12	1.9	Yes
	11-27-18	0.033	0.018	0.011	0.055	0.11	-	1.2	0.094	<0.10	1.4	Yes
	12-06-19	0.039	0.023	0.015	0.069	<0.10	-	1.8	0.11	0.12	2.1	Yes
	12-02-20	0.23	0.065	0.041	0.18	0.23	-	4.6	0.28	0.099	5.2	Yes
SCU18-007-MW (0.99 m)	7-12-06	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	11-24-09	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	9-7-10	0.002	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	0.007	Yes
	11-19-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	10-24-11	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	10-26-11	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	12-2-13	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.50	<0.10	-
	12-4-17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-27-18	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-06-19	<0.0010	<0.0010	<0.0010	<0.0020	<0.10	-	<0.050	<0.050	<0.10	<0.10	-
	12-02-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.050	<0.050	<0.090	<0.090	-
SCU26-001-MW *(Destroyed 2017)*	6-18-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	6-19-10	0.005	0.003	<0.0010	0.008	5.3	12	-	-	4.5	**26**	Yes
	6-20-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	6-21-10	<0.0010	<0.0010	<0.0010	<0.0020	0.015	-	0.096	0.1	0.13	0.34	Yes
	6-22-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.089	<0.050	0.12	0.21	Yes
	12-17-14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.063	<0.05	<0.1	<0.1	-
	11-27-15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.054	<0.050	<0.10	<0.10	Yes
	11-17-16	0.013	0.0087	<0.0010	0.0087	0.050	-	0.24	0.068	<0.10	0.36	Yes
SCU26-002-MW (*Decommissioned 2018*)	6-23-10	0.01	0.0061	<0.0010	0.0059	0.05	<0.20	-	-	<0.50	<0.50	-
	6-24-10	0.034	0.026	0.0015	0.022	0.050	-	0.29	0.070	<0.50	0.41	Yes
	6-25-10	0.018	0.015	<0.0010	0.013	0.052	-	0.37	0.18	0.13	0.72	Yes
	6-26-10[FD]	0.017	0.014	<0.0010	0.012	0.049	-	0.35	0.16	0.18	0.74	Yes
	6-27-10	0.023	0.018	0.0011	0.016	0.066	-	0.31	0.13	0.12	0.63	Yes
	12/17/14[FD]	0.014	0.010	<0.001	0.0084	0.027	-	0.15	<0.05	<0.1	0.18	Yes
	12-17-14	0.014	0.010	<0.001	0.0085	0.028	-	0.16	<0.05	<0.1	0.19	Yes
	11-27-15	0.016	0.011	<0.0010	0.0089	0.014	-	0.17	0.055	<0.10	0.24	Yes
	11-17-16	0.012	0.0091	<0.0010	0.0076	0.022	-	0.19	0.062	<0.10	0.27	Yes
	12-11-17	0.015	0.0097	<0.0010	0.0066	0.023	-	0.16	0.069	<0.10	0.26	Yes
SCU27-002-MW (*Decommissioned 2018*)	6-28-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	6-29-10[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	0.053	0.14	0.19	Yes
	6-30-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	7-1-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	0.063	0.14	0.20	Yes
	12-17-14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	11-27-15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-16-16	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	0.22	0.22	Yes
	12-14-17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-

TABLE B-1
HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Water Level 2019)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	C32
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
SCU31-002-MWB (6.50 m)	7-2-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	7-3-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	7-4-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	7-5-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	0.061	<0.50	<0.50	-
	7-6-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	7-7-10[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-18-14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12-18-14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12-2-15[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-2-15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-17-16	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-04-17[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-4-17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-27-18	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-06-19[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.10	-	<0.050	<0.050	<0.10	<0.10	-
	12-06-19	<0.0010	<0.0010	<0.0010	<0.0020	<0.10	-	<0.050	<0.050	<0.10	<0.10	-
	12/02/20[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.050	<0.050	<0.090	<0.090	-
	12-02-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.050	<0.050	<0.090	<0.090	-
SCU31-004-MW (5.68 m)	9-16-05	<0.001	<0.001	<0.001	<0.002	<0.01	<0.2	-	-	<0.5	<0.5	-
	12-15-17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.052	0.052	<0.10	0.10	Yes
	11-27-18	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-06-19	<0.0010	<0.0010	<0.0010	<0.0020	<0.10	-	<0.050	<0.050	<0.10	<0.10	-
	12-02-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.050	<0.050	<0.090	<0.090	-
SCU32-001-MWA (*Decommissioned 2018*)	7-18-10	<0.0010	0.004	<0.0010	<0.0020	<0.0010	-	0.32	0.15	<0.10	0.5	Yes
	7-19-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.99	0.82	0.56	2.4	Yes
	12-17-14	0.0013	<0.001	<0.001	<0.002	<0.01	-	0.50	0.44	0.41	1.4	Yes
	11-27-15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.51	0.53	0.43	1.5	Yes
	11-16-16	NM	NM	NM	NM	NM		NM	NM	NM	NM	-
	12-18-17	NM	NM	NM	NM	NM		NM	NM	NM	NM	-
SCU32-002-MW (*Decommissioned 2018*)	7-23-10	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-18-14	0.0011	<0.001	<0.001	<0.002	<0.01	-	0.055	0.064	0.13	0.25	Yes
	11-30-15	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	0.056	0.059	<0.10	0.11	Yes
	11-16-16[FD]	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-16-16	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-14-17	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
SCU32-003-MW (*Decommissioned 2018*)	7-24-10	<0.0010	0.008	<0.0010	<0.0020	<0.010	-	0.22	0.1	<0.10	0.3	Yes
	7-25-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	2.1	2.5	1.9	6.6	Yes
	12-18-14	0.0027	0.0013	<0.001	<0.002	<0.01	-	0.58	0.27	0.27	1.1	Yes
	11-30-15	0.0023	0.0012	<0.0010	<0.0020	<0.010	-	0.61	0.46	0.38	1.5	Yes
	12-14-17	0.0022	0.0010	<0.0010	<0.0020	<0.010	-	0.35	0.17	0.17	0.68	Yes
MCES-007-MW (*Buried/Inaccessible 2018*)	8-3-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	8-4-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	8-5-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	8-6-10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12-17-14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.10	-
	11-27-15[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-27-15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11-17-16	0.012	0.0098	<0.0010	0.0079	0.024	-	0.23	0.073	<0.10	0.32	Yes
	12-15-17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.072	<0.050	<0.10	<0.10	-
MCES-207-MW	12-10-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.050	<0.050	<0.090	<0.090	-
MW20-1	12-3-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	0.17	<0.050	<0.090	0.17	Yes
MW20-2	12-3-20	0.033	0.014	0.0011	0.013	<0.090	-	0.91	0.78	0.54	2.3	Yes
MW20-3	12-3-20	0.006	0.0031	<0.0010	0.005	<0.090	-	0.58	1.1	1.3	3.0	Yes
MW20-4	12-3-20	0.010	0.0025	<0.0010	<0.0020	<0.090	-	0.31	0.24	0.23	0.78	Yes
SCU26-200-MW	12-10-20	0.059	0.017	<0.0010	0.0051	<0.090	-	0.14	0.083	0.10	0.35	Yes
SCU27-202-MW	12-10-20	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	-	<0.050	<0.050	<0.090	<0.090	-
SCU32-200-MW	12-3-20	0.0015	<0.0010	<0.0010	<0.0020	<0.090	-	0.18	0.091	<0.090	0.27	Yes

NOTES:

FD - Field Duplicate
NM - Not Measured or not analyzed.
mg/L - milligrams per litre
- No applicable guideline criteria.
1 - Nova Scotia Environment Tier I Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013.
2 - Bold and Shaded Exceeds NSE Tier I EQS
3 - SCU10-004-MW was not sampled during the 2014 monitoring event due to product in the well.
4 - DNAPL in SCU32-003-MW was sampled during the 2015 LTMM monitoring event. The groundwater column in the monitor well was sampled above the DNAPL in the well.
5 - Historical data (i.e., pre-2014) tabulated by SLR Consulting (Canada) Ltd. during historic assessment work, with the exception of SCU31-004-MW, for which data was derived from the Phase II ESA, Sydney Steel Corporation Sysco Blast Furnace Area, Site Classification Units SCU17, SCU19 & SCU31, Sydney, Nova Scotia (AMEC, 2006).
6 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information.
7 - SCU32-001-MWA was not sampled during the 2016 or 2017 monitoring events due to product in the well.
8 - SCU18-007-MW and SCU31-004-MW added to the LTMM program in 2017.
9 - Interference from Volatile Organic Compounds (VOCs) in the gasoline range.

TABLE B-2
HARPBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
GROUNDWATER ANALYTICAL RESULTS - PAH

Sample Location (Water Level 2019)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene[5]	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Perylene	Phenanthrene	Pyrene
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	NS Tier 1 EQS[1]	600 [2]	750	2.4 [2]	4.7 [2]	0.81 [2]	0.75 [2]	0.2 [2]	-	0.4 [2]	1 [2]	0.52 [2]	130 [2]	400 [2]	0.2 [2]	38000	38000	7000	-	580 [2]	68 [2]
SCU10-001-MW (1.83 m)	12-19-14	3.9	0.63	1.5	0.30	0.18	0.14	0.057	0.084	0.081	0.30	0.020	1.7	4.4	0.056	5.3	9.9	16	0.038	6.9	1.0
	12-11-15	0.024	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	0.040	<0.010	0.053	0.15	<0.20	<0.010	0.011	0.018
	11-18-16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12-4-17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11-27-18	0.64	0.10	0.18	0.062	0.020	0.014	<0.020*	<0.010	<0.020*	0.058	<0.010	0.26	0.58	<0.010	0.73	1.1	2.1	<0.010	0.96	0.17
	12-06-19	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12-02-20	0.021	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	0.019	<0.010	<0.050	<0.050	<0.20	<0.010	0.026	<0.010
SCU10-004-MW (2.42 m)	9-17-04	**1580**	194	**590**	**205**	**111**	**128**	*<1*	NM	**52**	**173**	**11.2**	**882**	**1420**	**41**	2400	4150	**11900**	NM	**2510**	**553**
	11-19-08	18	2.2	1.7	0.37	0.12	0.08	0.01	NM	0.11	0.32	<0.01	2.4	10	0.01	19	14	21	0.02	5.1	1.7
	11-10-10	37	7.5	2.4	0.28	0.23	0.15	0.09	NM	0.12	0.26	0.03	2.4	18	0.09	38*	37*	180 *	0.04	15	1.6
	10-31-11	51**	10	**13**	3.1	**1.7**	**1.1**	**0.61**	NM	**0.73**	**2.5**	0.27	13	39**	**0.74**	74**	71**	68 **	0.28	47	8.7
	11-23-12	230**	34**	**38****	**5.3**	**1.9**	**1.4**	**0.58**	NM	**1.5**	**4.0**	0.15	38**	140**	**0.75**	380**	590**	2400 **	0.32	170 **	18
	12-2-13	53**	20	**4.0**	0.34	0.20	0.14	0.077	0.090	0.089	0.29	0.027	3.5	31	0.072	85**	80**	680 **	0.043	24	2.3
	12-19-14	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12-11-15	**2800**	410	**1100**	**360**	**190**	**130**	**67**	110	**87**	**310**	**29**	**1500**	**2700**	**67**	3300	6400	**11000**	41	**5300**	**980**
	11-18-16	150	28	**18**	2.8	*<1.0***	*<1.0***	*<1.0***	*<1.0***	*<1.0***	**2.1**	*<1.0***	16	95	*<1.0***	320	540	3800	<1.0**	76	10
	12-4-17	62	17	**5.6**	0.66	0.36	0.3	0.13	0.17	0.17	0.54	0.046	6.1	40	0.12	110	140	840	0.07	36	3.6
	11-27-18 [FD]	25	6.7	1.7	0.40	0.22	0.18	0.093	0.12	0.12	0.39	<0.040*	1.9	14	0.099	46**	59**	320**	<0.050*	8.0	1.2
	11-27-18	25	6.5	2.3	0.37	0.20	0.16	0.083	0.098	0.11	0.38	0.031	2.0	14	0.086	43**	51**	250**	0.041	8.7	1.2
	12-06-19	29	3.4	1.3	0.54	0.42	0.31	0.18	0.20	0.20	0.50	0.080	2.5	9.7	0.18	7.3	0.16	<0.20	0.085	0.54	1.6
	12-02-20	66**	27	8.2	1	0.48	0.35	0.17	0.24	0.23	0.94	0.060	10	40**	0.16	120**	140**	990**	0.097	34	6.1
SCU18-007-MW (0.99 m)	7-12-06	<0.010	<0.010	<0.010	<0.010	0.02	<0.010	<0.010	NM	<0.010	0.02	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	11-24-09	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	9-7-10	1.6	1.9	0.92	0.12	0.02	0.04	0.01	NM	0.01	0.12	<0.010	1.8	3.4	<0.010	6.1	7.1	45	<0.010	2.4	1.2
	11-19-10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	10-24-11	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	10-26-11	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	12-2-13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	12-4-17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	11-27-18	0.39	0.090	0.47	0.19	0.096	0.082	0.055	0.041	0.047	0.21	<0.030*	0.81	0.77	0.042	0.18	0.24	0.66	<0.030*	2.2	0.56
	12-06-19	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12-02-20	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
SCU26-001-MW *(Destroyed 2017)*	7-26-03	0.19	0.36	<0.01	<0.01	0.06	<0.01	<0.01	NM	<0.01	0.09	<0.01	0.6	<0.01	<0.01	<0.05	<0.05	2.1	<0.01	1.1	0.32
	7-11-12	0.13	0.26	0.24	0.53	0.51	0.37	**0.28**	NM	**0.51**	0.56	0.070	1.3	0.42	**0.26**	0.94	0.68	1.4	0.13	1.1 ***	0.98
	11-26-12	0.25	0.44	0.74	0.67	0.44	0.28	0.18	NM	0.39	0.58	0.051	1.7	0.76	**0.24**	1.7	1.3	3.3	0.11	1.7	1.2
	12-5-13	0.33	0.60	0.47	0.25	0.18	0.15	0.093	0.091	0.086	0.23	0.025	1.4	1.0	0.078	1.7	1.5	4.4	0.046	2.0	0.91
	12-17-14	0.16	0.34	0.14	0.03	0.021	0.011	0.014	<0.01	<0.01	0.029	<0.01	0.48	0.51	0.011	0.99	0.74	1.8	<0.01	0.9	0.27
	11-27-15	0.24	0.36	0.29	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.73	0.73	<0.010	1.1	0.78	1.7	<0.010	1.5	0.40
	11-17-16	0.37	0.63	0.42	0.062	<0.010	<0.010	<0.010	<0.010	<0.010	0.052	<0.010	0.69	1.2	<0.010	6.9	10	6.2	<0.010	2.2	0.39
SCU26-002-MW *(Decommissioned 2018)*	7-26-03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	1	<0.01	---	---	7.2	---	1.7	<0.01
	7-11-12	0.30	0.63	0.26	0.030	<0.01	<0.01	<0.01	NM	<0.01	0.020	<0.01	0.38	1.0	<0.01	8.5	12	7.4	<0.01	1.6 ***	0.22
	11-26-12	0.47	0.75	0.41	0.13	0.074	0.072	0.038	NM	0.076	0.10	0.012	0.73	1.3	0.047	9.8	13	8.4	0.020	2.3	0.46
	11/26/12 [FD]	0.51	0.82	0.42	0.099	0.046	0.047	0.024	NM	0.049	0.075	<0.01	0.70	1.4	0.032	11	14	10	0.011	2.4	0.43
	12-5-13	0.33	0.63	0.24	0.11	0.10	0.086	0.051	0.056	0.050	0.11	0.015	0.60	1.0	0.044	7.9	9.0	6.6	0.032	1.8	0.44
	12/17/14 [FD]	0.33	0.83	0.31	0.051	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	0.64	1.2	<0.01	6.7	9.6	6.3	<0.01	2.0	0.38
	12-17-14	0.29	0.85	0.34	0.049	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	0.60	1.1	<0.01	6.6	9.7	6.4	<0.01	2.0	0.35
	11-27-15	0.33	0.75	0.43	0.047	<0.010	<0.010	<0.010	<0.010	<0.010	0.038	<0.010	0.69	1.2	<0.010	7.4	11	7.7	<0.010	2.2	0.41
	11-17-16	0.3	0.66	0.39	0.13	0.065	0.047	0.038	0.031	0.031	0.11	<0.010	0.73	1	0.036	5.3	7.7	5.3	0.018	1.7	0.46
	12-11-17	0.22	0.47	0.25	0.055	0.018	0.017	<0.010	0.012	0.010	0.053	<0.010	0.52	0.73	<0.010	3.8	5.6	4.5	<0.010	1.5	0.30
SCU27-002-MW (*Decommissioned 2018*)	7-26-03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01
	7-4-12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.020	0.010	<0.01	<0.05	<0.05	<0.02	<0.01	0.030	0.020
	7/4/12 [FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.020	0.010	<0.01	<0.05	<0.05	<0.02	<0.01	0.030	0.020
	11-26-12	0.016	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.017	0.017	<0.01	<0.05	<0.05	<0.02	<0.01	0.050	0.013
	12-5-13	0.058	0.017	0.13	0.18	0.18	0.14	0.089	0.087	0.082	0.18	0.024	0.45	0.096	0.076	<0.050	<0.050	<0.20	0.046	0.47	0.40
	12-17-14	0.025	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.017	0.023	<0.01	0.082	0.081	0.47	<0.01	0.031	0.015
	11-27-15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11-16-16	<0.010	<0.010	<0.010	0.022	0.014	0.011	<0.010	<0.010	0.028	0.022	<0.010	0.045	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.031	0.04
	12-14-17	0.025	<0.010	0.031	0.052	0.033	0.030	0.018	0.020	0.019	0.051	<0.010	0.12	0.033	0.016	<0.050	<0.050	<0.20	<0.010	0.13	0.091
SCU31-002-MWB (6.50 m)	9-22-05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01
	11-16-10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.05	<0.05	<0.02	<0.01	0.02	0.01
	10-25-11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.05	<0.02	<0.01	0.03	0.02
	11-21-12	0.019	<0.01	0.014	0.032	0.033	0.027	0.024	NM	0.029	0.031	<0.01	0.067	0.010	0.018	<0.05	<0.05	<0.02	<0.01	0.068	0.063
	12/7/13 [FD]	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.020	0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.031	0.019
	12-7-13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.029	0.016
	12/18/14 [FD]	0.061	0.032	0.036	0.072	0.080	0.061	0.053	0.032	0.036	0.085	0.012	0.20	0.074	0.039	0.14	0.12	0.76	0.020	0.20	0.17
	12-18-14	0.046	0.028	0.028	0.051	0.050	0.038	0.026	0.020	0.021	0.064	<0.01	0.13	0.058	0.020	0.11	0.11	0.61	0.011	0.14	0.11
	12/2/15 [FD]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.017	0.01
	12-02-15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	<0.010
	11-17-16	<0.010	<0.010	<0.010	0.017	0.014	0.012	<0.010	<0.010	<0.010	0.017	<0.010	0.035	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.033	0.029
	12/4/17 [FD]	<0.010	<0.010	<0.010	0.019	0.016	0.013	0.011	<0.010	<0.010	0.021	<0.010	0.041	<0.010	0.011	<0.050	<0.050	<0.20	<0.010	0.034	0.033
	12-4-17	0.013	<0.010	0.025	0.056	0.052	0.041	0.031	0.024	0.025	0.059	<0.010	0.12	0.017	0.027	<0.050	<0.050	<0.20	0.013	0.1	0.097
	11-27-18	0.11	0.020	0.058	<0.040*	<0.020*	<0.020*	<0.020*	<0.010	<0.010	<0.040*	<0.010	0.096	0.15	<0.010	0.13	0.19	0.29	<0.010	0.34	0.073
	12-06-19 [FD]	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	0.019	0.024	<0.010	<0.050	<0.050	<0.20	<0.010	0.04	0.017
	12-06-19	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	0.024	<0.010	<0.050	<0.050	<0.20	<0.010	0.043	0.015
	12/02/20 [FD]	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	0.015	<0.010	<0.050	<0.050	<0.20	<0.010	0.013	0.015
	12-02-20	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	0.015	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	0.014

TABLE B-2
HARPBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
GROUNDWATER ANALYTICAL RESULTS - PAH

Sample Location (Water Level 2019)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene[5]	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Perylene	Phenanthrene	Pyrene
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
NS Tier 1 EQS[1]		600 [2]	750	2.4 [2]	4.7 [2]	0.81 [2]	0.75 [2]	0.2 [2]	-	0.4 [2]	1 [2]	0.52 [2]	130 [2]	400 [2]	0.2 [2]	38000	38000	7000	-	580 [2]	68 [2]
SCU31-004-MW (5.68 m)	9-6-05	0.02	<0.01	0.02	0.02	<0.01	<0.01	<0.01	NM	<0.01	0.03	<0.01	0.1	0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.02	0.17
	12-15-17	0.20	0.51	0.19	0.036	0.022	0.022	0.013	0.013	0.012	0.041	<0.010	0.32	0.73	0.011	0.81	1.0	2.3	<0.010	0.98	0.23
	11-27-18	0.12	0.14	0.18	0.064	<0.020*	0.023	<0.020*	<0.020*	<0.020*	0.072	<0.010	0.27	0.26	<0.010	0.16	0.17	0.22	<0.020*	0.60	0.27
	12-06-19	0.060	0.14	0.026	0.015	<0.010	<0.010	<0.010	<0.01	<0.010	0.021	<0.010	0.053	0.14	<0.01	0.21	0.17	0.46	<0.010	0.13	0.097
	12-02-20	0.28	0.69	0.17	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	0.025	<0.010	0.29	0.94	<0.010	1	0.39	0.64	<0.010	1	0.26
SCU32-001-MWA (*Decommissioned 2018*)	11-24-11	1.1	0.81	0.84	0.11	0.06	0.04	0.03	NM	0.02	0.12	<0.01	1.1	2.8	0.03	8.1	2.7	2.8	0.02	5.2	0.7
	12-5-13	5.3	1.8	**7.4**	**13**	**8.0**	**6.1**	**3.1**	4.0	**3.8**	**12**	**0.91**	23	8.8	**3.0**	15	4.1	3.3	1.9	39**	20
	12-17-14	1.1	0.91	1.4	1.4	**1.1**	**0.87**	**0.54**	0.55	**0.55**	**1.6**	0.15	5	2.4	**0.5**	2.5	2	6.6	0.26	7.2	3.6
	11-27-15	1.4	0.7	1.8	0.83	0.39	0.28	0.17	0.18	0.18	0.88	0.06	4.2	2.7	0.15	3.6	2.4	8.4	0.1	8.7	2.9
	11-16-16	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12-18-17	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
SCU32-002-MW (*Decommissioned 2018*)	11-25-11	0.23	0.34	0.41	0.14	0.09	0.04	0.04	NM	0.03	0.14	0.01	0.65	0.44	0.04	0.74	0.54	7.7	0.03	1.2	0.46
	12-5-13	0.65	0.62	1.5	2.7	**2.8**	2.1	1.4	1.3	**1.3**	**2.6**	0.38	6.9	1.2	**1.2**	0.91	0.8	6.7	0.68	6.7	5.80
	12-18-14	0.21	0.31	0.31	0.35	0.31	0.25	0.14	0.15	0.14	0.41	0.044	1.0	0.48	0.13	0.50	0.50	4.3	0.063	1.5	0.75
	11-30-15	0.23	0.38	0.21	0.023	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	0.3	0.48	<0.010	0.71	0.69	7.6	<0.010	1.1	0.21
	11/16/16[FD]	0.21	0.37	0.25	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	0.019	<0.010	0.38	0.42	<0.010	0.66	0.61	7.1	<0.010	1.1	0.23
	11-16-16	0.21	0.38	0.21	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	0.31	0.43	<0.010	0.69	0.63	7.4	<0.010	0.97	0.19
	12-14-17	0.25	0.35	0.21	0.039	0.021	0.019	0.014	0.013	0.013	0.039	<0.010	0.39	0.49	0.011	0.65	0.65	6.3	<0.010	1.2	0.24
SCU32-003-MW (*Decommissioned 2018*)	11-25-11	0.89	0.56	0.76	0.07	0.01	<0.01	<0.01	NM	<0.01	0.07	<0.01	1.1	1.9	<0.01	3.5	1.50	2.4	<0.01	3.3	0.72
	12-5-13	4.4	1.3	**8.7**	**19**	**11**	**8.4**	**4.3**	5.6	**5.3**	**17**	**1.3**	33	6.7	**4.2**	5.2	2.9	4.0	2.6	35	27
	12-18-14	1.6	1.9	0.89	0.20	0.17	0.12	0.080	0.078	0.073	0.25	0.021	1.6	3.5	0.065	3.1	2.6	8.5	0.039	5.2	0.97
	11-30-15	1.5	1.8	1.2	0.12	0.11	0.076	0.057	0.05	0.045	0.13	0.02	1.4	3.2	0.046	2.4	2.2	7.6	0.028	5.9	0.86
	12-14-17	1.5	1.4	0.70	0.050	0.031	0.030	0.019	0.019	0.018	0.055	<0.010	1.2	2.5	0.016	2.4	2.2	7.5	0.013	4.4	0.59
MCES-007-MW (*Buried/Inaccessible since 2018*)	7-26-03	0.27	0.7	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.74	0.97	<0.01	1.4	1.2	3.9	0.34	<0.01	0.34
	7-11-12	0.020	<0.01	0.050	0.15	0.13	0.10	0.080	NM	0.12	0.16	0.020	0.29	0.030	0.080	<0.05	<0.05	<0.02	0.040	0.2 ***	0.25
	11-27-12	0.052	0.024	0.18	0.45	0.35	0.34	0.17	NM	0.30	0.39	0.048	0.72	0.077	**0.23**	0.050	0.063	<0.02	0.077	0.44	0.60
	12-5-13	<0.010	<0.010	0.015	0.015	0.019	0.014	0.014	<0.010	<0.010	0.018	<0.010	0.039	0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	0.042
	12-17-14	0.21	0.59	0.26	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	0.49	0.76	<0.01	0.93	0.97	3.0	<0.01	1.5	0.27
	11/27/15[FD]	0.22	0.51	0.37	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.61	0.700	<0.010	0.76	0.85	2.5	<0.010	1.8	0.36
	11-27-15	0.2	0.45	0.33	0.03	0.01	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.58	0.76	<0.010	0.75	0.81	2.1	<0.010	1.7	0.33
	11-17-16	0.32	0.66	0.32	0.061	<0.010	<0.010	<0.010	<0.010	<0.010	0.048	<0.010	0.62	1.1	<0.010	6.7	9.7	6.3	<0.010	1.9	0.36
	12-15-17	0.30	0.53	0.34	0.028	0.011	0.011	<0.010	<0.010	<0.010	0.026	<0.010	0.64	0.77	<0.010	0.84	0.97	3.0	<0.010	1.8	0.35
MCES-207-MW	12-10-20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.011	<0.01	<0.05	<0.05	<0.2	<0.01	0.017	0.014
MW20-1	12-3-20	0.41	0.41	0.25	0.034	0.011	<0.01	<0.01	<0.01	<0.01	0.042	<0.01	0.42	0.86	<0.01	4.9	6.2	3.7	<0.01	1.6	0.25
MW20-2	12-3-20	38	5.6	28	9.2	3.4	2.8	1.1	1.9	1.8	9	0.39	38**	37	1.1	38	39**	120**	0.77	82**	30
MW20-3	12-3-20	10	5	17	11	5.7	4.3	2	2.9	2.8	10	0.73	28	15	2.1	12	8.7	44**	1.2	35	20
MW20-4	12-3-20	8.2	6.1	6.1	2.6	1.2	0.93	0.45	0.65	0.61	2.3	0.14	9.5	11	0.43	12	2.3	11	0.29	11	6.3
SCU26-200-MW	12-10-20	1.4	2.1	0.83	0.063	0.035	0.031	0.015	0.02	0.019	0.075	<0.01	1	2.1	0.017	3.4	3.2	21	0.012	4.8	0.63
SCU27-202-MW	12-10-20	0.013	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.027	0.017	<0.01	<0.05	<0.05	<0.2	<0.01	0.05	0.023
SCU32-200-MW	12-3-20	1.4	2.7	0.84	0.11	0.028	0.022	<0.01	0.016	0.015	0.12	<0.01	1.7	2.3	<0.01	3	2.8	9.6	<0.01	4.1	0.95

NOTES:

FD - Field Duplicate

NM - Not Measured or not analyzed

µg/L - micrograms per litre

- No applicable guideline criteria.

1 - Nova Scotia Environment Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013

2 - Ontario Ministry of Environment, Conservation and Parks Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (2011)

3 - Bold and Shaded Exceeds NSE Tier I EQS or the MOE standards which are used when no Tier I EQS is available.

4 - *Italicized RDL above applicable guideline*

5 - Benzo(j)fluoranthene was historically not included in PAH analysis.

6 - * Elevated PAH RDL(s) due to matrix / co-extractive interference.

7 - **Elevated PAH RDL(s) due to sample dilution.

8 - *** PAH RDL(s) elevated due to detection of compound in blank.

9 - SCU10-004-MW was not sampled during the 2014 monitoring event due to product in the well

10 - The DNAPL in SCU32-003-MW was sampled during the 2015 LTMM monitoring event. The groundwater column in the monitor well was sampled above the DNAPL in the well.

11 - Historical data (i.e., pre-2014) tabulated by SLR Consulting (Canada) Ltd. During historic assessment work, with the exception of SCU31-004-MW, for which data was derived from the Phase II ESA, Sydney Steel Corporation Sysco Blast Furnace Area, Site Classification Units SCU17, SCU19 & SCU31, Sydney, Nova Scotia (AMEC, 2006).

12 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information

13 - SCU32-001-MWA was not sampled during the 2016 or 2017 monitoring events due to product in the well.

TABLE B-3
HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Water Level 2019)	Sample Date	Dissolved Aluminum (Al)	Dissolved Antimony (Sb)	Dissolved Arsenic (As)	Dissolved Barium (Ba)	Dissolved Beryllium (Be)	Dissolved Bismuth (Bi)	Dissolved Boron (B)	Dissolved Cadmium (Cd)	Dissolved Calcium (Ca)	Dissolved Chromium (Cr)	Dissolved Cobalt (Co)	Dissolved Copper (Cu)	Dissolved Iron (Fe)	Dissolved Lead (Pb)	Dissolved Magnesium (Mg)	Dissolved Manganese (Mn)	Mercury total (Hg)	Dissolved Molybdenum (Mo)	Dissolved Nickel (Ni)	Dissolved Phosphorus (P)	Dissolved Potassium (K)	Dissolved Selenium (Se)	Dissolved Silver (Ag)	Dissolved Sodium (Na)	Dissolved Strontium (Sr)	Dissolved Thallium (Tl)	Dissolved Tin (Sn)	Dissolved Titanium (Ti)	Dissolved Uranium (U)	Dissolved Vanadium (V)	Dissolved Zinc (Zn)
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Standard MECP Table 3[4]		-	20000	1900	29000	67	-	45000	2.7	-	810	66	87	-	25	-	-	0.29	9200	490	-	-	63	1.5	2300000	-	510	-	-	420	250	1100
SCU10-001-MW (1.83 m)	12-19-14	120	<1	<1	37	<1	<2	86	0.34	120000	<1	0.79	<2	110	0.78	12000	11000	<0.013	<2	2.1	<100	7800	<1	<0.1	37000	420	<0.1	<2	<2	0.23	<2	35
	12-11-15	15	<1.0	<1.0	69	<1.0	<2.0	80	0.13	97000	<1.0	1.4	<2.0	190	<0.50	11000	16000	<0.013	<2.0	3.7	140	6500	<1.0	<0.10	43000	380	<0.10	<2.0	<2.0	0.33	<2.0	8.3
	11-18-16	6.8	<1.0	<1.0	4.7	<1.0	<2.0	99	0.031	72000	<1.0	<0.40	<2.0	<50	<0.50	8000	370	<0.013	<2.0	<2.0	<100	4600	<1.0	<0.10	44000	360	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
	12-4-17	<5.0	<1.0	1.2	14	<1.0	<2.0	94	0.11	72000	<1.0	<0.40	<2.0	50	<0.50	7900	910	<0.013	<2.0	<2.0	<100	3900	2.1	<0.10	32000	370	<0.10	<2.0	<2.0	1.5	<2.0	<5.0
	11-27-18	<5.0	1.1	1.5	23	<1.0	<2.0	94	0.013	99000	<1.0	<0.40	<2.0	<50	<0.50	9300	17	<0.013	<2.0	<2.0	<100	3800	2.3	<0.10	32000	450	<0.10	<2.0	<2.0	1.9	<2.0	<5.0
	12-6-19	<5.0	1.2	1.6	19	<1.0	<2.0	75	0.011	100000	<1.0	<0.40	0.57	<50	<0.50	8000	31	<0.013	3.6	<2.0	110	3700	3.9	<0.10	38000	450	<0.10	<2.0	<2.0	2.5	<2.0	7.1
	12-2-20	<5.0	1.8	2.1	16	<1.0	<2.0	100	0.038	70000	1	<0.40	0.55	<50	<0.5	6600	52	<0.013	2.2	<2.0	100	3500	4	<0.10	43000	330	<0.10	<2.0	<2.0	2	2.8	7.9
SCU10-004-MW (2.42 m)	9-17-04	101	<0.40	15.7	87.2	<0.50	NM	<100	<0.017	244000	<1.0	<1.0	<2.0	<100	NM	1330	10	<0.013	<4.0	<3.0	<100	10000	3	<0.10	151000	1160	<0.80	<20	NM	<0.15	10	2
	11-19-08	<5.0	1.2	4.3	56	<0.50	<2.0	<100	<0.017	130000	<1.0	<1.0	<2.0	<100	<1.0	6000	14	<0.013	6.9	<3.0	<100	13000	3.1	<0.10	140000	550	<0.80	<20	<3.0	2.4	8.0	<5.0
	11-10-10	13	<0.40	8.1	49	<0.50	<2.0	<100	<0.017	100000	<1.0	<1.0	<2.0	<100	<1.0	5000	83	<0.013	6.6	<3.0	<100	9000	1.9	<0.10	92000	470	<0.80	<20	<3.0	1.6	7.5	<5.0
	11-23-12	<5.0	<0.40	0.96	78	<0.50	<2.0	110	<0.017	99000	<1.0	<1.0	<2.0	<100	<1.0	10000	21	0.023	<4.0	<3.0	<100	<600	<1.0	<0.10	13000	6200	<0.80	<20	<3.0	2	<2.0	<5.0
	12-2-13	39	<1.0	11	57	<1.0	<2.0	69	<0.010	100000	<1.0	<0.40	<2.0	110	<0.50	3600	73	<0.013	5.4	<2.0	<100	10000	1.2	<0.10	100000	540	<0.10	<2.0	2.9	1.2	7.3	6.2
	12-19-14	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12-11-15	35	<1.0	11	41	<1.0	<2.0	62	0.044	83000	<1.0	<0.40	<2.0	110	<0.50	2800	51	<0.013	6.1	<2.0	170	11000	1.2	<0.10	150000	440	<0.10	<2.0	<2.0	0.8	4.9	<5.0
	11-18-16	17	<1.0	9.8	55	<1.0	<2.0	66	<0.010	95000	<1.0	<0.40	<2.0	160	<0.50	3600	93	0.013	3.2	<2.0	190	11000	1.7	<0.10	110000	460	<0.10	<2.0	<2.0	0.6	7.7	<5.0
	12-4-17	12	<1.0	11	51	<1.0	<2.0	57	<0.010	70000	<1.0	<0.40	<2.0	86	<0.50	2300	35	<0.013	3.9	<2.0	170	8800	3.8	<.010	100000	330	<0.10	<2.0	<2.0	0.56	5.0	<5.0
	11-27-18[FD]	10	1.3	9.4	42	<1.0	<2.0	55	<0.010	81000	<1.0	<0.40	<2.0	<50	<0.50	3600	23	<0.013	5.2	<2.0	<100	6800	1.7	<0.10	70000	330	<0.10	<2.0	<2.0	0.68	12	<5.0
	11-27-18	21	1.3	9.4	43	<1.0	<2.0	56	<0.010	80000	<1.0	<0.40	<2.0	<50	<0.50	3500	22	<0.013	5.4	<2.0	<100	6800	1.7	<0.10	70000	320	<0.10	<2.0	<2.0	0.69	13	<5.0
	12-6-19	8.5	<1.0	6.8	44	<1.0	<2.0	52	0.053	85000	<1.0	<0.40	0.78	<50	<0.50	3400	28	<0.013	5.7	<2.0	<100	6700	1.8	<0.10	67000	410	<0.10	<2.0	<2.0	0.69	12	<5.0
	12-2-20	14	<1.0	13	53	<1.0	<2.0	64	0.014	81000	<1.0	<0.40	<0.5	100	<0.50	3200	50	<0.013	5	<2.0	110	10000	2.1	<0.10	160000	620	<0.10	<2.0	<2.0	0.5	3.4	<5.0
SCU18-007-MW (0.99 m)	7-12-06	23	<0.40	3.1	69	<0.50	<2.0	<100	0.043	85000	<1.0	3.3	<2.0	<100	<1.0	10000	15	<0.013	10	<3.0	<100	8000	6.7	<0.10	80000	290	<0.80	<20	<3.0	0.99	17	<5.0
	11-24-09	7.9	<0.40	1.8	42	<0.50	<2.0	200	<0.017	67000	7.7	<1.0	<2.0	<100	<1.0	17000	<4.0	0.025	4.3	<3.0	<100	3900	2.2	<0.10	19000	200	<0.80	<20	<3.0	2	10	NM
	9-7-10	40	1.1	7.58	26	<0.50	<2.0	<100	<0.017	170000	<1.0	<1.0	<2.0	<100	<1.0	240	<4.0	<0.013	29	<3.0	<100	12000	3.6	<0.10	38000	740	<0.80	<20	<3.0	<0.15	98	<5.0
	11-19-10	30	3.4	1.9	48	<0.50	<2.0	200	<0.017	71000	8.6	<1.0	<2.0	<100	<1.0	16000	<4.0	<0.013	5.4	<3.0	<100	5200	1.5	<0.10	31000	250	<0.80	<20	<3.0	3.4	12	<5.0
	10-24-11	27	0.79	2.4	58	<0.50	<2.0	230	<0.017	82000	11	<1.0	<2.0	<100	<1.0	17000	<4.0	<0.013	4.9	<3.0	<100	6000	<1.0	<0.10	34000	250	<0.80	<20	<3.0	5.3	16	<5.0
	10-26-11	13	1.3	2.6	64	<0.50	<2.0	290	<0.017	84000	21	<1.0	<2.0	<100	<1.0	19000	<4.0	<0.013	4.8	<3.0	<100	5400	1.9	<0.10	26000	360	<0.80	<20	<3.0	6.4	17	6
	12-2-13	12	<1.0	1.5	62	<1.0	<2.0	190	0.010	82000	9.4	<1.0	<2.0	<50	<0.5	27000	<2.0	<0.013	2.8	<3.0	100	4000	1.2	<0.10	14000	230	<0.10	<2.0	<2.0	3.6	7.6	<5.0
	12-4-17	7.3	<1.0	1.5	85	<1.0	<2.0	190	<0.010	78000	16	<0.40	<2.0	<50	<0.50	32000	<2.0	<0.013	3.0	<2.0	<100	3700	2.2	<0.10	13000	230	<0.10	<2.0	<2.0	4.9	7.5	<5.0
	11-27-18	18	1.1	1.9	51	<1.0	<2.0	160	0.023	55000	9.3	<0.40	<2.0	<50	1.1	29000	4.9	<0.013	2.4	<2.0	<100	2700	<1.0	<0.10	13000	160	<0.10	<2.0	<2.0	3.4	10	<5.0
	12-6-19	<5.0	1.2	2.2	46	<1.0	<2.0	130	<0.010	49000	11	<0.40	1.4	<50	<0.50	26000	<2.0	<0.013	3.2	<2.0	130	2300	0.6	<0.10	11000	160	<0.10	<2.0	<2.0	2.8	11	<5.0
	12-2-20	8.2	1	1.9	92	<1.0	<2.0	160	0.014	75000	17	<0.40	1.3	<50	<0.50	38000	<2.0	<0.013	<2.0	<2.0	110	3200	1.7	<0.10	11000	230	<0.10	<2.0	<2.0	5.1	9.7	<5.0
SCU26-001-MW *(Destroyed 2017)*	7-26-03	42	<0.40	<0.60	520	<0.50	<2.0	<100	<0.017	320000	<1.0	<1.0	<2.0	720	<1.0	<60	<4.0	<0.013	6.4	<3.0	<100	20000	1.5	<0.10	23000	2200	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	7-11-12	42	<0.40	<0.60	450	<0.50	<2.0	<100	<0.017	420000	<1.0	<1.0	<2.0	150	<1.0	<60	<4.0	0.059	4.5	3.2	<100	28000	3.5	<0.10	28000	2700	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11-26-12	29	<0.40	1.7	440	<0.50	<2.0	<100	<0.017	380000	3.1	<1.0	<2.0	310	<1.0	110	<4.0	NM	4.2	<3.0	<100	26000	7.7	<0.10	31000	2900	<0.80	<20	<3.0	<0.15	7.5	<5.0
	12-5-13	25	<1.0	<1.0	440	<1.0	<2.0	<50	<0.010	370000	3.6	<0.40	<2.0	<50	0.53	<100	<2.0	0.027	3.8	<2.0	<100	27000	5.1	<0.10	29000	2700	<0.10	7.5	<2.0	<0.10	<2.0	<5.0
	12-17-14	19	<1	<1	480	<1	<2	<50	0.013	380000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	4.2	<2	<100	27000	8.0	<0.1	26000	2800	<0.1	<2.0	<2.0	<0.1	<2	<5
	11-27-15	14	<1.0	<1.0	460	<1.0	<2.0	<50	<0.010	390000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	4.4	<2.0	<100	26000	4.1	<0.10	26000	2800	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU26-002-MW (25.32 m) *(Decommissioned 2018)*	7-11-12	22	<0.40	<0.60	420	<0.50	<2.0	<100	<0.017	450000	<1.0	<1.0	<2.0	100	<1.0	<60	<4.0	<0.013	4.3	4.1	<100	37000	4.7	<0.10	30000	3200	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11-26-12	80	<0.40	<0.60	420	<0.50	<2.0	<100	<0.017	400000	<1.0	<1.0	<2.0	<100	<1.0	<60	<4.0	NM	<4.0	<3.0	<100	35000	<1.0	<0.10	32000	3100	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11-26-12[FD]	94	<0.40	1	420	<0.50	<2.0	<100	<0.017	400000	2.5	<1.0	<2.0	<100	<1.0	<60	<4.0	NM	4.4	<3.0	<100	37000	5.4	<0.10	35000	3300	<0.80	<20	<3.0	<0.15	3.9	5.9
	12-5-13	49	<1.0	<1.0	420	<1.0	<2.0	<50	<0.010	390000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	0.045	5.1	<2.0	<100	35000	4.3	<0.10	33000	3100	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-17-14[FD]	27	<1	<1.0	490	<1	<2	<50	<0.01	410000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	3.8	<2	<100	36000	9.7	<0.1	28000	3400	<0.1	<2	<2	<0.1	<2	<5
	12-17-14	28	<1	<1.0	510	<1	<2	<50	0.017	410000	<1	<0.4	<2	<50	0.53	<100	3	<0.013	3.4	<2	<100	37000	11	<0.1	28000	3300	<0.1	<2	<2	<0.1	<2	<5
	11-27-15	20	<1.0	<1.0	460	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	4.4	<2.0	<100	36000	4.3	<0.10	28000	3300	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-4-17	37	<1.0	<1.0	500	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	0.025	3.8	<2.0	<0.10	40000	10	<0.10	32000	3300	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU27-002-MW (22.66 m) *(Decommissioned 2018)*	7-26-03	<5.0	<0.40	30	15000	<0.50	<2.0	3100	<0.017	1200000	<1.0	<1.0	<2.0	49000	<1.0	630000	8600	<0.013	4.5	**1000**	<100	91000	<1.0	<0.10	**5100000**	70000	<0.80	<20	9	14	<2.0	<5.0
	7-4-12	<5.0	<0.40	<0.60	8700	<0.50	<2.0	<100	<0.017	1400000	<1.0	<1.0	<2.0	63000	<1.0	770000	7300	<0.013	<4.0	<3.0	<100	110000	<1.0	<0.10	**5700000**	84000	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	7-4-12[FD]	<5.0	<0.40	21	9300	<0.50	<2.0	3100	<0.017	1400000	<1.0	<1.0	<2.0	61000	<1.0	730000	7200	<0.013	<4.0	<3.0	<100	110000	28	<0.10	**4800000**	83000	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11-26-12	<5.0	<0.40	23	7300	<0.50	<2.0	2900	<0.017	1200000	<1.0	<1.0	<2.0	65000	<1.0	660000	7900	<0.013	<4.0	<3.0	<100	100000	21	<0.10	**4900000**	76000	<0.80	<20	<3.0	3.5	<2.0	<5.0
	12-5-13	<50	<10	<10	23000	<10	<20	2700	<0.10	1200000	<10	<4.0	<20	44000	<5.0	700000	4900	<0.013	<20	<20	<1000	96000	<10	<1.0	**5200000**	78000	<1.0	<20	<20	3.8	<20	<50
	12-17-14	18	<1	5.5	**30000**	<1	<2	2500	<0.1	1300000	<1	<0.4	<2	56000	<0.5	660000	5600	0.013	<2	<2	<100	90000	<1	<0.1	**4900000**	92000	<0.1	<2	<2	3.2	<2	31
	11-27-15	<50	<10	<10	**30000**	<10	<20	2600	<0.10	1300000	<10	<4.0	<20	53000	<5.0	680000	5000	<0.013	<20	<20	<1000	87000	<10	<1.0	**4900000**	96000	<1.0	<20	<20	4.1	<20	<50
	11-16-16	<50	<10	<10	**31000**	<10	<20	2600	<0.10	1300000	<10	<4.0	<20	57000	<5.0	700000	5000	<0.013	<20	<20	<1000	93000	<10	<1.0	**5100000**	93000	<1.0	<20	<20	5.1	<20	66
	12-11-17	<50	<10	<10	19000	<10	<20	2000	<0.10	1100000	<10	<4.0	<20	44000	<5.0	550000	4000	0.015	<20	<20	<1000	70000	<10	<1.0	**4100000**	72000	<1.0	<20	<20	3.7	<20	<50
SCU31-002-MWB (6.50 m)	8-17-05	<5.0	<0.40	<0.60	3200	<0.50	<2.0	<100	<0.017	1200000	<1.0	<1.0	<2.0	<100	<1.0	11000	<4.0	<0.013	<4.0	<3.0	<100	<600	<1.0	<0.10	<300	850	<0.80	<20	<3.0	3	**650**	-
	11-16-10	15	<0.40	<0.60	29	<0.50	<2.0	520	0.025	510000	<1.0	1.3	<2.0	<100	<1.0	110000	520	<0.013	<4.0	<3.0	<100	21000	<1.0	0.28	1500000	19000	<0.80	<20	<3.0	8.4	<2.0	<5.0
	10-25-11	440	9.1	<0.60	28	<0.50	<2.0	<100	<0.017	380000	<1.0	<1.0	<2.0	<100	<1.0	96000	440	<0.013	<4.0	47	<100	17000	13	<0.10	1300000	13000	<0.80	<20	<3.0	7.1	<2.0	32
	11-21-12	8.7	<0.40	6.4	47	<0.50	<2.0	560	<0.017	500000	<1.0	1.1	<2.0	<100	<1.0	100000	560	<0.013	4	<3	<100	23000	15	<0.10	1600000	18000	<0.80	<20	<3.0	6.5	4.4	<5.0
	12-7-13	14	<1.0	1.5	29	<1.0	<2.0	540	<0.010	480000	<1.0	<0.40	<2.0	100	<0.50	99000	530	<0.013	3.0	<2.0	<100	21000	<1.0	<0.10	1500000	17000	<0.10	<2.0	<2.0	7.0	<2.0	<5.0
	12-7-13[FD]	23	<1.0	1.5	29	<1.0	<2.0	540	0.012	490000	<1.0	<0.40	<2.0	100	<0.50	98000	530	<0.013	3.0	<2.0	100	21000	<1.0	<0.10	1500000	17000	<0.10	<2.0	<2.0	7.1	<2.0	<5.0
	12-18-14[FD]	140	1.1	1.3	86	<1	<2	550	0.025	450000	<1	<0.4	<2	240	<0.5	99000	560	<0.013	3.0	<2	<100	22000	<1	<0.1	1500000	17000	<0.1	<2	3.5	6.6	<2	7.5
	12-18-14	30	1.3	1.4	81	<1	<2	570	0.024	450000	<1	<0.4	<2	220	<0.5	100000	560	<0.013	3.1	<2	<100	21000	<1	<0.1	1500000	17000	<0.1	<2	<2	6.4	<2	7.2
	12-2-15[FD]	<50	<10	<10	33	<10	<20	570	<0.10	440000	<10	<4.0	<20	<500	<5.0	100000	540	<0.013	<20	<20	<1000	20000	<10	<1.0	1500000	17000	<1.0	<20	<20	6.5	<20	<50
	12-2-15	<50	<10	<10	32	<10	<20	570	<0.10	440000	<10	<4.0	<20	<500	<5.0	99000	520	<0.013	<20	<20	<1000	20000	<10	<1.0	1500000	17000	<1.0	<20	<20	6.8	<20	<50
	11-17-16	9.8	<1.0	1.3	26	<1.0	<2.0	580	0.011	440000	<1.0	<0.40	<2.0	120	<0.50	97000	530	<0.013	3.0	<2.0	<100	20000	<1.0	<0.10	1400000	17000	<0.10	<2.0	<2.0	6.7	<2.0	<5.0
	12-4-17[FD]	42	<1.0	1.4	27	<1.0	<2.0	580	0.021	450000	<0.10	<0.40	<2.0	110	<0.50	97000	520	<0.013	3.0	<2.0	<100	20000	<1.0	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.6	<2.0	<5.0
	12-4-17	18	<1.0	1.5	27	<1.0	<2.0	570	0.022	450000	<1.0	<0.40	<2.0	110	<0.50	97000	510	<0.013	3.2	<2.0	<100	20000	<1.0	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.6	<2.0	<5.0
	11-27-18	22	<1.0	1.3	27	<1.0	<2.0	570	<0.010	450000	<1.0	<0.40	<2.0	120	1.8	110000	560	<0.013	2.9	<2.0	<100	20000	<1.0	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.4	<2.0	<5.0
	12-06-19[FD]	13	<1.0	1.4	27	<1.0	<2.0	670	0.013	440000	<1.0	<0.40	<0.50	160	<0.50	100000	560	<0.013	3.3	<2.0	<100	20000	<0.50	<0.10	1400000	16000	<010	<2.0	<2.0	6.2	<2.0	<5.0
	12-6-19	17	<1.0	1.4	27	<1.0	<2.0	680	0.013	440000	<1.0	<0.40	0.65	160	<0.50	110000	560	<0.013	3.5	<2.0	<100	20000	<0.50	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.1	<2.0	<5.0
	12/02/20[FD]	18	<1.0	1.5	26	<1.0	<2.0	560	<0.01	450000	<1.0	<0.40	<0.50	160	<0.5	100000	540	<0.013	3.1	<2.0	<100	19000	<0.5	<0.1	1400000	17000	<0.1	<2.0	<2.0	6.4	<2.0	<5.0
	12-2-20	48	<1.0	1.5	25	<1.0	<2.0	550	<0.01	450000	<10.	<0.40	<0.50	160	<0.5	100000	540	<0.013	3	<2.0	<100	19000	<0.5	<0.1	1400000	17000	<0.1	<2.0	<2.0	6.4	<2.0	<50

TABLE B-3
HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Water Level 2019)	Sample Date	Dissolved Aluminum (Al)	Dissolved Antimony (Sb)	Dissolved Arsenic (As)	Dissolved Barium (Ba)	Dissolved Beryllium (Be)	Dissolved Bismuth (Bi)	Dissolved Boron (B)	Dissolved Cadmium (Cd)	Dissolved Calcium (Ca)	Dissolved Chromium (Cr)	Dissolved Cobalt (Co)	Dissolved Copper (Cu)	Dissolved Iron (Fe)	Dissolved Lead (Pb)	Dissolved Magnesium (Mg)	Dissolved Manganese (Mn)	Mercury total (Hg)	Dissolved Molybdenum (Mo)	Dissolved Nickel (Ni)	Dissolved Phosphorus (P)	Dissolved Potassium (K)	Dissolved Selenium (Se)	Dissolved Silver (Ag)	Dissolved Sodium (Na)	Dissolved Strontium (Sr)	Dissolved Thallium (Tl)	Dissolved Tin (Sn)	Dissolved Titanium (Ti)	Dissolved Uranium (U)	Dissolved Vanadium (V)	Dissolved Zinc (Zn)
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Standard MECP Table 3[4]		-	20000	1900	29000	67	-	45000	2.7	-	810	66	87	-	25	-	-	0.29	9200	490	-	-	63	1.5	2300000	-	510	-	-	420	250	1100
SCU31-004-MW (5.68 m)	9-15-05	11	1	<0.6	35	<0.5	<2	<100	<0.017	NM	1.1	<1	<2	<100	<1	NM	<4	<0.01	6.5	<3	<100	NM	3.1	<0.1	NM	290	<0.8	<20	<3	<0.15	2.1	2.9
	12-15-17	12	<1.0	<1.0	55	<1.0	<2.0	84	<0.010	130000	2.6	<0.40	<2.0	<50	<0.50	9800	<2.0	<0.013	6	<2.0	<100	12000	2.1	<0.10	20000	730	<0.10	<2.0	<2.0	0.74	<2.0	<5.0
	11-27-18	23	<1.0	<1.0	48	<1.0	<2.0	69	<0.010	200000	4.6	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	7.4	<2.0	<100	11000	4.3	<0.10	22000	950	<0.10	<2.0	<2.0	<0.10	10	<5.0
	12-6-19	20	<1.0	<1.0	48	<1.0	<2.0	65	<0.010	150000	2.3	<0.40	0.74	<50	<0.50	<100	<2.0	<0.013	6.4	<2.0	<100	8800	2.9	<0.10	20000	770	<0.10	<2.0	<2.0	<0.10	8.5	<5.0
	12-2-20	11	<1.0	<1.0	37	<1.0	<2.0	92	<0.010	180000	1.8	<0.40	<0.5	<50	<0.50	1300	<2.0	<0.013	5.1	<2.0	<100	9600	5.8	<0.1	22000	640	<0.10	<2.0	<2.0	<0.10	2.5	<5.0
SCU32-001-MWA (16.28 m) (*Decommissioned 2018*)	11-24-11	25	<0.40	1	98	<0.50	<2.0	<100	<0.017	270000	<1.0	<1.0	<2.0	<100	<1.0	<60	<4.0	<0.013	71	<3.0	<100	68000	17	<0.10	97000	1900	<0.80	20	<3.0	<0.15	3.7	<5.0
	12-5-13	360	<1.0	1.6	94	<1.0	<2.0	<50	0.011	220000	<1.0	<0.40	5.8	<50	<0.50	180	2.0	<0.013	58	<2.0	<100	45000	4.7	<0.10	64000	2300	<0.10	8.6	<2.0	<0.10	9.4	5.2
	12-17-14	130	<1	1.0	120	<1.0	<2	<50	<0.1	250000	<1	<0.4	<2	180	0.78	200	10	0.018	620	<2	<100	340000	40	<0.1	400000	2100	<0.1	<2	4.5	<0.1	2.0	5.7
	11-27-15	16	<1.0	<1.0	99	<1.0	<2.0	<50	<0.10	280000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	190	<2.0	<100	150000	8.5	<0.10	190000	2000	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU32-002-MW (16.33 m) (*Decommissioned 2018*)	11-25-11	680	<0.40	4.7	46	<0.50	<2.0	<100	<0.017	210000	<1.0	<1.0	<2.0	<100	<1.0	<60	<4.0	<0.013	48	<3.0	<100	24000	7.3	<0.10	84000	960	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	12-5-13	670	<1.0	5.0	47	<1.0	<2.0	<50	<0.010	200000	<1.0	<0.40	<2.0	180	<0.50	<100	2.1	<0.013	42	<2.0	<100	29000	3.9	<0.10	76000	920	<0.10	7.8	<2.0	<0.10	<2.0	<5.0
	12-18-14	700	<1.0	2.8	61	<1.0	<2	<50	0.054	230000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	21	<2	<100	29000	9.5	<0.1	72000	1100	<0.1	<2	<2	<0.1	<2	<5
	11-30-15	510	<1.0	4.6	42	<1.0	<2.0	<50	<0.010	200000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	41	<2.0	<100	27000	2.6	<0.10	59000	890	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11-16-16[FD]	450	<1.0	4.7	42	<1.0	<2.0	<50	<0.010	200000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	78	<2.0	<100	30000	3.7	<0.10	65000	890	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11-16-16	440	<1.0	4.7	40	<1.0	<2.0	<50	0.013	190000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	76	<2.0	<100	29000	4.4	<0.10	67000	910	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-14-17	470	<1.0	4.1	47	<1.0	<2.0	<50	<0.010	210000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	55	<2.0	<100	34000	3.0	<0.10	67000	980	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU32-003-MW (16.90 m) (*Decommissioned 2018*)	11-25-11	<50	<4.0	<6.0	150	<5.0	<20	<100	<0.17	250000	<10	<10	<20	<1000	<10	<600	<40	<0.013	130	<30	<1000	80000	28	<1.0	98000	2200	<8.0	<200	<30	<1.5	<20	<50
	12-5-13	79	<1.0	<1.0	130	<1.0	<2.0	<50	0.014	250000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	58	<2.0	<100	67000	7.1	<0.10	90000	2700	<0.10	6.9	<2.0	<0.10	3.9	<5.0
	12-18-14	40	<1	<1.0	140	<1.0	<2	<50	<0.1	240000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	83	<2	<1000	630000	**68**	<0.1	780000	2100	<0.1	<2	<2	<0.1	2.9	<5
	11-30-15	<50	<10	<10	130	<10	<20	<500	<0.10	240000	<10	<4.0	31	<500	<5.0	<1000	<20	<0.013	580	<20	<1000	530000	**77**	<1.0	680000	1900	<1.0	<20	<20	<1.0	<20	<50
	12-14-17	<50	<10	<10	120	<10	<20	<500	<0.10	220000	<10	<4.0	<20	<500	<5.0	<1000	<20	0.022	470	<20	<1000	420000	**89**	<1.0	560000	1800	<1.0	<20	<20	<1.0	<20	<50
MCES-007-MW (21.80 m) (*Buried/Inaccessible 2018*)	7-26-03	<5.0	<0.40	<0.60	490	<0.50	<2.0	<100	<0.017	380000	<1.0	<1.0	<2.0	690	<1.0	<60	<4.0	<0.013	1.8	<3.0	<100	31000	<1.0	<0.10	35000	2500	<0.80	<20	<3.0	<0.15	<2.0	NM
	7-11-12	10	1.2	2.3	23	<0.50	<2.0	<100	<0.017	22000	3.8	<1.0	<2.0	<100	<1.0	600	<4.0	0.013	<4.0	<3.0	<100	4100	1.2	<0.10	21000	160	<0.80	<20	<3.0	0.24	32	<5.0
	11-27-12	38	1.1	2.2	63	<0.50	<2.0	<100	<0.017	56000	9.6	<1.0	<2.0	<100	<1.0	<60	<4.0	NM	6.2	<3.0	<100	8200	1.1	<0.10	54000	510	<0.80	<20	<3.0	<0.15	34	<5.0
	12-5-13	5.0	1.0	1.0	1.0	1.0	2.0	50	0.010	100	1.0	0.40	2.0	50	0.50	100	2.0	<0.013	2.0	2.0	100	100	1.0	0.10	100	2.0	0.10	2.0	2.0	0.10	2.0	5.0
	12-17-14	24	<1.0	<1.0	580	<1.0	<2	<50	0.022	410000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	2.1	<2	<100	35000	12	<0.1	33000	3400	<0.1	<2	<2	<0.1	<2	<5
	11-27-15[FD]	52	<1.0	<1.0	580	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	2.8	<0.013	2.7	<2.0	<100	34000	4.5	<0.10	30000	3200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11-27-15	57	<1.0	<1.0	580	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	5.5	0.020	2.3	<2.0	<100	34000	5.5	<0.10	30000	3200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-15-17	41	<1.0	<1.0	560	<1.0	<2.0	<50	<0.010	410000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	2.2	<2.0	<100	35000	3.4	<0.10	46000	3200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
MCES-207-MW	12-10-20	<50	<10	<10	4300	<10	<20	2100	0.16	660000	<10	<4	11	<500	<5	390000	2200	<0.013	<20	<20	<1000	67000	<5	<1	2900000	23000	<1	<20	<20	5.2	<20	90
MW20-1	12-3-20	190	<1	<1	570	<1	<2	<50	<0.01	400000	<1	<0.4	<0.5	<50	<0.5	<100	<2	<0.013	3.9	<2	<100	30000	12	<0.1	32000	3200	<0.1	<2	<2	<0.1	<2	<5
MW20-2	12-3-20	750	1.4	27	490	<1	<2	62	0.01	250000	<1	<0.4	<0.5	1500	<0.5	<100	<2	0.41	7.3	<2	<100	69000	22	<0.1	190000	3600	<0.1	<2	<2	<0.1	3.7	<5
MW20-3	12-3-20	150	1.1	4.1	35	<1	<2	540	<0.01	150000	<1	<0.4	0.61	<50	<0.5	720	<2	0.16	24	<2	<100	32000	1.6	<0.1	45000	1100	<0.1	<2	<2	<0.1	55	<5
MW20-4	12-3-20	69	<1	8.3	55	<1	<2	750	0.017	230000	4.4	<0.4	2.6	59	<0.5	3100	2.9	0.068	39	3.6	<100	79000	3.9	<0.1	200000	1800	<0.1	<2	2	<0.1	54	<5
SCU26-200-MW	12-10-20	46	<1	<1	1100	<1	<2	<50	<0.01	710000	<1	<0.4	<0.5	<50	<0.5	<100	6.2	<0.013	5.9	3.5	<100	38000	0.55	<0.1	220000	3200	<0.1	<2	<2	<0.1	3.8	<5
SCU27-202-MW	12-10-20	<50	<10	<10	13,000	<10	<20	5400	<0.1	950000	<10	<4	<5	84,000	<5	740000	5600	0.018	<20	<20	2600	160000	<5	<1	5600000	32000	<1	<20	<20	<1	<20	55
SCU32-200-MW	12-3-20	<50	<10	<10	160	<10	<20	<500	<0.1	380000	<10	<4	<5	<500	<5	5500	<20	0.02	260	<20	<1000	260000	10	<1	2200000	4300	<1	<20	<20	<1	<20	<50

NOTES:
FD - Field Duplicate
NM - Not Measured or not analyzed
µg/L - micrograms per litre
- No applicable guideline criteria.
1 - There are no Nova Scotia Environment Environmental Quality Standards for inorganic parameters in groundwater on a site with Coarse-Grained Soil, Non-potable Groundwater Commercial/Industrial land use) 2013.
2 - Ontario Ministry of Environment, Conservation and Parks Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (2011).
3 - **Bold and Shaded Exceeds MOE Table 3 Standards**
4 - *Italicized RDL above applicable guideline*
5 - SCU10-004-MW was not sampled during the 2014 monitoring event due to product in the well.
6 - DNAPL in SCU32-003-MW was sampled during the 2015 LTMM monitoring event. The groundwater column in the monitor well was sampled above the DNAPL in the well.
7 - Historical data (i.e., pre-2014) tabulated by SLR Consulting (Canada) Ltd. During historic assessment work, , with the exception of SCU31-004-MW, for which data was derived from the Phase II ESA, Sydney Steel Corporation Sysco Blast Furnace Area, Site Classification Units SCU17, SCU19 & SCU31, Sydney, Nova Scotia (AMEC, 2006).
9 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information.

Appendix C

Mann Kendall

MANN-KENDALL PLUME STABILITY ANALYSIS

HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT
NOVEMBER and DECEMBER 2020

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: SCU10-004-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.0075	0.01	0.034	0.02	0.41	0.028	0.017	0.0067	0.0034	0.027	
	10-Nov-10	31-Oct-11	23-Nov-12	2-Dec-13	11-Dec-15	18-Nov-16	4-Dec-17	27-Nov-18	6-Dec-19	2-Dec-20	
Row 1: Compare to Event 1:		1	1	1	1	1	1	-1	-1	1	5
Row 2: Compare to Event 2:			1	1	1	1	1	-1	-1	1	4
Row 3: Compare to Event 3:				-1	1	-1	-1	-1	-1	-1	-5
Row 4: Compare to Event 4:					1	1	-1	-1	-1	1	0
Row 5: Compare to Event 5:						-1	-1	-1	-1	-1	-5
Row 6: Compare to Event 6:							-1	-1	-1	-1	-4
Row 7: Compare to Event 7:								-1	-1	1	-1
Row 8: Compare to Event 8:									-1	1	0
Row 9: Compare to Event 9:										1	1

1/2 detection limit used for nd, historical data assumed EQL of 0.01 mg/L

Mann-Kendall (S) Statistic = **-5**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							X
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

Unshaded area indicates generally stable trend (if CV<1)

Shaded area indicates
Expanding trend if S>0
Declining trend if S<0

Stability Evaulation Results

X	No Trend Indicated, Plume Not Dimishing or Expanding (Plume is Stable if CV<1)
	Trend Is Present (≥90% Confidence)
	S < 0 Diminishing Plume
	S > 0 Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT
NOVEMBER and DECEMBER 2020

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: SCU10-004-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0024	0.013	0.038	0.004	1.1	0.018	0.0056	0.0023	0.0013	0.0082	
	10-Nov-10	31-Oct-11	13-Nov-12	2-Dec-13	11-Dec-15	18-Nov-16	4-Dec-17	27-Nov-18	6-Dec-19	2-Dec-20	
Row 1: Compare to Event 1:		1	1	1	1	1	1	-1	-1	1	5
Row 2: Compare to Event 2:			1	-1	1	1	-1	-1	-1	-1	-2
Row 3: Compare to Event 3:				-1	1	-1	-1	-1	-1	-1	-5
Row 4: Compare to Event 4:					1	1	1	-1	-1	1	2
Row 5: Compare to Event 5:						-1	-1	-1	-1	-1	-5
Row 6: Compare to Event 6:							-1	-1	-1	-1	-4
Row 7: Compare to Event 7:								-1	-1	1	-1
Row 8: Compare to Event 8:									-1	1	0
Row 9: Compare to Event 9:										1	1

1/2 detection limit used for nd, historical data assumed EQL of 0.01 mg/L

Mann-Kendall (S) Statistic = **-9**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							X
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

Unshaded area indicates generally stable trend (if CV<1)

Shaded area indicates
Expanding trend if S>0
Declining trend if S<0

Stability Evaulation Results

X	No Trend Indicated, Plume Not Dimishing or Expanding (Plume is Stable if CV<1)
	Trend Is Present (≥90% Confidence)
	S < 0 Diminishing Plume
	S > 0 Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT
NOVEMBER and DECEMBER 2020

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: SCU10-004-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Indeno(1,2,3-cd)pyrene	0.00009	0.00074	0.00075	0.000072	0.067	0.0005	0.00012	0.000099	0.00018	0.00016	
	10-Nov-10	31-Oct-11	2012-23-11	2-Dec-13	11-Dec-15	18-Nov-16	4-Dec-17	27-Nov-18	6-Dec-19	2-Dec-20	
Row 1: Compare to Event 1:		1	1	-1	1	1	1	1	1	1	7
Row 2: Compare to Event 2:			1	-1	1	-1	-1	-1	-1	-1	-4
Row 3: Compare to Event 3:				-1	1	-1	-1	-1	-1	-1	-5
Row 4: Compare to Event 4:					1	1	1	1	1	1	6
Row 5: Compare to Event 5:						-1	-1	-1	-1	-1	-5
Row 6: Compare to Event 6:							-1	-1	-1	-1	-4
Row 7: Compare to Event 7:								-1	1	1	1
Row 8: Compare to Event 8:									1	1	2
Row 9: Compare to Event 9:										-1	-1

1/2 detection limit used for nd, historical data assumed EQL of 0.01 mg/L

Mann-Kendall (S) Statistic = **-3**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							X
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

Unshaded area indicates generally stable trend (if CV<1)

Shaded area indicates
Expanding trend if S>0
Declining trend if S<0

Stability Evaulation Results

X	No Trend Indicated, Plume Not Dimishing or Expanding (Plume is Stable if CV<1)
	Trend Is Present (≥90% Confidence)
	S < 0 Diminishing Plume
	S > 0 Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

HARBOURSIDE COMMERCIAL PARK (HCP)
LTMM GROUNDWATER MONITORING EVENT
NOVEMBER and DECEMBER 2020

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO:	SCU10-004-MW									
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Modified TPH	63	17	5.4	1.9	2.1	5.2					
	11-Dec-15	18-Nov-16	4-Dec-17	27-Nov-18	6-Dec-19	2-Dec-20					
Row 1: Compare to Event 1:		-1	-1	-1	-1	-1	0	0	0	0	-5
Row 2: Compare to Event 2:			-1	-1	-1	-1	0	0	0	0	-4
Row 3: Compare to Event 3:				-1	-1	-1	0	0	0	0	-3
Row 4: Compare to Event 4:					1	1	0	0	0	0	2
Row 5: Compare to Event 5:						1	0	0	0	0	1
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.25 mg/L

Mann-Kendall (S) Statistic = **-9**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9			X				
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

Unshaded area indicates generally stable trend (if CV<1)

Shaded area indicates
Expanding trend if S>0
Declining trend if S<0

Stability Evaulation Results

	No Trend Indicated, Plume Not Dimishing or Expanding (Plume is Stable if CV<1)
X	Trend Is Present (≥90% Confidence)
X	S < 0 Diminishing Plume
	S > 0 Expanding Plume

Appendix D

QC Tables

TABLE D-1
HARBOURSIDE COMMERCIAL PARK
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
SUMMARY OF FIELD DUPLICATES AND TRIP BLANKS

Field Duplicate Sample - Laboratory Certificate Number	Date Sampled	Trip Blank Sample - Laboratory Certificate Number	Date Sampled	Equipment Blank Sample - Laboratory Certificate Number	Date Sampled
FD-07 - C0W1246	2020-12-02	TB-01 - C0W2746 TB-02 - C0W2746	12/02/20 12/03/20	EB-01 - COV3679	2020-11-25

Notes:
1. During the annual LTMM groundwater monitoring events for OHP, HE and HCP, one equipment blank was collected following the decontamination of communal monitoring equipment.
2. FD - Field Duplicate
3. TB - Trip Blank
4. EB - Equipment Blank

TABLE D-2
HARBOURSIDE COMMERCIAL PARK
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
RPD FOR FIELD DUPLICATES (GROUNDWATER) - BTEX/TPH

Sample Location	Sample ID	Type	Sample Date	Benzene	Toluene	E. Benzene	Xylenes	C6-C10	C10-C16	C16-C21	C21-C32	Modified TPH
				mg/L								
SCU31-002-MWB	FD-07	Field Duplicate	2020-12-02	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090
	SCU31-002-MWB	Regular	2020-12-02	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090
	--	RPD (%)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
NA - Not applicable (Either 1) Parameter not analyzed or 2) One or both sample results exhibit concentrations less than 5 times the RDL)
Bold - Calculation is outside of the acceptable RPD range.
FD - Field Duplicate
RPD - Relative Percent Difference

TABLE D-3
HARBOURSIDE COMMERCIAL PARK
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2020
RPD FOR FIELD DUPLICATES (GROUNDWATER) - PAHs

Sample Location	Sample ID	Type	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Perylene	Phenanthrene	Pyrene
				µg/L																			
SCU31-002-MWB	FD-07	Field Duplicate	2020-12-02	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	0.015	<0.010	<0.050	<0.050	<0.20	<0.010	0.013	0.015
	SCU31-002-MWB	Regular	2020-12-02	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	0.015	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	0.014
	--	RPD (%)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
NA - Not applicable (Either 1) Parameter not analyzed or 2) One or both sample results exhibit concentrations less than 5 times the RDL)
Bold - Calculation is outside of the acceptable RPD range.
FD - Field Duplicate
RPD - Relative Percent Difference

TABLE D-4
HARBOURSIDE COMMERICAL PARK
LTMM GROUNDW ATER MONITORING EVENT DECEMBER 2020
RPD FOR FIELD DUPLICATES (GROUNDW ATER) - INORGANIC CHEMISTRY

Sample Location	Sample ID	Type	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn
				ug/L															
SCU31-002-MWB	FD-07	Field Duplicate	2020-12-02	18	<1	1.5	26	<1	<2	560	<0.01	450000	<1	<0.4	<0.5	160	<0.5	100000	540
	SCU31-002-MWB	Regular	2020-12-02	48	<1	1.5	25	<1	<2	550	<0.01	450000	<1	<0.4	<0.5	160	<0.5	100000	540
	--	RPD (%)	--	91%	NA	0%	4%	NA	NA	2%	NA	0%	NA	NA	NA	0%	NA	0%	0%

Sample Location	Sample ID	Type	Sample Date	Hg	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
				ug/L														
SCU31-002-MWB	FD-07	Field Duplicate	2020-12-02	<0.013	3.1	<2	<100	19000	<0.5	<0.1	1400000	17000	<0.1	<2	<2	6.4	<2	<5
	SCU31-002-MWB	Regular	2020-12-02	<0.013	3	<2	<100	19000	<0.5	<0.1	1400000	17000	<0.1	<2	<2	6.4	<2	<5
	--	RPD (%)	--	NA	3%	NA	NA	0%	NA	NA	0%	0%	NA	NA	NA	0%	NA	NA

Notes:
NA - Not applicable (Either 1) Parameter not analyzed or 2) One or both sample results exhibit concentrations less than 5 times the RDL)
Bold - Calculation is outside of the acceptable RPD range.
FD - Field Duplicate
RPD - Relative Percent Difference

Appendix E

Laboratory Certificates

Your Project #: 202862
Your C.O.C. #: 49465

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/11/24
Report #: R6423009
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0U1291
Received: 2020/11/13, 09:30

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2020/11/19	N/A	SM 23 4500-CO2 D
Alkalinity (1)	1	N/A	2020/11/23	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	1	N/A	2020/11/19	N/A	Auto Calc.
Chloride (1)	1	N/A	2020/11/23	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	1	N/A	2020/11/23	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	1	N/A	2020/11/19	ATL SOP 00004	SM 23 2510B m
TEH in Water (PIRI) (1)	1	2020/11/18	2020/11/18	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO3) (1)	1	N/A	2020/11/20	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	1	2020/11/18	2020/11/19	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2020/11/19	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	1	N/A	2020/11/24	N/A	Auto Calc.
Anion and Cation Sum (1)	1	N/A	2020/11/20	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	1	N/A	2020/11/20	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	1	N/A	2020/11/23	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	1	N/A	2020/11/23	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	1	N/A	2020/11/24	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	1	2020/11/18	2020/11/18	ATL SOP 00103	EPA 8270E R6 m
pH (1, 2)	1	N/A	2020/11/19	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	1	N/A	2020/11/23	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	1	N/A	2020/11/24	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	1	N/A	2020/11/24	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	1	N/A	2020/11/23	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	1	N/A	2020/11/23	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	1	N/A	2020/11/24	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	1	N/A	2020/11/19	ATL SOP 00203	SM 23 5310B m
ModTPH (T1) Calc. for Water (1)	1	N/A	2020/11/19	N/A	Atl. RBCA v3 m
Turbidity (1)	1	N/A	2020/11/19	ATL SOP 00011	EPA 180.1 R2 m
VPH in Water (PIRI) (1)	1	N/A	2020/11/18	ATL SOP 00130	Atl. RBCA v3.1 m

Remarks:

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

Your Project #: 202862
Your C.O.C. #: 49465

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/11/24
Report #: R6423009
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0U1291
Received: 2020/11/13, 09:30

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

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

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

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by BV Labs Bedford
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Key Account Specialist
Email: Natalie.MacAskill@bvlabs.com
Phone# (902)567-1255 Ext:17
==========
This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

BV Labs ID		ODP273		
Sampling Date		2020/11/12 15:00		
COC Number		49465		
	UNITS	DRILL WATER	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	3.15	N/A	7055200
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	88	1.0	7055195
Calculated TDS	mg/L	180	1.0	7055207
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	7055195
Cation Sum	me/L	3.07	N/A	7055200
Hardness (CaCO3)	mg/L	83	1.0	7055197
Ion Balance (% Difference)	%	1.29	N/A	7055199
Langelier Index (@ 20C)	N/A	-0.416		7055205
Langelier Index (@ 4C)	N/A	-0.667		7055206
Nitrate (N)	mg/L	0.056	0.050	7055201
Saturation pH (@ 20C)	N/A	8.02		7055205
Saturation pH (@ 4C)	N/A	8.27		7055206
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	88	5.0	7067656
Dissolved Chloride (Cl-)	mg/L	40	1.0	7067665
Colour	TCU	<5.0	5.0	7067669
Nitrate + Nitrite (N)	mg/L	0.056	0.050	7067671
Nitrite (N)	mg/L	<0.010	0.010	7067672
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	7065094
Total Organic Carbon (C)	mg/L	1.6	0.50	7064950
Orthophosphate (P)	mg/L	0.057	0.010	7067670
pH	pH	7.60		7064470
Reactive Silica (SiO2)	mg/L	8.8	0.50	7067668
Dissolved Sulphate (SO4)	mg/L	12	2.0	7067667
Turbidity	NTU	10	0.10	7064633
Conductivity	uS/cm	320	1.0	7064469

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		ODP273		
Sampling Date				
COC Number		49465		
	UNITS	DRILL WATER	RDL	QC Batch
Metals				
Total Mercury (Hg)	ug/L	<0.013	0.013	7062483

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		ODP273		
Sampling Date		2020/11/12 15:00		
COC Number		49465		
	UNITS	DRILL WATER	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	<5.0	5.0	7064624
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	7064624
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7064624
Dissolved Barium (Ba)	ug/L	110	1.0	7064624
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	7064624
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	7064624
Dissolved Boron (B)	ug/L	<50	50	7064624
Dissolved Cadmium (Cd)	ug/L	0.013	0.010	7064624
Dissolved Calcium (Ca)	ug/L	26000	100	7064624
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	7064624
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	7064624
Dissolved Copper (Cu)	ug/L	4.2	0.50	7064624
Dissolved Iron (Fe)	ug/L	230	50	7064624
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7064624
Dissolved Magnesium (Mg)	ug/L	4400	100	7064624
Dissolved Manganese (Mn)	ug/L	90	2.0	7064624
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	7064624
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	7064624
Dissolved Phosphorus (P)	ug/L	120	100	7064624
Dissolved Potassium (K)	ug/L	2100	100	7064624
Dissolved Selenium (Se)	ug/L	<0.50	0.50	7064624
Dissolved Silver (Ag)	ug/L	<0.10	0.10	7064624
Dissolved Sodium (Na)	ug/L	31000	100	7064624
Dissolved Strontium (Sr)	ug/L	400	2.0	7064624
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	7064624
Dissolved Tin (Sn)	ug/L	<2.0	2.0	7064624
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	7064624
Dissolved Uranium (U)	ug/L	<0.10	0.10	7064624
Dissolved Vanadium (V)	ug/L	<2.0	2.0	7064624
Dissolved Zinc (Zn)	ug/L	72	5.0	7064624

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		ODP273		
Sampling Date		2020/11/12 15:00		
COC Number		49465		
	UNITS	DRILL WATER	RDL	QC Batch
Polyaromatic Hydrocarbons				
1-Methylnaphthalene	ug/L	<0.050	0.050	7062238
2-Methylnaphthalene	ug/L	<0.050	0.050	7062238
Acenaphthene	ug/L	<0.010	0.010	7062238
Acenaphthylene	ug/L	<0.010	0.010	7062238
Anthracene	ug/L	<0.010	0.010	7062238
Benzo(a)anthracene	ug/L	<0.010	0.010	7062238
Benzo(a)pyrene	ug/L	<0.010	0.010	7062238
Benzo(b)fluoranthene	ug/L	<0.010	0.010	7062238
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	7055196
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	7062238
Benzo(j)fluoranthene	ug/L	<0.010	0.010	7062238
Benzo(k)fluoranthene	ug/L	<0.010	0.010	7062238
Chrysene	ug/L	<0.010	0.010	7062238
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	7062238
Fluoranthene	ug/L	<0.010	0.010	7062238
Fluorene	ug/L	<0.010	0.010	7062238
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	7062238
Naphthalene	ug/L	<0.20	0.20	7062238
Perylene	ug/L	<0.010	0.010	7062238
Phenanthrene	ug/L	<0.010	0.010	7062238
Pyrene	ug/L	<0.010	0.010	7062238
Surrogate Recovery (%)				
D10-Anthracene	%	96		7062238
D14-Terphenyl	%	113		7062238
D8-Acenaphthylene	%	70		7062238

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		ODP273		
Sampling Date		2020/11/12 15:00		
COC Number		49465		
	UNITS	DRILL WATER	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/L	<0.0010	0.0010	7062022
Toluene	mg/L	<0.0010	0.0010	7062022
Ethylbenzene	mg/L	<0.0010	0.0010	7062022
Total Xylenes	mg/L	<0.0020	0.0020	7062022
C6 - C10 (less BTEX)	mg/L	<0.090	0.090	7062022
>C10-C16 Hydrocarbons	mg/L	<0.050	0.050	7062290
>C16-C21 Hydrocarbons	mg/L	<0.050	0.050	7062290
>C21-<C32 Hydrocarbons	mg/L	<0.090	0.090	7062290
Modified TPH (Tier1)	mg/L	<0.090	0.090	7054640
Reached Baseline at C32	mg/L	NA	N/A	7062290
Hydrocarbon Resemblance	mg/L	NA	N/A	7062290
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	97		7062290
n-Dotriacontane - Extractable	%	99		7062290
Isobutylbenzene - Volatile	%	102		7062022

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7062022	THL	Matrix Spike	Isobutylbenzene - Volatile	2020/11/18		101	%	70 - 130
			Benzene	2020/11/18		98	%	70 - 130
			Toluene	2020/11/18		99	%	70 - 130
			Ethylbenzene	2020/11/18		97	%	70 - 130
			Total Xylenes	2020/11/18		100	%	70 - 130
7062022	THL	Spiked Blank	Isobutylbenzene - Volatile	2020/11/18		103	%	70 - 130
			Benzene	2020/11/18		91	%	70 - 130
			Toluene	2020/11/18		96	%	70 - 130
			Ethylbenzene	2020/11/18		97	%	70 - 130
			Total Xylenes	2020/11/18		99	%	70 - 130
7062022	THL	Method Blank	Isobutylbenzene - Volatile	2020/11/18		103	%	70 - 130
			Benzene	2020/11/18	<0.0010		mg/L	
			Toluene	2020/11/18	<0.0010		mg/L	
			Ethylbenzene	2020/11/18	<0.0010		mg/L	
			Total Xylenes	2020/11/18	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2020/11/18	<0.090		mg/L	
7062022	THL	RPD [ODP273-06]	Benzene	2020/11/18	NC		%	40
			Toluene	2020/11/18	NC		%	40
			Ethylbenzene	2020/11/18	NC		%	40
			Total Xylenes	2020/11/18	NC		%	40
			C6 - C10 (less BTEX)	2020/11/18	NC		%	40
7062238	LGE	Matrix Spike	D10-Anthracene	2020/11/18		108	%	50 - 130
			D14-Terphenyl	2020/11/18		111	%	50 - 130
			D8-Acenaphthylene	2020/11/18		107	%	50 - 130
			1-Methylnaphthalene	2020/11/18		93	%	50 - 130
			2-Methylnaphthalene	2020/11/18		93	%	50 - 130
			Acenaphthene	2020/11/18		106	%	50 - 130
			Acenaphthylene	2020/11/18		102	%	50 - 130
			Anthracene	2020/11/18		103	%	50 - 130
			Benzo(a)anthracene	2020/11/18		108	%	50 - 130
			Benzo(a)pyrene	2020/11/18		97	%	50 - 130
			Benzo(b)fluoranthene	2020/11/18		102	%	50 - 130
			Benzo(g,h,i)perylene	2020/11/18		100	%	50 - 130
			Benzo(j)fluoranthene	2020/11/18		100	%	50 - 130
			Benzo(k)fluoranthene	2020/11/18		102	%	50 - 130
			Chrysene	2020/11/18		111	%	50 - 130
			Dibenzo(a,h)anthracene	2020/11/18		90	%	50 - 130
			Fluoranthene	2020/11/18		106	%	50 - 130
			Fluorene	2020/11/18		103	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/11/18		94	%	50 - 130
			Naphthalene	2020/11/18		105	%	50 - 130
			Perylene	2020/11/18		93	%	50 - 130
			Phenanthrene	2020/11/18		108	%	50 - 130
			Pyrene	2020/11/18		107	%	50 - 130
7062238	LGE	Spiked Blank	D10-Anthracene	2020/11/18		104	%	50 - 130
			D14-Terphenyl	2020/11/18		112	%	50 - 130
			D8-Acenaphthylene	2020/11/18		104	%	50 - 130
			1-Methylnaphthalene	2020/11/18		89	%	50 - 130
			2-Methylnaphthalene	2020/11/18		88	%	50 - 130
			Acenaphthene	2020/11/18		103	%	50 - 130
			Acenaphthylene	2020/11/18		98	%	50 - 130
			Anthracene	2020/11/18		100	%	50 - 130
			Benzo(a)anthracene	2020/11/18		103	%	50 - 130
			Benzo(a)pyrene	2020/11/18		96	%	50 - 130
			Benzo(b)fluoranthene	2020/11/18		101	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(g,h,i)perylene	2020/11/18		97	%	50 - 130
			Benzo(j)fluoranthene	2020/11/18		100	%	50 - 130
			Benzo(k)fluoranthene	2020/11/18		99	%	50 - 130
			Chrysene	2020/11/18		107	%	50 - 130
			Dibenzo(a,h)anthracene	2020/11/18		86	%	50 - 130
			Fluoranthene	2020/11/18		103	%	50 - 130
			Fluorene	2020/11/18		100	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/11/18		95	%	50 - 130
			Naphthalene	2020/11/18		99	%	50 - 130
			Perylene	2020/11/18		96	%	50 - 130
			Phenanthrene	2020/11/18		104	%	50 - 130
			Pyrene	2020/11/18		104	%	50 - 130
7062238	LGE	Method Blank	D10-Anthracene	2020/11/18		101	%	50 - 130
			D14-Terphenyl	2020/11/18		103	%	50 - 130
			D8-Acenaphthylene	2020/11/18		99	%	50 - 130
			1-Methylnaphthalene	2020/11/18	<0.050		ug/L	
			2-Methylnaphthalene	2020/11/18	<0.050		ug/L	
			Acenaphthene	2020/11/18	<0.010		ug/L	
			Acenaphthylene	2020/11/18	<0.010		ug/L	
			Anthracene	2020/11/18	<0.010		ug/L	
			Benzo(a)anthracene	2020/11/18	<0.010		ug/L	
			Benzo(a)pyrene	2020/11/18	<0.010		ug/L	
			Benzo(b)fluoranthene	2020/11/18	<0.010		ug/L	
			Benzo(g,h,i)perylene	2020/11/18	<0.010		ug/L	
			Benzo(j)fluoranthene	2020/11/18	<0.010		ug/L	
			Benzo(k)fluoranthene	2020/11/18	<0.010		ug/L	
			Chrysene	2020/11/18	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2020/11/18	<0.010		ug/L	
			Fluoranthene	2020/11/18	<0.010		ug/L	
			Fluorene	2020/11/18	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2020/11/18	<0.010		ug/L	
			Naphthalene	2020/11/18	<0.20		ug/L	
			Perylene	2020/11/18	<0.010		ug/L	
			Phenanthrene	2020/11/18	<0.010		ug/L	
			Pyrene	2020/11/18	<0.010		ug/L	
7062238	LGE	RPD [ODP273-07]	1-Methylnaphthalene	2020/11/18	NC		%	40
			2-Methylnaphthalene	2020/11/18	NC		%	40
			Acenaphthene	2020/11/18	NC		%	40
			Acenaphthylene	2020/11/18	NC		%	40
			Anthracene	2020/11/18	NC		%	40
			Benzo(a)anthracene	2020/11/18	NC		%	40
			Benzo(a)pyrene	2020/11/18	NC		%	40
			Benzo(b)fluoranthene	2020/11/18	NC		%	40
			Benzo(g,h,i)perylene	2020/11/18	NC		%	40
			Benzo(j)fluoranthene	2020/11/18	NC		%	40
			Benzo(k)fluoranthene	2020/11/18	NC		%	40
			Chrysene	2020/11/18	NC		%	40
			Dibenzo(a,h)anthracene	2020/11/18	NC		%	40
			Fluoranthene	2020/11/18	NC		%	40
			Fluorene	2020/11/18	NC		%	40
			Indeno(1,2,3-cd)pyrene	2020/11/18	NC		%	40
			Naphthalene	2020/11/18	NC		%	40
			Perylene	2020/11/18	NC		%	40
			Phenanthrene	2020/11/18	NC		%	40
			Pyrene	2020/11/18	NC		%	40

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7062290	CMI	Matrix Spike	Isobutylbenzene - Extractable	2020/11/18		98	%	70 - 130
			n-Dotriacontane - Extractable	2020/11/18		102	%	70 - 130
			>C10-C16 Hydrocarbons	2020/11/18		88	%	70 - 130
			>C16-C21 Hydrocarbons	2020/11/18		91	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/11/18		85	%	70 - 130
7062290	CMI	Spiked Blank	Isobutylbenzene - Extractable	2020/11/18		93	%	70 - 130
			n-Dotriacontane - Extractable	2020/11/18		102	%	70 - 130
			>C10-C16 Hydrocarbons	2020/11/18		88	%	70 - 130
			>C16-C21 Hydrocarbons	2020/11/18		92	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/11/18		86	%	70 - 130
7062290	CMI	Method Blank	Isobutylbenzene - Extractable	2020/11/18		84	%	70 - 130
			n-Dotriacontane - Extractable	2020/11/18		99	%	70 - 130
			>C10-C16 Hydrocarbons	2020/11/18	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2020/11/18	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2020/11/18	<0.090		mg/L	
7062290	CMI	RPD [ODP273-05]	>C10-C16 Hydrocarbons	2020/11/18	NC		%	40
			>C16-C21 Hydrocarbons	2020/11/18	NC		%	40
			>C21-<C32 Hydrocarbons	2020/11/18	NC		%	40
7062483	NHU	Matrix Spike	Total Mercury (Hg)	2020/11/19		101	%	80 - 120
7062483	NHU	Spiked Blank	Total Mercury (Hg)	2020/11/19		103	%	80 - 120
7062483	NHU	Method Blank	Total Mercury (Hg)	2020/11/19	<0.013		ug/L	
7062483	NHU	RPD [ODP273-08]	Total Mercury (Hg)	2020/11/19	NC		%	20
7064469	SHW	Spiked Blank	Conductivity	2020/11/19		99	%	80 - 120
7064469	SHW	Method Blank	Conductivity	2020/11/19	1.2, RDL=1.0		uS/cm	
7064469	SHW	RPD	Conductivity	2020/11/19	0.40		%	10
7064470	SHW	Spiked Blank	pH	2020/11/19		101	%	97 - 103
7064470	SHW	RPD	pH	2020/11/19	0.92		%	N/A
7064624	MLB	Matrix Spike	Dissolved Aluminum (Al)	2020/11/19		104	%	80 - 120
			Dissolved Antimony (Sb)	2020/11/19		98	%	80 - 120
			Dissolved Arsenic (As)	2020/11/19		98	%	80 - 120
			Dissolved Barium (Ba)	2020/11/19		NC	%	80 - 120
			Dissolved Beryllium (Be)	2020/11/19		100	%	80 - 120
			Dissolved Bismuth (Bi)	2020/11/19		98	%	80 - 120
			Dissolved Boron (B)	2020/11/19		99	%	80 - 120
			Dissolved Cadmium (Cd)	2020/11/19		102	%	80 - 120
			Dissolved Calcium (Ca)	2020/11/19		NC	%	80 - 120
			Dissolved Chromium (Cr)	2020/11/19		97	%	80 - 120
			Dissolved Cobalt (Co)	2020/11/19		100	%	80 - 120
			Dissolved Copper (Cu)	2020/11/19		97	%	80 - 120
			Dissolved Iron (Fe)	2020/11/19		105	%	80 - 120
			Dissolved Lead (Pb)	2020/11/19		101	%	80 - 120
			Dissolved Magnesium (Mg)	2020/11/19		106	%	80 - 120
			Dissolved Manganese (Mn)	2020/11/19		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/11/19		105	%	80 - 120
			Dissolved Nickel (Ni)	2020/11/19		100	%	80 - 120
			Dissolved Phosphorus (P)	2020/11/19		103	%	80 - 120
			Dissolved Potassium (K)	2020/11/19		100	%	80 - 120
			Dissolved Selenium (Se)	2020/11/19		100	%	80 - 120
			Dissolved Silver (Ag)	2020/11/19		98	%	80 - 120
			Dissolved Sodium (Na)	2020/11/19		93	%	80 - 120
			Dissolved Strontium (Sr)	2020/11/19		NC	%	80 - 120
			Dissolved Thallium (Tl)	2020/11/19		100	%	80 - 120
			Dissolved Tin (Sn)	2020/11/19		103	%	80 - 120
			Dissolved Titanium (Ti)	2020/11/19		101	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Uranium (U)	2020/11/19		107	%	80 - 120
			Dissolved Vanadium (V)	2020/11/19		102	%	80 - 120
			Dissolved Zinc (Zn)	2020/11/19		97	%	80 - 120
7064624	MLB	Spiked Blank	Dissolved Aluminum (Al)	2020/11/19		104	%	80 - 120
			Dissolved Antimony (Sb)	2020/11/19		97	%	80 - 120
			Dissolved Arsenic (As)	2020/11/19		95	%	80 - 120
			Dissolved Barium (Ba)	2020/11/19		94	%	80 - 120
			Dissolved Beryllium (Be)	2020/11/19		96	%	80 - 120
			Dissolved Bismuth (Bi)	2020/11/19		100	%	80 - 120
			Dissolved Boron (B)	2020/11/19		98	%	80 - 120
			Dissolved Cadmium (Cd)	2020/11/19		98	%	80 - 120
			Dissolved Calcium (Ca)	2020/11/19		92	%	80 - 120
			Dissolved Chromium (Cr)	2020/11/19		95	%	80 - 120
			Dissolved Cobalt (Co)	2020/11/19		98	%	80 - 120
			Dissolved Copper (Cu)	2020/11/19		96	%	80 - 120
			Dissolved Iron (Fe)	2020/11/19		102	%	80 - 120
			Dissolved Lead (Pb)	2020/11/19		100	%	80 - 120
			Dissolved Magnesium (Mg)	2020/11/19		107	%	80 - 120
			Dissolved Manganese (Mn)	2020/11/19		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/11/19		104	%	80 - 120
			Dissolved Nickel (Ni)	2020/11/19		98	%	80 - 120
			Dissolved Phosphorus (P)	2020/11/19		102	%	80 - 120
			Dissolved Potassium (K)	2020/11/19		101	%	80 - 120
			Dissolved Selenium (Se)	2020/11/19		99	%	80 - 120
			Dissolved Silver (Ag)	2020/11/19		98	%	80 - 120
			Dissolved Sodium (Na)	2020/11/19		95	%	80 - 120
			Dissolved Strontium (Sr)	2020/11/19		101	%	80 - 120
			Dissolved Thallium (Tl)	2020/11/19		101	%	80 - 120
			Dissolved Tin (Sn)	2020/11/19		102	%	80 - 120
			Dissolved Titanium (Ti)	2020/11/19		100	%	80 - 120
			Dissolved Uranium (U)	2020/11/19		105	%	80 - 120
			Dissolved Vanadium (V)	2020/11/19		99	%	80 - 120
			Dissolved Zinc (Zn)	2020/11/19		98	%	80 - 120
7064624	MLB	Method Blank	Dissolved Aluminum (Al)	2020/11/19	<5.0		ug/L	
			Dissolved Antimony (Sb)	2020/11/19	<1.0		ug/L	
			Dissolved Arsenic (As)	2020/11/19	<1.0		ug/L	
			Dissolved Barium (Ba)	2020/11/19	<1.0		ug/L	
			Dissolved Beryllium (Be)	2020/11/19	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2020/11/19	<2.0		ug/L	
			Dissolved Boron (B)	2020/11/19	<50		ug/L	
			Dissolved Cadmium (Cd)	2020/11/19	<0.010		ug/L	
			Dissolved Calcium (Ca)	2020/11/19	<100		ug/L	
			Dissolved Chromium (Cr)	2020/11/19	<1.0		ug/L	
			Dissolved Cobalt (Co)	2020/11/19	<0.40		ug/L	
			Dissolved Copper (Cu)	2020/11/19	<0.50		ug/L	
			Dissolved Iron (Fe)	2020/11/19	<50		ug/L	
			Dissolved Lead (Pb)	2020/11/19	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2020/11/19	<100		ug/L	
			Dissolved Manganese (Mn)	2020/11/19	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2020/11/19	<2.0		ug/L	
			Dissolved Nickel (Ni)	2020/11/19	<2.0		ug/L	
			Dissolved Phosphorus (P)	2020/11/19	<100		ug/L	
			Dissolved Potassium (K)	2020/11/19	<100		ug/L	
			Dissolved Selenium (Se)	2020/11/19	<0.50		ug/L	
			Dissolved Silver (Ag)	2020/11/19	<0.10		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Sodium (Na)	2020/11/19	<100		ug/L	
			Dissolved Strontium (Sr)	2020/11/19	<2.0		ug/L	
			Dissolved Thallium (Tl)	2020/11/19	<0.10		ug/L	
			Dissolved Tin (Sn)	2020/11/19	<2.0		ug/L	
			Dissolved Titanium (Ti)	2020/11/19	<2.0		ug/L	
			Dissolved Uranium (U)	2020/11/19	<0.10		ug/L	
			Dissolved Vanadium (V)	2020/11/19	<2.0		ug/L	
			Dissolved Zinc (Zn)	2020/11/19	<5.0		ug/L	
7064624	MLB	RPD	Dissolved Aluminum (Al)	2020/11/19	NC		%	20
			Dissolved Antimony (Sb)	2020/11/19	NC		%	20
			Dissolved Arsenic (As)	2020/11/19	3.0		%	20
			Dissolved Barium (Ba)	2020/11/19	0.80		%	20
			Dissolved Beryllium (Be)	2020/11/19	NC		%	20
			Dissolved Bismuth (Bi)	2020/11/19	NC		%	20
			Dissolved Boron (B)	2020/11/19	3.5		%	20
			Dissolved Cadmium (Cd)	2020/11/19	NC		%	20
			Dissolved Calcium (Ca)	2020/11/19	3.0		%	20
			Dissolved Chromium (Cr)	2020/11/19	NC		%	20
			Dissolved Cobalt (Co)	2020/11/19	NC		%	20
			Dissolved Copper (Cu)	2020/11/19	NC		%	20
			Dissolved Iron (Fe)	2020/11/19	NC		%	20
			Dissolved Lead (Pb)	2020/11/19	NC		%	20
			Dissolved Magnesium (Mg)	2020/11/19	0.73		%	20
			Dissolved Manganese (Mn)	2020/11/19	0.99		%	20
			Dissolved Molybdenum (Mo)	2020/11/19	NC		%	20
			Dissolved Nickel (Ni)	2020/11/19	NC		%	20
			Dissolved Phosphorus (P)	2020/11/19	NC		%	20
			Dissolved Potassium (K)	2020/11/19	1.7		%	20
			Dissolved Selenium (Se)	2020/11/19	NC		%	20
			Dissolved Silver (Ag)	2020/11/19	NC		%	20
			Dissolved Sodium (Na)	2020/11/19	0.59		%	20
			Dissolved Strontium (Sr)	2020/11/19	0.44		%	20
			Dissolved Thallium (Tl)	2020/11/19	NC		%	20
			Dissolved Tin (Sn)	2020/11/19	NC		%	20
			Dissolved Titanium (Ti)	2020/11/19	NC		%	20
			Dissolved Uranium (U)	2020/11/19	4.2		%	20
			Dissolved Vanadium (V)	2020/11/19	NC		%	20
			Dissolved Zinc (Zn)	2020/11/19	NC		%	20
7064633	SHW	QC Standard	Turbidity	2020/11/19		100	%	80 - 120
7064633	SHW	Spiked Blank	Turbidity	2020/11/19		94	%	80 - 120
7064633	SHW	Method Blank	Turbidity	2020/11/19	<0.10		NTU	
7064633	SHW	RPD	Turbidity	2020/11/19	1.9		%	20
7064950	YLG	Matrix Spike	Total Organic Carbon (C)	2020/11/19		97	%	85 - 115
7064950	YLG	Spiked Blank	Total Organic Carbon (C)	2020/11/19		100	%	80 - 120
7064950	YLG	Method Blank	Total Organic Carbon (C)	2020/11/19	<0.50		mg/L	
7064950	YLG	RPD	Total Organic Carbon (C)	2020/11/19	4.6		%	15
7065094	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2020/11/20		100	%	80 - 120
7065094	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2020/11/20		105	%	80 - 120
7065094	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2020/11/20	<0.050		mg/L	
7065094	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2020/11/20	NC		%	20
7067656	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2020/11/23		NC	%	80 - 120
7067656	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2020/11/23		102	%	80 - 120
7067656	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2020/11/23	<5.0		mg/L	
7067656	EMT	RPD	Total Alkalinity (Total as CaCO3)	2020/11/23	7.9		%	20
7067665	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2020/11/23		91	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7067665	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2020/11/24		96	%	80 - 120
7067665	EMT	Method Blank	Dissolved Chloride (Cl-)	2020/11/24	<1.0		mg/L	
7067665	EMT	RPD	Dissolved Chloride (Cl-)	2020/11/23	1.2		%	20
7067667	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2020/11/23		98	%	80 - 120
7067667	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2020/11/23		99	%	80 - 120
7067667	EMT	Method Blank	Dissolved Sulphate (SO4)	2020/11/23	<2.0		mg/L	
7067667	EMT	RPD	Dissolved Sulphate (SO4)	2020/11/23	9.9		%	20
7067668	EMT	Matrix Spike	Reactive Silica (SiO2)	2020/11/23		NC	%	80 - 120
7067668	EMT	Spiked Blank	Reactive Silica (SiO2)	2020/11/23		93	%	80 - 120
7067668	EMT	Method Blank	Reactive Silica (SiO2)	2020/11/23	<0.50		mg/L	
7067668	EMT	RPD	Reactive Silica (SiO2)	2020/11/23	0.11		%	20
7067669	EMT	Spiked Blank	Colour	2020/11/23		103	%	80 - 120
7067669	EMT	Method Blank	Colour	2020/11/23	<5.0		TCU	
7067669	EMT	RPD	Colour	2020/11/23	NC		%	20
7067670	EMT	Matrix Spike	Orthophosphate (P)	2020/11/23		93	%	80 - 120
7067670	EMT	Spiked Blank	Orthophosphate (P)	2020/11/23		96	%	80 - 120
7067670	EMT	Method Blank	Orthophosphate (P)	2020/11/23	<0.010		mg/L	
7067670	EMT	RPD	Orthophosphate (P)	2020/11/23	NC		%	20
7067671	EMT	Matrix Spike	Nitrate + Nitrite (N)	2020/11/23		99	%	80 - 120
7067671	EMT	Spiked Blank	Nitrate + Nitrite (N)	2020/11/23		104	%	80 - 120
7067671	EMT	Method Blank	Nitrate + Nitrite (N)	2020/11/23	<0.050		mg/L	
7067671	EMT	RPD	Nitrate + Nitrite (N)	2020/11/23	NC		%	20
7067672	EMT	Matrix Spike	Nitrite (N)	2020/11/23		98	%	80 - 120
7067672	EMT	Spiked Blank	Nitrite (N)	2020/11/23		102	%	80 - 120
7067672	EMT	Method Blank	Nitrite (N)	2020/11/23	<0.010		mg/L	
7067672	EMT	RPD	Nitrite (N)	2020/11/23	NC		%	20

N/A = Not Applicable

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

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

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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

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

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

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

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

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Alan Stewart, Organics Manager, Bedford

Eric Dearman, Scientific Specialist

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For Service Group specific validation please refer to the Validation Signature Page.

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Site#: HARBOURSIDE COMMERCIAL PARK
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/12/11
Report #: R6445756
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0W1246
Received: 2020/12/03, 16:55

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Benzo(b/j)fluoranthene Sum (water) (1)	6	N/A	2020/12/11	N/A	Auto Calc.
TEH in Water (PIRI) (1)	7	2020/12/10	2020/12/10	ATL SOP 00113	Atl. RBCA v3.1 m
Mercury - Total (CVAA,LL) (1)	6	2020/12/10	2020/12/11	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	3	N/A	2020/12/10	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd) (1)	3	N/A	2020/12/11	ATL SOP 00058	EPA 6020B R2 m
PAH in Water by GC/MS (SIM) (1)	2	2020/12/09	2020/12/10	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	4	2020/12/09	2020/12/11	ATL SOP 00103	EPA 8270E R6 m
ModTPH (T1) Calc. for Water (1)	7	N/A	2020/12/11	N/A	Atl. RBCA v3 m
VPH in Water (PIRI) (1)	7	N/A	2020/12/10	ATL SOP 00130	Atl. RBCA v3.1 m

Remarks:

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

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

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

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

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by BV Labs Bedford

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Site#: HARBOURSIDE COMMERCIAL PARK
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/12/11
Report #: R6445756
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0W1246
Received: 2020/12/03, 16:55

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Key Account Specialist
Email: Natalie.MacAskill@bvlabs.com
Phone# (902)567-1255 Ext:17
==========
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MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		OHX184	OHX188	OHX189	OHX190	OHX191		
Sampling Date		2020/12/02	2020/12/02	2020/12/02	2020/12/02	2020/12/02		
	UNITS	SCU10-001-MW	SCU10-004-MW	SCU18-007-MW	SCU31-002-MWB	SCU31-004-MW0	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	7102050

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		OHX192		
Sampling Date		2020/12/02		
	UNITS	FD-07	RDL	QC Batch
Metals				
Total Mercury (Hg)	ug/L	<0.013	0.013	7102050

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		OHX184	OHX188	OHX189		OHX190		
Sampling Date		2020/12/02	2020/12/02	2020/12/02		2020/12/02		
	UNITS	SCU10-001-MW	SCU10-004-MW	SCU18-007-MW	RDL	SCU31-002-MWB	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	<5.0	14	8.2	5.0	48	5.0	7102031
Dissolved Antimony (Sb)	ug/L	1.8	<1.0	1.0	1.0	<1.0	1.0	7102031
Dissolved Arsenic (As)	ug/L	2.1	13	1.9	1.0	1.5	1.0	7102031
Dissolved Barium (Ba)	ug/L	16	53	92	1.0	25	1.0	7102031
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	7102031
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	7102031
Dissolved Boron (B)	ug/L	100	64	160	50	550	50	7102031
Dissolved Cadmium (Cd)	ug/L	0.038	0.014	0.014	0.010	<0.010	0.010	7102031
Dissolved Calcium (Ca)	ug/L	70000	81000	75000	100	450000	100	7102031
Dissolved Chromium (Cr)	ug/L	1.0	<1.0	17	1.0	<1.0	1.0	7102031
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	0.40	<0.40	0.40	7102031
Dissolved Copper (Cu)	ug/L	0.55	<0.50	1.3	0.50	<0.50	0.50	7102031
Dissolved Iron (Fe)	ug/L	<50	100	<50	50	160	50	7102031
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	<0.50	0.50	7102031
Dissolved Magnesium (Mg)	ug/L	6600	3200	38000	100	100000	100	7102031
Dissolved Manganese (Mn)	ug/L	52	50	<2.0	2.0	540	2.0	7102031
Dissolved Molybdenum (Mo)	ug/L	2.2	5.0	<2.0	2.0	3.0	2.0	7102031
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	7102031
Dissolved Phosphorus (P)	ug/L	100	110	110	100	<100	100	7102031
Dissolved Potassium (K)	ug/L	3500	10000	3200	100	19000	100	7102031
Dissolved Selenium (Se)	ug/L	4.0	2.1	1.7	0.50	<0.50	0.50	7102031
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	0.10	<0.10	0.10	7102031
Dissolved Sodium (Na)	ug/L	43000	160000	11000	100	1400000	1000	7102031
Dissolved Strontium (Sr)	ug/L	330	620	230	2.0	17000	20	7102031
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	0.10	<0.10	0.10	7102031
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	7102031
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	7102031
Dissolved Uranium (U)	ug/L	2.0	0.50	5.1	0.10	6.4	0.10	7102031
Dissolved Vanadium (V)	ug/L	2.8	3.4	9.7	2.0	<2.0	2.0	7102031
Dissolved Zinc (Zn)	ug/L	7.9	<5.0	<5.0	5.0	<5.0	5.0	7102031

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		OHX191		OHX192		
Sampling Date		2020/12/02		2020/12/02		
	UNITS	SCU31-004-MW0	RDL	FD-07	RDL	QC Batch
Metals						
Dissolved Aluminum (Al)	ug/L	11	5.0	18	5.0	7102031
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	<1.0	1.0	7102031
Dissolved Arsenic (As)	ug/L	<1.0	1.0	1.5	1.0	7102031
Dissolved Barium (Ba)	ug/L	37	1.0	26	1.0	7102031
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<1.0	1.0	7102031
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<2.0	2.0	7102031
Dissolved Boron (B)	ug/L	92	50	560	50	7102031
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	<0.010	0.010	7102031
Dissolved Calcium (Ca)	ug/L	180000	100	450000	100	7102031
Dissolved Chromium (Cr)	ug/L	1.8	1.0	<1.0	1.0	7102031
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	<0.40	0.40	7102031
Dissolved Copper (Cu)	ug/L	<0.50	0.50	<0.50	0.50	7102031
Dissolved Iron (Fe)	ug/L	<50	50	160	50	7102031
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<0.50	0.50	7102031
Dissolved Magnesium (Mg)	ug/L	1300	100	100000	100	7102031
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	540	2.0	7102031
Dissolved Molybdenum (Mo)	ug/L	5.1	2.0	3.1	2.0	7102031
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	<2.0	2.0	7102031
Dissolved Phosphorus (P)	ug/L	<100	100	<100	100	7102031
Dissolved Potassium (K)	ug/L	9600	100	19000	100	7102031
Dissolved Selenium (Se)	ug/L	5.8	0.50	<0.50	0.50	7102031
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<0.10	0.10	7102031
Dissolved Sodium (Na)	ug/L	22000	100	1400000	1000	7102031
Dissolved Strontium (Sr)	ug/L	640	2.0	17000	20	7102031
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<0.10	0.10	7102031
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<2.0	2.0	7102031
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<2.0	2.0	7102031
Dissolved Uranium (U)	ug/L	<0.10	0.10	6.4	0.10	7102031
Dissolved Vanadium (V)	ug/L	2.5	2.0	<2.0	2.0	7102031
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	<5.0	5.0	7102031

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		OHX184		OHX188		OHX189	OHX190		
Sampling Date		2020/12/02		2020/12/02		2020/12/02	2020/12/02		
	UNITS	SCU10-001-MW	RDL	SCU10-004-MW	RDL	SCU18-007-MW	SCU31-002-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	0.050	120 (1)	2.5	<0.050	<0.050	0.050	7102188
2-Methylnaphthalene	ug/L	<0.050	0.050	140 (1)	2.5	<0.050	<0.050	0.050	7102188
Acenaphthene	ug/L	0.021	0.010	66 (1)	0.50	<0.010	0.012	0.010	7102188
Acenaphthylene	ug/L	<0.010	0.010	27	0.010	<0.010	<0.010	0.010	7102188
Anthracene	ug/L	<0.010	0.010	8.2	0.010	<0.010	<0.010	0.010	7102188
Benzo(a)anthracene	ug/L	<0.010	0.010	1.0	0.010	<0.010	<0.010	0.010	7102188
Benzo(a)pyrene	ug/L	<0.010	0.010	0.48	0.010	<0.010	<0.010	0.010	7102188
Benzo(b)fluoranthene	ug/L	<0.010	0.010	0.35	0.010	<0.010	<0.010	0.010	7102188
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	0.59	0.020	<0.020	<0.020	0.020	7089613
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	0.17	0.010	<0.010	<0.010	0.010	7102188
Benzo(j)fluoranthene	ug/L	<0.010	0.010	0.24	0.010	<0.010	<0.010	0.010	7102188
Benzo(k)fluoranthene	ug/L	<0.010	0.010	0.23	0.010	<0.010	<0.010	0.010	7102188
Chrysene	ug/L	<0.010	0.010	0.94	0.010	<0.010	<0.010	0.010	7102188
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	0.060	0.010	<0.010	<0.010	0.010	7102188
Fluoranthene	ug/L	<0.010	0.010	10	0.010	<0.010	0.017	0.010	7102188
Fluorene	ug/L	0.019	0.010	40 (1)	0.50	<0.010	0.015	0.010	7102188
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	0.16	0.010	<0.010	<0.010	0.010	7102188
Naphthalene	ug/L	<0.20	0.20	990 (1)	10	<0.20	<0.20	0.20	7102188
Perylene	ug/L	<0.010	0.010	0.097	0.010	<0.010	<0.010	0.010	7102188
Phenanthrene	ug/L	0.026	0.010	34 (1)	0.50	<0.010	0.015	0.010	7102188
Pyrene	ug/L	<0.010	0.010	6.1	0.010	<0.010	0.014	0.010	7102188
Surrogate Recovery (%)									
D10-Anthracene	%	102		104		100	103		7102188
D14-Terphenyl	%	101		101		106	108		7102188
D8-Acenaphthylene	%	103		95		101	99		7102188

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		OHX191	OHX192		
Sampling Date		2020/12/02	2020/12/02		
	UNITS	SCU31-004-MW0	FD-07	RDL	QC Batch
Polyaromatic Hydrocarbons					
1-Methylnaphthalene	ug/L	1.0	<0.050	0.050	7102188
2-Methylnaphthalene	ug/L	0.39	<0.050	0.050	7102188
Acenaphthene	ug/L	0.28	0.014	0.010	7102188
Acenaphthylene	ug/L	0.69	<0.010	0.010	7102188
Anthracene	ug/L	0.17	<0.010	0.010	7102188
Benzo(a)anthracene	ug/L	0.018	<0.010	0.010	7102188
Benzo(a)pyrene	ug/L	<0.010	<0.010	0.010	7102188
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	0.010	7102188
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	0.020	7089613
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	0.010	7102188
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	0.010	7102188
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	0.010	7102188
Chrysene	ug/L	0.025	<0.010	0.010	7102188
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	0.010	7102188
Fluoranthene	ug/L	0.29	0.018	0.010	7102188
Fluorene	ug/L	0.94	0.015	0.010	7102188
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	0.010	7102188
Naphthalene	ug/L	0.64	<0.20	0.20	7102188
Perylene	ug/L	<0.010	<0.010	0.010	7102188
Phenanthrene	ug/L	1.0	0.013	0.010	7102188
Pyrene	ug/L	0.26	0.015	0.010	7102188
Surrogate Recovery (%)					
D10-Anthracene	%	104	98		7102188
D14-Terphenyl	%	112	104		7102188
D8-Acenaphthylene	%	99	102		7102188

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		OHX184	OHX188	OHX189	OHX190	OHX191		
Sampling Date		2020/12/02	2020/12/02	2020/12/02	2020/12/02	2020/12/02		
	UNITS	SCU10-001-MW	SCU10-004-MW	SCU18-007-MW	SCU31-002-MWB	SCU31-004-MW0	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/L	<0.0010	0.23	<0.0010	<0.0010	<0.0010	0.0010	7099288
Toluene	mg/L	<0.0010	0.065	<0.0010	<0.0010	<0.0010	0.0010	7099288
Ethylbenzene	mg/L	<0.0010	0.041	<0.0010	<0.0010	<0.0010	0.0010	7099288
Total Xylenes	mg/L	<0.0020	0.18	<0.0020	<0.0020	<0.0020	0.0020	7099288
C6 - C10 (less BTEX)	mg/L	<0.090	0.23	<0.090	<0.090	<0.090	0.090	7099288
>C10-C16 Hydrocarbons	mg/L	<0.050	4.6	<0.050	<0.050	<0.050	0.050	7102154
>C16-C21 Hydrocarbons	mg/L	<0.050	0.28	<0.050	<0.050	<0.050	0.050	7102154
>C21-<C32 Hydrocarbons	mg/L	<0.090	0.099	<0.090	<0.090	<0.090	0.090	7102154
Modified TPH (Tier1)	mg/L	<0.090	5.2	<0.090	<0.090	<0.090	0.090	7089698
Reached Baseline at C32	mg/L	NA	Yes	NA	NA	NA	N/A	7102154
Hydrocarbon Resemblance	mg/L	NA	COMMENT (1)	NA	NA	NA	N/A	7102154
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	96	103	99	101	100		7102154
n-Dotriacontane - Extractable	%	91	96	93	96	94		7102154
Isobutylbenzene - Volatile	%	109	105	105	108	110		7099288

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) One product in the gas/fuel oil range.

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		OHX192	OHX193		
Sampling Date		2020/12/02	2020/12/02		
	UNITS	FD-07	TB-01	RDL	QC Batch
Petroleum Hydrocarbons					
Benzene	mg/L	<0.0010	<0.0010	0.0010	7099288
Toluene	mg/L	<0.0010	<0.0010	0.0010	7099288
Ethylbenzene	mg/L	<0.0010	<0.0010	0.0010	7099288
Total Xylenes	mg/L	<0.0020	<0.0020	0.0020	7099288
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	0.090	7099288
>C10-C16 Hydrocarbons	mg/L	<0.050	<0.050	0.050	7102154
>C16-C21 Hydrocarbons	mg/L	<0.050	<0.050	0.050	7102154
>C21-<C32 Hydrocarbons	mg/L	<0.090	<0.090	0.090	7102154
Modified TPH (Tier1)	mg/L	<0.090	<0.090	0.090	7089698
Reached Baseline at C32	mg/L	NA	NA	N/A	7102154
Hydrocarbon Resemblance	mg/L	NA	NA	N/A	7102154
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	98	101		7102154
n-Dotriacontane - Extractable	%	92	95		7102154
Isobutylbenzene - Volatile	%	107	107		7099288

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7099288	THL	Matrix Spike [OHX184-02]	Isobutylbenzene - Volatile	2020/12/10		107	%	70 - 130
			Benzene	2020/12/10		92	%	70 - 130
			Toluene	2020/12/10		94	%	70 - 130
			Ethylbenzene	2020/12/10		94	%	70 - 130
			Total Xylenes	2020/12/10		94	%	70 - 130
7099288	THL	Spiked Blank	Isobutylbenzene - Volatile	2020/12/10		109	%	70 - 130
			Benzene	2020/12/10		95	%	70 - 130
			Toluene	2020/12/10		97	%	70 - 130
			Ethylbenzene	2020/12/10		96	%	70 - 130
			Total Xylenes	2020/12/10		98	%	70 - 130
7099288	THL	Method Blank	Isobutylbenzene - Volatile	2020/12/10		109	%	70 - 130
			Benzene	2020/12/10	<0.0010		mg/L	
			Toluene	2020/12/10	<0.0010		mg/L	
			Ethylbenzene	2020/12/10	<0.0010		mg/L	
			Total Xylenes	2020/12/10	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2020/12/10	<0.090		mg/L	
7099288	THL	RPD	Benzene	2020/12/10	2.6		%	40
			Toluene	2020/12/10	1.1		%	40
			Ethylbenzene	2020/12/10	0.65		%	40
			Total Xylenes	2020/12/10	1.7		%	40
			C6 - C10 (less BTEX)	2020/12/10	0.37		%	40
7102031	BAN	Matrix Spike [OHX184-04]	Dissolved Aluminum (Al)	2020/12/10		102	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/10		98	%	80 - 120
			Dissolved Arsenic (As)	2020/12/10		97	%	80 - 120
			Dissolved Barium (Ba)	2020/12/10		97	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/10		103	%	80 - 120
			Dissolved Bismuth (Bi)	2020/12/10		96	%	80 - 120
			Dissolved Boron (B)	2020/12/10		99	%	80 - 120
			Dissolved Cadmium (Cd)	2020/12/10		100	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/10		NC	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/10		98	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/10		98	%	80 - 120
			Dissolved Copper (Cu)	2020/12/10		96	%	80 - 120
			Dissolved Iron (Fe)	2020/12/10		101	%	80 - 120
			Dissolved Lead (Pb)	2020/12/10		97	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/10		98	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/10		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/10		102	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/10		99	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/10		105	%	80 - 120
			Dissolved Potassium (K)	2020/12/10		101	%	80 - 120
			Dissolved Selenium (Se)	2020/12/10		100	%	80 - 120
			Dissolved Silver (Ag)	2020/12/10		98	%	80 - 120
			Dissolved Sodium (Na)	2020/12/10		NC	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/10		NC	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/10		99	%	80 - 120
			Dissolved Tin (Sn)	2020/12/10		100	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/10		105	%	80 - 120
			Dissolved Uranium (U)	2020/12/10		104	%	80 - 120
			Dissolved Vanadium (V)	2020/12/10		97	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/10		98	%	80 - 120
7102031	BAN	Spiked Blank	Dissolved Aluminum (Al)	2020/12/10		100	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/10		98	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Arsenic (As)	2020/12/10		97	%	80 - 120
			Dissolved Barium (Ba)	2020/12/10		98	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/10		104	%	80 - 120
			Dissolved Bismuth (Bi)	2020/12/10		99	%	80 - 120
			Dissolved Boron (B)	2020/12/10		106	%	80 - 120
			Dissolved Cadmium (Cd)	2020/12/10		98	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/10		93	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/10		98	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/10		99	%	80 - 120
			Dissolved Copper (Cu)	2020/12/10		97	%	80 - 120
			Dissolved Iron (Fe)	2020/12/10		101	%	80 - 120
			Dissolved Lead (Pb)	2020/12/10		99	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/10		104	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/10		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/10		102	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/10		101	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/10		104	%	80 - 120
			Dissolved Potassium (K)	2020/12/10		100	%	80 - 120
			Dissolved Selenium (Se)	2020/12/10		100	%	80 - 120
			Dissolved Silver (Ag)	2020/12/10		97	%	80 - 120
			Dissolved Sodium (Na)	2020/12/10		99	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/10		101	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/10		100	%	80 - 120
			Dissolved Tin (Sn)	2020/12/10		102	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/10		103	%	80 - 120
			Dissolved Uranium (U)	2020/12/10		103	%	80 - 120
			Dissolved Vanadium (V)	2020/12/10		98	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/10		100	%	80 - 120
7102031	BAN	Method Blank	Dissolved Aluminum (Al)	2020/12/10	<5.0		ug/L	
			Dissolved Antimony (Sb)	2020/12/10	<1.0		ug/L	
			Dissolved Arsenic (As)	2020/12/10	<1.0		ug/L	
			Dissolved Barium (Ba)	2020/12/10	<1.0		ug/L	
			Dissolved Beryllium (Be)	2020/12/10	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2020/12/10	<2.0		ug/L	
			Dissolved Boron (B)	2020/12/10	<50		ug/L	
			Dissolved Cadmium (Cd)	2020/12/10	<0.010		ug/L	
			Dissolved Calcium (Ca)	2020/12/10	<100		ug/L	
			Dissolved Chromium (Cr)	2020/12/10	<1.0		ug/L	
			Dissolved Cobalt (Co)	2020/12/10	<0.40		ug/L	
			Dissolved Copper (Cu)	2020/12/10	<0.50		ug/L	
			Dissolved Iron (Fe)	2020/12/10	<50		ug/L	
			Dissolved Lead (Pb)	2020/12/10	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2020/12/10	<100		ug/L	
			Dissolved Manganese (Mn)	2020/12/10	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2020/12/10	<2.0		ug/L	
			Dissolved Nickel (Ni)	2020/12/10	<2.0		ug/L	
			Dissolved Phosphorus (P)	2020/12/10	<100		ug/L	
			Dissolved Potassium (K)	2020/12/10	<100		ug/L	
			Dissolved Selenium (Se)	2020/12/10	<0.50		ug/L	
			Dissolved Silver (Ag)	2020/12/10	<0.10		ug/L	
			Dissolved Sodium (Na)	2020/12/10	<100		ug/L	
			Dissolved Strontium (Sr)	2020/12/10	<2.0		ug/L	
			Dissolved Thallium (Tl)	2020/12/10	<0.10		ug/L	
			Dissolved Tin (Sn)	2020/12/10	<2.0		ug/L	
			Dissolved Titanium (Ti)	2020/12/10	<2.0		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Uranium (U)	2020/12/10	<0.10		ug/L	
			Dissolved Vanadium (V)	2020/12/10	<2.0		ug/L	
			Dissolved Zinc (Zn)	2020/12/10	<5.0		ug/L	
7102031	BAN	RPD [OHX184-04]	Dissolved Aluminum (Al)	2020/12/10	NC		%	20
			Dissolved Antimony (Sb)	2020/12/10	4.2		%	20
			Dissolved Arsenic (As)	2020/12/10	5.6		%	20
			Dissolved Barium (Ba)	2020/12/10	0.52		%	20
			Dissolved Beryllium (Be)	2020/12/10	NC		%	20
			Dissolved Bismuth (Bi)	2020/12/10	NC		%	20
			Dissolved Boron (B)	2020/12/10	1.6		%	20
			Dissolved Cadmium (Cd)	2020/12/10	13		%	20
			Dissolved Calcium (Ca)	2020/12/10	2.3		%	20
			Dissolved Chromium (Cr)	2020/12/10	0.90		%	20
			Dissolved Cobalt (Co)	2020/12/10	NC		%	20
			Dissolved Copper (Cu)	2020/12/10	12		%	20
			Dissolved Iron (Fe)	2020/12/10	NC		%	20
			Dissolved Lead (Pb)	2020/12/10	NC		%	20
			Dissolved Magnesium (Mg)	2020/12/10	0.92		%	20
			Dissolved Manganese (Mn)	2020/12/10	2.2		%	20
			Dissolved Molybdenum (Mo)	2020/12/10	2.7		%	20
			Dissolved Nickel (Ni)	2020/12/10	NC		%	20
			Dissolved Phosphorus (P)	2020/12/10	0.84		%	20
			Dissolved Potassium (K)	2020/12/10	1.2		%	20
			Dissolved Selenium (Se)	2020/12/10	0.96		%	20
			Dissolved Silver (Ag)	2020/12/10	NC		%	20
			Dissolved Sodium (Na)	2020/12/10	0.28		%	20
			Dissolved Strontium (Sr)	2020/12/10	0.66		%	20
			Dissolved Thallium (Tl)	2020/12/10	NC		%	20
			Dissolved Tin (Sn)	2020/12/10	NC		%	20
			Dissolved Titanium (Ti)	2020/12/10	NC		%	20
			Dissolved Uranium (U)	2020/12/10	2.0		%	20
			Dissolved Vanadium (V)	2020/12/10	0.72		%	20
			Dissolved Zinc (Zn)	2020/12/10	1.1		%	20
7102050	NHU	Matrix Spike	Total Mercury (Hg)	2020/12/11		100	%	80 - 120
7102050	NHU	Spiked Blank	Total Mercury (Hg)	2020/12/11		103	%	80 - 120
7102050	NHU	Method Blank	Total Mercury (Hg)	2020/12/11	<0.013		ug/L	
7102050	NHU	RPD	Total Mercury (Hg)	2020/12/11	NC		%	20
7102154	BCD	Matrix Spike [OHX189-01]	Isobutylbenzene - Extractable	2020/12/10		98	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/10		94	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/10		93	%	70 - 130
			>C16-C21 Hydrocarbons	2020/12/10		96	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/12/10		92	%	70 - 130
7102154	BCD	Spiked Blank	Isobutylbenzene - Extractable	2020/12/10		98	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/10		95	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/10		95	%	70 - 130
			>C16-C21 Hydrocarbons	2020/12/10		98	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/12/10		96	%	70 - 130
7102154	BCD	Method Blank	Isobutylbenzene - Extractable	2020/12/10		96	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/10		94	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/10	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2020/12/10	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2020/12/10	<0.090		mg/L	
7102154	BCD	RPD [OHX184-01]	>C10-C16 Hydrocarbons	2020/12/10	NC		%	40
			>C16-C21 Hydrocarbons	2020/12/10	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			>C21-<C32 Hydrocarbons	2020/12/10	NC		%	40
7102188	LGE	Matrix Spike	D10-Anthracene	2020/12/10		99	%	50 - 130
			D14-Terphenyl	2020/12/10		103	%	50 - 130
			D8-Acenaphthylene	2020/12/10		98	%	50 - 130
			1-Methylnaphthalene	2020/12/10		80	%	50 - 130
			2-Methylnaphthalene	2020/12/10		77	%	50 - 130
			Acenaphthene	2020/12/10		88	%	50 - 130
			Acenaphthylene	2020/12/10		91	%	50 - 130
			Anthracene	2020/12/10		94	%	50 - 130
			Benzo(a)anthracene	2020/12/10		93	%	50 - 130
			Benzo(a)pyrene	2020/12/10		88	%	50 - 130
			Benzo(b)fluoranthene	2020/12/10		90	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/10		85	%	50 - 130
			Benzo(j)fluoranthene	2020/12/10		87	%	50 - 130
			Benzo(k)fluoranthene	2020/12/10		88	%	50 - 130
			Chrysene	2020/12/10		101	%	50 - 130
			Dibenzo(a,h)anthracene	2020/12/10		78	%	50 - 130
			Fluoranthene	2020/12/10		94	%	50 - 130
			Fluorene	2020/12/10		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/10		82	%	50 - 130
			Naphthalene	2020/12/10		89	%	50 - 130
			Perylene	2020/12/10		86	%	50 - 130
			Phenanthrene	2020/12/10		95	%	50 - 130
			Pyrene	2020/12/10		99	%	50 - 130
7102188	LGE	Spiked Blank	D10-Anthracene	2020/12/10		106	%	50 - 130
			D14-Terphenyl	2020/12/10		107	%	50 - 130
			D8-Acenaphthylene	2020/12/10		104	%	50 - 130
			1-Methylnaphthalene	2020/12/10		87	%	50 - 130
			2-Methylnaphthalene	2020/12/10		85	%	50 - 130
			Acenaphthene	2020/12/10		99	%	50 - 130
			Acenaphthylene	2020/12/10		92	%	50 - 130
			Anthracene	2020/12/10		101	%	50 - 130
			Benzo(a)anthracene	2020/12/10		96	%	50 - 130
			Benzo(a)pyrene	2020/12/10		91	%	50 - 130
			Benzo(b)fluoranthene	2020/12/10		96	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/10		91	%	50 - 130
			Benzo(j)fluoranthene	2020/12/10		93	%	50 - 130
			Benzo(k)fluoranthene	2020/12/10		96	%	50 - 130
			Chrysene	2020/12/10		103	%	50 - 130
			Dibenzo(a,h)anthracene	2020/12/10		82	%	50 - 130
			Fluoranthene	2020/12/10		99	%	50 - 130
			Fluorene	2020/12/10		98	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/10		88	%	50 - 130
			Naphthalene	2020/12/10		105	%	50 - 130
			Perylene	2020/12/10		92	%	50 - 130
			Phenanthrene	2020/12/10		101	%	50 - 130
			Pyrene	2020/12/10		102	%	50 - 130
7102188	LGE	Method Blank	D10-Anthracene	2020/12/10		103	%	50 - 130
			D14-Terphenyl	2020/12/10		106	%	50 - 130
			D8-Acenaphthylene	2020/12/10		101	%	50 - 130
			1-Methylnaphthalene	2020/12/10	<0.050		ug/L	
			2-Methylnaphthalene	2020/12/10	<0.050		ug/L	
			Acenaphthene	2020/12/10	<0.010		ug/L	
			Acenaphthylene	2020/12/10	<0.010		ug/L	
			Anthracene	2020/12/10	<0.010		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(a)anthracene	2020/12/10	<0.010		ug/L	
			Benzo(a)pyrene	2020/12/10	<0.010		ug/L	
			Benzo(b)fluoranthene	2020/12/10	<0.010		ug/L	
			Benzo(g,h,i)perylene	2020/12/10	<0.010		ug/L	
			Benzo(j)fluoranthene	2020/12/10	<0.010		ug/L	
			Benzo(k)fluoranthene	2020/12/10	<0.010		ug/L	
			Chrysene	2020/12/10	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2020/12/10	<0.010		ug/L	
			Fluoranthene	2020/12/10	<0.010		ug/L	
			Fluorene	2020/12/10	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2020/12/10	<0.010		ug/L	
			Naphthalene	2020/12/10	<0.20		ug/L	
			Perylene	2020/12/10	<0.010		ug/L	
			Phenanthrene	2020/12/10	<0.010		ug/L	
			Pyrene	2020/12/10	<0.010		ug/L	
7102188	LGE	RPD	1-Methylnaphthalene	2020/12/10	NC		%	40
			2-Methylnaphthalene	2020/12/10	NC		%	40
			Acenaphthene	2020/12/10	0.34		%	40
			Acenaphthylene	2020/12/10	NC		%	40
			Anthracene	2020/12/10	NC		%	40
			Benzo(a)anthracene	2020/12/10	NC		%	40
			Benzo(a)pyrene	2020/12/10	NC		%	40
			Benzo(b)fluoranthene	2020/12/10	NC		%	40
			Benzo(g,h,i)perylene	2020/12/10	NC		%	40
			Benzo(j)fluoranthene	2020/12/10	NC		%	40
			Benzo(k)fluoranthene	2020/12/10	NC		%	40
			Chrysene	2020/12/10	0.61		%	40
			Dibenzo(a,h)anthracene	2020/12/10	NC		%	40
			Fluoranthene	2020/12/10	2.7		%	40
			Fluorene	2020/12/10	4.1		%	40
			Indeno(1,2,3-cd)pyrene	2020/12/10	NC		%	40
			Naphthalene	2020/12/10	NC		%	40
			Perylene	2020/12/10	NC		%	40
			Phenanthrene	2020/12/10	3.1		%	40
			Pyrene	2020/12/10	1.5		%	40

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

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

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

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

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

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

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

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Mike MacGillivray, Scientific Specialist (Inorganics)

Phil Deveau, Scientific Specialist (Organics)

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Site#: HARBOURSIDE COMMERCIAL PARK
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/12/17
Report #: R6453317
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0W2746
Received: 2020/12/03, 16:40

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Benzo(b/j)fluoranthene Sum (water) (1)	5	N/A	2020/12/15	N/A	Auto Calc.
TEH in Water (PIRI) (1)	6	2020/12/14	2020/12/14	ATL SOP 00113	Atl. RBCA v3.1 m
Mercury - Total (CVAA,LL) (1)	5	2020/12/14	2020/12/15	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	5	N/A	2020/12/15	ATL SOP 00058	EPA 6020B R2 m
PAH in Water by GC/MS (SIM) (1)	3	2020/12/11	2020/12/14	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	2	2020/12/11	2020/12/15	ATL SOP 00103	EPA 8270E R6 m
ModTPH (T1) Calc. for Water (1)	6	N/A	2020/12/15	N/A	Atl. RBCA v3 m
VPH in Water (PIRI) (1)	6	N/A	2020/12/14	ATL SOP 00130	Atl. RBCA v3.1 m

Remarks:

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

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

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

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

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by BV Labs Bedford

Site#: HARBOURSIDE COMMERCIAL PARK
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/12/17
Report #: R6453317
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0W2746
Received: 2020/12/03, 16:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Key Account Specialist
Email: Natalie.MacAskill@bvlabs.com
Phone# (902)567-1255 Ext:17
==========
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MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		OIF088	OIF089	OIF090	OIF091	OIF092		
Sampling Date		2020/12/03	2020/12/03	2020/12/03	2020/12/03	2020/12/03		
	UNITS	SCU32-200-MW	MW20-1	MW20-2	MW20-3	MW20-4	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	0.020	<0.013	0.41	0.16	0.068	0.013	7107773

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		OIF088		OIF089		OIF090		OIF091		
Sampling Date		2020/12/03		2020/12/03		2020/12/03		2020/12/03		
	UNITS	SCU32-200-MW	RDL	MW20-1	QC Batch	MW20-2	QC Batch	MW20-3	RDL	QC Batch
Metals										
Dissolved Aluminum (Al)	ug/L	<50	50	190	7109783	750	7109783	150	5.0	7109783
Dissolved Antimony (Sb)	ug/L	<10	10	<1.0	7109783	1.4	7109783	1.1	1.0	7109783
Dissolved Arsenic (As)	ug/L	<10	10	<1.0	7109783	27	7112179	4.1	1.0	7109783
Dissolved Barium (Ba)	ug/L	160	10	570	7109783	490	7109783	35	1.0	7109783
Dissolved Beryllium (Be)	ug/L	<10	10	<1.0	7109783	<1.0	7109783	<1.0	1.0	7109783
Dissolved Bismuth (Bi)	ug/L	<20	20	<2.0	7109783	<2.0	7109783	<2.0	2.0	7109783
Dissolved Boron (B)	ug/L	<500	500	<50	7109783	62	7109783	540	50	7109783
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	<0.010	7109783	0.010	7109783	<0.010	0.010	7109783
Dissolved Calcium (Ca)	ug/L	380000	1000	400000	7109783	250000	7109783	150000	100	7109783
Dissolved Chromium (Cr)	ug/L	<10	10	<1.0	7109783	<1.0	7109783	<1.0	1.0	7109783
Dissolved Cobalt (Co)	ug/L	<4.0	4.0	<0.40	7109783	<0.40	7109783	<0.40	0.40	7109783
Dissolved Copper (Cu)	ug/L	<5.0	5.0	<0.50	7109783	<0.50	7109783	0.61	0.50	7109783
Dissolved Iron (Fe)	ug/L	<500	500	<50	7109783	1500	7109783	<50	50	7109783
Dissolved Lead (Pb)	ug/L	<5.0	5.0	<0.50	7109783	<0.50	7109783	<0.50	0.50	7109783
Dissolved Magnesium (Mg)	ug/L	5500	1000	<100	7109783	<100	7109783	720	100	7109783
Dissolved Manganese (Mn)	ug/L	<20	20	<2.0	7109783	<2.0	7109783	<2.0	2.0	7109783
Dissolved Molybdenum (Mo)	ug/L	260	20	3.9	7109783	7.3	7109783	24	2.0	7109783
Dissolved Nickel (Ni)	ug/L	<20	20	<2.0	7109783	<2.0	7109783	<2.0	2.0	7109783
Dissolved Phosphorus (P)	ug/L	<1000	1000	<100	7109783	<100	7109783	<100	100	7109783
Dissolved Potassium (K)	ug/L	260000	1000	30000	7109783	69000	7109783	32000	100	7109783
Dissolved Selenium (Se)	ug/L	10	5.0	12	7109783	22	7109783	1.6	0.50	7109783
Dissolved Silver (Ag)	ug/L	<1.0	1.0	<0.10	7109783	<0.10	7109783	<0.10	0.10	7109783
Dissolved Sodium (Na)	ug/L	2200000	1000	32000	7109783	190000	7109783	45000	100	7109783
Dissolved Strontium (Sr)	ug/L	4300	20	3200	7109783	3600	7109783	1100	2.0	7109783
Dissolved Thallium (Tl)	ug/L	<1.0	1.0	<0.10	7109783	<0.10	7109783	<0.10	0.10	7109783
Dissolved Tin (Sn)	ug/L	<20	20	<2.0	7109783	<2.0	7109783	<2.0	2.0	7109783
Dissolved Titanium (Ti)	ug/L	<20	20	<2.0	7109783	<2.0	7109783	<2.0	2.0	7109783
Dissolved Uranium (U)	ug/L	<1.0	1.0	<0.10	7109783	<0.10	7109783	<0.10	0.10	7109783
Dissolved Vanadium (V)	ug/L	<20	20	<2.0	7109783	3.7	7109783	55	2.0	7109783
Dissolved Zinc (Zn)	ug/L	<50	50	<5.0	7109783	<5.0	7109783	<5.0	5.0	7109783

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		OIF092		
Sampling Date		2020/12/03		
	UNITS	MW20-4	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	69	5.0	7109783
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	7109783
Dissolved Arsenic (As)	ug/L	8.3	1.0	7109783
Dissolved Barium (Ba)	ug/L	55	1.0	7109783
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	7109783
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	7109783
Dissolved Boron (B)	ug/L	750	50	7109783
Dissolved Cadmium (Cd)	ug/L	0.017	0.010	7109783
Dissolved Calcium (Ca)	ug/L	230000	100	7109783
Dissolved Chromium (Cr)	ug/L	4.4	1.0	7109783
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	7109783
Dissolved Copper (Cu)	ug/L	2.6	0.50	7109783
Dissolved Iron (Fe)	ug/L	59	50	7109783
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7109783
Dissolved Magnesium (Mg)	ug/L	3100	100	7109783
Dissolved Manganese (Mn)	ug/L	2.9	2.0	7109783
Dissolved Molybdenum (Mo)	ug/L	39	2.0	7109783
Dissolved Nickel (Ni)	ug/L	3.6	2.0	7109783
Dissolved Phosphorus (P)	ug/L	<100	100	7109783
Dissolved Potassium (K)	ug/L	79000	100	7109783
Dissolved Selenium (Se)	ug/L	3.9	0.50	7109783
Dissolved Silver (Ag)	ug/L	<0.10	0.10	7109783
Dissolved Sodium (Na)	ug/L	200000	100	7109783
Dissolved Strontium (Sr)	ug/L	1800	2.0	7109783
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	7109783
Dissolved Tin (Sn)	ug/L	<2.0	2.0	7109783
Dissolved Titanium (Ti)	ug/L	2.0	2.0	7109783
Dissolved Uranium (U)	ug/L	<0.10	0.10	7109783
Dissolved Vanadium (V)	ug/L	54	2.0	7109783
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	7109783

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		OIF088	OIF089		OIF090		OIF091		OIF092		
Sampling Date		2020/12/03	2020/12/03		2020/12/03		2020/12/03		2020/12/03		
	UNITS	SCU32-200-MW	MW20-1	RDL	MW20-2	RDL	MW20-3	RDL	MW20-4	RDL	QC Batch
Polyaromatic Hydrocarbons											
1-Methylnaphthalene	ug/L	3.0	4.9	0.050	38	0.050	12	0.050	12	0.050	7107920
2-Methylnaphthalene	ug/L	2.8	6.2	0.050	39 (1)	0.50	8.7	0.050	2.3	0.050	7107920
Acenaphthene	ug/L	1.4	0.41	0.010	38	0.010	10	0.010	8.2	0.010	7107920
Acenaphthylene	ug/L	2.7	0.41	0.010	5.6	0.010	5.0	0.010	6.1	0.010	7107920
Anthracene	ug/L	0.84	0.25	0.010	28	0.010	17	0.010	6.1	0.010	7107920
Benzo(a)anthracene	ug/L	0.11	0.034	0.010	9.2	0.010	11	0.010	2.6	0.010	7107920
Benzo(a)pyrene	ug/L	0.028	0.011	0.010	3.4	0.010	5.7	0.010	1.2	0.010	7107920
Benzo(b)fluoranthene	ug/L	0.022	<0.010	0.010	2.8	0.010	4.3	0.010	0.93	0.010	7107920
Benzo(b/j)fluoranthene	ug/L	0.039	<0.020	0.020	4.7	0.020	7.2	0.020	1.6	0.020	7092483
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	0.010	1.1	0.010	2.0	0.010	0.45	0.010	7107920
Benzo(j)fluoranthene	ug/L	0.016	<0.010	0.010	1.9	0.010	2.9	0.010	0.65	0.010	7107920
Benzo(k)fluoranthene	ug/L	0.015	<0.010	0.010	1.8	0.010	2.8	0.010	0.61	0.010	7107920
Chrysene	ug/L	0.12	0.042	0.010	9.0	0.010	10	0.010	2.3	0.010	7107920
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	0.010	0.39	0.010	0.73	0.010	0.14	0.010	7107920
Fluoranthene	ug/L	1.7	0.42	0.010	38 (1)	0.10	28	0.010	9.5	0.010	7107920
Fluorene	ug/L	2.3	0.86	0.010	37	0.010	15	0.010	11	0.010	7107920
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	0.010	1.1	0.010	2.1	0.010	0.43	0.010	7107920
Naphthalene	ug/L	9.6	3.7	0.20	120 (1)	2.0	44 (1)	2.0	11	0.20	7107920
Perylene	ug/L	<0.010	<0.010	0.010	0.77	0.010	1.2	0.010	0.29	0.010	7107920
Phenanthrene	ug/L	4.1	1.6	0.010	82 (1)	0.10	35	0.010	11	0.010	7107920
Pyrene	ug/L	0.95	0.25	0.010	30	0.010	20	0.010	6.3	0.010	7107920
Surrogate Recovery (%)											
D10-Anthracene	%	87	96		109		92		92		7107920
D14-Terphenyl	%	80 (2)	96 (2)		86 (2)		94 (2)		99 (2)		7107920
D8-Acenaphthylene	%	81	90		85		84		77		7107920

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.
(2) PAH sample analysed past recommended hold time as per client request.

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		OIF088	OIF089	OIF090	OIF091	OIF092		
Sampling Date		2020/12/03	2020/12/03	2020/12/03	2020/12/03	2020/12/03		
	UNITS	SCU32-200-MW	MW20-1	MW20-2	MW20-3	MW20-4	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/L	0.0015	<0.0010	0.033	0.0060	0.010	0.0010	7107496
Toluene	mg/L	<0.0010	<0.0010	0.014	0.0031	0.0025	0.0010	7107496
Ethylbenzene	mg/L	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	0.0010	7107496
Total Xylenes	mg/L	<0.0020	<0.0020	0.013	0.0050	<0.0020	0.0020	7107496
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	<0.090	<0.090	<0.090	0.090	7107496
>C10-C16 Hydrocarbons	mg/L	0.18	0.17	0.91	0.58	0.31	0.050	7107566
>C16-C21 Hydrocarbons	mg/L	0.091	<0.050	0.78	1.1	0.24	0.050	7107566
>C21-<C32 Hydrocarbons	mg/L	<0.090	<0.090	0.54	1.3	0.23	0.090	7107566
Modified TPH (Tier1)	mg/L	0.27	0.17	2.3	3.0	0.78	0.090	7093140
Reached Baseline at C32	mg/L	Yes	Yes	Yes	Yes	Yes	N/A	7107566
Hydrocarbon Resemblance	mg/L	COMMENT (1)	COMMENT (1)	COMMENT (2)	COMMENT (2)	COMMENT (2)	N/A	7107566
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	83	97	84	86	81		7107566
n-Dotriacontane - Extractable	%	84	92	79	87	77		7107566
Isobutylbenzene - Volatile	%	107	108	110	106	110		7107496

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) One product in fuel oil range. Unidentified compound(s) in fuel oil range.
(2) One product in fuel / lube range. Unidentified compound(s) in fuel / lube range.

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		OIF093		
Sampling Date		2020/12/03		
	UNITS	TB-02	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/L	<0.0010	0.0010	7107496
Toluene	mg/L	<0.0010	0.0010	7107496
Ethylbenzene	mg/L	<0.0010	0.0010	7107496
Total Xylenes	mg/L	<0.0020	0.0020	7107496
C6 - C10 (less BTEX)	mg/L	<0.090	0.090	7107496
>C10-C16 Hydrocarbons	mg/L	<0.050	0.050	7107566
>C16-C21 Hydrocarbons	mg/L	<0.050	0.050	7107566
>C21-<C32 Hydrocarbons	mg/L	<0.090	0.090	7107566
Modified TPH (Tier1)	mg/L	<0.090	0.090	7093140
Reached Baseline at C32	mg/L	NA	N/A	7107566
Hydrocarbon Resemblance	mg/L	NA	N/A	7107566
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	100		7107566
n-Dotriacontane - Extractable	%	96		7107566
Isobutylbenzene - Volatile	%	112		7107496

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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GENERAL COMMENTS

Sample OIF088 [SCU32-200-MW] : Elevated reporting limits for trace metals due to sample matrix.
Sample OIF090, Metals Water Diss. MS (as rec'd): Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7107496	THL	Matrix Spike	Isobutylbenzene - Volatile	2020/12/14		109	%	70 - 130
			Benzene	2020/12/14		109	%	70 - 130
			Toluene	2020/12/14		103	%	70 - 130
			Ethylbenzene	2020/12/14		101	%	70 - 130
			Total Xylenes	2020/12/14		101	%	70 - 130
7107496	THL	Spiked Blank	Isobutylbenzene - Volatile	2020/12/14		114	%	70 - 130
			Benzene	2020/12/14		100	%	70 - 130
			Toluene	2020/12/14		98	%	70 - 130
			Ethylbenzene	2020/12/14		101	%	70 - 130
			Total Xylenes	2020/12/14		100	%	70 - 130
7107496	THL	Method Blank	Isobutylbenzene - Volatile	2020/12/14		110	%	70 - 130
			Benzene	2020/12/14	<0.0010		mg/L	
			Toluene	2020/12/14	<0.0010		mg/L	
			Ethylbenzene	2020/12/14	<0.0010		mg/L	
			Total Xylenes	2020/12/14	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2020/12/14	<0.090		mg/L	
7107496	THL	RPD	Benzene	2020/12/14	NC		%	40
			Toluene	2020/12/14	NC		%	40
			Ethylbenzene	2020/12/14	NC		%	40
			Total Xylenes	2020/12/14	NC		%	40
			C6 - C10 (less BTEX)	2020/12/14	NC		%	40
7107566	BCD	Matrix Spike	Isobutylbenzene - Extractable	2020/12/14		91	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/14		86	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/14		65 (1)	%	70 - 130
			>C16-C21 Hydrocarbons	2020/12/14		67 (1)	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/12/14		64 (1)	%	70 - 130
7107566	BCD	Spiked Blank	Isobutylbenzene - Extractable	2020/12/14		103	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/14		99	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/14		96	%	70 - 130
			>C16-C21 Hydrocarbons	2020/12/14		97	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/12/14		95	%	70 - 130
7107566	BCD	Method Blank	Isobutylbenzene - Extractable	2020/12/14		103	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/14		98	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/14	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2020/12/14	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2020/12/14	<0.090		mg/L	
7107566	BCD	RPD	>C10-C16 Hydrocarbons	2020/12/14	6.8		%	40
			>C16-C21 Hydrocarbons	2020/12/14	NC		%	40
			>C21-<C32 Hydrocarbons	2020/12/14	1.1		%	40
7107773	NHU	Matrix Spike [OIF088-05]	Total Mercury (Hg)	2020/12/15		86	%	80 - 120
7107773	NHU	Spiked Blank	Total Mercury (Hg)	2020/12/15		99	%	80 - 120
7107773	NHU	Method Blank	Total Mercury (Hg)	2020/12/15	<0.013		ug/L	
7107773	NHU	RPD	Total Mercury (Hg)	2020/12/15	NC		%	20
7107920	LGE	Matrix Spike	D10-Anthracene	2020/12/14		101	%	50 - 130
			D14-Terphenyl	2020/12/14		101	%	50 - 130
			D8-Acenaphthylene	2020/12/14		96	%	50 - 130
			1-Methylnaphthalene	2020/12/14		77	%	50 - 130
			2-Methylnaphthalene	2020/12/14		76	%	50 - 130
			Acenaphthene	2020/12/14		84	%	50 - 130
			Acenaphthylene	2020/12/14		87	%	50 - 130
			Anthracene	2020/12/14		87	%	50 - 130
			Benzo(a)anthracene	2020/12/14		88	%	50 - 130
			Benzo(a)pyrene	2020/12/14		84	%	50 - 130
			Benzo(b)fluoranthene	2020/12/14		89	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/14		82	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(j)fluoranthene	2020/12/14		84	%	50 - 130
			Benzo(k)fluoranthene	2020/12/14		84	%	50 - 130
			Chrysene	2020/12/14		96	%	50 - 130
			Dibenzo(a,h)anthracene	2020/12/14		75	%	50 - 130
			Fluoranthene	2020/12/14		89	%	50 - 130
			Fluorene	2020/12/14		88	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/14		80	%	50 - 130
			Naphthalene	2020/12/14		85	%	50 - 130
			Perylene	2020/12/14		81	%	50 - 130
			Phenanthrene	2020/12/14		90	%	50 - 130
			Pyrene	2020/12/14		91	%	50 - 130
7107920	LGE	Spiked Blank	D10-Anthracene	2020/12/14		102	%	50 - 130
			D14-Terphenyl	2020/12/14		104	%	50 - 130
			D8-Acenaphthylene	2020/12/14		95	%	50 - 130
			1-Methylnaphthalene	2020/12/14		81	%	50 - 130
			2-Methylnaphthalene	2020/12/14		80	%	50 - 130
			Acenaphthene	2020/12/14		89	%	50 - 130
			Acenaphthylene	2020/12/14		88	%	50 - 130
			Anthracene	2020/12/14		90	%	50 - 130
			Benzo(a)anthracene	2020/12/14		91	%	50 - 130
			Benzo(a)pyrene	2020/12/14		91	%	50 - 130
			Benzo(b)fluoranthene	2020/12/14		95	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/14		89	%	50 - 130
			Benzo(j)fluoranthene	2020/12/14		91	%	50 - 130
			Benzo(k)fluoranthene	2020/12/14		93	%	50 - 130
			Chrysene	2020/12/14		99	%	50 - 130
			Dibenzo(a,h)anthracene	2020/12/14		82	%	50 - 130
			Fluoranthene	2020/12/14		94	%	50 - 130
			Fluorene	2020/12/14		92	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/14		87	%	50 - 130
			Naphthalene	2020/12/14		88	%	50 - 130
			Perylene	2020/12/14		88	%	50 - 130
			Phenanthrene	2020/12/14		93	%	50 - 130
			Pyrene	2020/12/14		96	%	50 - 130
7107920	LGE	Method Blank	D10-Anthracene	2020/12/14		101	%	50 - 130
			D14-Terphenyl	2020/12/14		101	%	50 - 130
			D8-Acenaphthylene	2020/12/14		94	%	50 - 130
			1-Methylnaphthalene	2020/12/14	<0.050		ug/L	
			2-Methylnaphthalene	2020/12/14	<0.050		ug/L	
			Acenaphthene	2020/12/14	<0.010		ug/L	
			Acenaphthylene	2020/12/14	<0.010		ug/L	
			Anthracene	2020/12/14	<0.010		ug/L	
			Benzo(a)anthracene	2020/12/14	<0.010		ug/L	
			Benzo(a)pyrene	2020/12/14	<0.010		ug/L	
			Benzo(b)fluoranthene	2020/12/14	<0.010		ug/L	
			Benzo(g,h,i)perylene	2020/12/14	<0.010		ug/L	
			Benzo(j)fluoranthene	2020/12/14	<0.010		ug/L	
			Benzo(k)fluoranthene	2020/12/14	<0.010		ug/L	
			Chrysene	2020/12/14	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2020/12/14	<0.010		ug/L	
			Fluoranthene	2020/12/14	<0.010		ug/L	
			Fluorene	2020/12/14	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2020/12/14	<0.010		ug/L	
			Naphthalene	2020/12/14	<0.20		ug/L	
			Perylene	2020/12/14	<0.010		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Phenanthrene	2020/12/14	<0.010		ug/L	
			Pyrene	2020/12/14	<0.010		ug/L	
7107920	LGE	RPD	1-Methylnaphthalene	2020/12/14	NC		%	40
			2-Methylnaphthalene	2020/12/14	NC		%	40
			Acenaphthene	2020/12/14	16		%	40
			Acenaphthylene	2020/12/14	NC		%	40
			Anthracene	2020/12/14	22		%	40
			Benzo(a)anthracene	2020/12/14	11		%	40
			Benzo(a)pyrene	2020/12/14	9.9		%	40
			Benzo(b)fluoranthene	2020/12/14	13		%	40
			Benzo(g,h,i)perylene	2020/12/14	16		%	40
			Benzo(j)fluoranthene	2020/12/14	15		%	40
			Benzo(k)fluoranthene	2020/12/14	NC (2)		%	40
			Chrysene	2020/12/14	14		%	40
			Dibenzo(a,h)anthracene	2020/12/14	NC		%	40
			Fluoranthene	2020/12/14	14		%	40
			Fluorene	2020/12/14	19		%	40
			Indeno(1,2,3-cd)pyrene	2020/12/14	12		%	40
			Naphthalene	2020/12/14	NC		%	40
			Perylene	2020/12/14	12		%	40
			Phenanthrene	2020/12/14	14		%	40
			Pyrene	2020/12/14	12		%	40
7109783	BAN	Matrix Spike [OIF090-04]	Dissolved Aluminum (Al)	2020/12/15		NC	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/15		85	%	80 - 120
			Dissolved Arsenic (As)	2020/12/15		86	%	80 - 120
			Dissolved Barium (Ba)	2020/12/15		NC	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/15		104	%	80 - 120
			Dissolved Bismuth (Bi)	2020/12/15		66 (3)	%	80 - 120
			Dissolved Boron (B)	2020/12/15		99	%	80 - 120
			Dissolved Cadmium (Cd)	2020/12/15		84	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/15		NC	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/15		98	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/15		86	%	80 - 120
			Dissolved Copper (Cu)	2020/12/15		71 (3)	%	80 - 120
			Dissolved Iron (Fe)	2020/12/15		NC	%	80 - 120
			Dissolved Lead (Pb)	2020/12/15		97	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/15		101	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/15		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/15		81	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/15		88	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/15		103	%	80 - 120
			Dissolved Potassium (K)	2020/12/15		NC	%	80 - 120
			Dissolved Selenium (Se)	2020/12/15		42 (3)	%	80 - 120
			Dissolved Silver (Ag)	2020/12/15		74 (3)	%	80 - 120
			Dissolved Sodium (Na)	2020/12/15		NC	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/15		NC	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/15		84	%	80 - 120
			Dissolved Tin (Sn)	2020/12/15		96	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/15		104	%	80 - 120
			Dissolved Uranium (U)	2020/12/15		104	%	80 - 120
			Dissolved Vanadium (V)	2020/12/15		89	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/15		72 (3)	%	80 - 120
7109783	BAN	Spiked Blank	Dissolved Aluminum (Al)	2020/12/15		98	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/15		95	%	80 - 120
			Dissolved Arsenic (As)	2020/12/15		97	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Barium (Ba)	2020/12/15		98	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/15		103	%	80 - 120
			Dissolved Bismuth (Bi)	2020/12/15		100	%	80 - 120
			Dissolved Boron (B)	2020/12/15		103	%	80 - 120
			Dissolved Cadmium (Cd)	2020/12/15		102	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/15		98	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/15		99	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/15		100	%	80 - 120
			Dissolved Copper (Cu)	2020/12/15		97	%	80 - 120
			Dissolved Iron (Fe)	2020/12/15		101	%	80 - 120
			Dissolved Lead (Pb)	2020/12/15		100	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/15		102	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/15		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/15		100	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/15		102	%	80 - 120
			Dissolved Potassium (K)	2020/12/15		101	%	80 - 120
			Dissolved Selenium (Se)	2020/12/15		101	%	80 - 120
			Dissolved Silver (Ag)	2020/12/15		96	%	80 - 120
			Dissolved Sodium (Na)	2020/12/15		97	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/15		100	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/15		102	%	80 - 120
			Dissolved Tin (Sn)	2020/12/15		99	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/15		100	%	80 - 120
			Dissolved Uranium (U)	2020/12/15		104	%	80 - 120
			Dissolved Vanadium (V)	2020/12/15		97	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/15		103	%	80 - 120
7109783	BAN	Method Blank	Dissolved Aluminum (Al)	2020/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2020/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2020/12/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2020/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2020/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2020/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2020/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2020/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2020/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2020/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2020/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2020/12/15	<0.50		ug/L	
			Dissolved Iron (Fe)	2020/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2020/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2020/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2020/12/15	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2020/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2020/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2020/12/15	<100		ug/L	
			Dissolved Potassium (K)	2020/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2020/12/15	<0.50		ug/L	
			Dissolved Silver (Ag)	2020/12/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2020/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2020/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2020/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2020/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2020/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2020/12/15	<0.10		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Vanadium (V)	2020/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2020/12/15	<5.0		ug/L	
7109783	BAN	RPD [OIF090-04]	Dissolved Aluminum (Al)	2020/12/15	1.4		%	20
			Dissolved Antimony (Sb)	2020/12/15	NC		%	20
			Dissolved Barium (Ba)	2020/12/15	1.2		%	20
			Dissolved Beryllium (Be)	2020/12/15	NC		%	20
			Dissolved Bismuth (Bi)	2020/12/15	NC		%	20
			Dissolved Boron (B)	2020/12/15	5.9		%	20
			Dissolved Cadmium (Cd)	2020/12/15	3.9		%	20
			Dissolved Calcium (Ca)	2020/12/15	1.2		%	20
			Dissolved Chromium (Cr)	2020/12/15	NC		%	20
			Dissolved Cobalt (Co)	2020/12/15	NC		%	20
			Dissolved Copper (Cu)	2020/12/15	NC		%	20
			Dissolved Iron (Fe)	2020/12/15	1.5		%	20
			Dissolved Lead (Pb)	2020/12/15	NC		%	20
			Dissolved Magnesium (Mg)	2020/12/15	NC		%	20
			Dissolved Manganese (Mn)	2020/12/15	NC		%	20
			Dissolved Molybdenum (Mo)	2020/12/15	20		%	20
			Dissolved Nickel (Ni)	2020/12/15	NC		%	20
			Dissolved Phosphorus (P)	2020/12/15	NC		%	20
			Dissolved Potassium (K)	2020/12/15	1.1		%	20
			Dissolved Selenium (Se)	2020/12/15	2.3		%	20
			Dissolved Silver (Ag)	2020/12/15	NC		%	20
			Dissolved Sodium (Na)	2020/12/15	1.2		%	20
			Dissolved Strontium (Sr)	2020/12/15	1.6		%	20
			Dissolved Thallium (Tl)	2020/12/15	NC		%	20
			Dissolved Tin (Sn)	2020/12/15	NC		%	20
			Dissolved Titanium (Ti)	2020/12/15	NC		%	20
			Dissolved Uranium (U)	2020/12/15	NC		%	20
			Dissolved Vanadium (V)	2020/12/15	3.4		%	20
			Dissolved Zinc (Zn)	2020/12/15	NC		%	20
7112179	BAN	Matrix Spike	Dissolved Arsenic (As)	2020/12/16		98	%	80 - 120
7112179	BAN	Spiked Blank	Dissolved Arsenic (As)	2020/12/16		95	%	80 - 120
7112179	BAN	Method Blank	Dissolved Arsenic (As)	2020/12/16	<1.0		ug/L	
7112179	BAN	RPD	Dissolved Arsenic (As)	2020/12/16	NC		%	20

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

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

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

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

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

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

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

(1) Matrix Spike: results are outside acceptance limit due to probable matrix interference.

(2) Elevated PAH RDL(s) due to matrix / co-extractive interference.

(3) Matrix Spike exceeds acceptance limits, probable matrix interference.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Eric Dearman, Scientific Specialist

Mike MacGillivray, Scientific Specialist (Inorganics)

Phil Deveau, Scientific Specialist (Organics)

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Site#: HARBOURSIDE COMMERCIAL PARK
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/12/21
Report #: R6458307
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0X0619
Received: 2020/12/10, 16:40

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Benzo(b/j)fluoranthene Sum (water) (1)	3	N/A	2020/12/18	N/A	Auto Calc.
TEH in Water (PIRI) (1)	3	2020/12/15	2020/12/15	ATL SOP 00113	Atl. RBCA v3.1 m
Mercury - Total (CVAA,LL) (1)	3	2020/12/18	2020/12/21	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2020/12/16	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2020/12/17	ATL SOP 00058	EPA 6020B R2 m
PAH in Water by GC/MS (SIM) (1)	3	2020/12/16	2020/12/17	ATL SOP 00103	EPA 8270E R6 m
ModTPH (T1) Calc. for Water (1)	3	N/A	2020/12/16	N/A	Atl. RBCA v3 m
VPH in Water (PIRI) (1)	3	N/A	2020/12/15	ATL SOP 00130	Atl. RBCA v3.1 m

Remarks:

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

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

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

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

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by BV Labs Bedford

Site#: HARBOURSIDE COMMERCIAL PARK
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2020/12/21
Report #: R6458307
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0X0619
Received: 2020/12/10, 16:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Key Account Specialist
Email: Natalie.MacAskill@bvlabs.com
Phone# (902)567-1255 Ext:17
==========
This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		OJV838	OJV856	OJV857		
Sampling Date		2020/12/10	2020/12/10	2020/12/10		
	UNITS	SCU26-200-MW	SCU27-202-MW	MCES-207-MW	RDL	QC Batch
Metals						
Total Mercury (Hg)	ug/L	<0.013	0.018	<0.013	0.013	7116961

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		OJV838		OJV856	OJV857		
Sampling Date		2020/12/10		2020/12/10	2020/12/10		
	UNITS	SCU26-200-MW	RDL	SCU27-202-MW	MCES-207-MW	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	46	5.0	<50	<50	50	7112189
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	<10	<10	10	7112189
Dissolved Arsenic (As)	ug/L	<1.0	1.0	<10	<10	10	7112189
Dissolved Barium (Ba)	ug/L	1100	1.0	13000	4300	10	7112189
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<10	<10	10	7112189
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<20	<20	20	7112189
Dissolved Boron (B)	ug/L	<50	50	5400	2100	500	7112189
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	<0.10	0.16	0.10	7112189
Dissolved Calcium (Ca)	ug/L	710000	100	950000	660000	1000	7112189
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	<10	<10	10	7112189
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	<4.0	<4.0	4.0	7112189
Dissolved Copper (Cu)	ug/L	<0.50	0.50	<5.0	11	5.0	7112189
Dissolved Iron (Fe)	ug/L	<50	50	84000	<500	500	7112189
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<5.0	<5.0	5.0	7112189
Dissolved Magnesium (Mg)	ug/L	<100	100	740000	390000	1000	7112189
Dissolved Manganese (Mn)	ug/L	6.2	2.0	5600	2200	20	7112189
Dissolved Molybdenum (Mo)	ug/L	5.9	2.0	<20	<20	20	7112189
Dissolved Nickel (Ni)	ug/L	3.5	2.0	<20	<20	20	7112189
Dissolved Phosphorus (P)	ug/L	<100	100	2600	<1000	1000	7112189
Dissolved Potassium (K)	ug/L	38000	100	160000	67000	1000	7112189
Dissolved Selenium (Se)	ug/L	0.55	0.50	<5.0	<5.0	5.0	7112189
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<1.0	<1.0	1.0	7112189
Dissolved Sodium (Na)	ug/L	220000	100	5600000	2900000	1000	7112189
Dissolved Strontium (Sr)	ug/L	3200	2.0	32000	23000	20	7112189
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<1.0	<1.0	1.0	7112189
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<20	<20	20	7112189
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<20	<20	20	7112189
Dissolved Uranium (U)	ug/L	<0.10	0.10	<1.0	5.2	1.0	7112189
Dissolved Vanadium (V)	ug/L	3.8	2.0	<20	<20	20	7112189
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	55	90	50	7112189

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		OJV838	OJV856	OJV857		
Sampling Date		2020/12/10	2020/12/10	2020/12/10		
	UNITS	SCU26-200-MW	SCU27-202-MW	MCES-207-MW	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	3.4	<0.050	<0.050	0.050	7112265
2-Methylnaphthalene	ug/L	3.2	<0.050	<0.050	0.050	7112265
Acenaphthene	ug/L	1.4	0.013	<0.010	0.010	7112265
Acenaphthylene	ug/L	2.1	<0.010	<0.010	0.010	7112265
Anthracene	ug/L	0.83	0.014	<0.010	0.010	7112265
Benzo(a)anthracene	ug/L	0.063	<0.010	<0.010	0.010	7112265
Benzo(a)pyrene	ug/L	0.035	<0.010	<0.010	0.010	7112265
Benzo(b)fluoranthene	ug/L	0.031	<0.010	<0.010	0.010	7112265
Benzo(b/j)fluoranthene	ug/L	0.051	<0.020	<0.020	0.020	7104701
Benzo(g,h,i)perylene	ug/L	0.015	<0.010	<0.010	0.010	7112265
Benzo(j)fluoranthene	ug/L	0.020	<0.010	<0.010	0.010	7112265
Benzo(k)fluoranthene	ug/L	0.019	<0.010	<0.010	0.010	7112265
Chrysene	ug/L	0.075	<0.010	<0.010	0.010	7112265
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	7112265
Fluoranthene	ug/L	1.0	0.027	0.020	0.010	7112265
Fluorene	ug/L	2.1	0.017	0.011	0.010	7112265
Indeno(1,2,3-cd)pyrene	ug/L	0.017	<0.010	<0.010	0.010	7112265
Naphthalene	ug/L	21	<0.20	<0.20	0.20	7112265
Perylene	ug/L	0.012	<0.010	<0.010	0.010	7112265
Phenanthrene	ug/L	4.8	0.050	0.017	0.010	7112265
Pyrene	ug/L	0.63	0.023	0.014	0.010	7112265
Surrogate Recovery (%)						
D10-Anthracene	%	89	100	97		7112265
D14-Terphenyl	%	86	92 (1)	97		7112265
D8-Acenaphthylene	%	92	103	100		7112265

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH sample contained sediment.

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		OJV838	OJV856	OJV857		
Sampling Date		2020/12/10	2020/12/10	2020/12/10		
	UNITS	SCU26-200-MW	SCU27-202-MW	MCES-207-MW	RDL	QC Batch
Petroleum Hydrocarbons						
Benzene	mg/L	0.059	<0.0010	<0.0010	0.0010	7109662
Toluene	mg/L	0.017	<0.0010	<0.0010	0.0010	7109662
Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	0.0010	7109662
Total Xylenes	mg/L	0.0051	<0.0020	<0.0020	0.0020	7109662
C6 - C10 (less BTEX)	mg/L	<0.090	<0.090	<0.090	0.090	7109662
>C10-C16 Hydrocarbons	mg/L	0.14	<0.050	<0.050	0.050	7109728
>C16-C21 Hydrocarbons	mg/L	0.083	<0.050	<0.050	0.050	7109728
>C21-<C32 Hydrocarbons	mg/L	0.10	<0.090	<0.090	0.090	7109728
Modified TPH (Tier1)	mg/L	0.35	<0.090	<0.090	0.090	7104833
Reached Baseline at C32	mg/L	Yes	NA	NA	N/A	7109728
Hydrocarbon Resemblance	mg/L	COMMENT (1)	NA	NA	N/A	7109728
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	94	98	92		7109728
n-Dotriacontane - Extractable	%	96	88	92		7109728
Isobutylbenzene - Volatile	%	103	102	104		7109662

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in fuel / lube range.

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GENERAL COMMENTS

Sample OJV856 [SCU27-202-MW] : Elevated reporting limits for trace metals due to sample matrix.

Sample OJV857 [MCES-207-MW] : Elevated reporting limits for trace metals due to sample matrix.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7109662	THL	Matrix Spike [OJV856-02]	Isobutylbenzene - Volatile	2020/12/15		103	%	70 - 130
			Benzene	2020/12/15		107	%	70 - 130
			Toluene	2020/12/15		97	%	70 - 130
			Ethylbenzene	2020/12/15		97	%	70 - 130
			Total Xylenes	2020/12/15		105	%	70 - 130
7109662	THL	Spiked Blank	Isobutylbenzene - Volatile	2020/12/15		104	%	70 - 130
			Benzene	2020/12/15		101	%	70 - 130
			Toluene	2020/12/15		97	%	70 - 130
			Ethylbenzene	2020/12/15		102	%	70 - 130
			Total Xylenes	2020/12/15		107	%	70 - 130
7109662	THL	Method Blank	Isobutylbenzene - Volatile	2020/12/15		104	%	70 - 130
			Benzene	2020/12/15	<0.0010		mg/L	
			Toluene	2020/12/15	<0.0010		mg/L	
			Ethylbenzene	2020/12/15	<0.0010		mg/L	
			Total Xylenes	2020/12/15	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2020/12/15	<0.090		mg/L	
7109662	THL	RPD [OJV838-02]	Benzene	2020/12/15	1.1		%	40
			Toluene	2020/12/15	1.1		%	40
			Ethylbenzene	2020/12/15	NC		%	40
			Total Xylenes	2020/12/15	2.8		%	40
			C6 - C10 (less BTEX)	2020/12/15	NC		%	40
7109728	MSK	Matrix Spike	Isobutylbenzene - Extractable	2020/12/15		95	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/15		91	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/15		98	%	70 - 130
			>C16-C21 Hydrocarbons	2020/12/15		93	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/12/15		90	%	70 - 130
7109728	MSK	Spiked Blank	Isobutylbenzene - Extractable	2020/12/15		100	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/15		91	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/15		97	%	70 - 130
			>C16-C21 Hydrocarbons	2020/12/15		89	%	70 - 130
			>C21-<C32 Hydrocarbons	2020/12/15		88	%	70 - 130
7109728	MSK	Method Blank	Isobutylbenzene - Extractable	2020/12/15		103	%	70 - 130
			n-Dotriacontane - Extractable	2020/12/15		97	%	70 - 130
			>C10-C16 Hydrocarbons	2020/12/15	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2020/12/15	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2020/12/15	<0.090		mg/L	
7109728	MSK	RPD	>C10-C16 Hydrocarbons	2020/12/15	NC		%	40
			>C16-C21 Hydrocarbons	2020/12/15	NC		%	40
			>C21-<C32 Hydrocarbons	2020/12/15	NC		%	40
7112189	BAN	Matrix Spike	Dissolved Aluminum (Al)	2020/12/16		99	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/16		106	%	80 - 120
			Dissolved Arsenic (As)	2020/12/16		96	%	80 - 120
			Dissolved Barium (Ba)	2020/12/16		99	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/16		103	%	80 - 120
			Dissolved Bismuth (Bi)	2020/12/16		98	%	80 - 120
			Dissolved Boron (B)	2020/12/16		98	%	80 - 120
			Dissolved Cadmium (Cd)	2020/12/16		100	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/16		NC	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/16		98	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/16		95	%	80 - 120
			Dissolved Copper (Cu)	2020/12/16		95	%	80 - 120
			Dissolved Iron (Fe)	2020/12/16		101	%	80 - 120
			Dissolved Lead (Pb)	2020/12/16		99	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/16		NC	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/16		NC	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Molybdenum (Mo)	2020/12/16		102	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/16		97	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/16		103	%	80 - 120
			Dissolved Potassium (K)	2020/12/16		103	%	80 - 120
			Dissolved Selenium (Se)	2020/12/16		98	%	80 - 120
			Dissolved Silver (Ag)	2020/12/16		89	%	80 - 120
			Dissolved Sodium (Na)	2020/12/16		95	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/16		NC	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/16		101	%	80 - 120
			Dissolved Tin (Sn)	2020/12/16		103	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/16		102	%	80 - 120
			Dissolved Uranium (U)	2020/12/16		108	%	80 - 120
			Dissolved Vanadium (V)	2020/12/16		102	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/16		99	%	80 - 120
7112189	BAN	Spiked Blank	Dissolved Aluminum (Al)	2020/12/16		99	%	80 - 120
			Dissolved Antimony (Sb)	2020/12/16		96	%	80 - 120
			Dissolved Arsenic (As)	2020/12/16		93	%	80 - 120
			Dissolved Barium (Ba)	2020/12/16		99	%	80 - 120
			Dissolved Beryllium (Be)	2020/12/16		104	%	80 - 120
			Dissolved Bismuth (Bi)	2020/12/16		100	%	80 - 120
			Dissolved Boron (B)	2020/12/16		102	%	80 - 120
			Dissolved Cadmium (Cd)	2020/12/16		98	%	80 - 120
			Dissolved Calcium (Ca)	2020/12/16		93	%	80 - 120
			Dissolved Chromium (Cr)	2020/12/16		97	%	80 - 120
			Dissolved Cobalt (Co)	2020/12/16		97	%	80 - 120
			Dissolved Copper (Cu)	2020/12/16		97	%	80 - 120
			Dissolved Iron (Fe)	2020/12/16		102	%	80 - 120
			Dissolved Lead (Pb)	2020/12/16		99	%	80 - 120
			Dissolved Magnesium (Mg)	2020/12/16		102	%	80 - 120
			Dissolved Manganese (Mn)	2020/12/16		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2020/12/16		102	%	80 - 120
			Dissolved Nickel (Ni)	2020/12/16		100	%	80 - 120
			Dissolved Phosphorus (P)	2020/12/16		103	%	80 - 120
			Dissolved Potassium (K)	2020/12/16		103	%	80 - 120
			Dissolved Selenium (Se)	2020/12/16		97	%	80 - 120
			Dissolved Silver (Ag)	2020/12/16		96	%	80 - 120
			Dissolved Sodium (Na)	2020/12/16		98	%	80 - 120
			Dissolved Strontium (Sr)	2020/12/16		101	%	80 - 120
			Dissolved Thallium (Tl)	2020/12/16		100	%	80 - 120
			Dissolved Tin (Sn)	2020/12/16		103	%	80 - 120
			Dissolved Titanium (Ti)	2020/12/16		98	%	80 - 120
			Dissolved Uranium (U)	2020/12/16		105	%	80 - 120
			Dissolved Vanadium (V)	2020/12/16		100	%	80 - 120
			Dissolved Zinc (Zn)	2020/12/16		101	%	80 - 120
7112189	BAN	Method Blank	Dissolved Aluminum (Al)	2020/12/16	<5.0		ug/L	
			Dissolved Antimony (Sb)	2020/12/16	<1.0		ug/L	
			Dissolved Arsenic (As)	2020/12/16	<1.0		ug/L	
			Dissolved Barium (Ba)	2020/12/16	<1.0		ug/L	
			Dissolved Beryllium (Be)	2020/12/16	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2020/12/16	<2.0		ug/L	
			Dissolved Boron (B)	2020/12/16	<50		ug/L	
			Dissolved Cadmium (Cd)	2020/12/16	<0.010		ug/L	
			Dissolved Calcium (Ca)	2020/12/16	<100		ug/L	
			Dissolved Chromium (Cr)	2020/12/16	<1.0		ug/L	
			Dissolved Cobalt (Co)	2020/12/16	<0.40		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Copper (Cu)	2020/12/16	<0.50		ug/L	
			Dissolved Iron (Fe)	2020/12/16	<50		ug/L	
			Dissolved Lead (Pb)	2020/12/16	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2020/12/16	<100		ug/L	
			Dissolved Manganese (Mn)	2020/12/16	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2020/12/16	<2.0		ug/L	
			Dissolved Nickel (Ni)	2020/12/16	<2.0		ug/L	
			Dissolved Phosphorus (P)	2020/12/16	<100		ug/L	
			Dissolved Potassium (K)	2020/12/16	<100		ug/L	
			Dissolved Selenium (Se)	2020/12/16	<0.50		ug/L	
			Dissolved Silver (Ag)	2020/12/16	<0.10		ug/L	
			Dissolved Sodium (Na)	2020/12/16	<100		ug/L	
			Dissolved Strontium (Sr)	2020/12/16	<2.0		ug/L	
			Dissolved Thallium (Tl)	2020/12/16	<0.10		ug/L	
			Dissolved Tin (Sn)	2020/12/16	<2.0		ug/L	
			Dissolved Titanium (Ti)	2020/12/16	<2.0		ug/L	
			Dissolved Uranium (U)	2020/12/16	<0.10		ug/L	
			Dissolved Vanadium (V)	2020/12/16	<2.0		ug/L	
			Dissolved Zinc (Zn)	2020/12/16	<5.0		ug/L	
7112189	BAN	RPD	Dissolved Aluminum (Al)	2020/12/16	NC		%	20
			Dissolved Antimony (Sb)	2020/12/16	NC		%	20
			Dissolved Arsenic (As)	2020/12/16	NC		%	20
			Dissolved Barium (Ba)	2020/12/16	2.0		%	20
			Dissolved Beryllium (Be)	2020/12/16	NC		%	20
			Dissolved Bismuth (Bi)	2020/12/16	NC		%	20
			Dissolved Boron (B)	2020/12/16	NC		%	20
			Dissolved Cadmium (Cd)	2020/12/16	2.8		%	20
			Dissolved Calcium (Ca)	2020/12/16	0.65		%	20
			Dissolved Chromium (Cr)	2020/12/16	NC		%	20
			Dissolved Cobalt (Co)	2020/12/16	NC		%	20
			Dissolved Copper (Cu)	2020/12/16	NC		%	20
			Dissolved Iron (Fe)	2020/12/16	NC		%	20
			Dissolved Lead (Pb)	2020/12/16	NC		%	20
			Dissolved Magnesium (Mg)	2020/12/16	0.17		%	20
			Dissolved Manganese (Mn)	2020/12/16	2.2		%	20
			Dissolved Molybdenum (Mo)	2020/12/16	1.8		%	20
			Dissolved Nickel (Ni)	2020/12/16	NC		%	20
			Dissolved Phosphorus (P)	2020/12/16	NC		%	20
			Dissolved Potassium (K)	2020/12/16	1.8		%	20
			Dissolved Selenium (Se)	2020/12/16	NC		%	20
			Dissolved Silver (Ag)	2020/12/16	NC		%	20
			Dissolved Sodium (Na)	2020/12/16	1.1		%	20
			Dissolved Strontium (Sr)	2020/12/16	1.2		%	20
			Dissolved Thallium (Tl)	2020/12/16	NC		%	20
			Dissolved Tin (Sn)	2020/12/16	NC		%	20
			Dissolved Titanium (Ti)	2020/12/16	NC		%	20
			Dissolved Uranium (U)	2020/12/16	0.62		%	20
			Dissolved Vanadium (V)	2020/12/16	NC		%	20
			Dissolved Zinc (Zn)	2020/12/16	NC		%	20
7112265	LGE	Matrix Spike [OJV856-03]	D10-Anthracene	2020/12/17		100	%	50 - 130
			D14-Terphenyl	2020/12/17		93 (1)	%	50 - 130
			D8-Acenaphthylene	2020/12/17		102	%	50 - 130
			1-Methylnaphthalene	2020/12/17		80	%	50 - 130
			2-Methylnaphthalene	2020/12/17		82	%	50 - 130
			Acenaphthene	2020/12/17		87	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acenaphthylene	2020/12/17		89	%	50 - 130
			Anthracene	2020/12/17		93	%	50 - 130
			Benzo(a)anthracene	2020/12/17		82	%	50 - 130
			Benzo(a)pyrene	2020/12/17		68	%	50 - 130
			Benzo(b)fluoranthene	2020/12/17		74	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/17		50	%	50 - 130
			Benzo(j)fluoranthene	2020/12/17		70	%	50 - 130
			Benzo(k)fluoranthene	2020/12/17		68	%	50 - 130
			Chrysene	2020/12/17		86	%	50 - 130
			Dibenzo(a,h)anthracene	2020/12/17		45 (2)	%	50 - 130
			Fluoranthene	2020/12/17		89	%	50 - 130
			Fluorene	2020/12/17		90	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/17		51	%	50 - 130
			Naphthalene	2020/12/17		87	%	50 - 130
			Perylene	2020/12/17		62	%	50 - 130
			Phenanthrene	2020/12/17		91	%	50 - 130
			Pyrene	2020/12/17		91	%	50 - 130
7112265	LGE	Spiked Blank	D10-Anthracene	2020/12/17		100	%	50 - 130
			D14-Terphenyl	2020/12/17		97	%	50 - 130
			D8-Acenaphthylene	2020/12/17		99	%	50 - 130
			1-Methylnaphthalene	2020/12/17		83	%	50 - 130
			2-Methylnaphthalene	2020/12/17		84	%	50 - 130
			Acenaphthene	2020/12/17		94	%	50 - 130
			Acenaphthylene	2020/12/17		87	%	50 - 130
			Anthracene	2020/12/17		95	%	50 - 130
			Benzo(a)anthracene	2020/12/17		86	%	50 - 130
			Benzo(a)pyrene	2020/12/17		83	%	50 - 130
			Benzo(b)fluoranthene	2020/12/17		87	%	50 - 130
			Benzo(g,h,i)perylene	2020/12/17		82	%	50 - 130
			Benzo(j)fluoranthene	2020/12/17		85	%	50 - 130
			Benzo(k)fluoranthene	2020/12/17		85	%	50 - 130
			Chrysene	2020/12/17		92	%	50 - 130
			Dibenzo(a,h)anthracene	2020/12/17		75	%	50 - 130
			Fluoranthene	2020/12/17		91	%	50 - 130
			Fluorene	2020/12/17		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2020/12/17		81	%	50 - 130
			Naphthalene	2020/12/17		89	%	50 - 130
			Perylene	2020/12/17		84	%	50 - 130
			Phenanthrene	2020/12/17		91	%	50 - 130
			Pyrene	2020/12/17		94	%	50 - 130
7112265	LGE	Method Blank	D10-Anthracene	2020/12/17		98	%	50 - 130
			D14-Terphenyl	2020/12/17		94	%	50 - 130
			D8-Acenaphthylene	2020/12/17		96	%	50 - 130
			1-Methylnaphthalene	2020/12/17	<0.050		ug/L	
			2-Methylnaphthalene	2020/12/17	<0.050		ug/L	
			Acenaphthene	2020/12/17	<0.010		ug/L	
			Acenaphthylene	2020/12/17	<0.010		ug/L	
			Anthracene	2020/12/17	<0.010		ug/L	
			Benzo(a)anthracene	2020/12/17	<0.010		ug/L	
			Benzo(a)pyrene	2020/12/17	<0.010		ug/L	
			Benzo(b)fluoranthene	2020/12/17	<0.010		ug/L	
			Benzo(g,h,i)perylene	2020/12/17	<0.010		ug/L	
			Benzo(j)fluoranthene	2020/12/17	<0.010		ug/L	
			Benzo(k)fluoranthene	2020/12/17	<0.010		ug/L	
			Chrysene	2020/12/17	<0.010		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenzo(a,h)anthracene	2020/12/17	<0.010		ug/L	
			Fluoranthene	2020/12/17	<0.010		ug/L	
			Fluorene	2020/12/17	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2020/12/17	<0.010		ug/L	
			Naphthalene	2020/12/17	<0.20		ug/L	
			Perylene	2020/12/17	<0.010		ug/L	
			Phenanthrene	2020/12/17	<0.010		ug/L	
			Pyrene	2020/12/17	<0.010		ug/L	
7112265	LGE	RPD [OJV838-03]	1-Methylnaphthalene	2020/12/17	7.7		%	40
			2-Methylnaphthalene	2020/12/17	6.4		%	40
			Acenaphthene	2020/12/17	8.3		%	40
			Acenaphthylene	2020/12/17	9.0		%	40
			Anthracene	2020/12/17	6.9		%	40
			Benzo(a)anthracene	2020/12/17	27		%	40
			Benzo(a)pyrene	2020/12/17	NC		%	40
			Benzo(b)fluoranthene	2020/12/17	NC		%	40
			Benzo(g,h,i)perylene	2020/12/17	40		%	40
			Benzo(j)fluoranthene	2020/12/17	NC		%	40
			Benzo(k)fluoranthene	2020/12/17	NC		%	40
			Chrysene	2020/12/17	25		%	40
			Dibenzo(a,h)anthracene	2020/12/17	NC		%	40
			Fluoranthene	2020/12/17	0.63		%	40
			Fluorene	2020/12/17	7.1		%	40
			Indeno(1,2,3-cd)pyrene	2020/12/17	NC		%	40
			Naphthalene	2020/12/17	7.5		%	40
			Perylene	2020/12/17	14		%	40
			Phenanthrene	2020/12/17	8.4		%	40
			Pyrene	2020/12/17	2.6		%	40
7116961	NHU	Matrix Spike	Total Mercury (Hg)	2020/12/21		100	%	80 - 120
7116961	NHU	Spiked Blank	Total Mercury (Hg)	2020/12/21		101	%	80 - 120
7116961	NHU	Method Blank	Total Mercury (Hg)	2020/12/21	<0.013		ug/L	
7116961	NHU	RPD	Total Mercury (Hg)	2020/12/21	NC		%	20

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

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

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

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

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

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

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

(1) PAH sample contained sediment.

(2) Matrix Spike: results are outside acceptance limit due to probable matrix interference.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Mike MacGillivray, Scientific Specialist (Inorganics)

Phil Deveau, Scientific Specialist (Organics)

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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References

- Nova Scotia Environment Tier I Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013.
- Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.
- Harbourside Commercial Park, Sydney, NS, 2013 Groundwater Monitoring Program, SLR Consulting (Canada) Ltd., dated November 2014.
- Long Term Maintenance and Monitoring 2014 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated March 2015.
- Long Term Maintenance and Monitoring 2015 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated June 2016.
- Long Term Maintenance and Monitoring 2016 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated May 2017.
- Long Term Maintenance and Monitoring 2017 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated March 2018.
- Long Term Maintenance and Monitoring - 2018 Groundwater Monitoring Event Harbourside Commercial Park - Final Report, Dillon Consulting Limited, dated March 2019.