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NOVA SCOTIA LANDS

Open Hearth Park and Harbourside East 2019 Long Term Maintenance and Monitoring Groundwater Event

Final Report

March 2020 14-1360-2500

March 3, 2020

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ATTENTION: Mr. Frank Potter
Executive Project Director

Open Hearth Park and Harbourside East
2019 Long Term Maintenance and Monitoring Groundwater Event (Final Report)

Dear Mr. Potter:

Dillon Consulting Limited is pleased to submit the above referenced report. Should you have any questions or comments, please contact the undersigned at (902) 562-9880 extension 5206.

Sincerely,

DILLON CONSULTING LIMITED

N. J. Wambolt

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

NJW:kme

Enclosure

Our file: 14-1360-2500

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Executive Summary

Nova Scotia Lands (NS Lands) is a Crown Corporation of the Province of Nova Scotia responsible for the Long Term Maintenance and Monitoring Program (LTMM) implemented at Open Hearth Park (OHP) and Harbourside East (HE). NS Lands retained Dillon Consulting Limited (Dillon) to conduct the LTMM program, which consists of an annual groundwater sampling program. The LTMM event completed in 2019 included measurement of hydraulic head levels and sample collection from monitor wells around the shorelines of OHP and across HE.

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 were not available (e.g., for some polycyclic aromatic hydrocarbons (PAHs) and metals in groundwater at non-potable sites), the Ontario Ministry of the Environment (MOE) Groundwater Standards for use under Ontario's Environmental Protection Act were applied.

Groundwater quality trend analysis was performed for select monitor wells within the OHP and HE areas via Mann-Kendall analysis, and included PAH indicator parameters (i.e., anthracene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd)pyrene and naphthalene) and additional indicator general chemistry and metal parameters (i.e., sulfate, pH, TDS and selenium). The purpose of the comparison of groundwater data collected during the LTMM monitoring event with post-remediation monitoring events is to identify changes (if any) in groundwater over time. A potentially increasing trend for pH was identified in MCES-001-MWB; however, this requires further verification, as there is potential that the seal in this monitor well has failed (which may be allowing shallower groundwater to infiltrate into the monitor well). In general, review of trend analysis indicates the plume is fluctuating relative to indicator PAH concentrations, with parameters in select wells within the plume showing stable and decreasing trends.

Results of the 2019 monitoring event at OHP indicate no exceedances of the Tier I EQS or the default MOE standards for the 14 monitor wells sampled on the OHP site.

For HE, concentrations of analyzed parameters at the majority of the sampling wells were below applicable standards. Monitor well, CODT-201-MWC, located in the former Domtar site, had a naphthalene concentration above the Tier I EQS and an anthracene concentration above the MOE standard. Monitor wells CODT-201-MWA and CODT-203-MWA, located within HE at the former Domtar site, contained multiple PAH concentrations above the MOE standards.

During the 2019 monitoring event, no DNAPL was measured in monitor well CODT-103-MWB (located on the northwest portion of HE in the former Domtar site), which was added to the LTMM program in 2015 for water level/product check only; however, minor black silt with a petroleum hydrocarbon odour was noted on the probe following removal from the bottom of the monitor well. This is generally consistent with historical observations at this well. Measureable DNAPL has not been observed in CODT-

103-MWB since 2016. Black silt with a petroleum hydrocarbon odor and sheen was noted on the probe following removal from the bottom of monitor well SCU10-002-MW. This is also consistent with historical observations, as measureable DNAPL has not been observed in SCU10-002-MW since 2014. DNAPL was not measured at any other location in 2019. LNAPL was not measured at any location in 2019.

This report was prepared by Dillon Consulting Limited for the sole benefit of our client, NS Lands. 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

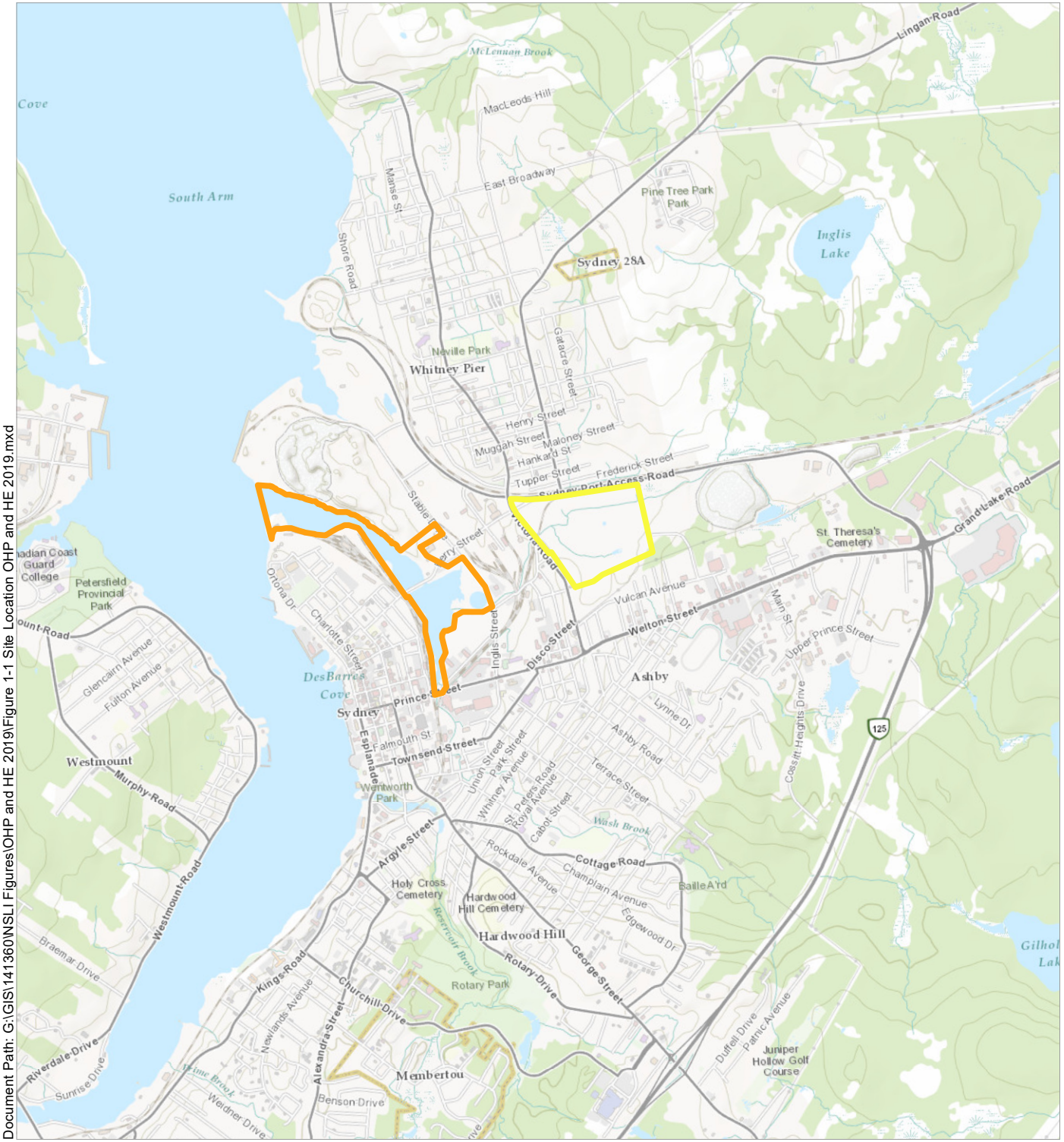
The footprint of the Sydney Tar Ponds and former Coke Ovens Site encompassed approximately 100 hectares of property within the Muggah Creek Watershed in the Cape Breton Regional Municipality of Nova Scotia. Extensive testing identified widespread contamination of soil, groundwater, surface water and sediments due to historical long term industrial use of the property. The remediation project, managed by the Sydney Tar Ponds Agency (STPA), was a complex undertaking, consisting of many design and construction elements completed over several years. An Environmental Effects Monitoring (EEM) and Surface Water Compliance Monitoring Program was established as part of the remediation program to assess performance of construction/remedial measures.

Long term maintenance and monitoring (LTMM) was one of the major components of the proposed remedial strategy designed to be carried out following the completion of the primary remediation project (2009-2014). Nova Scotia Lands (NS Lands) is a Crown Corporation of the Province of Nova Scotia with the responsibility for former lands involved in the Tar Ponds and Coke Ovens cleanup, now known as Open Hearth Park (OHP) and Harbourside East (HE) (Figure 1-1 and Figure 1-2). As such, NS Lands is responsible for the LTMM, which has been implemented at OHP and HE.

This document details the groundwater monitoring completed at OHP and HE in 2019. Section 1.0 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 presented in Section 5.0. Data tables and supporting information are found in appendices referenced throughout the document.

1.1 Scope of Work

The LTMM program for OHP and HE consists of an annual groundwater sampling program. The LTMM event included measurement of hydraulic head levels and sample collection from specific monitor wells around the shorelines of OHP (i.e., North and South Ponds) and at HE (i.e., the former Coke Ovens Site). In accordance with the request for proposal (RFP) NSLAND57 Groundwater Monitoring Services, the LTMM groundwater monitoring events were scheduled to include 67 water level measurements and the collection of 44 groundwater samples for select analysis. However, based on the findings of the 2014 LTMM program, Dillon recommended the exclusion of one monitor well, MW-2 (Spar Road), from the program due to its location (i.e., up gradient) and consistent/stable concentrations over the previous two years of monitoring from 2012 to 2014. Following approval from Nova Scotia Environment (NSE) and NS Lands, this monitor well was removed from the program in 2015 (note: this well was decommissioned in 2019 as part of Spar Road expansion activities). Additionally, during the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsequently decommissioned. Prior to commencing the 2016 groundwater monitoring program, monitor well MSES-003-MW was found to be destroyed. Further, during the 2017 monitoring program,



Document Path: G:\GIS\141360\NSLI Figures\OHP and HE 2019\Figure 1-1 Site Location OHP and HE 2019.mxd

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OPEN HEARTH PARK AND HARBOURSIDE EAST

2019 GROUNDWATER MONITORING EVENT

SITE LOCATION

Figure 1-1

Legend

- Harbourside East
- Open Hearth Park

0 250 500 1,000 1,500 m

SCALE 1:40,000

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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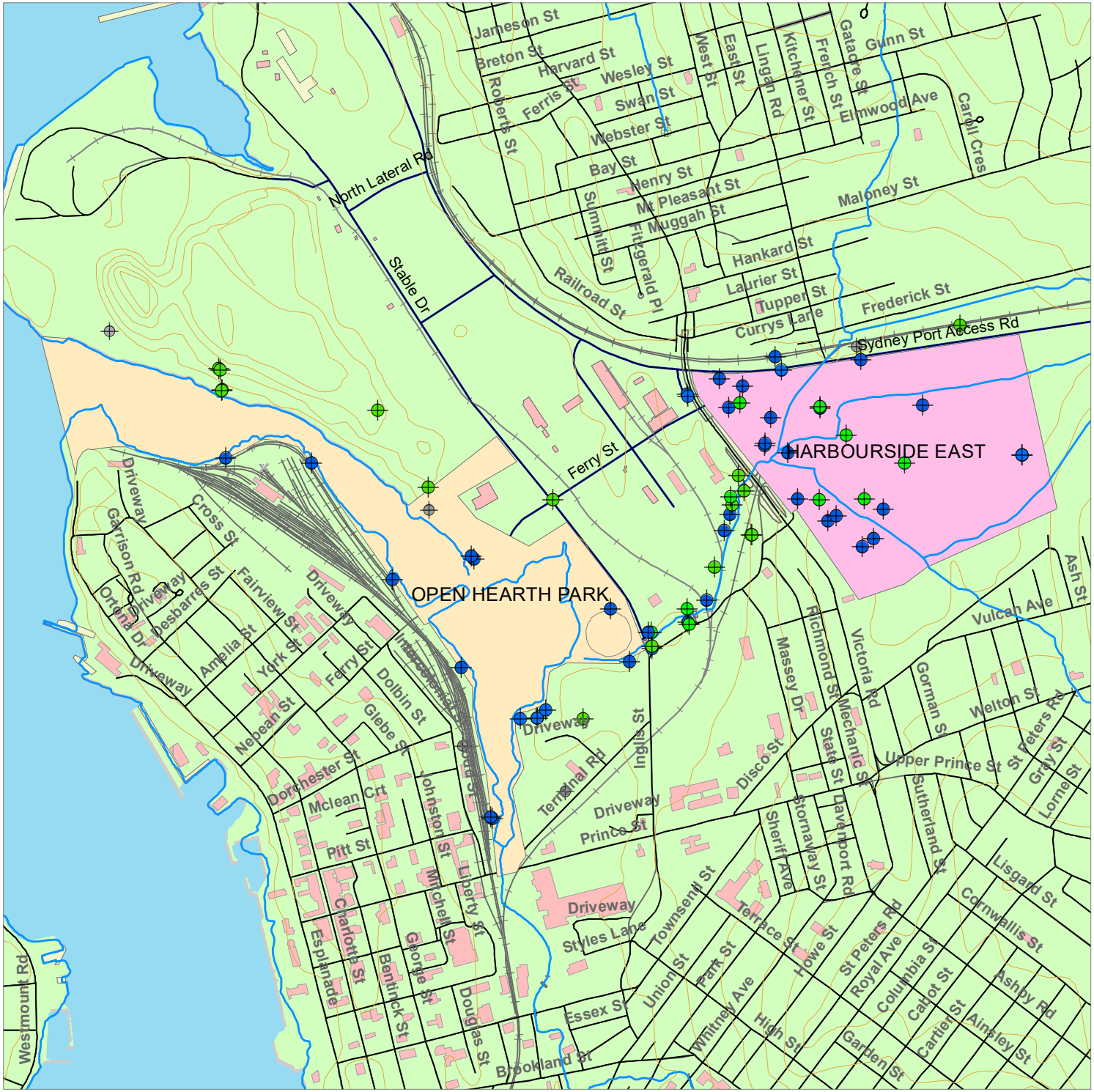

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OPEN HEARTH PARK AND
HARBOURSIDE EAST

2019 GROUNDWATER MONITORING EVENT

STUDY AREAS

FIGURE 1-2

LEGEND

Monitoring Wells

- Active Water Level Only
- Active Sample and Water Level
- Removed From Program, Destroyed and/or Decommissioned

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

MAP CREATED BY: SCM
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Document Path: G:\GIS\141360\NSLI Figures\OHP and HE 2019\Figure 1-2 Study Areas OHP and HE 2019.mxd

monitor well MCES-204-MW was found to be destroyed; thereby decreasing the sampling program to 40 monitor wells.

As no monitor wells on the HE site initially included in the LTMM program were installed in shallow or deep bedrock, no groundwater contours were available for bedrock in this area during the 2014 LTMM program. Therefore, water level measurements at five monitor wells installed within bedrock (i.e., COBP-001-MWC, COCB-001-MW, COBP-004-MWC, NOCO-014-MWB and COBT-001-MWB) on the HE site were added to the LTMM in 2015 to allow for inclusion of bedrock groundwater contours for this area. A water level measurement could not be obtained from SCU26-209-MW, which could not be located during the 2014 program and is assumed to be destroyed. During the 2016 program, SCU24-007-MWB could not be located. Therefore, the number of water level measurements included in the 2019 LTMM program was 66 (i.e., 40 sampling and 26 water level wells). Following completion of the 2019 LTMM groundwater monitoring program, monitor wells MW88-102-A and MW88-102-B, which were part of the water level measurement portion of the program, were decommissioned at the request of NS Lands. Decommissioning was required due to site development of a berm in that area.

As concentrations of petroleum hydrocarbons (PHC) have remained below laboratory detection limits or at concentrations below applicable criteria for the majority of the sampling wells, following approval from NSE and NS Lands, the 2015 LTMM program was reduced to include sampling for PHC at one monitor well location only (i.e., CODT-201-MWC located on the northwest portion of HE at the former Domtar site). Each of the 40 monitor wells scheduled for sampling were analyzed for polycyclic aromatic hydrocarbons (PAHs), metals and general inorganic chemistry parameters.

2.0 Project Methodologies

Methodologies are provided in the following sub-sections:

- Section 2.1 Health and Safety Processes
- Section 2.2 Quality Control 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 (H&S) for groundwater monitoring. Site specific information, such as, local emergency contact information and hospital routes are included in the plan, as well as, but not limited to the following:

- Identification of site activities and potential hazards;
- Description of safe work practices and procedures;
- Description of PPE;

- Identification of safety training and first aid requirements; and,
- Identification of emergency response procedures.

The project manager reviewed the H&S with field personnel prior to their mobilizing to the site. Field personnel were responsible for following the H&S, including conducting a job hazard analysis upon arrival at the site (i.e., OHP and HE).

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

As summarized in Table B-1 (Appendix B), four field duplicates, one field blank and two equipment blanks were collected during the 2019 monitoring event.

Laboratory QC

Samples were delivered to Burveau Veritas (BV) Laboratories in Sydney, Nova Scotia (formerly Maxxam Analytics Inc.) for analysis. BV is 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 LTMM Groundwater Monitoring Program

Groundwater characteristics within the boundaries of the Muggah Creek Watershed were previously assessed through the installation and testing of a significant number of monitor wells as part of Phase II and III Environmental Site Assessments (ESAs) (JDAC, 2001 and 2002). The wells were terminated within fill, native till, and shallow, intermediate and deeper bedrock units. Analytical data collected in conjunction with the ESAs, as well as in subsequent sampling events, confirmed widespread impacts, particularly PAHs, metals, and inorganic parameters, resulting from long term industrial use of the land. The JDAC data also suggested that the more permeable fractured shallow bedrock (SRx) unit represented the primary pathway for contaminant migration. The sampling wells included in the LTMM plan are specifically located in different areas across the sites in an attempt to monitor and assess the performance of remediation.

The field component of the 2019 groundwater monitoring event was consistent with pre-construction/ baseline and quarterly construction monitoring events and involved the following activities:

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

2.3.1 Measurement of Hydraulic Head Levels

The number of monitor wells measured for water levels during the 2019 groundwater monitoring event was 66 (i.e., 40 sampling and 26 water level wells).

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 field sampling sheets.

2.3.2 Well Purging

Using 12V submersible pumps, installed as part of the EEM program for the Sydney Tar Ponds (STP) remediation project, water was purged from each well scheduled for sample collection until select field parameters stabilized, including water level. The rate of flow (0.1 to 0.4 liters/minute) at each well was controlled by an in-line valve. In instances where the dedicated submersible pumps were no longer working, a peristaltic pump was used. The water level was measured at 3-minute intervals and maintained at a constant head; if the water level started to drop, the flow rate was reduced to maintain a constant head. The sample tube was connected to a flow-through cell containing a Horiba U-22 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 (L) of water was removed. Similar to the EEM program, stabilization of turbidity provided some challenges for a number of wells. In these cases, additional parameters, including dissolved oxygen (DO) and oxidation reduction potential (ORP), were referenced to confirm stabilized conditions.

2.3.3 Sample Collection

As detailed in Section 1.1, the 2019 groundwater monitoring program included the sampling of 40 monitor wells.

2.3.4 Groundwater Analysis

Pursuant to RFP NSLAND57 Groundwater Monitoring Services, groundwater samples were analyzed for PHCs (i.e., CODT-201-MWC only), PAHs, metals and general chemistry parameters, as listed in Table 2-1. 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 the Canadian Association for Laboratory Accreditation (CALA) certified laboratory BV in Sydney, Nova Scotia for analysis.

Table 2-1 Water Quality Analytical Suite of Parameters

PHC[1]	PAHs	General Chemistry	Metals (dissolved)
Benzene	Acenaphthene	Anion/Cation sums	Aluminum
Toluene	Acenaphthylene	Ion Balance (% Difference)	Antimony
Ethylbenzene	Anthracene	Langelier Index @ 4&20 C	Arsenic
Total Xylenes	Benzo(a)anthracene	Saturation pH @ 4&20 C	Barium
C6-C10 (Less BTEX)	Benzo(a)pyrene	Alkalinity (total as $CaCo_3$)	Beryllium
>C10-C16 Hydrocarbons	Benzo(b)fluoranthene	Sodium	Bismuth
>C16-C21 Hydrocarbons	Benzo(j)fluoranthene	Potassium	Boron
>C21-<C32 Hydrocarbons	Benzo(k)fluoranthene	Calcium	Cadmium
Modified TPH (Tier I)	Benzo(g,h,i)perylene	Magnesium	Chromium
	Chrysene	Chloride	Cobalt
	Dibenz(a,h)anthracene	TDS	Copper
	Fluoranthene	Colour	Iron
	Fluorene	Nitrate	Lead
	Indeno(1,2,3-cd)pyrene	Nitrite	Manganese
	Naphthalene	Nitrate + Nitrite	Mercury (Total)
	Perylene	Nitrogen (Ammonic N)	Molybdenum
	Phenanthrene	Total Organic Carbon	Nickel
	Pyrene	Orthophosphate	Phosphorus
	1-methylnaphthalene	pH	Selenium
	2-methylnaphthalene	Silica	Silver
		Sulphate	Strontium Thallium
		Turbidity	Tin
		Conductivity	Titanium Uranium
			Vanadium
			Zinc

Note:
1. Since 2015, only CODT-201-MWC has been sampled for PHC.

2.4 Data Compilation/Assessment

BV provided analytical results in a database compatible format, alleviating potential errors associated with manual entry. Data tables generated as part of the 2019 monitoring event also include available post-remediation data. Based on historical data, the following parameters, are used as indicator parameters for OHP and HE:

- PAHs: anthracene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd)pyrene and naphthalene.

Additional general chemistry and metal parameters were also selected for Mann-Kendall analysis at three monitor wells, which are located in the vicinity of the solidification/stabilization (S/S) area in consideration of monitoring the S/S performance over the long term period:

- General chemistry and metals: selenium, sulfate, pH and TDS.

Trend analysis was not completed for PHCs, as only monitor well CODT-201-MWC is sampled for PHCs and detected concentrations have been below the Tier I EQSs.

2.4.1 Regulatory Framework

Pursuant to RFP NSLAND57 Groundwater Monitoring Services, the remedial criteria used for this assessment were the Tier I Environmental Quality Standards (EQS) for groundwater established pursuant 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 (MOE) Groundwater Standards for use under Ontario's Environmental Protection Act were used.

2.4.2 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 (stable, decreasing, or increasing).

Based on a review of the analytical results from the LTMM and available post-remediation data, parameters with concentrations consistently (or historical consistently) above applicable standards were selected for Mann-Kendall analysis. These include PAH indicator parameters anthracene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd)pyrene and naphthalene. Additional indicator general chemistry and metal parameters (i.e., selenium, sulfate, pH and TDS) were also selected for Mann-Kendall analysis at three monitor wells, which are located in the vicinity of the S/S area in consideration of monitoring the S/S performance over the long term period. Up to four rounds (if available) of post-

remediation groundwater analytical data were applied for performing the trend analysis for the indicator parameters.

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 OHP Findings
- Section 3.4 HE Findings
- Section 3.5 QC Summary

3.1 Weather Conditions and General Observations

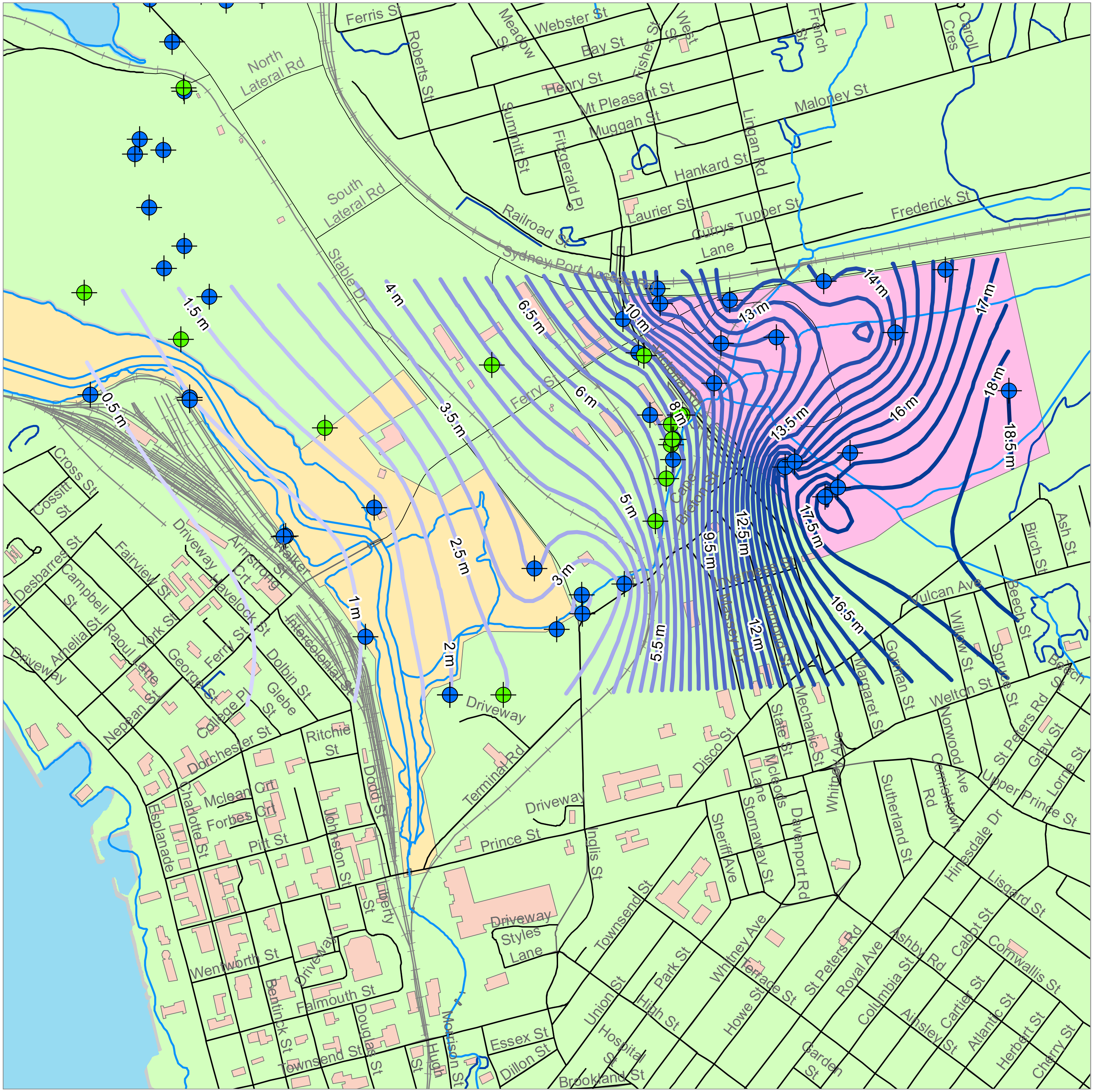
The current meteorological station (i.e., Sydney A, Climate ID: 8205700/8205701) is an official in-situ station established by Environment Canada since 1941. Historical precipitation recordings for the Sydney area can be traced back as far as 1870. Comparison of the recordings at the Sydney A station indicates that precipitation of approximately 1584.1 millimeters (mm) was recorded for 2019, which is slightly more than the normal value of yearly precipitation of 1517 mm (i.e., as recorded between 1981 and 2010) (http://climate.weather.gc.ca). The monthly precipitation recorded for November 2019 was 193.1 mm. The total precipitation recorded between November 28, 2019 and December 9, 2019 (the duration of OHP and HE sampling program) was 65.8 mm.

3.2 Groundwater Flow and Hydraulic Head Levels

A survey of the EEM program monitor well elevations across the OHP and HE sites was conducted in December 2011 and May 2014. The hydraulic head for the monitor wells at the OHP and HE sites are provided based on these surveys.

The hydraulic head data obtained from the monitoring areas during the 2019 monitoring event were employed to plot the equipotential groundwater contours. The groundwater contours were identified for different media within the unconsolidated till and/or fill unit (Figure 3-1), the upper fractured shallow bedrock (Figure 3-2), and the intermediate/deep bedrock (Figure 3-3).

Review of the available equipotential contour plots for the three media units (i.e., the fill/till, shallow bedrock and intermediate/deep bedrock) indicates that the groundwater flow direction in each of the units is generally consistent between the 2019 event and that observed during the previous LTMM programs and the EEM program associated with the STP remediation project. Based on hydraulic head data, the groundwater flows generally from HE towards the southwest into Sydney Harbour.



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OPEN HEARTH PARK AND HARBOURSIDE EAST

2018 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Fill TIll

FIGURE 3-1

LEGEND

- Active Water Level Only
- Active Sample and Water Level

Equipotential Groundwater Contours

6m — Groundwater Elevations are measured in meters above sea level (mASL)

Open Hearth Park

Harbourside East

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

FILE LOCATION: \\DILLON.CA\DILLON_DFS\SYDNEY\SYDNEYCAD\GIS\141360

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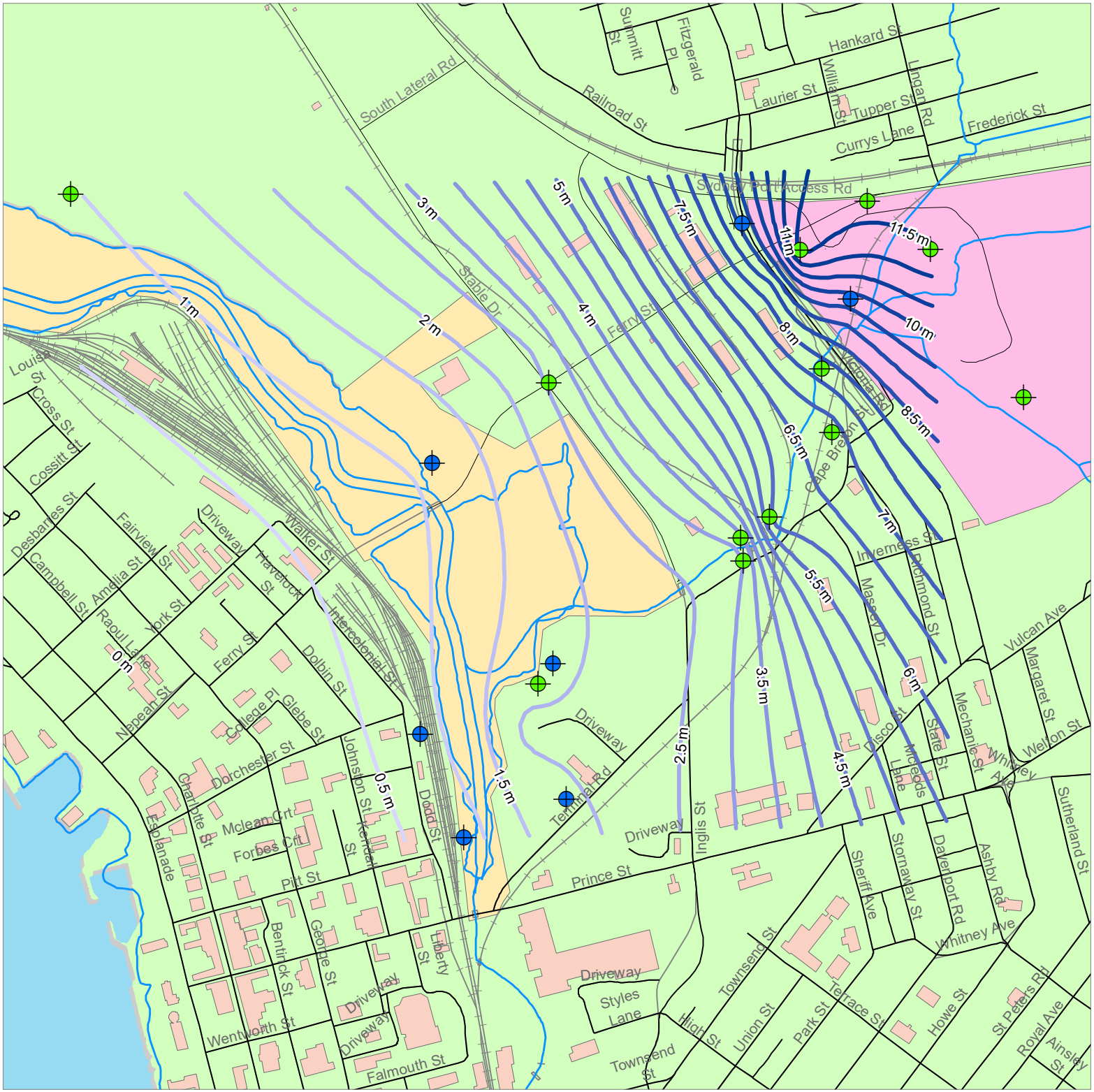
PROJECT: 14-1360

STATUS: FINAL

Date: 01/20/20



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OPEN HEARTH PARK AND
HARBOURSIDE EAST
2019 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Bedrock Aquifer
FIGURE 3-2

LEGEND

Equipotential Groundwater Contours

6m — *Groundwater Elevations are measured in meters above sea level, (mASL)*

Harbourside East

Open Hearth Park

Active Water Level Only

Active Sample and Water Level

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

FILE LOCATION: \\DILLON.CA\DILLON_DFS\SYDNEY\SYDNEYCAD\GIS\141360

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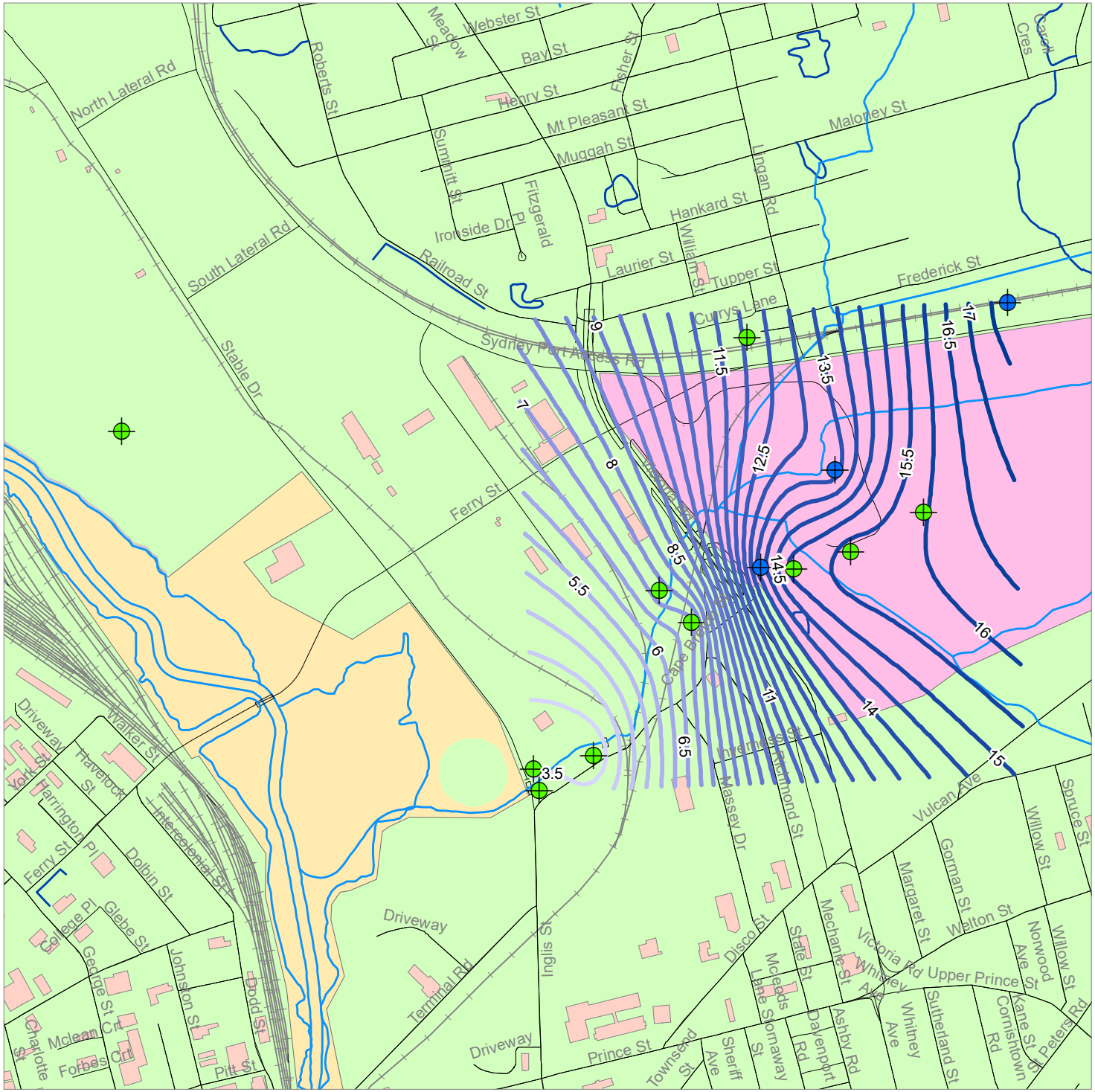
Date: 01/20/20



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OPEN HEARTH PARK AND
HARBOURSIDE EAST
2019 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Deep Bedrock Aquifer
FIGURE 3-3

LEGEND

Equipotential Groundwater Contours

6m *Groundwater Elevations are measured in meters above sea level, (mASL)*

Open Hearth Park

Harbourside East

Active Water Level Only

Active Sample and Water Level

0 50 100 200 300 m

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MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

FILE LOCATION: \\DILLON.CA\DILLON_DFS\SYDNEY\SYDNEYCAD\GIS\141360

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PROJECT: 14-1360
STATUS: FINAL
Date: 01/20/20

During the 2019 monitoring event, no DNAPL was measured in monitor well CODT-103-MWB (located on the northwest portion of HE in the former Domtar site), which was added to the LTMM program in 2015 for water level/product check only; however, minor black silt with a petroleum hydrocarbon odour was noted on the probe following removal from the bottom of the monitor well. This is generally consistent with historical observations at this well. Measureable DNAPL has not been observed in CODT-103-MWB since 2016. Black silt with a petroleum hydrocarbon odor and sheen was noted on the probe following removal from the bottom of monitor well SCU10-002-MW. This is also consistent with historical observations, as measureable DNAPL has not been observed in SCU10-002-MW since 2014. DNAPL was not measured at any other location in 2019. LNAPL was not measured at any location in 2019.

3.3 OHP Findings

The OHP area (i.e., formerly TP2/TP6/TP7 areas) includes the east, southeast, and western shorelines of the former Tar Ponds, as well as a portion of the former SYSCO property along Inglis Street. This area was remediated as part of the STP project using S/S processes. The LTMM program is used to evaluate groundwater quality post remediation. Results of the 2019 monitoring event are presented and discussed in the following subsections.

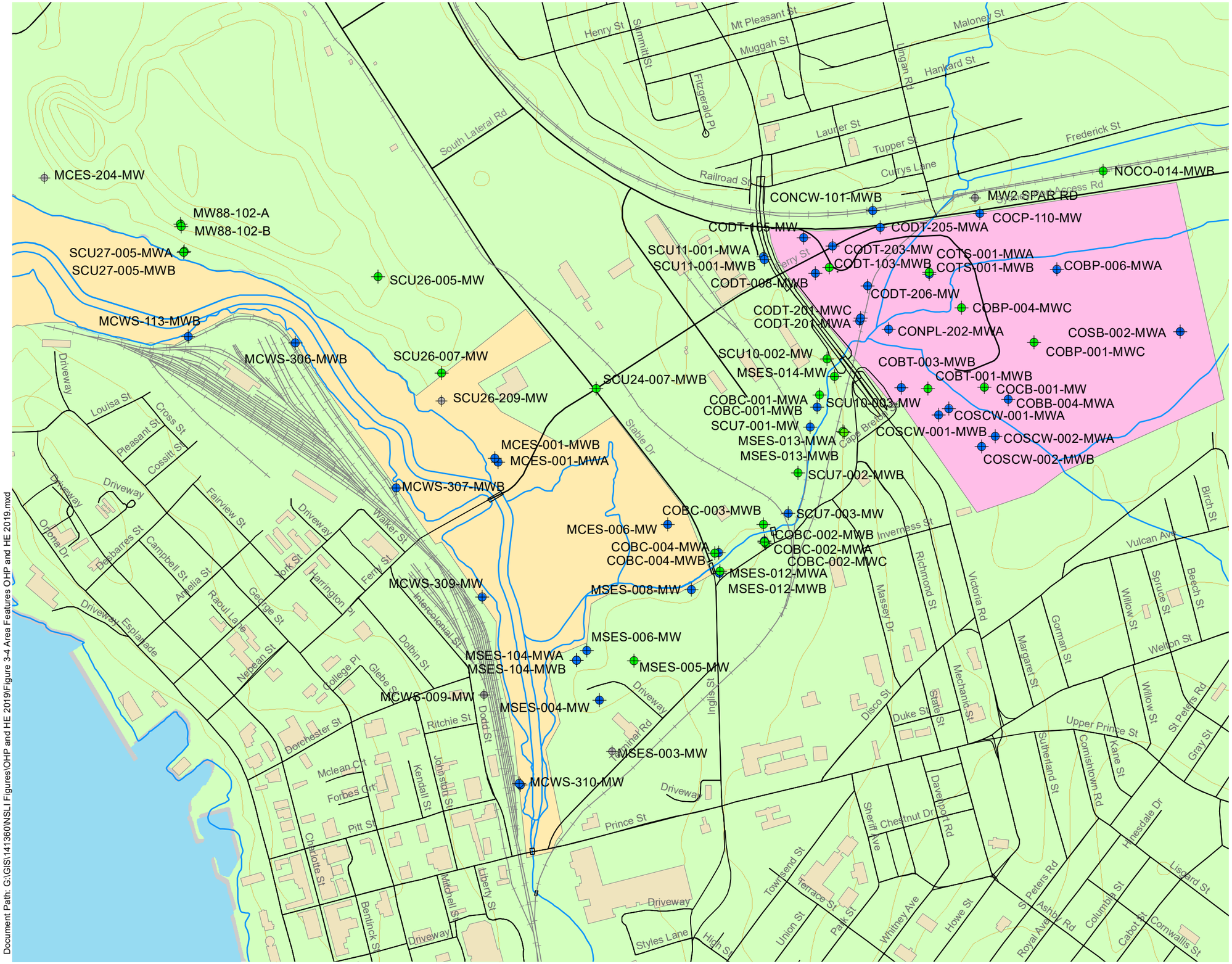
Monitor wells used for water level measurements in the OHP area include wells located in the “high dump” area, which is part of the Harbourside Commercial Park (HCP) site and is located at the north end of the eastern shoreline. The high dump was used for disposal of blast furnace slag from the former steel plant. Historical in-filling of the southeast shoreline of the OHP used a variety of materials including slag, coal, brick and scrap wood, in addition to a former municipal disposal area on the south shoreline of OHP. The OHP also includes the footprint of a former open cooling pond used to contain steel plant effluents, a number of municipal outfalls, and a rail yard, bulk fuel terminal and a number of other former industrial sites on the west shoreline.

Results of the 2019 monitoring event at OHP indicate no exceedances of the Tier I EQS or the default MOE standards for the 14 monitor wells sampled on the OHP site. Monitor well locations are presented on Figure 3-4.

3.3.1 OHP Groundwater Quality

Analytical data, including available historical post-remediation data for reference, are presented in Appendix A (Tables A-1 (TPH/BTEX), A-2 (PAHs) and A-3 (general chemistry and metals)). As stated previously, the LTMM 2019 Groundwater Monitoring Program included the collection of samples from 40 locations for analysis, 14 of which were collected from monitor wells located on the OHP site.

Analytical results indicate no exceedances of the Tier I EQS or the default MOE standards for the 14 monitor wells sampled on the OHP site.



Document Path: G:\GIS\141360\NSLI Figures\OHP and HE 2019\Figure 3-4 Area Features OHP and HE 2019.mxd

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OPEN HEARTH PARK AND HARBOURSIDE EAST

2019 GROUNDWATER MONITORING EVENT

AREA FEATURES

Figure 3-4

LEGEND

Monitoring Wells

- Active Sample and Water Level
- Active Water Level Only
- Removed From Program, Destroyed and/or Decommissioned

Harbourside East

Open Hearth Park

NOTE:
MCES-204-MW destoyed in 2017
MW 2 SPAR RD removed from program,
MCWS-009-MW decomissioned December 2015,
SCU26-209-MW destroyed,
MSES-003-MW destroyed

0 75 150 300 450 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

N W E S

DILLON CONSULTING

PROJECT: 14-1360
STATUS: FINAL
Date: 2020-01-20

As noted in 2018, review of analytical data for MCES-001-MWB indicates a possible monitor well seal failure (which may be allowing shallower groundwater to infiltrate into the monitor well). This appears to be supported by the 2019 findings.

Table 3-1 summarizes indicator parameter concentrations for select monitor wells, which are located in the vicinity of the S/S area in consideration of monitoring the S/S performance over the long term period.

Table 3-1 Summary of Indicator Parameter Concentrations

Well ID	Date	Inorganic Parameters			
		Selenium (ug/L)	Sulphur (mg/L)	TDS (mg/L)	pH
MOE Table 3[1]		63	-	-	-
MCES-006-MW	Mar 2013	6.3	34	374	7.50
	Jul 2013	<1.0	28	376	7.57
	Nov 2013	<1.0	34	390	7.61
	Dec 2014	2.9	70	260	8.91
	Dec 2015	3.3	88	260	9.44
	Dec 2016	<1.0	48	220	7.95
	Dec 2017	1.7	35	200	7.86
	Nov 2018	1.5	64	200	9.15
	Dec 2019	2.2	83	220	10.3
MCES-001-MWA	Mar 2013	1.8	85	631	11.8
	July 2013	1.6	160	542	11.8
	Dec 2014	1.8	120	730	11.9
	Dec 2015	1.5	160	540	11.8
	Nov 2016	1.9	190	730	11.9
	Dec 2017	1.8	160	560	12
	Nov 2018	1.5	110	580	12
	Dec 2019	1.6	130	570	11.9
MCES-001-MWB	Mar 2013	32	29	24,700	7.1
	July 2013	<10	25	21,000	7.42
	Nov 2013	<10	10	22,000	7.32
	Dec 2014	<1.0	6.7	21,000	7.4
	Dec 2015	<10	<2.0	22,000	7.49
	Nov 2016	<10	<2.0	19,000	7.42
	Dec 2017	<10	<2.0	21,000	7.47
	Nov 2018[5]	1.8	94	520	11.9
	Dec 2019	1.6	96	510	12

Notes:

1. Ontario MOE Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 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 selenium, sulphur, TDS or pH.
3. BOLD Exceeds the MOE Table 3 standards (when no Tier I EQS is available).
4. "-" Denotes no Tier I EQS or MOE standards available.
5 A possible monitor well seal failure is suspected in MCES-001-MWB.

3.3.2 Trend Analysis - OHP

Mann-Kendall analysis was conducted based on available post-remediation data. Statistical analysis of available indicator parameter data indicated that most select parameter concentration trends are stable or decreasing, as presented in Table 3-2.

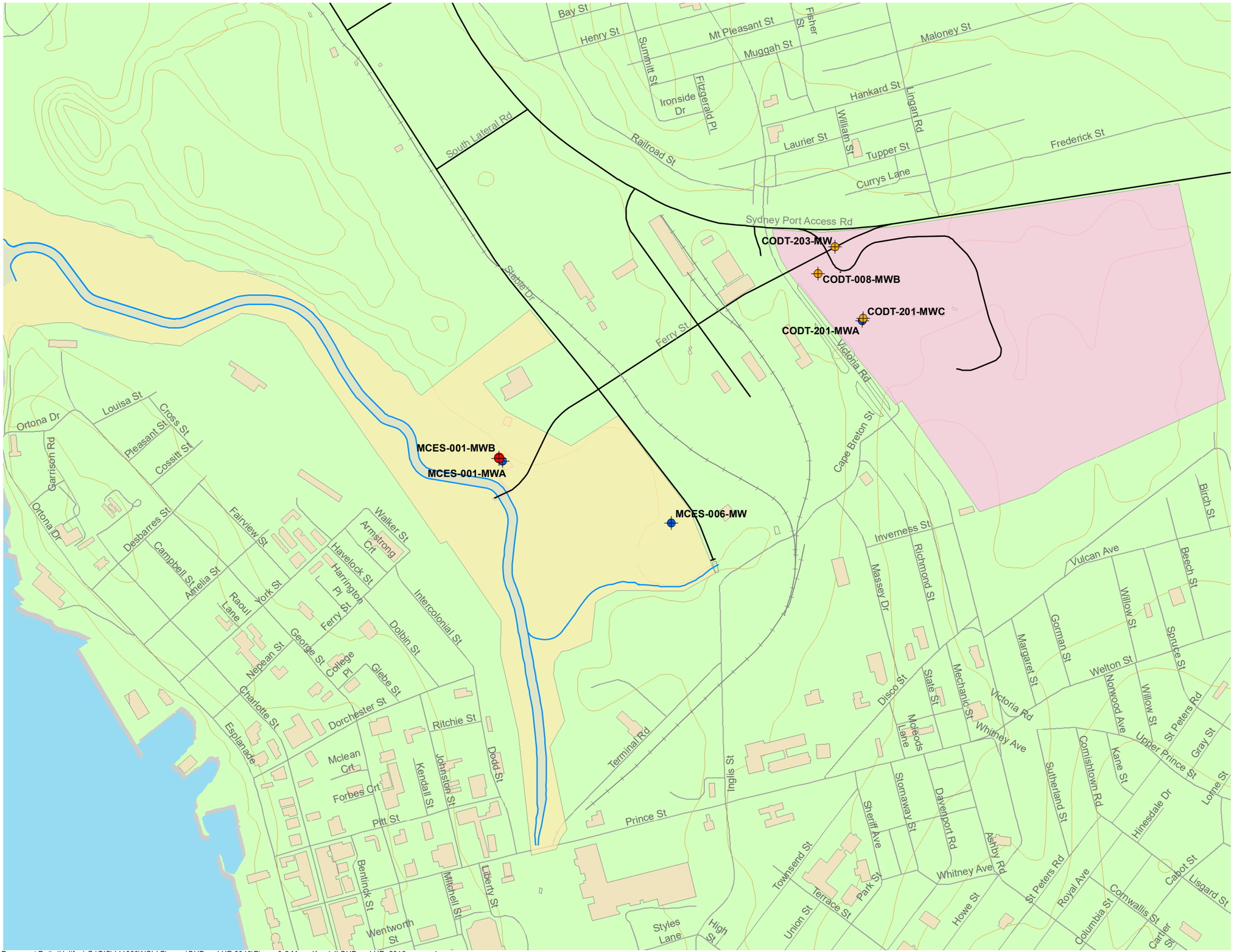
Table 3-2 OHP – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
MCES-006-MW	Selenium	Stable
	pH	Stable
	TDS	Decreasing
	SO4	Stable
MCES-001-MWA[3]	Selenium	Stable
	pH	Stable
	TDS	Stable
	SO4	Stable
MCES-001-MWB[4]	pH	Potentially Increasing
	TDS	Decreasing
	SO4	Fluctuating

Notes:
1. Trend analysis not completed for selenium in monitor well MCES-001-MWB, as the majority of the analytical results are below laboratory detection limits.
2. Monitor well MCES-204-MW, which has been historically included in trend analysis completed as part of the LTMM, was not included, as this monitor well was found to be destroyed during the 2017 LTMM.
3 Mann-Kendall analysis indicates an expanding plume for pH in MCES-001-MWA; however, review of the data indicates incremental changes in the data reflective of a stable trend.
4 A possible monitor well seal failure is suspected in MCES-001-MWB.

In general, review of trend analysis indicates general plume stability. The potentially increasing trend for pH identified in MCES-001-MWB requires further verification, as there is potential that the seal in this monitor well has failed. The groundwater quality trend analysis for the 2019 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for the parameters with concentrations above the applicable guidelines.

Trend analysis is presented on Figure 3-5. Mann-Kendall tables are presented in Appendix D.



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OPEN HEARTH PARK AND HARBOURSIDE EAST

2019 GROUNDWATER MONITORING EVENT

INDICATOR PARAMETER CONCENTRATION TREND

Figure 3-5

LEGEND

Trend Analysis

- Increasing/Potentially Increasing
- Fluctuating
- Stable
- Decreasing
- Monitoring Well
- **Open Hearth Park**
- **Harbourside East**

0 75 150 300 450 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

N W E S

DILLON CONSULTING

PROJECT: 14-1360
STATUS: FINAL
Date: 2020-01-30

Document Path:(Halifax) G:\GIS\141360\NSLI Figures\OHP and HE 2019\Figure 3-5 Mann Kendall OHP and HE 2019_rev.mxd

3.1 HE Area Findings

The HE area includes most of the former Coke Ovens Site; along Coke Ovens Brook from the southern area of the former Domtar site (near Victoria Road) and the mergence of Coke Ovens Brook into the South Pond to the downstream of the Municipal Ash Incinerator Disposal (MAID) area. In particular, the HE area contains part of the former CO1 (Coke Ovens Brook Connector), CO2 (Tar Cell), CO5 (Vertical Cut-Off Walls), CO6 (Surface Cap) and CO7 (Groundwater Collection System).

Historical investigations confirmed the presence of contaminated sediments in the Coke Oven Brook and the Domtar Interceptor trench, as well as the in-filling of coal tar, particularly at the former Domtar site. Elevated concentrations of organics (i.e., PHCs and PAHs) and inorganics, such as metals, were present in the groundwater.

Results of the 2019 monitoring event at HE indicate that the concentrations of analyzed parameters at the majority of the sampling wells were below applicable standards. Monitor well, CODT-201-MWC, located in the former Domtar site, had a naphthalene concentration above the Tier I EQS and an anthracene concentration above the MOE standard. Monitor wells CODT-201-MWA and CODT-203-MWA, located within HE at the former Domtar site, contained multiple PAH concentrations above the MOE standards (when Tier I EQS are not available). Monitor well locations are presented on Figure 3-4.

3.1.1 HE Groundwater Quality

Analytical data, including available post-remediation data for reference, are presented in Appendix A (Tables A-1 (TPH/BTEX), A-2 (PAHs) and A-3 (general chemistry and metals)). As stated previously, the 2019 LTMM Groundwater Monitoring Program included the collection of samples from 40 locations for analysis, 26 of which were collected from monitor wells located on the HE site.

During the 2019 monitoring event, no petroleum hydrocarbon exceedances of the Tier I EQS were identified in monitor well CODT-201-MWC (i.e., the only well in the program sampled for BTEX/TPH).

Two of the 26 monitor wells sampled on the HE site had organic parameter concentrations above the default Tier I EQS or the MOE standards (when no Tier I EQS is available), as follows:

- CODT-201-MWA: Concentrations for benzo(a)pyrene (2.9 ug/L), benzo(b)fluoranthene (2.0 ug/L), benzo(g,h,i)perylene (1.2 ug/L), benzo(k)fluoranthene (1.5 ug/L), chrysene (3.2 ug/L) and indeno(1,2,3-cd)pyrene (0.87 ug/L) exceeded the MOE standards of 0.81 ug/L, 0.75 ug/L, 0.2 ug/L, 0.4 ug/L, 1 ug/L and 0.2 ug/L, respectively. These exceedances are consistent with historical LTMM data. Mann-Kendall analysis (see Section 3.4.2), indicates the trend in this well is stable.
- CODT-201-MWC: The naphthalene and anthracene concentrations of 8,300 ug/L and 5.4 ug/L, respectively, exceeded the Tier I EQS for naphthalene of 7,000 ug/L and the MOE standard for anthracene of 2.4 ug/L. These exceedances are consistent with historical LTMM data. Mann-

Kendall analysis (see Section 3.4.2), indicates the trends for anthracene and naphthalene in this well are stable.

- CODT-203-MW: Concentrations for anthracene (6.4 ug/L), benzo(a)anthracene (12 ug/L), benzo(a)pyrene (9.7 ug/L), benzo(b)fluoranthene 6.8 ug/L), benzo(g,h,i)perylene (3.6 ug/L), benzo(k)fluoranthene (4.2 ug/L), chrysene (11 ug/L), dibenzo(a,h)anthracene (1.0 ug/L) and indeno(1,2,3-cd)pyrene (3.3 ug/L) exceeded the MOE standards of 2.4 ug/L, 4.7 ug/L, 0.81 ug/L, 0.75 ug/L, 0.2 ug/L, 0.4 ug/L, 1 ug/L, 0.52 ug/L and 0.2 ug/L, respectively. These are the first benzo(a)anthracene and dibenzo(a,h)anthracene exceedances reported for this well since the LTMM commenced in 2013, and the highest concentrations observed in this well to date for the remaining reported exceedances. Mann-Kendall analysis (see Section 3.4.2) indicates the trends in this well are stable or fluctuating.

Table 3-3 summarizes indicator parameter concentrations for select monitor wells exhibiting concentrations above applicable criteria.

Table 3-3 HE – Summary of Indicator Parameter Concentrations

Well ID	Organic Parameters					
	Date	Anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Chrysene	Indeno(1,2,3-cd) pyrene (ug/L)	Napthalene (ug/L)
NSE Tier I EQS (or defaulted MOE Table 3 Standards (as denoted)		2.4[2]	0.81[2]	1[2]	0.2[2]	7000[1]
CODT-008-MWB	Mar 2013	15	1.7	4.2	0.65	17
	Jul 2013	140	30	57	14	29
	Oct 2013	11	2.6	46	0.64	2.8
	Dec 2014	2.0	0.032	0.058	0.018	<0.20
	Dec 2015	0.13	1.2	0.96	0.31	<0.20
	Nov 2016	43	<5.0	6.0	<5.0	4100
	Dec 2017	0.19	0.22	0.29	0.10	<0.20
	Dec 2018	0.13	0.11	0.15	0.052	0.56
	Nov 2019	<0.080	0.037	0.050	0.013	0.20
CODT-201-MWA	Mar 2013	0.45	0.73	0.91	0.33	1.1
	Jul 2013	2.5	3.6	4.8	1.5	0.22
	Oct 2013	1.7	2.5	2.9	1.1	<0.2
	Dec 2014	2.5	3.7	4.5	1.5	46
	Dec 2015	2.3	4.7	5.1	1.9	<0.20
	Nov 2016	0.85	1.8	2.1	0.78	<0.20
	Dec 2017	3.7	6.9	8.6	2.9	<0.20
	Dec 2018	0.49	0.99	1.4	0.49	50
	Nov 2019	1.4	2.9	3.2	0.87	<0.20
CODT-201-MWC	Mar 2013	4.9	<0.01	0.04	<0.01	5100
	Jul 2013	4.5	0.016	0.064	0.014	4900
	Mar 2013	3.3	<0.01	0.032	<0.01	6300
	Dec 2014	5.9	<0.01	0.048	<0.01	7200

Well ID	Organic Parameters					
	Dec 2015	<10	<10	<10	<10	9500
	Nov 2016	3.3	<0.010	0.036	<0.010	7500
	Dec 2017	4.5	<0.010	0.042	<0.010	6200
	Dec 2018	4.2	0.011	0.056	<0.010	7800
	Nov 2019	5.4	<0.010	0.033	<0.010	8300
CODT-203-MW	Mar 2013	2.1	0.64	1.1	0.24	0.62
	Jul 2013	2.6	1.1	1.7	0.38	6.3
	Mar 2013	2.5	0.71	1.2	0.29	1.5
	Dec 2014	0.55	0.69	0.83	0.28	<0.2
	Dec 2015	0.42	0.61	0.73	0.29	<0.20
	Nov 2016	0.79	1.5	1.6	0.64	<0.20
	Dec 2017	0.27	0.24	0.35	0.10	0.52
	Dec 2018	0.27	0.27	0.40	0.11	1.6
	Nov 2019	6.4	9.7	11	3.3	0.39

Notes:
1 NS Tier I EQS for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/ Industrial Site) 2013.
2 Ontario MOE Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.
3. Bold exceeds NSE Tier I EQS or default MOE standards when no Tier I EQS is available.
4. Italics denotes detection limit elevated above applicable standards.

3.1.2 Trend Analysis - HE

Mann-Kendall analysis was conducted based on available post-remediation data. Statistical analysis of available indicator parameter data indicated that most select parameter concentration trends are stable or fluctuating. Trend analysis is presented on Figure 3-5. Results of Mann-Kendall trend analysis for HE are presented in Table 3-4.

Table 3-4 HE – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
CODT-008-MWB	Anthracene	Decreasing
	Benzo(a)pyrene	Fluctuating
	Chrysene	Fluctuating
	Indeno(1,2,3-cd)pyrene	Fluctuating
	Naphthalene	Fluctuating
CODT-201-MWA	Anthracene	Stable
	Benzo(a)pyrene	Stable
	Chrysene	Stable
	Indeno(1,2,3-cd)pyrene	Stable
CODT-201-MWC	Anthracene	Stable
	Chrysene	Fluctuating
	Naphthalene	Stable
CODT-203-MW	Anthracene	Fluctuating
	Benzo(a)pyrene	Fluctuating

WELL ID	INDICATOR PARAMETER	TREND
	Chrysene	Fluctuating
	Indeno(1,2,3-cd)pyrene	Fluctuating
	Naphthalene	Fluctuating

Note:
1. Trend analysis was not completed for naphthalene in monitor well CODT-201-MWA or for benzo(a)pyrene and indeno(1,2,3-cd)pyrene in monitor well CODT-201-MWC, as the majority of the analytical results for these parameters in these wells are below laboratory detection limits.

The groundwater quality trend analysis for the 2019 monitoring event was based on the available post-remediation analytical results (i.e., four rounds of sampling events are required) for the select monitor wells with concentrations above the applicable guidelines. In general, review of trend analysis indicates the plume is fluctuating relative to indicator PAH concentrations, with parameters in select wells within the plume showing stable and decreasing trends. Mann-Kendall Tables are presented in Appendix D.

3.2 QC Summary

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

- Section 3.5.1 Relative Percent Difference (RPD)
- Section 3.5.2 Laboratory Matrix Spikes, Spikes Blank and Method Blanks
- Section 3.5.3 Equipment Blanks
- Section 3.5.4 Holding Times

3.2.1 Relative Percent Difference

Four field duplicates were 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 samples indicated the calculated RPDs were within established limits (i.e., less than 40% RPD) with the exception of the following original sample and field duplicates that exhibited RPDs greater than the respective RPD Data Quality Objectives (DQOs), as presented in Tables B-2 and B-3 (Appendix B):

- One parameters at FD-16 (field duplicate of COBT-003-MWB): phenanthrene;
- One parameter at FD-17 (field duplicate of MSES-104-MWA): turbidity; and,
- One parameter at FD-19 (field duplicate of SCU11-00MWB): turbidity.

3.2.2 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 issues:

- Duplicate results exceeded RPD acceptance criteria for colour. This may be due to sample heterogeneity: COSCW-001-MWA
- Laboratory duplicate results were outside the acceptance limit, with insufficient sample for repeat analysis, for acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(j)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, perylene, phenanthrene and/or pyrene in samples collected at COBC-002-MWA, COCB-001-MWA, COBC-004-MWA, CODT-105-MW, CODT-206-MW, CODT-205-MWA, SCU7-001-MW, SCU7-003-MW, SCU11-001-MWA, SCU11-001-MWB, MSES-004-MW, MSES-012-MWA, MSES-104-MWA, MSES-104-MWB, MSES-006-MW, MSES-008-MW, MCES-001-MWA, MCES-001-MWB, MCES-006-MW, MCWS-113-MWB, MCWS-306-MWB, MCWS-307-MWB, CONCW-101-MWB and/or MCWS-309-MW.

Due to a shipping error (i.e., when BV shipped the samples from the Sydney laboratory to the Bedford laboratory they were temporarily misplaced by the courier) the laboratory reported that the average cooler temperature reading was 12 °C when the sample collected at COSCW-001-MWA arrived at the BV Bedford location. Review of the data for COSCW-001-MWA, in comparison to historical findings, indicates that the 2019 concentrations are generally within historical ranges.

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

3.2.3 Field Blanks

One field blank was collected and submitted for PAH analysis as part of the 2019 LTMM program for OHP and HE. PAHs were not detected in the field blank sample.

3.2.4 Equipment Blanks

One equipment blank 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). PAHs and/or metals were not detected in the field blank sample.

3.2.5 Holding Times

There were no holding time exceedances.

4.0 Summary

The OHP and HE 2019 monitoring event was conducted in accordance to RFP NSLAND57 Groundwater Monitoring Services. Findings were compared to July 2013 NS CSR Tier I EQS for groundwater. Where Tier I EQS were not available, MOE standards were used.

The groundwater elevation and flow direction for the monitored areas during the 2019 monitoring event was generally comparable to historical monitoring events. The groundwater flows generally from HE towards the southwest to Sydney Harbour.

The following observations are made based on the 2019 data:

OHP

Analytical results indicate no exceedances of the Tier I EQS or the default MOE standards for the 14 monitor wells sampled on the OHP site.

In general, review of trend analysis indicates general plume stability. The potentially increasing trend for pH identified in MCES-001-MWB requires further verification, as there is potential that the seal in this monitor well has failed.

HE

During the 2019 monitoring event three of the 26 monitor wells sampled on the HE site had organic parameter concentrations above the Tier I EQS or the default MOE standards (used when no Tier I EQS is available). Specifically, monitor well, CODT-201-MWC, located in the former Domtar site, had a naphthalene concentration above the Tier I EQS and an anthracene concentration above the MOE standard. Monitor wells CODT-201-MWA and CODT-203-MWA, located within HE at the former Domtar site, contained multiple PAH concentrations above the MOE standards (when Tier I EQS are not available).

The exceedances reported for CODT-201-MWA and CODT-201-MWC are generally consistent with historical LTMM data. For CODT-203-MWA, it is the first benzo(a)anthracene and dibenzo(a,h)anthracene exceedances reported for this well since the LTMM commenced in 2013, and the highest concentrations observed in this well for the remaining reported exceedances.

In general, review of trend analysis indicates the plume is fluctuating relative to indicator PAH concentrations, with parameters in select wells within the plume showing stable and decreasing trends.

5.0 Recommendations

During the 2017 monitoring program, monitor well MCES-204-MW was found to be destroyed. As MCES-204-MW has historically exhibited concentrations of anthracene and selenium above the comparison criteria, it is recommended that this well be replaced.

Review of the analytical data for MCES-001-MWB indicates a possible monitor well seal failure. It is recommended that this well be decommissioned and replaced.

Review of the 2019 groundwater sampling results, considered in context of historical data associated with OHP and HE sites, suggests that the fall 2020 groundwater monitoring program could include the following:

- The collection of 65 water levels (including a replacement well for MCES-204-MW);
- The continued inclusion of CODT-103-MWB in the LTMM for water level/product check only. and,
- The sampling of 41 monitor wells (including a replacement well for MCES-204-MW).

It is recommended that the groundwater monitoring program continue to include sampling of PHC at CODT-201-MWC only, with the remaining monitor wells scheduled for sampling to include analysis for PAHs, metals and general inorganic chemistry 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

Analytical Tables

TABLE A-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Monitor Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						Reached Baseline at C32
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
COBB-004-MWA (1.25 m)	03/27/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.0013	<0.0013	<0.0013	<0.0026	<0.013	-	<0.05	<0.05	<0.1	<0.1	-
COBC-001-MWA (1.83 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.13	-	-	<0.1	0.13	Yes
	12/12/14	0.0045	<0.001	<0.001	<0.002	<0.01	-	0.058	<0.05	<0.1	<0.1	-
COBC-002-MWA (4.13 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COBC-004-MWA (3.89 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COBP-006-MWA (2.09 m)	03/27/13[FD]	0.0043	<0.001	<0.001	<0.002	<0.01	0.34	-	-	0.1	0.43	Yes
	03/27/13	0.004	<0.001	<0.001	<0.002	<0.01	0.195	-	-	<0.1	0.19	Yes
	12/15/14	0.02	<0.001	0.0025	<0.002	<0.01	-	0.17	0.19	<0.1	0.35	Yes
COBT-003-MWB (3.03 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.07	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COCP-110-MW (2.39 m)	04/04/12	<0.001	<0.001	<0.001	<0.002	<0.01	2.95	-	-	14	17	Yes
	09/13/12	<0.001	<0.001	<0.001	<0.002	<0.01	0.12	-	-	0.42	0.54	Yes
	12/11/12	<0.001	<0.001	<0.001	<0.002	<0.01	0.054	-	-	0.1	0.16	Yes
	03/27/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	0.11	0.11	Yes
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	0.072	0.29	0.36	Yes
CODT-008-MWB (1.62 m)	03/29/13	<0.001	<0.001	0.0014	0.0053	0.018	1.36	-	-	0.25	1.6	Yes
	12/15/14	<0.001	0.0015	<0.001	0.0028	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CODT-105-MW (2.95 m)	03/13/13[L]	0.0015	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/13/13	0.0015	<0.001	<0.001	<0.002	<0.01	-	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	<0.05	<0.05	<0.1	<0.1	-
CODT-201-MWA (3.64 m)	03/13/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	0.001	0.0045	<0.01	-	0.086	<0.05	<0.1	<0.1	-
CODT-201-MWC (3.75 m)	03/13/13	0.1	0.22	0.15	0.59	0.9	13.35	-	-	<0.1	15	Yes
	12/15/14	0.1	0.2	0.15	0.61	1.0	-	15	0.49	0.22	17	Yes
	12/09/15	0.11	0.26	0.17	0.71	1.4	-	14	0.38	0.1	16	Yes
	11/28/16	0.072	0.16	0.14	0.57	1.1	-	18	49	<0.01	20	Yes
	12/05/17	0.072	0.13	0.13	0.50	0.87	-	17	0.48	0.1	19	Yes
	12/05/18	0.10	0.20	0.14	0.56	1.2	-	15	<0.50	<1.0	16	Yes
	11/28/19	0.097	0.21	0.13	0.54	0.52	-	17	<1.0	<2.0	18	Yes
CODT-203-MW (2.62 m)	03/13/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CODT-205-MWA (1.75 m)	03/13/13[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	03/13/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CODT-206-MW (2.15 m)	03/13/13	0.0035	0.0027	0.0036	0.012	0.016	0.53	-	-	<0.1	0.55	Yes
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.064	<0.05	<0.1	<0.1	-
CONCW-101-MWB (3.60 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.051	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CONPL-202-MWA (5.14 m)	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSB-002-MWA (1.61 m)	03/18/13[L]	<0.001	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/18/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-

TABLE A-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Monitor Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						Reached Baseline at C32
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
COSCW-001-MWA (3.36 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.072	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSCW-001-MWB (1.68 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSCW-002-MWA (3.85 m)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSCW-002-MWB (2.47 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COTS-001-MWA (3.83 m)	12/15/14	DRY										
MCES-001-MWA (5.81 m)	03/28/13[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	0.129	-	-	0.1	0.23	Yes
	03/28/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.105	-	-	<0.1	0.1	Yes
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCES-001-MWB (6.35 m)	03/28/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	0.022	-	<0.05	<0.05	<0.1	<0.1	-
MCES-006-MW (2.83 m)	03/28/13	0.04	0.012	0.042	0.062	0.11	1.49	-	-	0.14	1.7	Yes
	12/10/14	0.0050	0.0018	0.0041	0.0043	<0.01	-	0.27	<0.05	<0.1	0.26	Yes
MCES-204-MW (4.17 m) *Destroyed 2017*	03/28/13	0.018	0.0078	<0.001	0.0082	0.028	0.53	-	-	0.16	0.72	Yes
	12/18/14[FD]	0.017	0.0072	<0.001	0.0068	0.01	-	0.19	0.11	0.11	0.42	Yes
	12/18/14	0.017	0.0072	<0.001	0.0069	0.013	-	0.19	0.11	<0.1	0.31	Yes
MCWS-009-MW (6.63 m) *Decommissioned 2015*	12/9/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCWS-113-MWB (1.49 m)	03/27/13[L]	<0.001	<0.001	<0.001	<0.002	0.013	NM	-	-	NM	NM	-
	03/27/13	<0.001	<0.001	<0.001	<0.002	0.013	0.5	-	-	<0.1	0.52	Yes
	12/09/14	<0.001	<0.001	<0.001	<0.002	0.019	-	0.48	0.21	0.17	0.87	Yes
MCWS-306-MWB (0.78 m)	03/27/13	<0.001	<0.001	<0.001	<0.002	0.31	<0.05	-	-	<0.1	0.31	Yes
	12/09/14	<0.001	<0.001	<0.001	<0.002	0.47	-	<0.05	<0.05	<0.1	0.47	Yes
MCWS-307-MWB (0.81 m)	03/27/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCWS-309-MW (0.96 m)	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCWS-310-MW (1.06 m)	03/29/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-004-MW (7.63 m)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-006-MW (3.65 m)	03/26/13	0.0012	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14	0.011	<0.001	0.0053	0.0028	<0.01	-	0.32	0.092	0.29	0.70	Yes

TABLE A-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Monitor Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						Reached Baseline at C32
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
MSES-008-MW (4.10 m)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.052	-	-	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.07	<0.05	<0.1	<0.1	-
MSES-012-MWA (3.53 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-104-MWA (1.97 m)	03/28/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.56	-	-	0.51	1.1	Yes
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.12	0.069	<0.1	0.18	Yes
MSES-104-MWB (2.43 m)	03/26/13	0.012	0.0019	0.0081	0.0071	0.056	0.83	-	-	<0.1	0.89	Yes
	12/10/14	0.0078	0.0014	0.0045	0.0036	0.014	-	0.44	0.11	0.12	0.69	Yes
MW2 SPAR RD (2.62 m) *Removed from the LTMM in 2015/Decommissioned in 2019*	3/19/13[L]	<0.001	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU11-001-MWA (2.77 m)	03/29/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	0.11	0.11	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU11-001-MWB (2.07 m)	03/29/13	0.0072	<0.001	0.0047	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU7-001-MW (1.76 m)	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU7-003-MW (1.11 m)	03/29/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-

NOTES:
FD - Field Duplicate
L - Lab Duplicate
NM - Not measured or not analyzed; lab duplicates do not analyze for all parameters.
mg/L - milligrams per litre
- No applicable guideline criteria.
1 - Nova Scotia Environment (NSE) Tier 1 Environmental Quality Standards (EQS) for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013 (Revised January 2015)
2 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information
3 - Underline Exceeds NSE Tier I EQS

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
COBB-004-MWA (1.25 m)	03/27/13	0.022	0.029	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	0.14	<0.05	0.4	<0.01	0.011	<0.01
	07/26/13	0.025	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.017	<0.01	0.074	<0.05	0.45	<0.01	0.016	0.012
	11/06/13	0.013	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/15/14	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/09/15	0.04	<0.010	0.014	0.021	0.015	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	0.055	0.01	<0.010	<0.050	<0.050	<0.20	<0.010	0.054	0.038
	12/2/16	0.20	<0.010	0.014	0.017	0.012	0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.033	0.063	<0.010	0.57	0.19	3.9	<0.010	0.06	0.025
	12/8/17	<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
	12/3/18	<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
	11/28/19	<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
COBC-001-MWA (1.83 m)	03/15/13	2.0	0.7	0.017	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.078	0.025	<0.01	0.061	<0.05	0.24	<0.01	<0.01	0.054
	07/26/13[FD]	1.4	0.58	0.029	0.03	0.017	0.015	<0.01	0.011	<0.01	0.028	<0.01	0.11	0.048	<0.01	0.06	<0.05	0.3	<0.01	0.045	0.085
	07/26/13	1.9	0.82	0.025	0.019	0.012	0.012	<0.01	<0.01	<0.01	0.017	<0.01	0.091	0.05	<0.01	0.052	<0.05	0.22	<0.01	0.024	0.069
	11/07/13	0.74	0.37	0.022	0.019	0.012	0.012	<0.01	<0.01	<0.01	0.020	<0.01	0.11	0.032	<0.01	<0.05	<0.05	<0.2	<0.01	0.023	0.084
	12/12/14	4.2	1.5	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.075	0.15	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.047
	12/10/15	5.8	1.6	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.095	0.24	<0.010	0.54	0.37	5.4	<0.010	0.049	0.061
	12/2/16	0.42	0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.052	0.061	<0.010	0.36	0.19	4.2	<0.010	0.022	0.052
	12/11/17	6.1	1.40	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.055	0.17	<0.010	0.065	<0.050	<0.20	<0.010	0.013	0.050
	12/7/18	10	2.4	0.043	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.097	0.53	<0.010	0.75	0.47	6.0	<0.010	0.047	0.065
	12/2/19	9.9	1.7	0.038	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.070	0.35	<0.010	0.72	0.53	5.3	<0.010	0.062	0.065
COBC-002-MWA (4.13 m)	03/15/13	0.043	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	0.1	0.053	0.72	<0.01	0.023	<0.01
	07/18/13	0.066	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.013	0.039	<0.01	0.15	0.1	2.0	<0.01	0.036	<0.01
	11/05/13	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	<0.01
	12/12/14	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.011
	12/10/15	0.25	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.079	<0.010	0.78	0.59	9.7	<0.010	0.048	<0.010
	11/22/16	<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
	12/7/17	0.15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.057	<0.010	0.25	0.14	1.7	<0.010	0.036	<0.010
	12/3/18	0.064	<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
	12/2/19	0.31	0.029	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030[8]	<0.010	<0.010	0.11	0.011	<0.010	0.71	0.57	6.5	<0.010	0.045	<0.010
COBC-004-MWA (3.89 m)	03/15/13	0.32	0.016	0.05	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	0.16	<0.01	0.75	0.44	6.7	<0.01	0.3	<0.01
	07/18/13	0.074	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.045	<0.01	0.19	0.12	2.1	<0.01	0.029	<0.01
	11/05/13	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.05	<0.05	<0.2	<0.01	0.013	<0.01
	12/12/14	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.01
	12/10/15	0.26	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.084	<0.010	0.84	0.63	11	<0.010	0.053	<0.010
	11/25/16	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.01	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.011
	11/25/16[R]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12/7/17	0.20	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.076	<0.010	0.36	0.21	2.7	<0.010	0.039	<0.010
	12/3/18	<0.10[8]	<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	0.084	<0.050	<0.20	<0.010	<0.010	<0.010
	12/2/19	0.46	<0.03[8]	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.15	<0.010	1.1	0.87	12	<0.010	0.067	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
COBP-006-MWA (2.09 m)	03/27/13[FD]	4.8	0.23	0.081	0.07	0.029	0.024	0.013	NM	0.034	0.075	<0.01	0.26	0.19	0.015	0.53	0.055	0.97	<0.01	0.23	0.21
	03/27/13	3.9	0.2	0.15	0.14	0.046	0.029	0.014	NM	0.054	0.13	<0.01	0.51	0.21	0.015	0.48	0.084	0.92	0.012	0.46	0.4
	07/26/13	1.4	0.44	0.019	0.024	0.014	0.012	<0.01	<0.01	<0.01	0.021	<0.01	0.045	0.044	<0.01	0.26	<0.05	0.67	<0.01	0.036	0.048
	11/06/13	0.84	0.041	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.028	<0.01	<0.05	<0.05	<0.20	<0.01	0.02	0.026
	12/15/14	13	0.44	0.034	0.050	0.044	0.033	0.021	0.020	0.020	0.043	<0.01	0.10	0.67	0.020	1.2	<0.05	0.95	0.012	0.067	0.10
	12/9/15[FD]	8.3	0.23	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.024	0.26	<0.010	0.12	<0.050	0.48	<0.010	0.029	0.027
	12/09/15	8.4	0.25	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.020	0.24	<0.010	0.095	<0.050	0.21	<0.010	0.020	0.024
	11/28/16	14	0.22	0.02	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	0.029	0.83	<0.010	4	0.69	16	<0.010	0.12	0.027
	12/21/17	18	0.21	0.024	0.030	0.025	0.018	0.012	0.013	0.012	0.031	<0.010	0.062	1.0	0.011	6.7	<0.050	18	<0.010	0.094	0.061
	12/3/18[FD]	23	0.29	0.028	0.021	0.019	0.016	0.011	<0.010	<0.010	0.023	<0.010	0.047	1.8	<0.010	14	<0.050	28	<0.010	0.21	0.045
	12/3/18	22	0.28	0.030	0.035	0.029	0.024	0.016	0.016	0.016	0.036	<0.010	0.071	1.8	0.016	13	<0.050	27	<0.010	0.21	0.068
	11/29/19	34	0.40	0.049	0.084	0.081	0.058	0.043	0.039	0.033	0.085	0.015	0.14	2.7	0.039	22	0.95	61 [9]	<0.010	0.37	0.13
COBT-003-MWB (3.03 m)	03/19/13	0.024	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.017	<0.01	0.063	<0.05	0.38	<0.01	<0.01	<0.01
	07/18/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.066	<0.05	0.84	<0.01	0.018	<0.01
	11/07/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/12/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/09/15	0.053	<0.010	0.012	0.020	0.019	0.016	0.012	<0.010	0.010	0.018	<0.010	0.052	0.010	0.010	<0.050	<0.050	<0.20	<0.010	0.044	0.042
	11/28/16	0.41	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.13	<0.010	1.4	0.86	15	<0.010	0.066	<0.010
	12/7/17	0.13	<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	0.20	0.12	1.3	<0.010	0.034	<0.010
	12/3/18	<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
	11-29-19[FD]	0.40	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.16	<0.010	1.2	0.98	12	<0.010	0.073	<0.010
	11/29/19	0.56	0.024	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.20	<0.010	1.7	1.4	16	<0.010	0.11	0.014
COCP-110-MW (2.39 m)	03/27/13	0.22	0.021	0.051	0.019	<0.01	<0.01	<0.01	NM	<0.01	0.022	<0.01	0.11	0.081	<0.01	0.32	0.057	0.75	<0.01	0.45	0.14
	07/18/13	0.41	0.047	0.043	0.027	0.016	0.014	0.011	<0.01	<0.01	0.034	<0.01	0.14	0.16	<0.01	0.49	0.093	2.6	<0.01	0.7	0.19
	11/06/13	0.20	0.048	0.10	0.16	0.086	0.081	0.043	0.045	0.046	0.18	0.012	0.37	0.10	0.037	0.20	<0.05	0.23	0.017	0.40	0.50
	12/15/14	0.062	0.021	0.056	0.10	0.071	0.056	0.042	0.035	0.033	0.12	0.012	0.19	0.042	0.035	0.060	<0.05	<0.2	0.017	0.16	0.24
	12/09/15	0.17	0.017	0.041	0.063	0.044	0.037	0.027	0.025	0.023	0.080	<0.010	0.16	0.037	0.022	0.065	<0.050	<0.20	<0.010	0.11	0.21
	11/28/16	0.014	<0.010	0.013	0.026	0.02	0.016	0.015	<0.010	<0.010	0.027	<0.010	0.054	0.011	<0.010	<0.050	<0.050	<0.20	<0.010	0.04	0.05
	12/8/17[FD]	0.023	<0.010	0.015	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	0.034	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.012	0.087
	12/8/17	0.024	<0.010	0.017	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	0.033	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.011	0.096
	12/3/18	0.035	0.015	0.072	0.16	0.11	0.092	0.065	0.053	0.054	0.19	0.018	0.30	0.041	0.057	<0.050	<0.050	<0.20	0.026	0.24	0.32
	11/28/19	0.030	<0.010	0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	0.019	<0.010	0.029	0.014	<0.010	<0.050	<0.050	<0.20	<0.010	0.030	0.076
CODT-008-MWB (1.62 m)	03/29/13	16	0.6	**15**	**5.3**	**1.7**	**1.3**	**0.54**	NM	**1.7**	**4.2**	0.15	27	18	**0.65**	10	0.62	17	0.44	40	18
	07/24/13	110	2.8	**140**	**57**	**30**	**33**	**12**	24	**22**	**57**	**5.3**	**310**	90	**14**	35	1.9	29	9.1	260	**210**
	10/23/13	64	3.4	**11**	**5.9**	**2.6**	**1.9**	**0.60**	NM	**1.3**	**4.6**	0.22	29	34	**0.64**	40	0.31	2.8	0.47	6.5	19
	12/15/14	0.12	0.026	2.0	0.029	0.032	0.022	0.020	0.016	0.016	0.058	<0.01	0.11	0.060	0.018	0.15	0.064	<0.20	0.010	0.052	0.11
	12/10/15	0.064	0.047	0.13	1.1	**1.2**	**0.84**	**0.32**	0.71	0.63	0.96	0.097	2.4	0.11	**0.31**	0.057	<0.050	<0.20	0.28	0.054	4.1
	11/30/16	410	5.3	**43**	**7.6**	*<5.0*	*<5.0*	*<5.0*	<5.0	*<5.0*	**6.0**	*<5.0*	34	200	*<5.0*	970	1000	4100	<5.0	180	21
	12/7/17	0.076	0.02	0.19	0.26	0.22	0.20	0.13	0.11	0.11	0.29	0.033	0.69	0.083	0.10	<0.050	<0.050	<0.20	0.046	0.35	0.66
	12/5/18[FD]	0.21	0.039	0.15	0.14	0.11	0.098	0.061	0.059	0.059	0.17	0.017	0.41	0.11	0.056	0.43	0.18	0.69	0.028	0.21	0.47
	12/5/18	0.21	0.036	0.13	0.14	0.11	0.091	0.059	0.055	0.055	0.15	0.016	0.39	0.10	0.052	0.41	0.17	0.56	0.026	0.21	0.46
	11/28/19	0.31	0.056	<0.080[8]	0.040	0.037	0.026	0.020	<0.02[8]	0.015	0.050	<0.010	0.17	0.13	0.013	0.91	0.35	0.20	<0.010	<0.030[8]	0.32

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
CODT-105-MW (2.95 m)	03/13/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	0.2	0.67	0.081	0.036	0.025	0.019	0.014	NM	0.025	0.034	<0.01	0.17	0.35	0.013	0.69	0.094	0.58	<0.01	0.34	0.12
	07/16/13	0.24	0.27	0.048	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.11	0.32	<0.01	0.61	0.19	13	<0.01	0.25	0.08
	10/23/13[L]	0.17	0.034	0.044	0.049	0.041	0.031	0.025	NM	0.018	0.05	<0.01	0.19	0.17	0.02	0.11	<0.05	<0.2	0.011	0.19	0.17
	10/23/13	0.11	0.029	0.013	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.065	0.10	<0.01	0.065	<0.05	<0.2	<0.01	0.023	0.063
	12/16/14	0.079	<0.01	<0.01	0.015	0.014	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.090	0.012	<0.01	<0.05	<0.05	<0.2	<0.01	0.042	0.072
	12/10/15	0.26	0.044	<0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.07	0.21	<0.010	0.62	0.23	0.97	<0.010	0.11	0.058
	11/23/16[FD]	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.049	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.042
	11/23/16	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.047	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.041
	12/7/17	0.24	0.011	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.025	0.10	<0.010	0.41	0.15	2.3	<0.010	0.037	0.027
	12/5/18	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.028	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.013	0.022
	12/4/19	0.22	0.013	<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
CODT-201-MWA (3.64 m)	03/13/13	0.3	0.012	0.45	1.0	0.73	0.5	**0.32**	NM	**0.66**	0.91	0.097	1.8	0.21	**0.33**	0.21	0.1	1.1	0.17	1.5	1.5
	07/16/13	0.98	0.083	**2.5**	**5.0**	**3.6**	**3.1**	**1.6**	1.8	**1.7**	**4.8**	0.49	11	0.98	**1.5**	0.15	0.15	0.22	0.75	8.6	8.7
	10/23/13	0.65	0.053	1.7	3.2	**2.5**	**1.9**	**1.1**	NM	**1.2**	**2.9**	0.34	6.9	0.67	**1.1**	0.087	0.094	<0.2	0.60	6.2	5.6
	12/15/14	1.6	0.16	**2.5**	4.5	**3.7**	**2.9**	**1.6**	1.9	**1.9**	**4.5**	**0.57**	10	1.3	**1.5**	3.3	2.1	46	0.83	8.1	8.1
	12/09/15	0.96	0.078	2.3	**4.9**	**4.7**	**3.5**	**2.0**	2.4	**2.3**	**5.1**	**0.67**	12	0.95	**1.9**	0.12	0.12	<0.20	1.0	9.0	9.3
	11/28/16	0.35	0.033	0.85	2.1	**1.8**	**1.4**	**0.81**	0.88	**0.85**	**2.1**	0.26	4.4	0.38	**0.78**	0.05	0.053	<0.20	0.4	3.2	3.6
	12/5/17	1.2	0.084	**3.7**	**9.5**	**6.9**	**5.9**	**3.1**	3.3	**3.4**	**8.6**	**1.1**	18	1.2	**2.9**	0.12	0.12	<0.20	1.5	12	13
	12/5/18	1.9	0.10	0.49	1.3	**0.99**	**0.83**	**0.51**	0.49	**0.53**	**1.4**	0.16	2.8	0.77	**0.49**	5.1	3.5	50	0.23	2.4	2.2
	11/28/19	4.6	0.048	1.4	3.7	**2.9**	**2.0**	**1.2**	1.4	**1.5**	**3.2**	0.20	6.9	0.44	**0.87**	0.053	0.054	<0.20	0.52	5.1	5.5
CODT-201-MWC (3.75 m)	03/13/13	220	3.8	**4.9**	0.058	<0.01	<0.01	<0.01	NM	<0.01	0.04	<0.01	3.3	90	<0.01	490	310	5100	<0.01	76	1.6
	07/16/13	160	8.0	**4.5**	0.08	0.016	0.02	0.017	0.01	0.015	0.064	<0.01	2.7	66	0.014	360	300	4900	<0.01	51	1.3
	10/23/13[FD]	190	10	**2.5**	0.036	<0.01	<0.01	<0.01	NM	<0.01	0.029	<0.01	2.2	77	<0.01	450	320	6000	<0.01	57	1.1
	10/23/13	190	10	**3.3**	0.038	<0.01	<0.01	<0.01	NM	<0.01	0.032	<0.01	2.2	78	<0.01	470	330	6300	<0.01	56	1.1
	12/15/14	230	12	**5.9**	0.058	<0.01	<0.01	<0.01	<0.01	<0.01	0.048	<0.01	3.7	110	<0.01	670	450	**7200**	<0.01	76	1.8
	12/9/15	300	18	*<10*	*<10*	*<10*	*<10*	*<10*	<10	*<10*	*<10*	*<10*	<10	120	*<10*	750	610	**9500**	<10	89	<10
	11/28/16	250	11	**3.3**	0.044	<0.010	<0.010	<0.010	<0.010	<0.010	0.036	<0.010	1.9	120	<0.010	660	430	**7500**	<0.010	78	1
	12/5/17	240	11	**4.5**	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	0.042	<0.010	3.5	96	<0.010	560	340	6200	<0.010	74	1.4
	12/5/18	270	10	**4.2**	0.068	0.011	<0.010	<0.010	<0.010	<0.010	0.056	<0.010	4.5	120	<0.010	670	490	**7800**	<0.010	90	2.0
	11/28/19	280	10	**5.4**	0.042	<0.010	<0.010	<0.010	<0.010	<0.010	0.033	<0.010	3.0	120	<0.010	680	600	**8300**	<0.010	88	1.5
CODT-203-MW (2.62 m)	03/13/13	4.8	0.083	2.1	1.3	0.64	0.43	0.2	NM	**0.57**	**1.1**	0.064	4	2.2	**0.24**	0.63	0.22	0.62	0.14	5.1	3
	07/16/13[FD]	7.2	0.11	**2.6**	1.8	**1.2**	**0.93**	**0.48**	0.6	**0.58**	**1.6**	0.16	6.2	3.4	**0.4**	1.6	0.57	6.8	0.2	7.5	4.6
	07/16/13	7.0	0.13	**2.6**	1.8	**1.1**	**0.91**	**0.43**	0.53	**0.56**	**1.7**	0.14	6.2	3.3	**0.38**	1.6	0.53	6.3	0.22	7.6	4.6
	10/23/13[L]	10	0.19	**3.2**	1.8	**1.1**	**0.84**	**0.42**	0.59	**0.53**	**1.5**	0.15	6.6	4.8	**0.43**	2.0	0.31	1.6	0.25	9.8	4.6
	10/23/13	10	0.19	**2.5**	1.7	0.71	0.53	**0.27**	0.35	0.33	**1.2**	0.11	5.1	4.4	**0.29**	1.8	0.23	1.5	0.22	7.0	3.6
	12/12/14	0.23	<0.01	0.55	0.81	0.69	0.49	**0.29**	0.35	0.35	0.83	0.10	1.9	0.29	**0.28**	<0.05	<0.05	<0.2	0.14	1.7	1.4
	12/8/15[FD]	3.0	0.094	0.46	0.6	0.46	0.34	0.17	0.21	0.2	0.59	0.063	1.6	0.96	0.17	0.22	<0.050	<0.20	0.089	1.3	1.1
	12/8/15	0.61	0.026	0.42	0.75	0.61	0.42	**0.29**	0.27	0.26	0.73	0.11	1.8	0.24	**0.29**	<0.050	<0.050	<0.20	0.12	1.5	1.3
	11/23/16	0.37	<0.010	0.79	1.7	**1.5**	**1.1**	**0.65**	0.69	**0.67**	**1.6**	0.23	3.4	0.4	**0.64**	0.063	0.06	<0.20	0.31	2.6	2.7
	12/7/17	1.0	0.027	0.27	0.36	0.24	0.20	0.11	0.14	0.13	0.35	0.035	0.93	0.41	0.10	0.12	<0.050	0.52	0.049	0.74	0.65
	12/10/18	0.66	0.031	0.27	0.40	0.27	0.22	0.11	0.13	0.14	0.40	0.033	1.0	0.26	0.11	0.28	<0.050	1.6	0.054	0.79	0.74
	11/28/19	2.6	0.038	**6.4**	**12**	**9.7**	**6.8**	**3.6**	4.1	**4.2**	**11**	**1.0**	22	2.9	**3.3**	0.33	0.38	0.39	1.8	21	17

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
CODT-205-MWA (1.75 m)	03/13/13[FD]	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.027	0.021	<0.01	<0.05	<0.05	<0.2	<0.01	0.061	0.028
	03/13/13	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	NM	0.011	<0.01	<0.01	0.025	0.013	<0.01	<0.05	<0.05	<0.2	<0.01	0.055	0.024
	07/16/13	0.53	1.0	0.041	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.065	0.56	<0.01	0.54	<0.05	0.76	<0.01	0.29	0.041
	10/23/13	1.7	1.5	0.082	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	0.13	1.0	<0.01	4.9	2.7	53	<0.01	1.0	0.08
	12/15/14	0.37	0.35	0.030	0.018	0.012	0.012	<0.01	<0.01	<0.01	0.018	<0.01	0.15	0.31	<0.01	0.40	0.16	4.3	<0.01	0.15	0.088
	12/8/15	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.017
	11/23/16	0.38	0.6	0.033	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.043	0.43	<0.010	0.3	<0.050	<0.20	<0.010	0.1	0.023
	12/5/17	0.26	0.30	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.031	0.26	<0.010	0.099	<0.050	<0.20	<0.010	0.043	0.020
	11/28/18	0.053	0.079	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	0.047	<0.010	<0.050	<0.050	<0.20	<0.010	0.025	0.014
	12/4/19	0.27	0.16	0.015	0.012	0.011	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.051	0.15	<0.010	0.35	0.18	2.8	<0.010	0.047	0.038
CODT-206-MW (2.15 m)	03/13/13	32	1.2	1.6	0.16	0.089	0.08	0.03	NM	0.076	0.13	0.01	3.1	18	0.03	16	3.2	72	0.019	12	1.7
	07/16/13	90	4.4	**4.1**	0.16	0.074	0.068	0.025	0.028	0.035	0.13	<0.01	7.2	56	0.018	43	1.5	140	0.012	54	3.8
	10/23/13	3.6	0.12	0.041	0.048	0.068	0.054	0.03	NM	0.023	0.057	<0.01	0.81	0.073	0.025	<0.05	<0.05	<0.2	0.013	0.095	0.3
	12/15/14	0.89	0.060	0.076	0.083	0.12	0.10	0.057	0.052	0.052	0.16	0.015	0.27	0.36	0.049	0.86	0.38	8.7	0.023	0.31	0.19
	12/8/15	0.034	<0.010	0.023	0.04	0.072	0.05	0.038	0.029	0.028	0.059	0.011	0.089	0.018	0.032	<0.050	<0.050	<0.20	0.015	0.059	0.064
	11/28/16[FD]	0.059	0.015	0.041	0.066	0.095	0.092	0.057	0.042	0.039	0.095	0.014	0.19	0.055	0.045	<0.050	<0.050	<0.20	0.023	0.13	0.14
	11/28/16	0.032	<0.010	0.021	0.038	0.054	0.046	0.034	0.022	0.021	0.058	<0.010	0.11	0.029	0.028	<0.050	<0.050	<0.20	0.016	0.084	0.08
	12/5/17 FD	63	3.0	2.4	0.20	0.25	0.23	0.096	0.082	0.095	0.27	0.033	3.1	39	0.096	18	1.1	30	0.043	25	1.5
	12/5/17	46	2.3	1.2	0.11	0.15	0.13	0.076	0.055	0.061	0.13	0.022	1.8	26	0.066	13	1.3	36	0.027	14	0.86
	12/5/18	0.68	0.034	0.016	0.017	0.033	0.029	0.026	0.015	0.014	0.022	<0.010	0.044	0.22	0.021	1.7	1.2	15	0.010	0.085	0.033
	12/4/19	0.014	<0.010	0.025	0.029	0.048	0.036	0.038	0.019	0.019	0.041	<0.010	0.076	0.010	0.027	<0.050	<0.050	<0.20	0.020	0.051	0.061
CONCW-101-MWB (3.60 m)	03/15/13	0.19	0.03	0.024	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.028	0.095	<0.01	0.42	0.27	3.0	<0.01	0.14	0.021
	07/17/13	0.11	0.034	0.028	0.017	0.013	0.014	<0.01	<0.01	<0.01	0.018	<0.01	0.057	0.079	<0.01	0.21	0.14	2.2	<0.01	0.11	0.042
	10/24/13	0.071	0.026	0.02	0.013	0.013	<0.01	<0.01	NM	<0.01	0.015	<0.01	0.039	0.049	<0.01	0.058	<0.05	0.23	<0.01	0.087	0.034
	12/12/14	0.055	0.043	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.032	0.035	<0.01	0.060	<0.05	0.20	<0.01	0.066	0.024
	12/8/15	0.064	0.027	0.033	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.08	0.07	<0.010	0.065	0.06	0.29	<0.010	0.21	0.052
	11/23/16	0.059	0.052	0.042	0.062	0.045	0.037	0.03	0.023	0.021	0.053	<0.010	0.15	0.078	0.026	0.091	0.073	0.55	0.011	0.22	0.11
	12/11/17	0.014	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	0.024	<0.010	<0.050	<0.050	<0.20	<0.010	0.038	0.020
	11/28/18[FD]	0.021	0.022	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.026	0.026	<0.010	<0.050	<0.050	<0.20	<0.010	0.068	0.019
	11/28/18	0.024	0.026	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.033	0.030	<0.010	<0.050	<0.050	<0.20	<0.010	0.078	0.024
	12/4/19	0.28	0.030	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	0.096	<0.010	0.81	0.66	7.1	<0.010	0.085	0.022
CONPL-202-MWA (5.14 m)	12/15/14	0.054	0.030	0.031	0.062	0.059	0.045	0.030	0.026	0.027	0.053	<0.01	0.12	0.028	0.027	<0.05	<0.05	<0.2	0.014	0.086	0.096
	12/9/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11/23/16	<0.010	<0.010	<0.010	0.021	0.015	0.011	<0.010	<0.010	<0.010	0.018	<0.010	0.037	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.033	0.028
	12/21/17	0.022	0.016	0.047	0.095	0.071	0.055	0.035	0.041	0.034	0.089	0.011	0.18	0.038	0.034	<0.050	<0.050	<0.20	0.020	0.14	0.14
	11/28/18	0.025	0.035	0.079	0.16	0.12	0.095	0.066	0.063	0.067	0.14	0.021	0.34	0.042	0.062	<0.050	<0.050	<0.20	0.031	0.29	0.27
	11/29/19	<0.010	<0.010	0.011	0.028	0.028	0.019	0.012	0.013	<0.010	0.029	<0.010	0.044	<0.010	0.011	<0.050	<0.050	<0.20	<0.010	0.032	0.038

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
COSB-002-MWA (1.61 m)	03/18/13[L]	0.026	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	0.014	<0.01	0.056	<0.05	0.42	<0.01	0.018	<0.01
	03/18/13	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.05	<0.05	0.34	<0.01	0.016	<0.01
	07/26/13	0.2	0.21	0.44	0.53	0.52	0.4	**0.31**	0.25	0.23	0.52	0.073	1.3	0.35	**0.26**	0.17	0.21	0.25	0.13	1.4	1.2
	11/06/13[FD]	0.018	0.021	0.014	0.022	0.013	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.055	0.02	<0.01	<0.05	<0.05	<0.2	<0.01	0.033	0.055
	11/06/13	0.022	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.027	0.019	<0.01	<0.05	<0.05	<0.2	<0.01	0.021	0.039
	12/15/14	0.013	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	<0.05	<0.05	<0.2	<0.01	0.014	0.012
	12/9/15	0.014	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.050	<0.050	<0.20	<0.010	0.010	0.012
	11/28/16	0.74	0.053	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.02	0.32	<0.010	2.5	1.6	33	<0.010	0.21	0.013
	12/8/17	<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	0.011	<0.010
	11/28/18	<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	0.015	0.011
	11/29/19	<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
COSCW-001-MWA (3.36 m)	03/19/13	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	0.3	0.2	2.3	<0.01	0.034	<0.01
	07/17/13[L]	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.046	0.017	<0.01	<0.05	<0.05	<0.2	<0.01	0.07	0.022
	07/17/13	<0.01	<0.01	0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.049	0.015	<0.01	<0.05	<0.05	<0.2	<0.01	0.068	0.027
	10/24/13	0.043	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.05	<0.05	<0.2	<0.01	0.016	<0.01
	12/12/14	0.045	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.12	0.05	1	<0.01	0.022	<0.01
	12/8/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.013	<0.010	<0.050	<0.050	<0.20	<0.010	0.022	0.01
	11/22/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.012	<0.010
	12/8/17	<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	0.014	<0.010
	12/3/18	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.027	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.024	0.014
	12/9/19	0.075	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.028	<0.010	0.20	0.15	1.5	<0.010	0.018	<0.010
COSCW-001-MWB (1.68 m)	03/19/13	0.012	<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	<0.2	<0.01	<0.01	<0.01
	07/17/13	0.091	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.052	<0.01	0.24	0.16	3.2	<0.01	0.032	<0.01
	10/24/13	0.22	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.075	<0.01	0.85	0.57	12	<0.01	0.056	<0.01
	12/12/14	0.017	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.010	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/8/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.023	0.015
	11/22/16	<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
	12/8/17	<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
	12/3/18	<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
	11/29/19	<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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
COSCW-002-MWA (3.85 m)	03/26/13[L]	0.074	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.012	0.071	<0.01	0.25	<0.05	0.49	<0.01	0.053	<0.01
	03/26/13	0.055	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.052	<0.01	0.19	<0.05	0.39	<0.01	0.034	<0.01
	07/17/13	0.036	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	0.022	<0.01	0.083	0.055	1.0	<0.01	0.025	<0.01
	10/24/13	0.46	0.034	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.15	<0.01	1.9	1.2	29	<0.01	0.11	<0.01
	12/12/14	0.039	0.020	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.031	0.028	<0.01	0.057	<0.05	0.22	<0.01	0.042	0.023
	12/8/15	0.015	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	0.03	0.019	<0.010	<0.050	<0.050	<0.20	<0.010	0.046	0.024
	11/22/16	<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	0.011	<0.010
	12/8/17	<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	0.024	<0.010
	12/3/18	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	0.034	0.011	<0.010	<0.050	<0.050	<0.20	<0.010	0.034	0.023
	11/29/19	1.1	0.042	0.031	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.026	0.40	<0.010	2.5	2.1	31	<0.010	0.31	0.017
COSCW-002-MWB (2.47 m)	03/19/13	0.023	0.012	<0.01	0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.023	0.022	<0.01	<0.05	<0.05	0.3	<0.01	0.036	0.018
	07/17/13	0.13	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.033	0.076	<0.01	0.28	0.15	3.1	<0.01	0.08	0.021
	10/24/13	0.062	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.015	0.031	<0.01	<0.05	<0.05	<0.2	<0.01	0.026	0.014
	12/12/14	0.020	0.010	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	0.011	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.011
	12/8/15	<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	0.014	<0.010
	11/22/16	<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
	12/8/17	<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
	12/3/18	<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	0.019	<0.010
	11/29/19	0.98	0.040	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	0.38	<0.010	2.9	2.4	29	<0.010	0.21	<0.010
COTS-001-MWA[3] (3.83 m)	11/15/13	0.052	0.18	0.16	0.28	0.33	0.27	0.17	0.14	0.14	0.25	0.046	0.48	0.12	0.13	0.1	<0.05	0.22	0.062	0.29	0.37
	12/15/14	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/08/15	NM	NM	NM	NM	NM	NM	NM	NM	NM		NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
COTS-001-MWB[3] (4.07 m)	12/08/15	<0.010	<0.010	<0.010	0.011	0.011	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.029	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.023	0.023
	11/28/16	0.19	1.2	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.091	<0.010	0.49	<0.050	1.7	<0.010	0.017	<0.010
	12/21/17	<0.010	0.018	<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
	11/28/18	<0.010	0.013	0.027	0.015	0.010	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	0.089	0.017	<0.010	<0.050	<0.050	<0.20	<0.010	0.095	0.062
	11/29/19	<0.010	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
MCES-001-MWA (5.81 m)	03/28/13[FD]	0.21	0.45	0.078	0.071	0.012	0.01	<0.01	NM	0.02	0.06	<0.01	0.38	0.36	<0.01	0.68	0.39	0.82	<0.01	0.39	0.75
	03/28/13	0.22	0.46	0.083	0.08	0.017	0.016	<0.01	NM	0.03	0.07	<0.01	0.41	0.35	<0.01	0.69	0.39	0.79	<0.01	0.41	0.81
	07/24/13	0.23	0.43	0.1	0.15	0.047	0.057	0.03	0.037	0.04	0.14	0.01	0.46	0.39	0.028	0.67	0.39	1.0	0.018	0.46	0.98
	12/10/14	0.069	0.098	0.023	0.039	0.021	0.022	0.014	0.014	0.014	0.044	<0.01	0.19	0.099	0.015	0.18	<0.05	<0.2	<0.01	0.068	0.25
	12/2/15	0.1	0.16	0.07	0.048	<0.010	<0.010	<0.010	<0.010	<0.010	0.046	<0.010	0.44	0.18	<0.010	0.28	0.1	<0.20	<0.010	0.21	0.7
	11/25/16	0.059	0.098	0.019	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	0.025	<0.010	0.13	0.1	<0.010	0.18	0.05	<0.20	<0.010	0.04	0.16
	12-12-17[FD]	0.048	0.067	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.09	0.074	<0.010	0.12	<0.050	<0.20	<0.010	0.034	0.13
	12/12/17	0.052	0.073	0.021	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.22	0.076	<0.010	0.13	<0.050	<0.20	<0.010	0.041	0.13
	11/28/18	0.059	0.083	0.024	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	<0.010	0.11	0.094	<0.010	0.13	<0.050	<0.20	<0.010	0.055	0.20
	12/2/19	0.047	0.062	0.022	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030[8]	<0.010	0.082	0.086	<0.010	0.11	<0.050	<0.20	<0.010	0.051	0.19
MCES-001-MWB (6.35 m)	03/28/13	0.022	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.031	0.015	<0.01	0.064	<0.05	0.5	<0.01	0.019	0.05
	07/25/13	0.021	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	0.018	<0.01	0.064	<0.05	0.44	<0.01	0.023	0.031
	11/14/13	0.012	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.026	0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.013	0.037
	12/10/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.015	<0.01
	12/02/15	<0.010	<0.010	<0.010	0.02	0.012	0.01	<0.010	<0.010	<0.010	0.019	<0.010	0.045	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.036	0.037
	11/25/16	<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
	12/15/17	<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
	12-28-18 [10]	<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	<0.020 [8]	<0.010
	12/2/19	<0.010	<0.010	<0.020[8]	<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	<0.020 [8]	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
MCES-006-MW (2.83 m)	03/28/13	52	0.79	1.1	0.16	0.019	0.021	<0.01	NM	0.02	0.14	<0.01	1.7	12	<0.01	34	7.0	34	<0.01	3.1	1.3
	07/26/13	62	1.1	0.84	0.3	0.11	0.11	0.02	0.051	0.06	0.29	<0.01	2.4	11	0.021	46	4.7	15	0.018	3.2	1.8
	11/05/13	60	1.4	0.69	0.15	0.035	0.037	<0.01	0.012	0.02	0.17	<0.01	2.1	13	<0.01	55	10	83	<0.01	2.9	1.7
	12/10/14	11	0.26	0.15	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	0.024	<0.01	0.25	3.3	<0.01	8.7	2.5	63	<0.01	1.1	0.22
	12/3/15	1.7	0.031	0.027	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.059	0.061	<0.010	<0.050	<0.050	<0.20	<0.010	0.029	0.048
	12/2/16	22	0.24	0.30	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	0.42	7.4	<0.010	17	0.53	<0.20	<0.010	2.6	0.30
	12/13/17	<0.010	0.014	0.012	<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	0.091
	11/28/18	4.1	0.096	0.12	0.088	0.034	0.029	0.017	0.015	0.018	0.083	<0.010	0.37	1.1	0.013	4.1	2.0	36	<0.010	0.68	0.27
	12/2/19	9.6	0.16	0.14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.13	2.4	<0.010	3.1	<0.050	<0.20	<0.010	0.97	0.086
MCES-204-MW (4.17 m) *(Destroyed 2017)*	03/28/13	2.5	1.7	**3.6**	1.2	0.64	0.46	**0.27**	NM	**0.57**	1.00	0.052	5.6	5.9	**0.28**	5.9	8.9	68	0.16	14	3.7
	07/24/13	2.9	1.8	**3.3**	0.39	0.22	0.17	0.11	0.1	0.10	0.34	0.028	3.7	6.5	0.095	7.1	12	65	0.049	15	2.5
	11/07/13	3.2	2.5	**4.2**	0.79	0.39	0.36	0.20	0.18	0.25	0.70	0.049	6.1	7.1	0.18	8.2	12	90	0.094	16	4.0
	12/18/14[FD]	0.41	<0.04	<0.05	0.033	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	0.65	0.13	<0.01	0.087	0.08	0.35	<0.01	<0.04	0.45
	12/18/14	1.6	1.9	1.9	0.13	0.035	0.031	0.015	0.021	0.020	0.14	<0.01	2.6	4.7	0.013	4.6	7.1	34	<0.01	9.2	1.5
	12/10/15	1.8	1.8	**2.6**	0.13	0.018	0.014	<0.010	0.015	0.013	0.12	<0.010	2.7	4.6	<0.010	5	7.8	49	<0.010	11	1.6
	11/25/16[FD]	1.6	1.7	**2.7**	0.14	0.022	0.015	<0.010	0.015	0.01	0.14	<0.010	2.9	4.2	<0.010	4.8	7.2	46	<0.010	9.5	1.7
	11/25/16[FDR]	1.4	1.6	1.8	0.11	0.013	0.012	<0.010	<0.010	<0.010	0.099	<0.010	2.1	3.7	<0.010	4.1	6.2	43	<0.010	7.1	1.2
	11/25/16	1.6	1.7	**2.5**	0.12	0.021	0.018	<0.010	0.014	0.012	0.12	<0.010	2.4	4.2	<0.010	4.8	7.3	47	<0.010	8.2	1.5
	11/25/16[R]	1.7	1.8	2.0	0.12	0.016	0.014	<0.010	0.011	<0.010	0.12	<0.010	2.4	4.4	<0.010	4.9	7.4	49	<0.010	6.3	1.4
MCWS-009-MW[4] (6.63 m) *Decommissioned 2015*	12/9/14[FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.014	<0.01
	12/9/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	<0.01
MCWS-113-MWB (1.49 m)	03/27/13	0.86	0.035	0.082	0.034	0.016	0.011	<0.01	NM	0.02	0.03	<0.01	0.18	0.54	<0.01	9.2	0.14	2.4	<0.01	0.19	0.12
	07/24/13	1.0	0.043	0.11	0.12	0.11	0.087	0.06	0.05	0.05	0.11	0.02	0.27	0.65	0.058	16	0.55	8.2	0.028	0.49	0.21
	11/15/13	1.2	0.06	0.23	0.18	0.16	0.12	0.10	0.075	0.07	0.17	0.023	0.44	0.89	0.072	19	0.59	11	0.036	0.64	0.31
	12/9/14	0.74	0.042	0.097	0.042	0.032	0.022	0.019	0.013	0.015	0.044	<0.01	0.15	0.44	0.018	8.7	0.72	0.39	<0.01	0.26	0.12
	12/2/15	0.97	0.035	0.12	0.031	<0.010	0.012	<0.010	<0.010	<0.010	0.033	<0.010	0.24	0.52	<0.010	19	3.5	0.33	<0.010	0.35	0.14
	11/30/16	<0.010	0.013	0.03	0.024	0.038	0.034	0.025	0.033	0.028	0.044	<0.010	0.067	0.011	0.016	<0.050	<0.050	<0.20	<0.010	0.023	0.16
	12/12/17	<0.010	<0.010	<0.010	0.012	0.021	0.021	0.013	0.010	0.012	0.022	<0.010	0.014	<0.010	0.011	<0.050	<0.050	<0.20	<0.010	<0.010	0.13
	12/7/18	<0.010	0.011	<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	0.16
	12-4-19[FD]	<0.020[8]	<0.020[8]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030[8]	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.18
	12/4/19	<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	0.14
MCWS-306-MWB (0.78 m)	03/27/13	0.028	<0.01	0.02	0.028	0.013	0.011	<0.01	NM	0.02	0.03	<0.01	0.087	0.018	<0.01	0.072	<0.05	0.6	<0.01	0.068	0.07
	07/24/13	0.011	<0.01	0.016	0.027	0.022	0.023	0.02	0.013	0.01	0.03	<0.01	0.052	0.016	0.016	<0.05	<0.05	0.22	<0.01	0.06	0.043
	11/15/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.015	0.017
	12/9/14	<0.01	<0.01	0.011	0.018	0.019	0.016	0.011	<0.01	<0.01	0.018	<0.01	0.037	<0.01	0.01	<0.05	<0.05	<0.2	<0.01	0.033	0.034
	12/2/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.023	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.021	0.021
	11/30/16	<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
	12/12/17	<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
	12/7/18	<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
	12/4/19	0.088	0.043	<0.020[8]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.047	<0.020[8]	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.032

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
MCWS-307-MWB (0.81 m)	03/27/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13	0.017	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.055	<0.05	0.25	<0.01	0.011	<0.01
	07/24/13	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.078	<0.05	0.42	<0.01	<0.01	<0.01
	11/14/13	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/9/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.017	0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.030	0.013
	12/2/15	<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
	12/2/16	<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
	12/12/17	<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
	12/7/18	<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
	12/4/19	<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
MCWS-309-MW (0.96 m)	07/26/13	0.041	0.067	0.074	0.16	0.17	0.13	0.11	0.078	0.08	0.16	0.025	0.35	0.056	0.089	<0.05	<0.05	<0.2	0.05	0.25	0.29
	11/14/13	0.09	0.049	0.033	0.029	0.027	0.024	0.02	0.013	0.01	0.03	<0.01	0.14	0.075	<0.01	0.13	0.06	1.3	<0.01	0.077	0.11
	12/9/14	0.028	0.13	0.22	0.51	0.50	0.37	**0.28**	0.24	0.24	0.48	0.084	1.0	0.13	0.28	<0.05	0.062	<0.2	0.13	0.60	0.79
	12/3/15	0.049	0.15	0.18	0.44	0.36	0.26	**0.22**	0.18	0.16	0.41	0.061	1.0	0.13	0.20	0.099	<0.050	<0.20	0.096	0.56	0.79
	12/2/16	<0.010	0.013	0.019	0.029	0.033	0.027	0.02	0.018	0.016	0.031	<0.010	0.093	0.014	0.018	<0.050	<0.050	<0.20	<0.010	0.052	0.080
	12/12/17	<0.010	0.021	0.039	0.10	0.09	0.13	0.064	0.051	0.053	0.11	0.019	0.29	0.024	0.059	<0.050	<0.050	<0.20	0.028	0.11	0.22
	12/7/18	<0.010	0.012	0.020	0.045	0.043	0.035	0.026	0.022	0.024	0.045	<0.010	0.14	0.016	0.024	<0.050	<0.050	<0.20	0.013	0.059	0.11
	12/5/19	0.010	0.055	0.10	0.23	0.17	0.12	0.092	0.097	0.096	0.22	0.013	0.65	0.061	0.065	<0.050	<0.050	<0.20	0.043	0.30	0.49
MCWS-310-MW (1.06 m)	03/29/13	0.014	<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	0.32	<0.01	<0.01	<0.01
	07/26/13[L]	0.029	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	0.076	<0.05	0.59	<0.01	<0.01	<0.01
	07/26/13	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	0.056	<0.05	0.38	<0.01	<0.01	<0.01
	11/14/13[L]	0.11	0.047	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	0.051	<0.01	0.43	0.22	4.5	<0.01	0.061	<0.01
	11/14/13	0.069	0.028	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.038	<0.01	0.26	0.13	2.3	<0.01	0.041	<0.01
	12/9/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.016	<0.01
	12/10/15[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	<0.010	<0.010
	12/10/15	<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
	12/2/16	<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	0.013	<0.010
	12/12/17	0.037	0.032	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.014
	12/7/18	<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
	12/5/19	<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
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	0.018	<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	0.056	<0.05	0.44	<0.01	<0.01	<0.01
	07/24/13[FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	07/24/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	11/05/13	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/10/14[FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/10/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/3/15	<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	0.011	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
MSES-004-MW (7.63 m)	03/26/13	0.033	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.015	0.019	<0.01	0.087	0.053	0.63	<0.01	0.018	0.012
	07/26/13	0.039	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	<0.01	0.08	<0.05	0.57	<0.01	0.011	<0.01
	11/15/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.011
	12/10/14	0.038	0.069	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	0.023	<0.01	0.11	<0.05	<0.2	<0.01	0.017	0.011
	12/3/15	<0.010	<0.010	0.024	0.046	0.034	0.025	0.019	0.017	0.016	0.053	<0.010	0.12	0.015	0.015	<0.050	<0.050	<0.20	<0.010	0.10	0.10
	11/25/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11/25/16[R]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12-13-17 [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	<0.010	0.010
	12/13/17	<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
	12/10/18	0.18	0.039	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.074	<0.010	0.47	0.31	3.2	<0.010	0.035	0.013
	12/5/19	0.13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.046	<0.010	0.34	0.28	2.9	<0.010	0.024	<0.010
MSES-006-MW (3.65 m)	03/26/13	0.73	1.1	0.013	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.1	0.36	<0.01	0.46	<0.05	0.74	<0.01	0.048	0.062
	07/24/13	0.46	0.79	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.22	<0.01	0.37	<0.05	0.67	<0.01	0.033	0.041
	11/05/13[L]	0.43	0.88	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.064	0.16	<0.01	0.22	<0.05	0.57	<0.01	0.02	0.042
	11/05/13	0.2	0.36	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.044	0.077	<0.01	0.073	<0.05	0.24	<0.01	0.017	0.03
	12/10/14	0.75	1.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	0.23	<0.01	0.52	<0.05	1.5	<0.01	0.015	<0.01
	12/3/15	0.89	1.2	0.015	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	0.046	0.27	<0.010	0.82	<0.050	1.4	<0.010	0.049	0.035
	11/25/16	0.66	0.94	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.035	0.16	<0.010	0.21	<0.050	<0.20	<0.010	<0.010	0.02
	11/25/16[R]	0.65	0.96	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.031	0.16	<0.010	0.2	<0.050	<0.20	<0.010	<0.010	0.02
	12/13/17	0.44	0.69	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.12	<0.010	0.25	<0.050	0.33	<0.010	<0.010	<0.010
	12/10/18	0.93	1.2	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.039	0.23	<0.010	0.54	<0.050	<0.20	<0.010	0.015	0.023
	12/2/19	0.35	0.62	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.098	<0.010	0.14	<0.050	<0.20	<0.010	<0.010	<0.010
MSES-008-MW (4.10m)	03/26/13	2.3	4.2	0.37	0.096	0.011	<0.01	<0.01	NM	0.02	0.06	<0.01	1.7	5.2	<0.01	1.8	<0.05	0.88	<0.01	4.2	1.2
	07/26/13	2.5	3.2	0.29	0.078	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	1.4	4.7	<0.01	1.4	<0.05	0.36	<0.01	2.9	1.0
	11/15/13	3.1	4.1	0.53	0.10	0.011	0.012	<0.01	<0.01	<0.01	0.08	<0.01	1.9	5.7	<0.01	2.0	<0.05	0.23	<0.01	3.8	1.3
	12/10/14	1.9	2.7	0.21	0.070	<0.01	<0.01	<0.01	<0.01	<0.01	0.049	<0.01	1.2	3.6	<0.01	0.94	<0.05	<0.2	<0.01	1.9	0.94
	12/3/15[FD]	2.1	2.5	0.23	0.07	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	<0.010	1.5	3.8	<0.010	0.7	<0.050	<0.20	<0.010	1.7	1.1
	12/3/15	2.1	2.4	0.23	0.065	<0.010	<0.010	<0.010	<0.010	<0.010	0.051	<0.010	1.4	3.8	<0.010	0.69	<0.050	<0.20	<0.010	1.6	1.0
	11/25/16[FD]	1.4	1.8	0.16	0.049	<0.010	<0.010	<0.010	<0.010	<0.010	0.04	<0.010	1	3.1	<0.010	0.42	<0.050	<0.20	<0.010	0.8	0.77
	11/25/16[FDR]	1.6	2.0	0.15	0.063	<0.010	<0.010	<0.010	<0.010	<0.010	0.047	<0.010	1.3	3.6	<0.010	0.45	<0.050	<0.20	<0.010	0.88	0.92
	11/25/16	1.4	1.7	0.15	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	0.045	<0.010	1	3.1	<0.010	0.4	<0.050	<0.20	<0.010	0.84	0.79
	11/25/16[R]	1.4	1.7	0.13	0.049	<0.010	<0.010	<0.010	<0.010	<0.010	0.036	<0.010	0.96	3.1	<0.010	0.39	<0.050	<0.20	<0.010	0.68	0.70
	12/13/17	1.6	1.9	0.13	0.062	<0.010	<0.010	<0.010	<0.010	<0.010	0.050	<0.010	1.3	2.9	<0.010	0.34	<0.050	<0.20	<0.010	0.83	0.88
	12/10/18	1.7	2.3	0.16	0.065	<0.010	<0.010	<0.010	<0.010	<0.010	0.053	<0.010	1.3	3.6	<0.010	0.58	0.24	2.1	<0.010	0.58	0.99
	12/2/19	2.0	2.5	0.14	0.061	<0.010	<0.010	<0.010	<0.010	<0.010	0.044	<0.010	1.2	3.6	<0.010	0.94	0.62	7.7	<0.010	0.36	0.92
MSES-012-MWA (3.53 m)	03/15/13	0.19	0.021	0.071	0.024	0.022	0.011	<0.01	NM	0.03	0.05	<0.01	0.14	0.3	0.01	0.37	0.19	2.6	<0.01	0.19	0.099
	07/25/13[FD]	0.026	0.015	0.023	0.029	0.02	0.013	<0.01	<0.01	0.01	0.03	<0.01	0.084	0.061	<0.01	<0.05	<0.05	0.26	<0.01	0.066	0.063
	07/25/13	0.038	0.034	0.1	0.16	0.11	0.075	0.04	0.052	0.04	0.13	0.017	0.31	0.11	0.044	0.053	<0.05	0.32	0.027	0.27	0.23
	11/05/13	0.12	0.029	0.085	0.051	0.032	0.023	0.01	0.016	0.01	0.05	<0.01	0.23	0.19	0.013	0.19	0.094	2.5	<0.01	0.14	0.16
	12/16/14	0.15	0.033	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.059	0.12	<0.01	0.43	0.19	4.0	<0.01	0.036	0.039
	12/3/15	0.014	0.017	0.014	0.018	0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.059	0.033	<0.010	<0.050	<0.050	<0.20	<0.010	0.037	0.042
	11/22/16	<0.010	<0.010	0.015	0.023	0.018	0.014	<0.010	<0.010	<0.010	0.028	<0.010	0.057	0.018	<0.010	<0.050	<0.050	<0.20	<0.010	0.034	0.041
	12/13/17	0.019	0.020	0.060	0.13	0.083	0.067	0.037	0.052	0.046	0.12	0.013	0.31	0.048	0.035	<0.050	<0.050	<0.20	0.021	0.16	0.22
	12/10/18	0.15	0.021	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	0.029	0.080	<0.010	0.35	0.26	2.2	<0.010	0.037	0.018
	12/5/19	0.17	0.063	0.20	0.33	0.21	0.12	0.061	0.11	0.11	0.27	0.011	0.78	0.15	0.047	0.37	0.27	2.9	0.041	0.48	0.58

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
MSES-104-MWA (1.97 m)	03/28/13	9.5	6.9	**2.8**	**5.8**	**2.7**	**2.0**	**1.10**	NM	**2.40**	**4.80**	0.28	29	2.2	**1.3**	0.69	0.52	2.4	0.6	3.1	18
	12/10/14	5.4	5.6	0.38	0.20	0.079	0.060	0.031	0.040	0.036	0.16	0.011	2.3	1.1	0.034	0.51	0.21	3.7	0.015	0.29	1.4
	12/3/15	8.1	7.5	0.70	0.24	0.035	0.028	<0.010	0.023	0.018	0.20	<0.010	4.2	1.6	<0.010	0.73	0.29	4.6	<0.010	0.55	2.6
	11/25/16	6.8	6.2	0.55	0.26	0.12	0.085	0.055	0.057	0.054	0.23	0.018	3.1	1.3	0.051	1.1	0.35	6.5	0.023	0.44	1.9
	11/25/16[R]	6.7	6.4	0.41	0.26	0.12	0.081	0.051	0.053	0.053	0.23	0.018	2.8	1.2	0.053	0.99	0.32	6	0.024	0.44	1.8
	12/13/17	7.3	6.3	0.53	0.20	0.028	0.026	<0.010	0.021	0.016	0.17	<0.010	3.4	1.9	<0.010	1.2	0.36	6.5	<0.010	0.60	2.0
	12/10/18	6.7	6.5	0.50	0.18	0.021	0.020	<0.010	0.016	0.013	0.15	<0.010	3.1	2.1	<0.010	1.5	0.48	8.7	<0.010	0.68	1.8
	12-2-19[FD]	5.7	5.7	0.45	0.16	<0.050[8]	<0.050[8]	0.020	<0.030[8]	<0.030[8]	0.14	<0.010	2.3	1.8	<0.020[8]	1.2	0.36	8.2	<0.010	0.52	1.5
	12/2/19	6.1	5.9	0.52	0.17	0.057	0.044	0.023	0.037	0.031	0.15	<0.010	2.4	1.8	0.018	1.2	0.37	8.5	<0.020[8]	0.56	1.5
MSES-104-MWB (2.43 m)	03/26/13	17	30	1.7	0.11	0.014	0.012	<0.01	NM	0.02	0.08	<0.01	1.4	13	<0.01	53	0.17	47	<0.01	11	0.86
	07/24/13	21	36	2.0	0.16	0.044	0.039	0.01	0.032	0.03	0.11	<0.01	1.4	16	0.013	58	0.12	37	0.015	12	0.96
	11/05/13[FD]	19	30	1.6	0.081	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	1.2	15	<0.01	55	0.19	26	<0.01	10	0.79
	11/05/13	20	32	1.7	0.11	0.018	0.012	<0.01	0.012	0.01	0.080	<0.01	1.3	15	<0.01	63	0.20	28	<0.01	11	0.84
	12/10/14	18	33	1.4	0.10	0.018	0.012	<0.01	0.013	0.011	0.074	<0.01	1.1	14	<0.01	45	0.12	17	<0.01	9.7	0.72
	12/3/15	18	31	1.4	0.038	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.83	13	<0.010	52	<0.050	9.1	<0.010	8.6	0.47
	11/25/16	25	39	1.4	0.034	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.8	18	<0.010	64	0.08	12	<0.010	2.9	0.45
	11/25/16[R]	24	45	1.1	0.032	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	<0.010	0.71	17	<0.010	66	0.079	11	<0.010	3	0.39
	12/13/17	16	28	1.1	0.031	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.71	11	<0.010	39	<0.050	3.3	<0.010	6.9	0.38
	12/10/18[FD]	13	24	0.98	0.028	<0.010	<0.010	<0.010	<0.010	<0.010	0.019	<0.010	0.65	11	<0.010	33	<0.050	4.4	<0.010	7.4	0.36
	12/10/18	13	24	1.0	0.029	<0.010	<0.010	<0.010	<0.010	<0.010	0.020	<0.010	0.64	11	<0.010	33	<0.050	4.5	<0.010	7.4	0.38
	12/2/19	20	379	1.2	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	0.64	14	<0.010	529	0.051	5.2	<0.010	9.3	0.34
MW2 SPAR RD (2.62 m) *Removed from the LTMM program in 2015/ Decommissioned in 2019*	03/19/13[FD]	0.037	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.092	0.057	0.69	<0.01	0.013	<0.01
	03/19/13	0.039	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.099	0.063	0.74	<0.01	0.016	<0.01
	07/24/13	0.015	<0.01	0.013	0.041	0.03	0.028	0.021	NM	0.016	0.041	<0.01	0.065	0.013	0.019	<0.05	<0.05	0.36	<0.01	0.06	0.06
	11/06/13	0.026	0.028	0.012	0.017	0.014	0.015	0.012	NM	<0.01	0.021	<0.01	0.043	0.023	<0.01	<0.05	<0.05	<0.20	<0.01	0.038	0.03
	12/16/14[FD]	0.077	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	0.034	<0.01	0.25	0.12	1.7	<0.01	0.031	0.014
	12/16/14	0.055	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.15	0.081	1.1	<0.010	0.016	<0.010
SCU11-001-MWA (2.77 m)	03/29/13	0.097	<0.01	0.18	0.041	0.012	<0.01	<0.01	NM	0.013	0.04	<0.01	0.21	0.21	<0.01	<0.05	<0.05	<0.2	<0.01	0.49	0.17
	07/17/13	0.076	0.013	0.23	0.14	0.081	0.072	0.039	0.048	0.043	0.13	0.011	0.43	0.13	0.035	<0.05	<0.05	<0.2	0.016	0.47	0.36
	10/24/13	0.074	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	0.018	<0.01	<0.01	0.012	0.025	<0.01	0.18	<0.05	0.58	0.087	0.059	0.011
	12/15/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.015	<0.01
	12/11/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.01	<0.010	<0.050	<0.050	<0.20	<0.010	0.016	<0.010
	11/23/16	<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	0.016	<0.010
	12/13/17	<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
	12/10/18	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	0.024	<0.010
	12/5/19	<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	0.019	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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	ug/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]
SCU11-001-MWB (2.07 m)	03/29/13	0.79	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.071	<0.01	1.8	<0.05	3.2	<0.01	0.033	<0.01
	07/17/13	0.55	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	0.06	<0.01	0.7	<0.05	1.1	<0.01	0.024	0.015
	10/24/13	<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	<0.2	<0.01	<0.01	<0.01
	12/15/14[FD]	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.014	<0.01	<0.05	<0.05	<0.2	<0.01	0.021	0.012
	12/15/14	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	0.013	<0.01	<0.05	<0.05	<0.2	<0.01	0.019	0.012
	12/11/15	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.011	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	0.012
	11/23/16	<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
	12/13/17	<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
	12/5/18	0.016	<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	0.024	<0.010
	12-5-19[FD]	0.015	<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
	12/5/19	0.015	<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
SCU7-001-MW (1.76 m)	12/12/14	0.029	0.045	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.010	<0.01	0.030	0.024	<0.01	<0.05	<0.05	<0.2	<0.01	0.026	0.019
	12/10/15	<0.010	0.011	0.017	0.026	0.025	0.015	0.017	0.013	0.013	0.031	<0.010	0.064	0.012	0.013	<0.050	<0.050	<0.20	<0.010	0.056	0.053
	12/2/16	0.012	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.028	<0.010	<0.050	<0.050	<0.20	<0.010	0.014	0.011
	12/15/17	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.011
	12/7/18	0.29	0.051	0.035	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	0.26	<0.010	0.095	0.12	<0.20	<0.010	0.22	0.017
	12/5/19	<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
SCU7-003-MW (1.11 m)	03/29/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/29/13	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.013
	07/17/13	0.097	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.031	0.059	<0.01	0.18	0.11	2.5	<0.01	0.13	0.026
	11/07/13	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.012
	12/12/14	0.060	0.011	0.026	0.044	0.025	0.022	0.012	0.013	0.013	0.047	<0.01	0.19	0.047	<0.01	<0.05	<0.05	<0.2	<0.01	0.10	0.11
	12/10/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.014	0.018
	11/30/16	0.096	0.013	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.035	0.087	<0.010	0.11	0.19	0.68	<0.010	0.1	0.022
	12/15/17	<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
	12/11/18	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.034	0.016
	12/5/19	<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

NOTES:

FD - Field Duplicate
L - Lab Duplicate
R - Sample analysis repeated due to a laboratory error.
FDR - Field duplicate sample analysis repeated due to a laboratory error.
NM - Not measured or not analyzed; lab duplicates do not analyze for all parameters.
µg/L - micrograms per litre
- No applicable guideline criteria.
1 - Nova Scotia Environment (NSE) Tier I Environmental Quality Standards (EQS) for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013 (Revised January 2015)
2 - Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011
3 - COTS-001-MWA could not be sampled during the December 2014 event due to insufficient water. COTS-001-MWB added to the LTMM in 2015 in place of COTS-001-MWA.
4 - Benzo(j)fluoranthene was historically not included in PAH analysis.
5 - Bold and Shaded Exceeds NSE Tier I EQS or default MOE standards when no Tier I EQS is available.
6 - *Italics indicates laboratory detection limit elevated above criteria*
7 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information
8 - Elevated PAH RDL(s) due to matrix / co-extractive interference.
9 - Elevated PAH RDL(s) due to sample dilution.
10 - A possible seal failure is suspected in MCES-001-MWB. Further investigative work is being implemented and well replacement may be necessary.

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_pH (@20C)	Sat_pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COBB-004-MWA (1.25 m)	03/27/13	7800	<3000	100000	4300	90	200	18	19	0.014	<500	0.19	<0.01	0.19	<0.05	<5	2.3	0.5	600	7.8	270	89	<1	402	6.38	4.76	0.314	0.065	7.49	7.74
	07/26/13	8990	3460	119000	5010	120	190	19	27	0.021	<100	<0.05	<0.01	<0.05	<0.05	<5	4.1	1.7	670	7.8	320	120	<1	444	6.84	0.07	0.489	0.241	7.31	7.56
	11/06/13	6800	3100	76000	2500	62	130	14	27	0.029	<100	<0.05	<0.01	<0.05	<0.05	15	6.7	1	430	7.65	200	62	<1	300	4.36	0	-0.096	-0.345	7.75	8
	12/15/14	8000	3500	130000	4800	100	210	16	27	0.022	<100	0.16	<0.01	0.16	<50	10	7.4	1.8	680	7.56	340	100	<1	460	6.9	3.02	0.212	-0.036	7.35	7.59
	12/9/15	8000	3700	140000	5900	160	210	14	24	0.02	<100	<0.050	<0.010	<0.050	0.094	5	NM	2.2	720	7.72	370	150	<1.0	500	7.86	0.32	0.583	0.335	7.14	7.39
	12/02/16	8900	4200	170000	6900	140	300	20	26	0.023	<100	<0.050	<0.010	<0.050	0.052	10	5.6	3.8	830	7.52	460	140	<1.0	630	9.72	0.26	0.424	0.177	7.09	7.34
	12/08/17	11000	4600	210000	9200	210	310	22	27	0.015	<100	0.076	<0.010	0.076	0.51	5.3	7.0	4.5	1100	7.69	560	210	<1.0	730	11.4	1.93	0.829	0.582	6.86	7.11
	12/03/18	10000	4200	220000	7700	180	380	18	27	0.013	<100	<0.050	<0.010	<0.050	0.060	5.5	7.6	0.71	1000	7.68	580	180	<1.0	770	12.0	0.540	0.769	0.523	6.92	7.16
	11/28/19	8500	3600	160000	6900	210	210	18	22	0.017	<100	<0.050	<0.010	<0.050	0.13	5.8	8.2	0.62	760	8.00	420	210	1.9	550	8.96	0.060	1.04	0.789	6.97	7.21
COBC-001-MWA (1.83 m)	03/15/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	770	7.4	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/15/13	29000	2000	110000	5700	170	140	64	8.5	<0.01	<100	<0.05	<0.01	<0.05	0.47	65	3	32	770	7.4	300	170	<1	470	8.17	4.08	0.22	-0.028	7.18	7.43
	07/26/13[LFD]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	720	7.26	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/26/13[FD]	34400	2300	98800	5930	150	120	73	11	0.013	212	<0.05	<0.01	<0.05	0.9	<5	4	96	720	7.27	270	150	<1	446	7.46	0	-0.024	-0.272	7.29	7.54
	07/26/13	34000	2260	107000	6110	120	120	73	11	<0.01	193	<0.05	<0.01	<0.05	0.9	<5	3.4	110	740	7.33	290	150	<1	454	7.56	1.69	0.086	-0.162	7.24	7.49
	11/07/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1200	7.25	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/07/13	41000	2300	190000	12000	150	350	67	8.6	<0.01	140	<0.05	<0.01	<0.05	0.4	5.2	2.5	40	1200	7.24	520	150	<1	770	12.2	0.85	0.183	-0.063	7.06	7.3
	12/12/14	39000	2400	130000	7200	160	170	78	11	<10	<100	0.1	0.017	0.12	0.69	6.5	3.8	49	860	7.1	350	160	<1	550	9.12	1.22	-0.06	-0.308	7.16	7.41
	12/10/15	40000	2600	130000	7700	200	170	77	10	<0.010	160	<0.050	<0.010	<0.050	0.7	6	NM	57	880	7.32	360	200	<1.0	570	9.69	2.76	0.249	0.002	7.08	7.32
	12/02/16	45000	2600	270000	16000	170	560	68	8.6	0.012	<100	<0.050	0.013	<0.050	0.66	<5.0	3.1	31	1400	7.3	730	170	<1.0	1100	16.9	0.21	0.402	0.157	6.9	7.15
	12/11/17	42000	2600	170000	9900	160	430	76	9	<0.010	<100	<0.05	<0.010	<0.050	1.1	<5.0	4.3	42	1300	7.55	460	160	<1.0	840	14.4	12.1	0.455	0.208	7.10	7.34
	12/07/18	42000	2400	130000	7800	160	220	83	11	<0.010	150	<0.050	0.010	<0.050	0.78	5.7	4.1	61	920	7.23	360	160	<1.0	600	10.1	3.90	0.0650	-0.182	7.17	7.41
	12/02/19	42000	2500	160000	10000	170	280	68	9.2	<0.010	<100	<0.10	0.010	<0.10	0.62	8.0	3.8	56	1000	7.46	450	170	<1.0	690	11.3	0.810	0.408	0.161	7.05	7.30
COBC-002-MWA (4.13 m)	03/15/13	160000	2500	170000	15000	48	270	320	3.3	<0.01	<100	0.23	<0.01	0.23	<0.05	<5	1.2	2.2	1600	6.3	500	48	<1	971	15.6	3.68	-1.33	-1.57	7.63	7.87
	07/18/13	115000	2440	129000	13900	51	170	230	4.6	<0.01	<100	0.35	<0.01	0.35	<0.05	<5	1.5	1.3	1400	6.19	380	51	<1	696	11	6.96	-1.5	-1.75	7.69	7.94
	11/05/13	150000	2800	150000	16000	50	250	310	4.9	<0.01	<100	0.25	<0.01	0.25	<0.05	<5	1.4	4.1	1600	5.98	450	50	<1	920	14.9	2.43	-1.68	-1.92	7.66	7.90
	12/12/14	110000	2200	130000	13000	61	300	190	4.4	<10	<100	0.15	<0.01	0.15	0.057	<5	1.5	1.4	1300	5.99	380	61	<1	790	12.8	1.38	-1.64	-1.88	7.62	7.87
	12/10/15	120000	2500	140000	16000	48	180	320	3.2	<0.010	<100	0.27	<0.010	0.27	0.056	<5.0	NM	4.1	1500	6.25	410	48	<1.0	820	13.9	0.62	-1.45	-1.7	7.7	7.94
	11/22/16	160000	2600	150000	16000	58	230	340	3.8	0.011	<100	0.5	<0.010	0.5	0.056	<5.0	1.4	7.1	1600	6.29	430	58	<1.0	930	15.4	0.19	-1.32	-1.57	7.62	7.86
	11/22/16	160000	2600	150000	16000	58	230	340	3.8	0.011	<100	0.5	<0.010	0.5	0.056	<5.0	1.4	7.1	1600	6.29	430	58	<1.0	930	15.4	0.19	-1.32	-1.57	7.62	7.86
	12/02/17	210000	3300	190000	22000	53	190	590	2.9	<0.010	<100	0.21	<0.010	0.21	<0.050	<5.0	1.8	1.8	2300	6.37	570	53	<1.0	1300	21.9	2.53	-1.20	-1.44	7.57	7.82
	12/03/18	260000	3300	190000	20000	66	200	620	2.8	<0.010	<100	0.17	<0.010	0.17	<0.050	<5.0	1.8	2.7	2400	6.44	550	66	<1.0	1300	23.0	1.35	-1.06	-1.31	7.50	7.74
	12/02/19	260000	3100	190000	21000	55	180	690	2.7	<0.010	<100	0.48	<0.01	0.48	<0.050	<5.0	1.6	2.0	2500	6.25	550	55	<1.0	1400	24.3	3.79	-1.34	-1.58	7.59	7.83
COBC-004-MWA (3.89 m)	03/15/13	100000	5000	320000	28000	220	710	170	17	0.07	<100	<0.05	0.013	<0.05	<0.05	<5	1.2	<0.1	1900	7.6	920	210	<1.0	1480	23.9	2.09	0.837	0.593	6.76	7.01
	07/18/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1600	7.82	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/18/13	86300	5180	221000	35800	190	360	160	18	0.066	117	0.21	<0.01	0.21	0.18	<5	1.5	0.24	1700	7.8	700	190	1.1	999	15.7	6.45	0.88	0.634	6.92	7.17
	11/05/13	43000	4100	83000	14000	120	110	52	22	0.092	200	0.44	<0.01	0.44	<0.05	5.3	0.87	4.3	610	7.89	270	120	<1.0	410	6.26	7.74	0.449	0.201	7.44	7.69
	12/12/14	29000	2200	34000	5100	99	20	41	13	0.086	140	0.18	<0.01	0.18	<50	<5	0.53	3	350	7.83	110	98	<1	210	3.59	1.84	-0.035	-0.285	7.86	8.11
	12/10/15	32000	2300	34000	4800	100	18	49	13	0.13	210	0.079	<0.010	0.079	0.05	<5.0	NM	1.1	370	7.92	110	100	<1.0	220	3.85	3.77	0.072	-0.178	7.84	8.09
	11/25/16	34000	4100	120000	18000	130	240	54	21	0.19	200	0.53	<0.010	0.53	0.069	<5.0	1.5	8	780	7.81	360	130	<1.0	570	9.13	1.5	0.519	0.272	7.3	7.54
	12/07/17	90000	4800	150000	21000	160	280	140	21	0.16	180	0.053	<0.010	0.053	0.068	<5.0	1.9	2.0	1300	7.93	460	160	1.3	810	13.1	0.340	0.792	0.545	7.14	7.39
	12/03/18	50000	4100	140000	24000	180	290	76	24	0.16	200	1.5	<0.010	1.5	<0.050	<5.0	1.4	1.3	1100	7.94	460	180	1.5	730	12.0	2.13	0.836	0.589	7.1	7.35
	12/02/19	90000	4500	150000	26000	220	300	140	22	0.19	220	0.54	0.074	0.62	0.067	<5.0	1.3	1.6	1300	8.03	490	220	2.2	870	14.7	3.20	1.03	0.779	7.01	7.26
COBP-006-MWA (2.09 m)	03/27/13[FDL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	6	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13[FD]	14000	3900	150000	17000	220	300	25	14	<0.01	<500	<0.05	<0.01	<0.05	1.00	370	6.4	250	940	6.9	440	220	<1	683	11.2	3.41	-0.094	-0.341	6.99	7.24
	03/27/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13	14000	3900	150000	18000	220	300	25	14	<0.01	<500	<0.05	<0.01	<0.05	0.99	310	7.4	270	940	6.9	460	220	<1	690	11.2	1.81	-0.077	-0.324	6.98	7.22
	07/26/13	15300	4090	169000	21000	210	320	25	15	<0.01	<100	<0.05	<0.01	<0.05	0.89	37	6.7	190	1000	7.16	510	210	<1	723	11.5	1.25	0.192	-0.054	6.97	7.21
	11/06/13	14000	4300	170000	21000	200	330	24	14	<0.01	110	<0.05	<0.01	<0.05	0.92	48	5.1	170	1000	7.01	520	200	<1	740	11.6	0.94	0.046	-0.200	6.96	7.21
	12/15/14	21000	4000	130000	17000	250	150	34	16	<10	130	<0.05	<0.01	<0.05	1.2	17	7.8	170	820	6.95	400	250	<1	550	8.98	4.42	-0.007	-0.254	6.96	7.2
	12/9/15[FD]	19000	3900	130000	15000	250	140	36	16	0.012	120	<0.050	<0.010	<0.050	1.1	<5.0	NM	240	800	7.11	380	250	<1.0	530	8.85	1.88	0.122	-0.126	6.99	7.23
	12/9/15	19000	3800	120000	15000	260	120	35	16	0.013	120	<0.050	<0.010	<0.050	1.1	11	NM	270	790	7.13	370	260	<1.0	510	8.65	2.7	0.166	-0.082	6.97	7.22
	11/28/16	21000	4200	110000	15000	280	98	38	16	0.016	<100	<0.050	<0.010	<0.050	1.4	5.6	12	280	720	7.06	350	280	<1.0	500	8.78	0.8	0.104	-0.144	6.96	7.2
	12/21/17	21000	4000	110000	14000	270	81	40	16	<0.01	110	<0.050	<0.010	<0.050	1.3	6.8	11	170	770	7.29	340	270	<1.0	470	8.30	0.42	0.316	0.068	6.98	7.23
	12/3/18[FD]	24000	4000	110000	14000	270	77	44	15	<0.010	110	<0.050	<0.010	<0.050	1.2	16	8.5	170	730	7.33	340	270	<1.0	470	8.22	1.26	0.340	0.092	6.99	7.24
	12/3/18	24000	4000	110000	14000	270	79	45	15	<0.010	130	<0.050	<0.010	<0.050	1.2	80	8.8	160	760	7.73	330	260	1.3	470	8.21	0.610	0.735	0.487	7.00	7.25
	11/29/19	22000	3900	110000	14000	260	74	46	15	<0.010	<100	<0.050	<0.010	<0.050	1.5	<5.0	9.6	150	750	7.22	330	260	<1.0	460	8.12	0.370	0.21	-0.038	7.01	7.26

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
COBB-004-MWA (1.25 m)	03/27/13	<25	<5	<3	44	<2.5	<10	<500	0.12	<5	<5	<10	<500	<5	<20	0.013	<20	<15	<5	<0.5	430	<4	<100	<15	1.8	<10	26
	07/26/13	12.9	<1	3.3	56.1	<1	<2	75	0.096	<1	<0.4	<2	77	<0.5	972	NM	19	2.2	<1	<0.1	481	<0.1	<2	<2	2.03	<2	16
	11/06/13	10	<1	3.3	37	<1	<2	59	0.1	<1	<0.4	4.4	<50	<0.5	390	NM	7.8	2.5	<1	<0.1	360	<0.1	<2	<2	0.6	<2	12
	12/15/14	27	<1	2.2	57	<1	<2	55	0.46	<1	<0.4	5.7	<50	<0.5	41	<0.013	3.2	<2	1.5	<0.1	600	<0.1	<2	<2	1.6	<2	20
	12/9/15	23	<1.0	3	76	<1.0	<2.0	65	0.058	<1.0	1.1	<2.0	360	<0.50	2300	<0.013	13	3.5	<1.0	<0.10	600	<0.10	<2.0	<2.0	2.7	<2.0	12
	12/02/16	10	<1.0	3.2	87	<1.0	<2.0	66	0.03	<1.0	0.76	2.3	320	<0.50	1700	<0.013	11	2.5	<1.0	<0.10	740	<0.10	<2.0	<2.0	3.2	<2.0	48
	12/08/17	5.5	<1.0	2.9	94	<1.0	<2.0	82	0.069	<1.0	0.60	<2.0	280	<0.50	2300	<0.013	12	<2.0	<1.0	<0.10	880	<0.10	<2.0	<2.0	8.2	<2.0	<5.0
	12/03/18	<5.0	<1.0	2.3	89	<1.0	<2.0	85	0.12	<1.0	0.60	<2.0	170	<0.50	1300	<0.013	13	2.2	<1.0	<0.10	880	<0.10	<2.0	<2.0	8.0	<2.0	<5.0
	11/28/19	7.1	<1.0	2.5	60	<1.0	<2.0	90	0.019	<1.0	0.43	<0.50	130	<0.50	1500	<0.013	15	<2.0	<0.50	<0.10	590	<0.10	<2.0	<2.0	7.2	<2.0	<5.0
COBC-001-MWA (1.83 m)	03/15/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/15/13	16	<1	1.6	33	<0.5	<2.0	<100	0.056	<1.0	<1.0	<2.0	2600	<1.0	950	<0.013	<4	<3	<1.0	<0.1	3500	<0.8	<20	<3	<0.15	<2.0	37
	07/26/13[LFD]	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
	07/26/13[FD]	293	<1.0	3.9	43.9	<1.0	<2.0	<50	0.028	<1.0	0.53	<2.0	11900	<0.5	1060	NM	<2.0	<2.0	<1.0	<0.1	2380	<0.1	<2.0	<2.0	0.15	2.1	35.5
	07/26/13	23.3	<1.0	3.8	42.2	<1.0	<2.0	<50	<0.017	<1.0	0.48	<2.0	11100	<0.5	1080	NM	<2.0	<2.0	<1.0	<0.1	2550	<0.1	<2.0	<2.0	<0.1	<2.0	19.2
	11/07/13[L]	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
	11/07/13	21	<1.0	2.7	34	<1.0	<2.0	<50	<0.01	<1.0	0.61	<2.0	4400	<0.5	1600	NM	<2.0	<2.0	<1.0	<0.1	7300	<0.1	<2.0	<2.0	0.17	<2.0	36
	12/12/14	10	<1	2	50	<1	<2	<50	0.058	<1	0.44	<2	3900	<0.5	1200	<0.013	<2	<2	<1	<0.1	3600	<0.1	<2	<2	<0.1	<2	20
	12/10/15	29	<1.0	2.1	58	<1.0	<2.0	<50	0.095	<1.0	0.48	<2.0	4400	<0.50	1300	<0.013	<2.0	<2.0	<1.0	<0.10	3800	<0.10	<2.0	<2.0	0.12	<2.0	21
	12/02/16	7.7	<1.0	2.1	42	<1.0	<2.0	<50	0.058	<1.0	0.86	<2.0	3800	1.3	2500	<0.013	<2.0	<2.0	<1.0	<0.10	10000	<0.10	<2.0	<2.0	0.17	<2.0	61
	12/11/17	<5.0	<1.0	1.8	71	<1.0	<2.0	50	0.054	<1.0	0.42	<2.0	3300	<0.50	1700	<0.013	<2.0	<2.0	<1.0	<0.10	5000	<0.10	<2.0	<2.0	0.11	<2.0	11
	12/07/18	<5.0	<1.0	2.3	76	<1.0	<2.0	<50	<0.010	<1.0	0.47	<2.0	4900	<0.50	1400	<0.013	<2.0	<2.0	<1.0	<0.10	3700	<0.10	<2.0	<2.0	<0.10	<2.0	29
	12/02/19	8.7	<1.0	1.9	81	<1.0	<2.0	<50	0.024	<1.0	0.44	<0.50	4000	<0.50	1700	<0.013	<2.0	<2.0	<0.5	<0.10	5100	<0.10	<2.0	<2.0	<0.10	<2.0	13
COBC-002-MWA (4.13 m)	03/15/13	47	<1	<0.6	15	<0.5	<2	<100	0.6	<1	<1	30	<100	<1	67	<0.013	<4	6.2	10	<0.1	730	<0.8	<20	<3	<0.15	<2	370
	07/18/13	40.2	<1	<1	12.7	<1	<2	82	0.203	<1	0.46	40.4	84	0.93	56.1	NM	<2	2.2	8.4	<0.1	547	<0.1	<2	<2	<0.1	<2	189
	11/05/13	95	<1	<1	14	<1	<2	87	0.26	<1	0.85	46	<50	0.92	80	NM	<2	5.3	7.6	<0.1	610	<0.1	<2	<2	<0.1	<2	240
	12/12/14	60	<1	<1	11	<1	<2	79	0.47	<1	0.41	7.2	<50	0.57	51	<0.013	<2	<2	8.3	<0.1	500	<0.1	<2	<2	<0.1	<2	110
	12/10/15	36	<1.0	<1.0	17	<1.0	<2.0	77	0.17	<1.0	<0.40	5.9	57	0.63	62	<0.013	<2.0	<2.0	5.8	<0.10	600	<0.10	<2.0	<2.0	<0.10	<2.0	84
	11/22/16	66	<1.0	<1.0	15	<1.0	<2.0	79	0.21	<1.0	0.75	44	<50	0.61	98	<0.013	<2.0	2.5	6.9	<0.10	650	<0.10	<2.0	<2.0	<0.10	<2.0	160
	11/22/16	66	<1.0	<1.0	15	<1.0	<2.0	79	0.21	<1.0	0.75	44	<50	0.61	98	<0.013	<2.0	2.5	6.9	<0.10	650	<0.10	<2.0	<2.0	<0.10	<2.0	160
	12/02/17	27	<1.0	<1.0	21	<1.0	<2.0	75	0.21	<1.0	<0.40	9.6	<50	<0.50	59	<0.013	<2.0	<2.0	5.6	<0.10	950	<0.10	<2.0	<2.0	<0.10	<2.0	140
	12/03/18	20	<1.0	<1.0	21	<1.0	<2.0	69	0.21	<1.0	<0.40	8.8	<50	<0.50	53	<0.013	<2.0	<2.0	5.1	<0.10	850	<0.10	<2.0	<2.0	<0.10	<2.0	120
	12/02/19	32	<1.0	<1.0	20	<1.0	<2.0	71	0.2	<1.0	0.49	11	<50	1.1	100	<0.013	<2.0	3.5	4.7	<0.10	890	<0.10	<2.0	<2.0	<0.10	<2.0	62
COBC-004-MWA (3.89 m)	03/15/13	6.4	1.9	4.1	20	<0.5	<2.0	<100	0.064	<1.0	<1.0	<2.0	<100	<1.0	270	<0.013	4.1	4.3	1.2	<0.10	710	<0.80	<20	<3.0	1	13	23
	07/18/13[L]	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
	07/18/13	8.4	1.5	3.6	15.3	<1.0	<2.0	93	0.054	<1.0	<0.4	4.2	72	<0.5	908	NM	7.5	<2.0	1.2	<0.10	682	<0.10	<2.0	<2.0	0.6	10.6	24.7
	11/05/13	16	5.0	5.4	8.5	<1.0	<2.0	67	0.043	<1.0	<0.4	<2.0	370	<0.5	310	NM	4.2	2.4	1.7	<0.10	200	<0.10	<2.0	<2.0	0.21	9.2	41
	12/12/14	11	1.5	4.6	3.9	<1	<2	<50	0.12	<1	<0.4	2.9	<50	<0.5	7.6	<0.013	<2	<2	<1	<0.1	210	<0.1	<2	<2	0.14	8.6	18
	12/10/15	7.7	<1.0	3.9	5.1	<1.0	<2.0	<50	0.037	<1.0	<0.40	2.6	<50	<0.50	<2.0	<0.013	<2.0	<2.0	<1.0	<0.10	300	<0.10	<2.0	<2.0	0.17	7.3	17
	11/25/16	9.4	2.5	4.6	41	<1.0	<2.0	80	0.023	<1.0	<0.40	6.6	<50	<0.50	35	<0.013	3.8	<2.0	1.7	<0.10	400	<0.10	<2.0	<2.0	0.59	13	41
	12/07/17	19	1.0	5.2	25	<1.0	<2.0	86	0.036	<1.0	<0.40	2.4	<50	<0.50	160	<0.013	7.3	<2.0	<1.0	<0.10	510	<0.10	<2.0	<2.0	0.64	15	20
	12/03/18	340	2.5	4.9	30	<1.0	<2.0	80	0.096	1.0	<0.40	3.6	<50	<0.50	21	<0.013	3.8	<2.0	8.7	<0.10	400	<0.10	<2.0	<2.0	0.68	11	20
	12/02/19	5.7	1.8	6.1	25	<1.0	<2.0	85	0.029	<1.0	<0.40	2.8	<50	<0.50	180	<0.013	7.3	<2.0	3.3	<0.10	410	<0.10	<2.0	<2.0	0.74	15	19
COBP-006-MWA (2.09 m)	03/27/13[FDL]	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
	03/27/13[FD]	31	<5	3.1	30	<2.5	<10	<500	<0.085	<5	<5	<10	23000	<5	8400	0.022	<20	<15	<5	1	500	<4	<100	<15	<0.75	<10	34
	03/27/13[L]	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
	03/27/13	<25	<5	<3	31	<2.5	<10	<500	<0.085	<5	<5	<10	23000	<5	8400	<0.013	<20	<15	<5	<0.5	510	<4	<100	<15	<0.75	<10	32
	07/26/13	33.9	<1	2.7	32.8	<1	<2	71	0.06	<1	1.53	<2	20700	0.74	10500	NM	<2	<2	<1	<0.1	501	<0.1	<2	<2	0.26	<2	35
	11/06/13	15	<1.0	3.4	30.0	<1.0	<2.0	64	<0.01	<1	0.93	<2	20000	<0.50	10000	NM	<2	<2	<1	<0.1	550	<0.1	<2	<2	0.18	<2	35
	12/15/14	26	<1	1.4	37	<1	<2	61	0.18	<1	<0.40	<2	19000	<0.5	6200	<0.013	<2	<2	<1	<0.1	480	<0.1	<2	<2	<0.1	<2	29
	12/9/15[FD]	<5.0	<1.0	<1.0	37	<1.0	<2.0	59	0.012	<1.0	<0.40	<2.0	19000	<0.50	5800	<0.013	<2.0	<2.0	<1.0	<0.10	440	<0.10	<2.0	<2.0	<0.10	<2.0	27
	12/9/15	6.6	<1.0	<1.0	36	<1.0	<2.0	61	0.016	<1.0	<0.40	<2.0	19000	<0.50	5800	<0.013	<2.0	<2.0	<1.0	<0.10	440	<0.10	<2.0	<2.0	<0.10	<2.0	28
	11/28/16	9	<1.0	<1.0	58	<1.0	<2.0	62	<0.010	<1.0	<0.40	<2.0	16000	<0.50	5300	<0.013	<2.0	<2.0	<1.0	<0.10	450	<0.10	<2.0	<2.0	<0.10	<2.0	47
	12/21/17	9.1	<1.0	<1.0	75	<1.0	<2.0	57	0.067	<1.0	<0.40	<2.0	15000	<0.50	5000	<0.013	<2.0	<2.0	<1.0	<0.10	450	<0.10	<2.0	<2.0	<0.10	<2.0	56
	12/3/18[FD]	10	<1.0	<1.0	110	<1.0	<2.0	60	0.15	<1.0	<0.40	<2.0	13000	<0.50	4900	<0.013	<2.0	<2.0	<1.0	<0.10	470	<0.10	<2.0	<2.0	<0.10	<2.0	52
	12/3/18	9.8	<1.0	<1.0	110	<1.0	<2.0	59	0.086	<1.0	<0.40	<2.0	13000	<0.50	4800	<0.013	<2.0	<2.0	<1.0	<0.10	460	<0.10	<2.0	<2.0	<0.10	<2.0	52
	11/29/19	50	<1.0	<1.0	110	<1.0	<2.0	59	0.02	<1.0	<0.40	<0.5	13000	<0.50	4700	<0.013	<2.0	<2.0	<0.5	<0.10	450	<0.10	<2.0	<2.0	<0.10	<2.0	13

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COBT-003-MWB (3.03 m)	03/13/12[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.98	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/12[FD]	99000	2700	100000	11000	210	81	180	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	7.9	0.94	1	1100	7.7	300	210	1	621	11.1	3.73	0.535	0.288	7.17	7.41
	03/13/12	100000	2700	100000	12000	210	81	180	13	0.014	<100	<0.05	<0.01	<0.05	<0.05	9	<0.5	1.4	1100	7.7	300	210	1	620	11	2.89	0.535	0.288	7.17	7.41
	06/07/12	120000	3400	99000	12000	210	89	210	13	<0.01	<100	<0.05	<0.01	<0.05	0.064	<5	<0.5	0.96	1100	7.6	300	210	<1	677	11.9	2.36	0.408	0.161	7.19	7.44
	09/12/12[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	09/12/12	130000	3300	100000	12000	210	87	230	12	<0.01	<100	<0.05	<0.01	<0.05	0.061	<5	0.55	1.3	1200	7.6	300	210	<1	695	12.4	3.3	0.409	0.162	7.19	7.44
	12/12/12[L]	NM	2900	110000	NM	NM	NM	NM	13	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/12/12	110000	3000	100000	12000	210	85	220	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	12	<0.5	0.37	1200	7.7	310	210	1	674	12.1	4.79	0.538	0.291	7.16	7.41
	03/19/13	130000	3200	120000	12000	210	89	220	12	<0.01	<100	<0.05	<0.01	<0.05	0.06	<5	<0.5	0.8	1200	7.7	340	210	1	717	12.4	1.12	0.578	0.331	7.12	7.37
	07/18/13	111000	2910	104000	11900	210	80	180	13	<0.01	<100	0.052	<0.01	0.052	0.058	<5	0.54	0.43	1200	7.41	310	210	<1	638	11.2	0.41	0.26	0.013	7.15	7.4
	11/07/13	110000	3100	110000	13000	210	80	200	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<0.5	0.86	1200	7.31	330	210	<1	670	11.7	0.56	0.177	-0.07	7.13	7.38
	12/12/14	120000	3100	110000	13000	220	78	220	13	<10	<100	0.14	<0.01	0.14	0.074	<5	<0.5	1.3	1200	7.32	340	220	<1	700	12.2	0.62	0.222	-0.025	7.1	7.35
	12/9/15	110000	2800	110000	12000	230	76	200	13	0.012	<100	<0.050	<0.010	<0.050	0.14	<5.0	NM	1.3	1200	7.64	320	230	<1.0	670	11.9	2.11	0.549	0.302	7.09	7.34
	11/28/16	110000	3100	110000	12000	220	74	210	13	0.015	<100	0.052	<0.010	0.052	0.073	9.1	0.72	1.6	1100	7.55	320	220	<1.0	670	11.9	2.33	0.43	0.183	7.12	7.37
	12/07/17	100000	2900	110000	12000	210	69	200	13	<0.010	<100	<0.050	<0.010	<0.050	<0.050	<5.0	1.3	0.51	1200	7.64	320	210	<1.0	640	11.3	1.57	0.516	0.269	7.13	7.37
	12/03/18	97000	2700	110000	12000	220	74	190	14	<0.010	<100	<0.050	<0.010	<0.050	0.058	<5.0	1.1	0.53	1100	7.86	320	220	1.5	630	11.3	2.92	0.726	0.478	7.13	7.38
	11-29-19[FD]	92000	2600	100000	11000	220	72	190	12	<0.010	<100	<0.050	<0.010	<0.050	0.097	<5.0	0.78	0.47	1000	7.49	300	220	<1.0	620	11.3	5.24	0.351	0.104	7.14	7.38
	11/29/19	93000	2600	100000	11000	220	73	170	13	<0.010	<100	0.089	<0.010	0.089	0.065	<5.0	0.77	0.42	1100	7.54	310	220	<1.0	600	10.7	2.05	0.407	0.160	7.14	7.39
COCP-110-MW (2.39 m)	03/27/13[L]	NM	NM	NM	NM	NM	NM	NM	25	NM	<500	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13	14000	6900	110000	7600	140	130	59	25	<0.01	<500	0.11	<0.01	0.11	1.3	5.8	1.8	56	680	7.5	320	140	<1	449	7.18	1.37	0.235	-0.013	7.27	7.51
	07/18/13	17900	8680	139000	7800	170	130	62	37	<0.01	159	0.055	<0.01	0.055	2.3	7.9	3	79	860	7.44	380	170	<1	513	7.91	5.72	0.352	0.105	7.09	7.34
	11/06/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	85	1000	7.4	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/06/13	15000	9600	160000	10000	210	260	58	40	<0.01	240	0.076	0.012	0.088	2.5	17	5.5	85	1000	7.35	450	210	<1	690	11.3	4.87	0.392	0.145	6.96	7.21
	12/15/14	20000	10000	150000	11000	210	190	35	35	<10	170	0.15	0.012	0.16	1.2	9.2	5	73	880	7.48	430	210	<1	590	9.15	4.34	0.501	0.254	6.98	7.23
	12/9/15	29000	11000	150000	10000	190	220	61	34	0.019	<100	0.17	0.011	0.18	2.3	7.4	NM	70	980	7.5	410	190	<1.0	640	10.2	0.39	0.45	0.202	7.05	7.29
	11/28/16	24000	11000	120000	11000	180	150	55	35	0.041	140	0.18	<0.010	0.18	0.22	10	3	23	720	7.82	340	180	1.1	520	8.44	2.18	0.677	0.429	7.14	7.39
	12-8-17 FD	33000	12000	150000	13000	210	210	75	35	<0.01	310	0.16	<0.010	0.16	1.3	6	4.1	86	1000	7.69	430	210	<1.0	660	10.6	0.38	0.68	0.433	7.01	7.26
	12/8/17	33000	12000	150000	13000	210	200	75	34	<0.010	290	0.20	<0.010	0.20	1.4	5.7	4.1	69	990	7.67	420	210	<1.0	640	10.4	0.14	0.654	0.406	7.02	7.26
	12/3/18	28000	11000	140000	13000	200	210	62	31	<0.010	200	<0.050	<0.010	<0.050	1.0	6.3	6.1	68	930	7.80	410	200	1.2	620	10.0	1.16	0.750	0.502	7.05	7.30
	11/28/19	34000	11000	130000	11000	180	200	54	29	<0.010	250	<0.050	<0.010	<0.050	1.5	7.6	3.3	43	850	8.00	380	180	1.6	590	9.30	1.43	0.880	0.632	7.12	7.37
CODT-008-MWB (1.62 m)	03/29/13	27000	5500	56000	1700	95	31	75	20	0.042	<100	0.56	0.087	0.65	0.1	23	4.9	36	420	9.1	150	84	10	275	4.71	5.49	1.36	1.11	7.74	7.99
	07/16/13	30400	10200	76500	1390	120	85	61	18	0.074	141	<0.05	0.015	0.056	0.79	52	12	120	570	8.53	200	110	3.6	354	5.82	2.11	1.03	0.781	7.5	7.75
	10/23/13	8700	5200	79000	1600	87	130	6.8	26	<0.01	<100	0.53	0.11	0.63	0.12	33	12	>1000	450	7.56	200	86	<1.0	310	4.63	0.43	-0.029	-0.278	7.59	7.84
	12/15/14	18000	7800	69000	330	80	58	31	23	<10	<100	0.23	0.15	0.39	0.31	20	3.6	1.8	460	10.9	170	38	5.5	260	3.73	8.91	2.04	1.79	8.83	9.08
	12/10/15	13000	8500	60000	190	74	97	17	18	0.03	110	0.24	0.37	0.61	0.37	46	NM	12	400	9.75	150	47	25	260	4.02	2.29	1.79	1.54	7.96	8.21
	11/30/16	40000	2300	38000	3500	100	12	87	6.1	0.067	<100	<0.050	0.011	<0.050	0.5	37	<5.0	16	470	7.55	110	100	<1.0	250	4.76	8.18	-0.267	-0.517	7.82	8.07
	12/07/17	13000	5200	75000	700	67	130	14	23	0.011	<100	0.81	0.19	1.0	<0.050	19	6.0	6.3	450	10.1	190	28	33	300	4.44	0.670	2.00	1.75	8.10	8.35
	12/05/18[FD]	45000	5200	83000	310	110	73	84	19	0.014	<100	0.096	0.20	0.29	0.37	17	<5.0 [9]	3.4	800	11.3 [8]	210	<1.0	2.0	370	6.02	2.11	0.812	0.564	10.50	10.7
	12/05/18	46000	5200	83000	310	110	71	87	19	0.014	<100	0.064	0.19	0.25	0.36	17	3.8	3.3	770	11.0 [8]	210	4.7	48	380	6.10	1.77	2.19	1.94	8.85	9.09
	11/28/19	41000	4500	74000	450	100	86	62	20	<0.010	<100	0.11	0.18	0.30	0.37	17	5.2	1.2	640	11.0 [8]	190	4.0	41	350	5.58	0.710	2.08	1.83	8.96	9.21
CODT-105-MW (2.95 m)	01/15/13	26000	13000	96000	13000	150	140	39	12	<0.01	<100	0.58	0.093	0.67	0.066	<5	2.3	1.5	640	8	290	150	1.4	433	7.12	1.73	0.714	0.466	7.29	7.53
	03/13/13	250000	17000	99000	400	78	110	460	11	<0.01	<100	0.094	0.46	0.55	0.27	8	2.3	8.2	1900	10.7	250	43	9.2	995	16.8	1.69	2.11	1.86	8.59	8.84
	07/16/13	56000	11500	74200	4980	42	140	91	10	<0.01	<100	0.22	0.065	0.29	0.39	9	3.1	1.6	660	8.89	210	39	2.8	413	6.3	4.33	0.902	0.654	7.99	8.24
	10/23/13	41000	14000	77000	4700	81	140	62	10	0.017	<100	0.5	0.31	0.8	0.32	11	3.5	1.8	640	9.10	210	72	8.5	410	6.42	0.39	1.40	1.15	7.70	7.95
	12/16/14	14000	7200	130000	18000	180	110	230	17	0.018	<100	0.53	0.037	1.1	<50	11	3.3	0.56	780	7.79	390	300	1.7	500	8.84	1.14	0.902	0.654	6.89	7.13
	12/10/15	36000	9300	69000	6200	62	140	32	13	0.013	<100	0.55	0.18	0.74	0.17	<5.0	NM	0.65	510	8.64	200	60	2.5	350	5.09	6.43	0.825	0.577	7.82	8.07
	11/23/16[FD]	41000	21000	110000	17000	230	140	36	15	0.025	<100	0.74	0.23	0.97	0.095	<5.0	2.9	1.4	760	7.87	330	230	1.6	520	8.59	2.22	0.781	0.533	7.09	7.34
	11/23/16	42000	21000	110000	17000	220	140	36	14	0.026	<100	0.76	0.22	0.98	0.08	<5.0	2.9	1.3	750	7.91	340	220	1.7	520	8.51	3.13	0.811	0.563	7.1	7.35
	12/07/17	64000	9900	56000	2600	61	130	81	16	0.010	<100	1.4	0.45	1.9	0.092	6.6	4.3	0.38	650	8.28	150	59	1.1	400	6.24	1.22	0.358	0.109	7.92	8.17
	12/05/18	15000	5400	160000	24000	370	160	13	18	0.029	<100	2.1	<0.010	2.1	<0.050	<5.0	3.1	0.39	940	7.87	510	370	2.6	630	11.2	1.45	1.16	0.914	6.71	6.96
	12/04/19	13000	5400	160000	23000	390	140	16	18	0.021	<100	2.2	<0.010	2.2	<0.050	<5.0	2.8	0.36	940	7.83	490	390	2.5	620	11.3	3.24	1.14	0.888	6.69	6.94

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
COBT-003-MWB (3.03 m)	03/13/12[L]	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
	03/13/12[FD]	<5	0.51	3.4	42	<0.5	<2	<100	<0.017	<1	<1	<2	210	<1	2600	<0.013	<4	<3	<1	<0.1	1300	<0.8	<20	<3	0.45	<2	6.7
	03/13/12	23	<0.4	3.5	43	<0.5	<2	<100	<0.017	<1	<1	<2	220	<1	2700	<0.013	<4	<3	<1	<0.1	1300	<0.8	<20	<3	0.45	<2	7.3
	06/07/12	<5	<1	4.2	70	<0.5	<2	<100	<0.017	<1	<1	<2	170	<1	2000	<0.013	<4	<3	1.2	<0.1	1500	<0.8	<20	<3	0.22	<2	29
	09/12/12[L]	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
	09/12/12	<5	<1	3.7	67	<0.5	<2	<100	0.055	<1	<1	<2	170	<1	2000	<0.013	<4	<3	<1	<0.1	1500	<0.8	<20	<3	0.24	<2	16
	12/12/12[L]	13	<1	3.5	42	<0.5	<2	<100	0.034	<1	<1	<2	110	<1	2300	NM	<4	<3	<1	<0.1	1400	<0.8	<20	<3	0.28	<2	7.9
	12/12/12	14	<1	3.5	42	<0.5	<2	<100	0.034	<1	<1	<2	110	<1	2300	<0.013	<4	<3	<1	<0.1	1500	<0.8	<20	<3	0.29	<2	8.1
	03/19/13	<5	<1	3	57	<0.5	<2	<100	0.02	<1	<1	<2	140	<1	2100	<0.013	<4	<3	<1	<0.1	1700	<0.8	<20	<3	0.3	<2	20
	07/18/13	5.4	<1	3.7	42.4	<1	<2	62	0.018	<1	0.44	<2	159	<0.5	2170	NM	<2	<2	<1	<0.1	1500	<0.1	<2	<2	0.22	<2	21.4
	11/07/13	20	<1	3.8	43	<1	<2	61	0.02	<1	0.53	<2	190	<0.5	2200	NM	<2	<2	<1	<0.1	1400	<0.1	<2	<2	0.27	<2	22
	12/12/14	20	<1	3.4	56	<1	<2	64	1.7	<1	0.42	<2	240	<0.5	2300	<0.013	<2	<2	<1	<0.1	1500	<0.1	<2	<2	0.26	<2	20
	12/9/15	<5.0	<1.0	3	43	<1.0	<2.0	64	0.039	<1.0	0.41	<2.0	200	<0.50	2400	<0.013	<2.0	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	0.28	<2.0	15
	11/28/16	5.9	<1.0	2.5	46	<1.0	<2.0	65	<0.010	<1.0	<0.40	<2.0	220	<0.50	2200	<0.013	<2.0	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	0.25	<2.0	21
	12/07/17	<5.0	<1.0	2.8	44	<1.0	<2.0	63	0.010	<1.0	0.48	<2.0	220	<0.50	2300	<0.013	<2.0	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	0.44	<2.0	21
	12/03/18	<5.0	<1.0	2.4	48	<1.0	<2.0	57	0.016	<1.0	0.44	<2.0	220	<0.50	2200	<0.013	<2.0	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	0.49	<2.0	41
	11-29-19[FD]	11	<1.0	2.0	41	<1.0	<2.0	56	0.040	<1.0	0.56	0.60	130	<0.50	2400	<0.013	<2.0	<2.0	<0.50	<0.10	1200	<0.10	<2.0	<2.0	0.29	<2.0	9.2
	11/29/19	11	<1.0	2.0	42	<1.0	<2.0	57	0.026	<1.0	0.58	0.78	120	<0.50	2400	<0.013	<2.0	<2.0	<0.50	<0.10	1200	<0.10	<2.0	<2.0	0.29	<2.0	8.0
COCP-110-MW (2.39 m)	03/27/13[L]	<25	<5	14	60	<2.5	<10	<500	0.1	<5	<5	<10	4200	<5	320	NM	<20	<15	<5	<0.5	410	<4	<100	<15	0.92	<10	28
	03/27/13	<25	<5	14	61	<2.5	<10	<500	0.11	<5	<5	<10	4300	<5	330	<0.013	<20	<15	<5	<0.5	420	<4	<100	<15	0.92	<10	29
	07/18/13	7.8	<1	18.5	60.3	<1	<2	64	<0.017	<1	<0.4	<2	3880	<0.5	493	NM	4.1	<2	<1	<0.1	464	<0.1	<2	<2	0.54	<2	7.4
	11/06/13[L]	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
	11/06/13	14	1.8	19	81	<1	<2	82	0.011	<1	<0.4	<2	3300	<0.5	380	NM	5.7	<2	1.9	<0.1	660	<0.1	<2	<2	2.6	4.9	12
	12/15/14	13	2.5	13	77	<1	<2	76	0.18	<1	<0.4	<2	4400	<0.5	390	0.017	6.6	<2	1.3	<0.1	610	<0.1	<2	<2	3	5.1	9.8
	12/9/15	15	1.6	17	56	<1.0	<2.0	70	0.067	<1.0	<0.40	<2.0	6600	<0.50	550	<0.013	6.9	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	1	<2.0	55
	11/28/16	10	2.1	13	96	<1.0	<2.0	68	0.05	<1.0	<0.40	<2.0	800	<0.50	110	<0.013	4	<2.0	1.7	<0.10	500	<0.10	<2.0	<2.0	3	4.7	<5.0
	12-8-17 FD	<5.0	1.4	28	85	<1.0	<2.0	77	0.021	<1.0	<0.40	<2.0	4600	<0.50	390	0.015	7.9	<2.0	<1.0	<0.10	580	<0.10	<2.0	<2.0	2.5	3.4	<5.0
	12/8/17	<5.0	1.6	27	86	<1.0	<2.0	75	0.018	<1.0	<0.40	<2.0	4000	<0.50	370	<0.013	8.0	<2.0	1.1	<0.10	580	<0.10	<2.0	<2.0	2.4	3.6	<5.0
	12/3/18	6.3	2.6	18	75	<1.0	<2.0	72	0.13	<1.0	<0.40	<2.0	2200	<0.50	260	0.017	7.2	<2.0	1.0	<0.10	580	<0.10	<2.0	<2.0	2.6	7.0	5.5
	11/28/19	17	1.1	27	63	<1.0	<2.0	75	0.011	<1.0	<0.40	0.97	4700	<0.50	350	<0.013	7.1	<2.0	<0.50	<0.10	500	<0.10	<2.0	<2.0	1.6	3.0	<5.0
CODT-008-MWB (1.62 m)	03/29/13	34	<1	9.7	27	<0.5	<2	<100	<0.017	<1	<1	4.7	<100	<1	6.9	0.12	<4	<3	2.8	<0.1	250	<0.8	<20	<3	1.2	9.7	<5
	07/16/13	41.3	<1	41.7	52.7	<1	<2	<50	0.028	2.2	<0.4	<2	134	<0.5	143	NM	5.9	<2	1.3	<0.1	509	<0.1	<2	<2	1.45	2.9	8
	10/23/13	45	<1	11	58	<1	<2	<50	<0.01	<1	<0.40	3.2	110	<0.50	220	NM	3.8	<2	1.6	<0.1	480	<0.1	<2	4.3	1.9	4.9	9.9
	12/15/14	510	<1	7.2	25	<1	<2	<50	0.085	1.3	<0.4	5.6	<50	<0.5	<2	<0.013	5.1	<2	1.8	<0.1	840	<0.1	<2	<2	0.19	11	<5
	12/10/15	250	<1.0	21	18	<1.0	<2.0	<50	0.13	<1.0	<0.40	8.2	<50	<0.50	<2.0	0.13	4.4	<2.0	2.1	<0.10	850	<0.10	<2.0	<2.0	0.18	16	<5.0
	11/30/16	41	<1.0	1.4	190	<1.0	<2.0	<50	0.15	<1.0	<0.40	<2.0	69	<0.50	430	<0.013	<2.0	<2.0	<1.0	<0.10	280	<0.10	<2.0	<2.0	0.31	<2.0	<5.0
	12/07/17	160	<1.0	7.1	41	<1.0	<2.0	<50	0.046	<1.0	<0.40	6.1	<50	<0.50	<2.0	<0.013	2.8	<2.0	<2.0	<0.10	790	<2.0	<2.0	1.2	10	<2.0	5.0
	12/05/18[FD]	520	<1.0	3.3	40	<1.0	<2.0	<50	0.026	1.6	<0.40	3.7	<50	<0.50	<2.0	<0.013	6.8	<2.0	1.4	<0.10	880	<0.10	<2.0	<2.0	0.30	8.8	<5.0
	12/05/18	530	<1.0	3.3	41	<1.0	<2.0	<50	0.025	1.7	<0.40	3.6	<50	<0.50	<2.0	<0.013	7.0	<2.0	1.4	<0.10	890	<0.10	<2.0	<2.0	0.30	8.5	<5.0
	11/28/19	410	<1.0	3.4	43	<1.0	<2.0	<50	<0.010	1.2	<0.40	3.9	<50	<0.50	<2.0	0.027	7.8	<2.0	1.6	<0.10	780	<0.10	<2.0	<2.0	0.65	9.3	<5.0
CODT-105-MW (2.95 m)	01/15/13	18	2.3	1.7	22	<0.5	<2	<100	0.058	<1	<1	8.5	<100	<1	17	<0.013	9.5	<3	26	<0.1	480	<0.8	<20	<3	2.1	4.9	46
	03/13/13	1100	1.8	17	5.7	<0.5	<2	<100	<0.017	<1	<1	11	<100	<1	<4	0.013	14	<3	37	<0.1	1700	<0.8	<20	<3	<0.15	30	<5
	07/16/13	798	1.5	3.3	8.6	<1	<2	<50	0.027	1.1	<0.4	8.7	<50	<0.5	10.6	NM	14.9	3.1	19.1	<0.1	729	<0.1	<2	<2	0.74	7.4	12.3
	10/23/13	670	1.6	6.2	13	<1	<2	<50	0.053	1.8	<0.4	9.5	<50	<0.5	8.0	NM	9.9	<2.0	29	<0.1	1000	<0.1	<2.0	<2.0	0.97	9.7	<5.0
	12/16/14	20	2.2	2.1	25	<1	<2	62	0.13	<1	<0.4	4.3	<50	<0.5	2.9	<0.013	5.4	<2	15	<0.1	380	<0.1	<2	<2	2.3	2.5	18
	12/10/15	430	1.7	3.1	11	<1.0	<2.0	<50	0.034	1.1	<0.40	6	<50	6.6	2.6	<0.013	5.8	<2.0	21	<0.10	880	<0.10	<2.0	<2.0	0.82	6.6	11
	11/23/16[FD]	19	2.6	2.1	28	<1.0	<2.0	70	0.044	<1.0	<0.40	10	<50	0.52	7.5	<0.013	7.5	<2.0	11	<0.10	480	<0.10	<2.0	<2.0	2.5	3.4	69
	11/23/16	20	2.5	2.2	28	<1.0	<2.0	70	0.047	<1.0	<0.40	10	<50	0.52	7.6	<0.013	7.5	<2.0	12	<0.10	480	<0.10	<2.0	<2.0	2.5	3.3	68
	12/07/17	170	<1.0	2.9	13	<1.0	<2.0	<50	0.041	2.7	0.41	10	<50	<0.50	<2.0	<0.013	7.9	<2.0	11	<0.10	840	<0.10	<2.0	<2.0	0.43	10	16
	12/05/18	15	2.2	2.4	34	<1.0	<2.0	75	0.074	<1.0	<0.40	6.6	<50	<0.50	<2.0	<0.013	5.6	<2.0	18	<0.10	400	<0.10	<2.0	<2.0	3.2	4.0	30
	12/04/19	15	2.2	2.3	33	<1.0	<2.0	73	0.041	<1.0	<0.40	6.3	<50	1.2	2.2	<0.013	5.0	<2.0	17	<0.10	440	<0.10	<2.0	<2.0	3.1	4.3	100

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CODT-201-MWA (3.64 m)	03/13/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.9	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	16000	2300	87000	8200	200	53	22	13	<0.01	<100	1.1	<0.01	1.1	<0.05	5.8	1.8	15	530	7.5	250	200	<1	327	5.83	0.43	0.316	0.067	7.18	7.43
	07/16/13	15700	2690	89300	9070	220	51	20	14	0.015	<100	1	<0.01	1	<0.05	<5	<5	140	560	7.44	260	220	<1	339	6.11	1.33	0.302	0.053	7.14	7.39
	10/23/13	14000	2100	75000	7300	190	42	9	11	0.012	<100	3.3	<0.01	3.3	<0.05	13	5.9	110	460	7.71	220	180	<1	290	5.08	0.990	0.434	0.185	7.28	7.53
	12/15/14	9900	2800	100000	11000	220	67	12	14	0.019	<100	3.2	<0.01	3.2	<50	6.5	3.8	240	570	7.57	290	220	<1	360	6.3	0.47	0.472	0.223	7.1	7.35
	12/9/15	9800	2900	120000	12000	280	79	11	15	0.022	<100	7.0	<0.010	7	0.11	<5.0	NM	160	680	7.54	350	280	<1.0	450	7.96	3.11	0.601	0.353	6.94	7.18
	11/28/16	8200	3200	100000	11000	250	58	11	15	0.027	<100	3.7	<0.010	3.7	<0.050	6.3	3.8	75	560	7.61	310	250	<1.0	380	6.8	1.64	0.588	0.339	7.02	7.27
	12/05/17	9400	3100	94000	10000	230	53	9.4	15	0.021	<100	4.2	<0.010	4.2	<0.050	<5.0	<5.0	160	580	7.68	280	230	1.1	350	6.36	2.66	0.591	0.343	7.09	7.34
	12/05/18	7400	2900	100000	9900	210	79	16	15	0.020	<100	1.3	<0.010	1.3	<0.050	<5.0	3.4	7.7	580	7.86	300	200	1.4	360	6.32	0.240	0.748	0.499	7.12	7.37
	11/28/19	7500	3000	110000	11000	230	85	14	14	0.017	<100	2.0	<0.010	2.0	<0.050	<5.0	3.4	20	590	7.89	320	230	1.7	400	6.99	0.940	0.858	0.610	7.03	7.28
CODT-201-MWC (3.75 m)	03/13/13	59000	2400	43000	4700	210	4.7	42	11	<0.01	<100	<0.05	<0.01	<0.05	0.64	7.3	6.3	14	500	8	130	200	1.9	292	5.4	1.69	0.527	0.278	7.47	7.72
	07/16/13	64900	2360	40800	4730	210	6	40	11	0.15	<100	<0.05	<0.01	<0.05	0.58	<5	<5	25	500	7.91	120	210	1.6	298	5.48	1.2	0.422	0.173	7.49	7.74
	10/23/13[FD]	67000	2300	41000	4500	200	13	44	11	<0.01	<100	<0.05	<0.01	<0.05	0.43	6	4.3	2.3	510	7.97	120	200	1.7	300	5.5	1.1	0.456	0.207	7.51	7.76
	10/23/13	67000	2400	40000	4600	200	13	45	12	<0.01	<100	0.058	<0.01	0.058	0.42	5.5	4.5	2.2	510	7.92	120	200	1.6	300	5.53	1.47	0.401	0.152	7.52	7.77
	12/15/14	66000	2300	38000	4300	200	5.3	43	11	0.01	<100	<0.05	<0.01	<0.05	0.52	5.5	5.2	9.3	500	7.87	110	200	1.4	290	5.32	1.04	0.327	0.077	7.54	7.79
	12/9/15	60000	2300	45000	5100	220	11	45	11	0.019	<100	<0.050	<0.010	<0.050	0.91	<5.0	NM	1.2	530	7.99	130	220	2	310	5.87	4.08	0.556	0.307	7.43	7.68
	11/28/16	70000	2500	38000	4200	200	6.7	64	11	0.019	<100	0.054	<0.010	0.054	0.45	<5.0	<5.0	4	510	8.05	110	200	2.1	320	5.89	4.53	0.497	0.248	7.56	7.81
	12/05/17	69000	2500	40000	4900	210	4.0	59	12	<0.010	<100	<0.050	<0.010	<0.050	0.59	5.2	5.7	0.84	560	7.81	120	200	1.2	320	5.85	3.08	0.299	0.050	7.51	7.76
	12/05/18	64000	2400	42000	4600	210	<2.0	50	12	0.013	<100	<0.050	<0.010	<0.050	0.54	5.3	14	7.7	530	7.97	120	210	1.8	300	5.57	1.92	0.488	0.239	7.48	7.73
	11/28/19	63000	2400	39000	4500	200	2.1	47	11	0.011	<100	<0.050	<0.010	<0.050	0.68	<5.0	14	1.6	480	8.13	120	200	2.5	290	5.36	2.00	0.597	0.348	7.53	7.78
CODT-203-MW (2.62 m)	3/13/2013[L]	NM	NM	NM	NM	NM	200	210	NM	<0.01	NM	NM	<0.01	<0.05	NM	21	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	120000	6800	130000	13000	180	200	220	14	<0.01	<100	<0.05	<0.01	<0.05	0.66	14	2.3	56	1300	7.2	390	180	<1	824	13.9	2.51	0.065	-0.182	7.14	7.38
	07/16/13[FD]	130000	6430	143000	13000	220	180	220	15	<0.01	<100	<0.05	<0.01	<0.05	0.69	19	2.7	62	1500	7.33	410	220	<1	848	14.2	0.11	0.294	0.048	7.04	7.28
	07/16/13	132000	6560	143000	13000	220	170	210	15	<0.01	<100	<0.05	<0.01	<0.05	0.68	15	2.6	70	1500	7.35	410	220	<1	832	13.8	2.14	0.318	0.071	7.03	7.28
	10/23/13	47000	5100	140000	15000	220	240	58	19	<0.01	<100	<0.05	<0.01	<0.05	0.47	21	4.1	98	980	7.22	420	220	<1	670	10.9	0.87	0.217	-0.0300	7.00	7.25
	12/12/14	24000	2500	110000	6000	120	190	27	23	<10	<100	0.42	<0.01	0.42	0.1	6.5	4.4	14	660	7.19	290	120	<1	450	7.05	0.57	-0.166	-0.414	7.35	7.6
	12/8/15[FD]	36000	4100	130000	8600	180	210	34	18	0.016	<100	<0.050	0.041	0.083	0.29	6.7	3.6	26	820	7.51	350	180	<1.0	550	8.87	0.8	0.388	0.14	7.13	7.37
	12/8/15	36000	4100	130000	8600	180	210	35	18	0.014	<100	<0.050	0.038	0.084	0.28	5.9	3.6	23	830	7.56	350	180	<1.0	550	8.94	1.42	0.434	0.186	7.12	7.37
	11/23/16	59000	3800	110000	6000	160	170	74	22	0.024	<100	0.29	0.02	0.31	0.057	7.5	3.6	65	800	7.18	300	160	<1.0	540	8.82	1.26	-0.059	-0.306	7.24	7.49
	12/07/17	160000	5500	93000	5200	150	160	200	14	<0.01	<100	<0.050	<0.010	<0.050	0.32	<5.0	3.6	3.6	1300	7.53	250	150	<1.0	730	11.9	1.70	0.150	-0.096	7.38	7.62
	12/10/18	89000	3600	59000	2700	110	110	120	14	<0.010	<100	<0.050	<0.010	<0.050	0.17	<5.0	2.9	0.87	810	7.52	160	110	<1.0	460	7.72	3.76	-0.138	-0.387	7.66	7.91
	11/28/19	55000	2500	80000	3500	140	130	43	20	0.011	<100	0.16	<0.010	0.16	0.062	5.8	4.1	1.9	650	7.81	210	140	<1.0	430	6.84	0.510	0.405	0.157	7.40	7.65
CODT-205-MWA (1.75 m)	03/13/13[FD]	41000	5800	82000	11000	280	13	23	15	<0.01	<100	<0.05	<0.01	<0.05	0.26	9.1	7.2	130	600	7.6	250	280	1.1	363	6.59	2.66	0.527	0.278	7.07	7.32
	03/13/13	42000	5800	83000	11000	290	13	23	16	<0.01	<100	<0.05	<0.01	<0.05	0.25	9.7	6.7	130	610	7.5	250	290	<1	367	6.69	2.26	0.438	0.189	7.06	7.31
	07/16/13[L]	NM	NM	NM	NM	300	10	23	16	<0.01	NM	NM	<0.01	<0.05	0.16	6.8	5.2	33	610	7.64	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/16/13	40800	5720	72400	10700	300	11	22	16	<0.01	<100	<0.05	<0.01	<0.05	0.16	8.3	5.6	33	610	7.64	220	300	1.2	366	6.94	3.04	0.543	0.294	7.1	7.35
	10/23/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	600	7.64	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/23/13	38000	5900	80000	11000	310	9.6	22	18	<0.01	<100	<0.05	<0.01	<0.05	0.17	12	5.5	31	610	7.64	250	310	1.3	370	6.98	1.01	0.592	0.343	7.05	7.30
	12/15/14	35000	5400	84000	12000	310	24	18	17	<10	<100	<0.05	<0.01	<0.05	0.24	7.7	7	66	620	7.52	260	300	<1	380	7.12	1.5	0.482	0.234	7.03	7.28
	12/8/15	27000	4800	77000	11000	270	18	15	16	0.013	<100	0.052	<0.010	0.052	0.28	12	9.2	35	530	7.84	240	270	1.7	330	6.14	0.08	0.721	0.472	7.12	7.37
	11/23/16	33000	4800	68000	9500	270	18	14	16	0.016	<100	0.05	0.015	0.065	0.19	9	6.8	24	510	7.7	210	270	1.3	330	6.13	2.77	0.528	0.279	7.17	7.42
	12/05/17	30000	4800	70000	9600	260	24	13	16	<0.010	<100	<0.050	<0.010	<0.050	0.2	11	8	24	530	7.95	210	260	2.1	330	6.01	1.43	0.775	0.526	7.17	7.42
	11/28/18	15000	4200	78000	7400	220	33	14	15	<0.010	<100	<0.050	<0.010	<0.050	0.74	13	9.7	140	510	7.47	220	220	<1.0	310	5.47	2.76	0.284	0.0350	7.19	7.44
	12/04/19	20000	3700	67000	8500	230	20	16	14	<0.010	<100	0.12	<0.010	0.12	0.16	8.7	7.4	16	480	7.96	200	220	1.9	290	5.40	3.25	0.721	0.472	7.24	7.49
CODT-206-MW (2.15 m)	03/13/13[L]	NM	NM	NM	NM	NM	NM	NM	23	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	5800	2700	82000	5300	140	57	19	23	<0.01	<100	0.19	<0.01	0.19	0.24	19	6.1	7.8	440	7.5	230	140	<1	285	4.52	4.54	0.14	-0.11	7.36	7.61
	07/16/13	7200	4090	97300	8620	200	83	19	14	0.035	<100	<0.05	<0.01	<0.05	1.2	74	11	24	590	7.1	280	200	<1	371	6.34	0.56	-0.042	-0.29	7.14	7.39
	10/23/13	6800	2800	56000	3900	130	36	4.6	17	0.014	<100	0.47	<0.01	0.47	0.16	72	14	9.1	320	7.25	160	130	<1	210	3.46	0.86	-0.285	-0.535	7.54	7.79
	12/15/14	4400	2300	47000	1800	96	27	5.7	37	0.035	<100	0.37	<0.01	0.37	<50	18	5.3	32	260	7.83	130	96	<1	190	2.68	1.47	0.106	-0.144	7.72	7.97
	12/8/15	4400	3000	73000	2400	98	86	10	41	0.048	<100	0.48	<0.010	0.48	0.085	14	5	8	400	8.18	190	96	1.4	280	4.06	0.37	0.608	0.358	7.57	7.82
	11/28/16[FD]	5400	1700	41000	2000	91	17	7.4	13	0.038	<100	0.59	<0.010	0.59	0.094	32	7.5	71	210	7.35	110	91	<1.0	140	2.42	1.22	-0.45	-0.7	7.8	8.05
	11/28/16	5300	1700	40000	2000	93	17	7.2	13	0.037	<100	0.24	<0.010	0.24	0.093	32	7.2	76	210	7.39	110	92	<1.0	140	2.43	0.82	-0.398	-0.648	7.79	8.04
	12/05/17 FD	6700	4100	110000	7600	240	84	10	19	<0.010	<100	0.12	<0.010	0.12	1.1	22	19	95	650	7.33	300	240	<1.0	400	6.92	2.98	0.300	0.052	7.03	7.28
	12/05/17	6600	4100	110000	7600	230	91	9.8	21	<0.010	<100	0.16	<0.010	0.160	1	21.0	13	78	630	7.39	300	230	<1.0	400	6.84	2.7	0.33	0.084	7.05	7.3
	12/05/18	6100	1800	51000	1800	69	59	20	19	0.021	<100	0.15	<0.010	0.15	<0.050	9.3	3.4	3.2	310	7.94	130	68	<1.0	200	3.19	3.07	0.0930	-0.157	7.85	8.10
	12/04/19	4800	1700	55000	2000	89	65	10	23	0.017	<100	0.18	<0.010	0.18	<0.050	7.9	3.9	7.6	330	8.08	140	88	<1.0	220	3.44	4.56	0.366	0.116	7.71	7.96

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
CODT-201-MWA (3.64 m)	03/13/13[L]	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
	03/13/13	11	<1	0.73	17	<0.5	<2	<100	0.078	<1	<1	8	<100	<1	14	0.017	<4	<3	1.5	<0.1	310	<0.8	<20	<3	0.43	<2	48
	07/16/13	268	<1	<1	23.5	<1	<2	52	0.052	<1	<0.4	13	<50	<0.5	11.5	NM	<2	<2	2	<0.1	276	<0.1	<2	<2	0.67	<2	55.8
	10/23/13	20	<1	<1	25	<1	<2	<50	0.083	<1	<0.4	20	<50	<0.5	4.0	NM	<2	<2	2.3	<0.1	210	<0.1	<2	<2	0.49	<2	58
	12/15/14	17	<1	<1	27	<1	<2	<50	0.27	<1	<0.4	2.6	<50	<0.5	2.6	0.032	2.2	<2	4.3	<0.1	260	<0.1	<2	<2	0.71	<2	11
	12/9/15	14	<1.0	<1.0	23	<1.0	<2.0	<50	0.053	<1.0	<0.40	4	<50	<0.50	12	<0.013	<2.0	<2.0	5.2	<0.10	350	<0.10	<2.0	<2.0	0.72	<2.0	26
	11/28/16	8.2	<1.0	<1.0	24	<1.0	<2.0	<50	0.026	<1.0	<0.40	9.6	<50	<0.50	<2.0	<0.013	2.1	<2.0	4	<0.10	280	<0.10	<2.0	<2.0	0.6	<2.0	50
	12/05/17	15	<1.0	<1.0	20	<1.0	<2.0	56	0.036	<1.0	<0.40	16	<50	<0.50	<2.0	0.047	<2.0	<2.0	3.9	<0.10	290	<0.10	<2.0	0.68	<2.0	<2.0	48
	12/05/18	8.8	<1.0	<1.0	19	<1.0	<2.0	<50	0.052	<1.0	<0.40	3.1	<50	<0.50	<2.0	<0.013	2.3	<2.0	4.2	<0.10	250	<0.10	<2.0	<2.0	0.67	<2.0	34
	11/28/19	12	<1.0	<1.0	21	<1.0	<2.0	<50	0.053	<1.0	<0.40	7.7	<50	3.2	3.7	<0.013	<2.0	<2.0	4.7	<0.10	290	<0.10	<2.0	<2.0	0.68	<2.0	18
CODT-201-MWC (3.75 m)	03/13/13	20	<1	4.1	340	<0.5	<2	<100	0.2	<1	<1	<2	<100	<1	780	<0.013	<4	<3	<1	<0.1	530	<0.8	<20	<3	<0.15	<2	7.5
	07/16/13	16.9	<1	4	331	<1	<2	73	<0.017	2.5	<0.4	<2	<50	<0.5	766	NM	<2	<2	<1	<0.1	504	<0.1	<2	<2	<0.1	<2	8.8
	10/23/13[FD]	9.7	<1	3.7	340	<1	<2	77	<0.01	<1	<0.4	<2	<50	<0.5	760	NM	<2	<2	1.6	<0.1	500	<0.1	<2	<2	<0.1	<2	<5
	10/23/13	10	<1	3.3	330	<1	<2	77	<0.01	<1	<0.4	<2	<50	<0.5	760	NM	<2	<2	2.7	<0.1	500	<0.1	<2	<2	<0.1	<2	6.1
	12/15/14	13	<1	4.1	340	<1	<2	77	0.28	<1	<0.4	<2	<50	<0.5	690	<0.013	<2	<2	3.2	<0.1	520	<0.1	<2	<2	<0.1	<2	6
	12/9/15	6.3	<1.0	4.2	420	<1.0	<2.0	73	<0.010	<1.0	<0.40	<2.0	<50	<0.50	930	<0.013	<2.0	<2.0	<1.0	<0.10	540	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/28/16	7.6	<1.0	3.7	380	<1.0	<2.0	77	<0.010	<1.0	<0.40	<2.0	<50	<0.50	670	<0.013	<2.0	<2.0	<1.0	<0.10	520	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/05/17	<5.0	<1.0	3.5	420	<1.0	<2.0	80	<0.010	<1.0	<0.40	<2.0	<50	<0.50	810	<0.013	<2.0	<2.0	8.5	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/05/18	7.0	<1.0	3.6	460	<1.0	<2.0	85	0.045	<1.0	<0.40	<2.0	<50	<0.50	760	<0.013	<2.0	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/28/19	5.4	<1.0	3.4	510	<1.0	<2.0	87	<0.010	<1.0	<0.40	<0.50	<50	<0.50	740	<0.013	<2.0	<2.0	1.0	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
CODT-203-MW (2.62 m)	3/13/2013[L]	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
	03/13/13	13	<1	20	250	<0.5	<2	<100	0.028	<1	1.7	<2	5200	<1	7000	<0.013	<4	<3	<1	<0.1	850	<0.8	<20	<3	0.3	<2	41
	07/16/13[FD]	12.4	<1	16.9	230	<1	<2	<50	<0.017	<1	1.44	2.3	5000	<0.5	7650	NM	3.2	2.3	<1	<0.1	811	<0.1	<2	<2	0.91	<2	**5360**
	07/16/13	31.6	<1	17	229	<1	<2	<50	0.026	<1	1.54	2.3	5010	<0.5	7700	NM	3.5	<2	<1	<0.1	809	<0.1	<2	<2	0.93	<2	**5210**
	10/23/13	8.6	<1	30	150	<1	<2	52	0.013	<1	1.4	<2	10000	<0.50	5700	NM	3.2	<2	<1	<0.1	580	<0.1	<2	<2	0.76	<2	75
	12/12/14	15	<1	<1	58	<1	<2	57	0.34	<1	<0.4	3.3	90	<0.5	130	<0.013	<2	<2	1	<0.1	260	0.19	<2	<2	0.72	<2	25
	12/8/15[FD]	7.3	<1.0	2.1	85	<1.0	<2.0	59	0.088	<1.0	0.48	4	720	<0.50	1900	0.057	2.6	<2.0	<1.0	<0.10	390	0.17	<2.0	<2.0	1.5	<2.0	46
	12/8/15	6.2	<1.0	2.1	85	<1.0	<2.0	59	0.08	<1.0	0.47	4.1	720	<0.50	1800	<0.013	2.7	<2.0	<1.0	<0.10	390	0.17	<2.0	<2.0	1.5	<2.0	46
	11/23/16	18	<1.0	1.1	67	<1.0	<2.0	56	0.1	<1.0	<0.40	<2.0	54	<0.50	390	<0.013	<2.0	<2.0	<1.0	<0.10	340	0.15	<2.0	<2.0	1.1	<2.0	60
	12/07/17	<5.0	<1.0	1.7	130	<1.0	<2.0	<50	0.10	<1.0	0.58	<2.0	270	<0.50	3300	<0.013	4.2	<2.0	<1.0	<0.10	510	0.12	<2.0	<2.0	0.94	<2.0	58
	12/10/18	11	<1.0	1.7	61	<1.0	<2.0	<50	0.094	<1.0	<0.40	<2.0	77	<0.50	1600	<0.013	5.5	<2.0	<1.0	<0.10	300	0.16	<2.0	<2.0	0.39	<2.0	21
	11/28/19	11	<1.0	1.0	52	<1.0	<2.0	<50	0.077	<1.0	<0.40	5.6	<50	5.0	270	<0.013	2.1	<2.0	0.77	<0.10	330	0.29	<2.0	<2.0	1.1	<2.0	16
CODT-205-MWA (1.75 m)	03/13/13[FD]	5.6	<1	1.3	92	<0.5	<2	<100	0.044	<1	<1	<2	490	<1	1100	<0.013	5.4	<3	<1	<0.1	3700	<0.8	<20	<3	1.1	<2	31
	03/13/13	5.9	<1	1.3	93	<0.5	<2	<100	0.062	<1	<1	<2	460	<1	1200	<0.013	5.3	<3	<1	<0.1	3700	<0.8	<20	<3	1.1	<2	32
	07/16/13[L]	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
	07/16/13	10.6	<1	5	85.8	<1	<2	<50	0.025	<1	<0.4	5.3	2820	<0.5	1120	NM	2.2	<2	<1	<0.1	3380	<0.1	<2	<2	0.95	<2	24.5
	10/23/13[L]	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
	10/23/13	13	<1	6.8	120	<1	<2	58	0.012	<1	<0.40	<2	3200	<0.50	1200	NM	3.3	<2	<1	<0.1	3600	<0.1	<2	<2	1.10	<2	23
	12/15/14	29	<1	4.1	140	<1	<2	55	0.25	<1	<0.4	<2	2100	<0.5	1300	<0.013	5.7	<2	<1	<0.1	3900	<0.1	<2	<2	1.2	<2	16
	12/8/15	10	<1.0	4.6	320	<1.0	<2.0	<50	0.019	<1.0	<0.40	<2.0	2200	<0.50	860	<0.013	6.9	<2.0	<1.0	<0.10	3100	<0.10	<2.0	<2.0	0.79	<2.0	19
	11/23/16	14	<1.0	8	280	<1.0	<2.0	54	0.011	<1.0	<0.40	<2.0	2000	<0.50	920	<0.013	3.1	<2.0	<1.0	<0.10	3300	<0.10	<2.0	<2.0	0.79	<2.0	35
	12/05/17	46	<1.0	8.1	250	<1.0	<2.0	56	0.027	<1.0	<0.40	<2.0	3000	<0.50	980	<0.013	3.5	<2.0	<1.0	<0.10	3400	<0.10	<2.0	<2.0	0.73	<2.0	21
	11/28/18	7.6	<1.0	11	260	<1.0	<2.0	<50	0.028	<1.0	<0.40	<2.0	14000	<0.50	1400	<0.013	2.6	<2.0	<1.0	<0.10	1800	<0.10	<2.0	<2.0	0.35	<2.0	36
	12/04/19	19	<1.0	3.9	190	<1.0	<2.0	<50	0.017	<1.0	<0.40	0.57	1200	<0.50	650	<0.013	5.1	<2.0	<0.50	<0.10	2600	<0.10	<2.0	<2.0	0.56	<2.0	29
CODT-206-MW (2.15 m)	03/13/13[L]	17	<1	2.4	41	<0.5	<2	<100	0.041	<1	<1	2.2	1600	<1	2900	NM	<4	<3	1.1	<0.1	250	<0.8	<20	<3	1.4	<2	36
	03/13/13	17	<1	2.4	42	<0.5	<2	<100	0.041	<1	<1	2.3	1600	<1	3000	0.015	<4	<3	1.4	<0.1	260	<0.8	<20	<3	1.4	<2	36
	07/16/13	29.8	<1	7.3	56.4	<1	<2	58	0.017	<1	0.61	8.5	5670	0.7	7880	NM	<2	2.1	<1	<0.1	250	<0.1	<2	<2	0.3	<2	137
	10/23/13	71	<1.0	2.1	36	<1.0	<2.0	<50	0.17	<1.0	<0.4	19	580	0.61	860	NM	<2	<2	<1	<0.1	150	<0.1	<2	2.6	1.4	2.1	71
	12/15/14	38	<1	4	33	<1	<2	<50	1.3	<1	<0.4	5.9	<50	<0.5	5.0	<0.013	<2	<2	1.4	<0.1	180	<0.1	<2	<2	2.2	4.9	14
	12/8/15	12	<1.0	4	46	<1.0	<2.0	<50	1.3	<1.0	<0.40	5.3	<50	<0.50	<2.0	<0.013	<2.0	<2.0	1.9	<0.10	340	<0.10	<2.0	<2.0	2.6	7.5	6.3
	11/28/16[FD]	30	<1.0	1.1	39	<1.0	<2.0	<50	0.068	<1.0	<0.40	11	57	<0.50	250	<0.013	<2.0	<2.0	<1.0	<0.10	170	<0.10	<2.0	<2.0	0.72	<2.0	87
	11/28/16	31	<1.0	1.1	39	<1.0	<2.0	<50	0.092	<1.0	<0.40	11	51	<0.50	250	<0.013	<2.0	<2.0	<1.0	<0.10	170	<0.10	<2.0	<2.0	0.71	<2.0	87
	12/05/17 FD	20	<1.0	4.7	100	<1.0	<2.0	60	0.090	<1.0	0.87	2.6	2400	<0.50	6100	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	2.8	<2.0	44
	12/05/17	19	<1.0	4.8	100	<1.0	<2.0	62	0.22	<1.0	0.87	2.3	2300	<0.50	6100	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	2.8	<2.0	45
	12/05/18	23	<1.0	1.3	33	<1.0	<2.0	<50	0.014	<1.0	<0.40	<2.0	<50	<0.50	<2.0	<0.013	<2.0	<2.0	1.0	<0.10	240	<0.10	<2.0	<2.0	1.2	2.8	<5.0
	12/04/19	18	<1.0	1.2	40	<1.0	<2.0	<50	0.016	<1.0	<0.40	13	<50	<0.50	<2.0	<0.013	<2.0	<2.0	0.98	<0.10	300	<0.10	<2.0	<2.0	1.9	2.6	20

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_pH (@20C)	Sat_pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CONCW-101-MWB (3.60 m)	03/15/13	86000	5700	90000	2000	24	130	150	14	<0.01	<100	0.25	0.024	0.27	0.24	5.9	2.1	0.38	770	9.1	230	21	2.5	489	7.31	7.93	0.918	0.67	8.18	8.43
	07/17/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.25	NM	NM	0.36	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/17/13	66100	5650	50700	4220	42	120	110	18	0.013	<100	0.24	0.078	0.32	0.26	8.6	2.4	0.36	670	9.18	140	36	5.1	398	6.37	3.66	0.993	0.745	8.19	8.44
	10/24/13	63000	6300	70000	2200	52	170	80	20	0.012	<100	0.095	0.035	0.13	0.43	9.1	3.1	1.4	700	9.65	180	35	15	440	6.78	1.42	1.59	1.34	8.06	8.31
	12/12/14	59000	5500	85000	1800	28	120	85	21	<10	<100	0.31	0.026	0.33	0.35	5.2	2.7	1.8	580	9.55	220	20	6.6	400	5.52	12.9	1.33	1.08	8.22	8.47
	12/8/15	56000	6500	96000	5900	39	130	82	17	0.015	<100	0.21	0.017	0.22	0.41	5.1	3.4	11	620	8.02	260	39	<1.0	420	5.93	14.2	0.139	-0.109	7.88	8.13
	11/23/16	51000	5900	95000	<100	39	130	88	22	0.022	<100	<0.050	0.015	<0.050	1	6.3	3.1	18	790	11.1	240	<1.0	<1.0	420	5.96	9.35	NC	NC	NC	NC
	12/11/17	49000	5200	76000	5700	100	120	56	25	0.036	<100	0.35	0.015	0.37	0.28	9.1	3.5	0.81	610	8.88	210	97	6.8	400	6.23	2.12	1.29	1.05	7.58	7.83
	11/28/18[FD]	52000	5800	67000	2900	60	110	91	21	0.012	<100	0.11	0.052	0.16	0.41	7.5	3.4	0.29	640	8.62	180	57	2.3	390	6.17	1.31	0.762	0.514	7.86	8.11
	11/28/18	54000	5900	68000	3000	54	110	94	21	<0.010	<100	0.12	0.055	0.17	0.44	6.7	3.4	0.25	630	8.6	180	51	1.9	390	6.08	0.57	0.698	0.45	7.90	8.15
	12/04/19	50000	5300	71000	5600	110	100	69	23	0.024	<100	0.73	0.042	0.77	0.23	6.6	3.1	1.1	670	8.52	200	110	3.4	400	6.44	1.18	0.962	0.713	7.55	7.80
CONPL-202-MWA (5.14 m)	12/15/14	22000	1900	170000	28000	410	170	22	12	<10	<100	<0.05	<0.01	<0.05	0.081	<5	1.7	14	1000	7.34	550	410	<1	680	12.4	1.27	0.693	0.446	6.65	6.9
	12/9/15	17000	1600	160000	25000	390	170	17	11	0.013	<100	<0.050	<0.010	<0.050	<0.050	<5.0	NM	2.2	950	7.7	510	390	1.9	650	11.9	3.92	1.01	0.766	6.69	6.93
	11/23/16	16000	1600	150000	23000	350	150	14	11	0.017	<100	<0.050	0.014	0.053	0.074	<5.0	2.8	3.3	800	7.41	460	350	<1.0	570	10.5	2.8	0.634	0.386	6.77	7.02
	12/21/17	13000	1500	140000	20000	320	130	13	11	0.011	<100	<0.050	<0.010	<0.050	<0.050	<5.0	<5.0	18	810	7.55	420	320	1.1	520	9.53	2.58	0.715	0.468	6.84	7.09
	11/28/18	12000	1400	120000	19000	300	110	12	11	<0.010	<100	<0.050	<0.010	<0.050	<0.050	<5.0	2.5	18	770	7.66	390	300	1.3	480	8.79	2.99	0.775	0.527	6.89	7.14
	11/29/19	11000	1300	120000	17000	270	110	10	10	<0.010	<100	<0.050	<0.010	<0.050	<0.050	<5.0	2.2	8.1	720	7.63	370	270	1.1	440	7.94	0.830	0.674	0.425	6.95	7.20
COSB-002-MWA (1.61 m)	03/18/13	17000	3300	140000	16000	210	200	32	21	<0.01	<100	0.25	<0.01	0.25	<0.05	<5	1.9	160	800	7.1	400	210	<1	550	9.23	1.88	0.075	-0.173	7.03	7.27
	07/26/13	19500	4200	178000	29200	170	410	39	26	<0.01	<100	<0.05	<0.01	<0.05	0.15	16	11	830	1100	6.97	560	170	<1	822	13.1	2.9	-0.075	-0.321	7.05	7.29
	11/6/13[FDL]	20000	5600	230000	36000	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	2.1	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/6/13[FD]	20000	5700	230000	36000	130	620	49	30	<0.01	<100	<0.05	0.021	<0.05	0.32	130	2.2	160	1400	6.61	720	130	<1	1100	17	2.69	-0.473	-0.718	7.08	7.33
	11/06/13	20000	5500	230000	36000	130	610	49	29	<0.01	<100	<0.05	0.017	<0.05	0.33	120	1.9	77	1400	6.64	730	130	<1	1100	16.6	1.07	-0.451	-0.696	7.09	7.34
	12/15/14	14000	3200	150000	17000	200	210	26	20	<10	<100	1.6	<0.01	1.6	0.098	<5	1.9	17	860	6.72	450	200	<1	580	9.29	2.57	-0.276	-0.524	7	7.25
	12/9/15	11000	7100	340000	53000	<5.0	1500	12	150	0.066	240	0.18	<0.010	0.18	1.6	28	NM	250	2600	3.66	1100	<1.0	<1.0	2100	31.3	14.3	NC	NC	NC	NC
	11/28/16	11000	3600	170000	25000	190	300	16	20	0.018	<100	0.36	<0.010	0.36	0.13	84	2.9	43	910	6.97	530	190	<1.0	670	10.6	3.24	-0.003	-0.25	6.98	7.22
	12/08/17	18000	9700	470000	120000	10	1600	9.2	51	0.01	<100	0.76	<0.010	0.76	2.4	26	4.7	49	2700	4.43	1700	10	<1.0	2300	33.6	2.27	-3.55	-3.79	7.98	8.22
	11/28/18	10000	7300	280000	65000	130	900	9.9	26	<0.010	<100	0.13	<0.010	0.13	0.58	52	1.4	19	1700	6.54	970	130	<1.0	1400	21.5	2.73	-0.499	-0.744	7.04	7.28
	11/29/19	8900	4300	290000	46000	190	700	9.9	20	<0.010	<100	0.33	<0.010	0.33	<0.050	9.2	1.9	17	1500	6.98	900	190	<1.0	1200	18.8	0.750	0.148	-0.097	6.83	7.08
COSCW-001-MWA (3.36 m)	03/19/13	11000	1400	64000	6900	160	49	14	8.6	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<0.5	23	430	7.9	190	160	1.2	253	4.66	4.25	0.506	0.257	7.39	7.64
	07/17/13	12500	1660	66100	8100	170	50	13	11	0.013	<100	0.057	<0.01	0.057	<0.05	<5	1.1	24	440	7.71	200	170	<1	267	4.82	2.88	0.348	0.099	7.36	7.61
	10/24/13	14000	1800	72000	8700	170	52	14	12	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	0.62	43	460	7.57	220	170	<1	280	4.93	0.100	0.251	0.002	7.32	7.57
	12/16/14	13,000	1900	74,000	8,800	180	49	14	12	<10	<100	0.052	<0.01	0.052	0.093	<5	0.93	46	480	7.61	220	180	<1	290	5.11	0.29	0.334	0.085	7.28	7.53
	12/8/15	13,000	1600	74,000	8,400	180	51	14	11	0.011	<100	0.058	<0.010	0.058	<0.050	<5.0	0.78	43	460	7.8	220	180	1.1	280	5.04	0.3	0.51	0.261	7.29	7.54
	11/22/16	14000	1700	72000	8500	180	47	0.014	13	12	<100	<0.050	<0.010	<0.050	<0.050	<5.0	<5.0	95	450	7.68	220	180	<1.0	280	4.96	0	0.381	0.132	7.3	7.55
	12/8/17	13000	1800	74000	8200	190	41	14	12	0.011	<100	0.071	<0.01	0.071	0.13	<5.0	1.5	15	490	7.93	220	190	1.5	290	5.12	1.29	0.665	0.416	7.26	7.51
	12/3/18	14000	1500	77000	8400	210	46	13	12	<0.010	<100	<0.050	<0.010	<0.050	0.058	<5.0	<5.0[9]	110	480	7.60	230	210	<1.0	300	5.43	2.45	0.383	0.134	7.22	7.47
	12/9/19	13000	1600	80000	8700	210	46	12	11	<0.010	<100	0.051	0.010	0.062	0.061	<5.0	0.86	210	490	7.86	240	210	1.4	300	5.54	1.93	0.665	0.416	7.19	7.44
COSCW-001-MWB (1.68 m)	03/19/13	18000	3200	56000	9600	190	29	14	8.6	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	0.55	1	440	8	180	190	1.8	254	4.8	3.56	0.616	0.367	7.38	7.63
	07/17/13[L]	NM	NM	NM	NM	200	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/17/13	18200	3620	55800	10100	200	22	14	11	<0.01	<100	<0.05	<0.01	<0.05	0.057	<5	1.1	0.48	430	7.85	180	200	1.3	253	4.79	3.12	0.484	0.234	7.37	7.62
	10/24/13[L]	NM	NM	NM	NM	NM	23	14	12	<0.01	NM	NM	0.011	0.25	0.063	<5	1.5	2.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/24/13	20000	4000	61000	11000	200	22	14	12	<0.01	<100	0.25	<0.01	0.25	0.065	<5	1.4	2.4	450	7.91	200	200	1.5	260	4.83	1.02	0.581	0.332	7.33	7.58
	12/12/14	19000	3700	65000	11000	210	38	13	11	<10	<100	0.091	<0.01	0.091	0.11	<5	1.2	0.32	460	7.88	210	200	1.5	290	5.28	1.64	0.587	0.338	7.29	7.54
	12/8/15	16000	3200	80000	15000	270	30	12	12	0.011	<100	<0.050	<0.010	<0.050	<0.050	<5.0	2.8	2.1	540	7.84	260	270	1.8	330	6.39	3.48	0.746	0.497	7.1	7.35
	11/22/16	14000	1700	72000	8500	180	47	13	12	0.014	<100	<0.050	<0.010	<0.050	<0.050	<5.0	<5.0	95	450	7.68	220	180	<1.0	280	4.96	0	0.381	0.132	7.3	7.55
	12/8/17	17000	3400	73000	13000	240	28	16	13	<0.01	<100	0.076	<0.010	0.076	<0.050	<5.0	2.7	1.0	530	7.96	230	230	2.0	310	5.74	1.86	0.773	0.524	7.19	7.44
	12/3/18	18000	3300	68000	12000	210	31	14	12	<0.010	<100	<0.050	<0.010	<0.050	0.055	<5.0	1.7	0.39	480	7.96	220	210	1.8	290	5.32	0.660	0.707	0.458	7.26	7.51
	11/29/19	21000	3400	77000	14000	250	38	18	13	<0.010	<100	<0.050	<0.010	<0.050	0.051	<5.0	2.3	1.30	560	7.90	250	250	1.9	340	6.32	2.60	0.755	0.506	7.15	7.39

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
CONCW-101-MWB (3.60 m)	03/15/13	43	<1	5.1	56	<0.5	<2	<100	0.041	1.1	<1	<2	<100	<1	19	<0.013	6.4	<3	2.3	<0.1	700	<0.8	<20	<3	0.79	3.1	6.6
	07/17/13[L]	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
	07/17/13	23.6	<1	8	38.4	<1	<2	<50	<0.017	<1	<0.4	3.2	<50	<0.5	9.8	NM	9.3	<2	<1	<0.1	438	<0.1	<2	<2	0.91	4.2	7.1
	10/24/13	38	<1.0	7.8	45	<1.0	<2.0	<50	<0.01	<1.0	<0.4	<2.0	<50	<0.5	6.6	NM	9.5	<2	1.1	<0.1	520	<0.1	<2.0	<2.0	0.40	4.2	<5.0
	12/12/14	82	<1	8.2	46	<1	<2	<50	0.27	<1	<0.4	<2	<50	<0.5	7.7	<0.013	7.2	<2	3.1	<0.1	540	<0.1	<2	<2	0.68	2.7	<5
	12/8/15	63	<1.0	6.6	66	<1.0	<2.0	53	0.066	<1.0	<0.40	<2.0	<50	<0.50	250	<0.013	6.2	<2.0	2.8	<0.10	600	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
	11/23/16	170	<1.0	8.9	45	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	<50	<0.50	<2.0	0.013	5	<2.0	3.9	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/11/17	39	<1.0	8.5	43	<1.0	<2.0	54	0.087	<1.0	<0.40	<2.0	<50	<0.50	310	<0.013	7.5	<2.0	1.7	<0.10	420	<0.10	<2.0	<2.0	1.6	5.7	<5.0
	11/28/18[FD]	48	<1.0	10	35	<1.0	<2.0	51	0.054	<1.0	<0.40	<2.0	<50	<0.50	30	<0.013	10	<2.0	<1.0	<0.10	460	<0.10	<2.0	<2.0	1.4	4.3	<5.0
	11/28/18	45	<1.0	11	36	<1.0	<2.0	55	0.028	<1.0	<0.40	<2.0	<50	<0.50	31	<0.013	11	<2.0	<1.0	<0.10	460	<0.10	<2.0	<2.0	1.5	4.7	<5.0
	12/04/19	32	<1.0	10	36	<1.0	<2.0	55	<0.010	1.0	<0.40	1.3	<50	<0.50	27	<0.013	7.4	<2.0	1.6	<0.10	440	<0.10	<2.0	<2.0	1.6	7.8	<5.0
CONPL-202-MWA (5.14 m)	12/15/14	17	<1	2.2	43	<1	<2	<50	0.27	<1	0.84	<2	280	<0.5	1100	<0.013	<2	<2	<1	<0.1	720	<0.1	<2	<2	2.7	<2	14
	12/9/15	12	<1.0	2.2	36	<1.0	<2.0	<50	0.012	<1.0	0.46	<2.0	270	<0.50	830	<0.013	<2.0	<2.0	<1.0	<0.10	540	<0.10	<2.0	<2.0	2.1	<2.0	<5.0
	11/23/16	6	<1.0	<1.0	33	<1.0	<2.0	<50	0.025	<1.0	<0.40	<2.0	<50	<0.50	430	<0.013	<2.0	<2.0	<1.0	<0.10	470	<0.10	<2.0	<2.0	2	<2.0	<5.0
	12/21/17	5.3	<1.0	<1.0	31	<1.0	<2.0	<50	0.078	<1.0	<0.40	<2.0	<50	<0.50	470	<0.013	<2.0	<2.0	<1.0	<0.10	460	<0.10	<2.0	<2.0	1.7	<2.0	<5.0
	11/28/18	9.6	<1.0	<1.0	29	<1.0	<2.0	<50	0.051	<1.0	<0.40	<2.0	<50	<0.50	390	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	1.5	<2.0	<5.0
	11/29/19	<5.0	<1.0	<1.0	30	<1.0	<2.0	<50	0.027	<1.0	<0.40	<0.50	<50	<0.50	320	<0.013	<2.0	<2.0	<0.50	<0.10	390	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
COSB-002-MWA (1.61 m)	03/18/13	10	2.3	<0.6	20	<0.5	<2	<100	0.098	<1	<1	3.3	220	<1	42	<0.013	<4	3.6	<1	<0.1	370	<0.8	<20	<3	0.54	<2	110
	07/26/13	59	<1	<1	40	<1	<2	55	0.273	<1	3.51	<2	3660	<0.5	5980	NM	<2	30.7	<1	<0.1	533	<0.1	<2	<2	0.69	<2	466
	11/6/13[FDL]	1000	<1	2.2	67	<1	<2	63	0.8	<1	9.2	3.1	17000	<0.5	14000	NM	<2	91	<1	<0.1	690	<0.1	<2	<2	0.4	<2	**1200**
	11/6/13[FD]	1000	<1	2.3	68	<1	<2	63	0.81	<1	9.6	3.3	18000	<0.5	14000	NM	<2	92	<1	<0.1	690	<0.1	<2	<2	0.42	<2	**1300**
	11/06/13	1100	<1	2.3	68	<1	<2	61	0.80	<1	9.2	4.0	18000	<0.5	14000	NM	<2	91	<1	<0.1	700	<0.1	<2	<2	0.40	<2	**1300**
	12/15/14	73	<1	<1	19	<1	<2	<50	0.66	<1	0.43	5.1	1700	0.52	480	<0.013	<2	7.3	<1	<0.1	390	<0.1	<2	<2	0.22	<2	92
	12/9/15	180000	<1.0	6.2	76	25	<2.0	120	**8.5**	91	**80**	**650**	32000	7.8	23000	<0.013	<2.0	270	<1.0	<0.10	1200	0.39	<2.0	<2.0	11	<2.0	**3800**
	11/28/16	16	<1.0	<1.0	21	<1.0	<2.0	54	0.097	<1.0	<0.40	3.3	2800	<0.50	580	<0.013	<2.0	4.5	<1.0	<0.10	420	<0.10	<2.0	<2.0	0.14	<2.0	97
	12/08/17	34000	<1.0	<1.0	70	3.7	<2.0	110	**3.9**	3.8	29	**100**	7500	1.8	16000	<0.013	<2.0	300	<1.0	<0.1	1700	0.33	<2.0	<2.0	1.6	<2.0	**2400**
	11/28/18	63	<1.0	<1.0	29	<1.0	<2.0	110	0.43	<1.0	2.2	<2.0	7600	<0.50	17000	<0.013	<2.0	140	<1.0	<0.10	870	<0.10	<2.0	<2.0	0.25	<2.0	190
	11/29/19	86	<1.0	<1.0	26	<1.0	<2.0	68	0.21	<1.0	0.42	0.76	1000	<0.50	5100	<0.013	<2.0	47	<0.50	<0.10	750	<0.10	<2.0	<2.0	0.45	<2.0	45
COSCW-001-MWA (3.36 m)	03/19/13	7.3	<1	<0.6	41	<0.5	<2	<100	<0.017	<1	<1	5.3	280	<1	16	<0.013	<4	<3	<1	<0.1	560	<0.8	<20	<3	0.55	<2	38
	07/17/13	7.8	<1	<1	47.1	<1	<2	<50	0.104	<1	<0.4	11.2	<50	<0.5	1470	NM	<2	<2	<1	<0.1	672	<0.1	<2	<2	0.55	<2	52.5
	10/24/13	16	<1	<1	53	<1	<2	<50	0.032	<1	<0.4	2.2	<50	<0.5	620	NM	<2	<2	<1	<0.1	680	<0.1	<2	<2	0.59	<2	21
	12/16/14	13	<1	<1	48	<1	<2	<50	0.13	<1	<0.4	7.5	<50	<0.5	10	<0.013	<2	<2	<1	<0.1	650	<0.1	<2	<2	0.82	<2	45
	12/8/15	7.6	<1.0	<1.0	45	<1.0	<2.0	<50	0.061	<1.0	<0.40	12	<50	<0.50	87	0.11	<2.0	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.75	<2.0	44
	11/22/16	9.9	<1.0	<1.0	48	<1.0	<2.0	<50	0.13	<1.0	<0.40	15	<50	<0.50	66	<0.013	<2.0	<2.0	<1.0	<0.10	660	<0.10	<2.0	<2.0	0.63	<2.0	81
	12/8/17	7.6	<1.0	1.6	82	<1.0	<2.0	<50	0.10	<1.0	0.65	3.0	<50	<0.50	3900	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	0.70	<2.0	29
	12/3/18	<5.0	<1.0	<1.0	55	<1.0	<2.0	<50	0.10	<1.0	<0.40	5.0	<50	<0.50	340	<0.013	<2.0	<2.0	<1.0	<0.10	620	<0.10	<2.0	<2.0	0.68	<2.0	62
	12/9/19	9.0	<1.0	<1.0	51	<1.0	<2.0	<50	0.054	<1.0	<0.40	10	<50	<0.50	150	<0.013	<2.0	<2.0	<0.50	<0.10	560	<0.10	<2.0	<2.0	0.73	<2.0	34
COSCW-001-MWB (1.68 m)	03/19/13	6.7	<1	1.8	120	<0.5	<2	<100	0.19	<1	<1	<2	640	<1	1000	<0.013	4.7	<3	<1	<0.1	1300	<0.8	<20	<3	0.87	<2	12
	07/17/13[L]	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
	07/17/13	16.2	<1	2.6	107	<1	<2	52	<0.017	<1	<0.4	4.9	181	<0.5	348	NM	2.2	<2	<1	<0.1	1260	<0.1	<2	<2	0.68	<2	19.1
	10/24/13[L]	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
	10/24/13	18	<1	1.1	120	<1	<2	62	<0.01	<1	<0.4	<2	200	<0.5	350	NM	2.7	<2	<1	<0.1	1300	<0.1	<2	<2	0.76	<2	14
	12/12/14	22	<1	<1	130	<1	<2	62	0.22	<1	<0.4	<2	57	1.1	66	<0.013	5.7	<2	<1	<0.1	1400	<0.1	<2	<2	1.2	<2	20
	12/8/15	5.2	<1.0	<1.0	150	<1.0	<2.0	62	0.051	<1.0	<0.40	<2.0	110	<0.50	160	0.19	3.4	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	2.6	<2.0	<5.0
	11/22/16	9.9	<1.0	<1.0	48	<1.0	<2.0	<50	0.13	<1.0	<0.40	15	<50	<0.50	66	<0.013	<2.0	<2.0	<1.0	<0.10	660	<0.10	<2.0	<2.0	0.63	<2.0	81
	12/8/17	<5.0	<1.0	<1.0	130	<1.0	<2.0	56	0.012	<1.0	<0.40	<2.0	59	<0.50	120	<0.013	3.4	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	1.8	<2.0	<5.0
	12/3/18	6.6	<1.0	<1.0	130	<1.0	<2.0	57	0.073	<1.0	<0.40	<2.0	82	<0.50	98	<0.013	4.3	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
	11/29/19	7.0	<1.0	<1.0	150	<1.0	<2.0	61	0.23	<1.0	<0.40	<0.50	110	<0.50	130	<0.013	4.7	<2.0	<0.50	<0.10	1600	<0.10	<2.0	<2.0	1.8	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COSCW-002-MWA (3.85 m)	03/26/13	7400	1400	160000	17000	320	150	7.9	12	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<0.5	5.5	820	7.5	470	320	<1	545	9.63	0.93	0.73	0.482	6.77	7.02
	07/17/13	7810	1650	154000	16700	340	150	8	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	1.1	20	830	7.48	450	330	<1	548	9.96	2.57	0.715	0.468	6.77	7.01
	10/24/13	8200	1800	160000	18000	300	160	8.2	13	<0.01	<100	0.073	<0.01	0.073	<0.05	<5	0.87	25	840	7.45	470	300	<1	540	9.49	1.15	0.641	0.393	6.81	7.06
	12/12/14	7400	1600	160000	17000	340	160	8.2	12	<10	<100	0.1	<0.01	0.1	0.066	<5	<0.5	8.1	840	7.49	480	330	<1	570	10.2	1.64	0.744	0.205	6.75	7
	12/8/15	8700	1500	160000	18000	350	150	8.2	13	0.012	<100	0.077	<0.010	0.077	<0.050	<5.0	1.1	4.2	830	7.88	470	340	2.4	560	10.2	2.3	1.13	0.883	6.75	6.99
	11/22/16	20000	3700	65000	12000	220	29	14	13	0.014	<100	<0.050	<0.010	<0.050	<0.050	<5.0	1.5	0.42	470	7.87	210	210	1.5	290	5.31	1.14	0.601	0.352	7.27	7.52
	12/8/17	7300	1500	160000	17000	330	130	7.7	14	<0.01	<100	0.083	<0.010	0.083	<0.050	<5.0	0.99	13	850	7.58	470	330	1.2	530	9.53	0.68	0.831	0.583	6.75	7.00
	12/3/18	7300	1400	150000	16000	330	130	6.9	13	<0.010	<100	<0.050	<0.010	<0.050	<0.050	<5.0	0.82	7.4	800	7.70	450	330	1.5	530	9.47	1.12	0.918	0.671	6.78	7.03
	11/29/19	7800	1300	150000	16000	340	120	9.3	13	<0.010	<100	0.12	<0.010	0.12	<0.050	<5.0	<5.0[9]	47	820	7.54	440	340	1.1	520	9.62	2.83	0.776	0.528	6.76	7.01
COSCW-002-MWB (2.47 m)	03/19/13[L]	22000	1900	91000	9600	NM	NM	NM	7	NM	<100	NM	NM	NM	<0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/19/13	22000	1900	89000	9700	150	180	8.6	7	<0.01	<100	0.081	<0.01	0.081	<0.05	<5	<0.5	10	610	7.9	260	150	1.1	411	7.06	6.25	0.583	0.335	7.32	7.57
	07/17/13	24400	2380	92700	10900	170	150	8.2	9.5	<0.01	<100	0.056	<0.01	0.056	0.12	<5	0.52	1.6	620	7.74	280	170	<1	399	6.73	0.52	0.495	0.246	7.25	7.49
	10/24/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	640	7.81	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/24/13	26000	2700	98000	11000	180	150	7.9	10	<0.01	<100	0.16	<0.01	0.16	<0.05	<5	0.89	34	640	7.75	290	180	<1	420	6.98	0.36	0.543	0.295	7.21	7.46
	12/12/14	25,000	2100	100,000	11,000	180	160	9	9.1	<10	<100	0.11	<0.01	0.11	0.11	<5	0.5	3.9	640	7.64	300	180	<1	430	7.21	0.84	0.453	0.497	7.19	7.43
	12/8/15	24,000	1700	88,000	11,000	180	130	10	8.4	<0.010	<100	0.15	<0.010	0.15	<0.050	<5.0	0.63	1.5	600	7.85	270	180	1.2	380	6.59	1.23	0.609	0.36	7.24	7.49
	11/22/16	25000	1700	86000	11000	180	120	10	9.4	0.014	<100	0.087	<0.010	0.087	<0.050	<5.0	0.66	5	580	7.75	260	180	<1.0	370	6.4	0.39	0.507	0.259	7.25	7.49
	12/8/17	24000	1600	87000	10000	200	110	11	10	<0.010	<100	0.085	<0.010	0.085	<0.050	<5.0	1.2	2.0	610	7.88	260	200	1.4	370	6.51	1.56	0.680	0.431	7.20	7.45
	12/3/18	24000	1400	87000	11000	190	100	9.7	9.1	<0.010	<100	0.081	<0.010	0.081	<0.050	<5.0	0.72	3.5	570	7.89	260	190	1.4	360	6.23	0.480	0.668	0.419	7.22	7.47
	11/29/19	24000	1400	89000	11000	210	110	9.6	9.4	<0.010	<100	0.056	<0.010	0.056	<0.050	<5.0	0.80	1.6	600	7.79	270	210	1.2	380	6.73	2.36	0.628	0.380	7.17	7.41
COTS-001-MWA[3] (3.83 m)	11/15/13[L]	8000	3100	96000	7400	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/15/13	8000	3100	96000	7400	33	74	11	17	<0.01	<100	50	0.05	50	5.3	23	6.2	73	710	6.04	270	33	<1	470	6.08	0.98	-1.92	-2.17	7.96	8.21
	12/15/14	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
	12/08/14	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
COTS-001-MWB[3] (4.07 m)	12/08/15	37,000	2,800	120,000	14,000	260	120	48	13	0	<100	2	<0.010	2	0	<5.0	2	4	810	8	360	260	2	520	9	3	1	1	7	7
	11/28/16	35000	2700	110000	13000	260	110	53	13	0.018	<100	1.2	<0.010	1.2	0.31	<5.0	1	1.6	740	7.6	340	260	<1.0	500	9.1	4.12	0.603	0.355	6.99	7.24
	12/21/17	33000	2800	120000	13000	280	98	51	14	<0.010	<100	<0.050	<0.010	<0.050	1.1	<5.0	1.2	0.86	810	7.75	340	280	1.5	500	9.04	3.20	0.791	0.543	6.96	7.21
	11/28/18	36000	2900	110000	13000	280	96	46	15	0.014	<100	0.14	<0.010	0.14	0.57	<5.0	<5.0[9]	2.3	800	7.88	330	280	2.0	500	9.00	3.69	0.911	0.663	6.96	7.21
	11/29/19	32000	2700	120000	13000	290	100	40	13	<0.010	<100	0.065	<0.010	0.065	1.2	<5.0	1.2	0.94	810	7.78	350	290	1.6	500	9.07	2.89	0.847	0.599	6.93	7.18
MCES-001-MWA (5.81 m)	03/28/13[FD]	31000	17000	220000	<60	430	83	38	2.8	<0.01	<100	<0.05	0.39	0.28	1	<5	2.2	21	2100	12	550	<1	<1	656	11.5	5.81	NC	NC	NC	NC
	03/28/13	30000	17000	200000	<60	430	85	36	3	<0.01	<100	<0.05	0.41	0.27	1	<5	2	18	2100	11.8	500	1.8	110	631	11.3	2.5	2.87	2.63	8.93	9.17
	07/24/13	36400	17800	230000	<100	87	160	43	2.9	<0.01	<100	<0.05	0.17	0.13	1.3	6.2	2.2	15	2300	11.8	570	<1	<1	542	6.24	37.2	NC	NC	NC	NC
	12/10/14	34000	18,000	240000	<100	420	120	50	3.5	<10	<100	0.096	0.28	0.38	1.5	<5	3.4	37	1900	11.9	610	<1	17	730	12.4	6.93	2.12	1.88	9.78	10
	12/2/15	39000	17,000	240000	<100	66	160	44	2.7	<0.010	<100	<0.050	0.29	0.31	1.3	<5.0	2.2	3.5	2100	11.8	590	<1.0	<1.0	540	5.89	40.9	NC	NC	NC	NC
	11/25/16	36000	19000	250000	<100	280	190	60	2.8	<0.010	<100	<0.050	0.47	0.39	1.1	<5.0	<5.0	10	1900	11.9	610	<1.0	<1.0	730	11.4	11.8	NC	NC	NC	NC
	12/12/17 [FD]	42000	17000	240000	<0.10	70	150	55	2.4	<0.010	<100	<0.050	0.13	0.16	1.4	<5.0	3.1	0.27	2400	12	600	<1.0	<1.0	560	6.16	39.9	NC	NC	NC	NC
	12/12/17	42000	17000	240000	<0.10	76	160	52	2.3	<0.010	<100	<0.050	0.13	0.16	1.4	5.5	3.1	0.25	2500	12	600	<1.0	<1.0	560	6.26	39.5	NC	NC	NC	NC
	11/28/18	26000	13000	240000	<100	240	110	36	2.0	<0.010	<100	<0.050	0.26	0.29	0.47	<5.0	2.5	0.75	2300	12.0[8]	600	<1.0	<1.0	580	8.28	23.8	NC	NC	NC	NC
	12/02/19	28000	13000	220000	<100	240	130	31	2.8	<0.010	<100	0.086	0.28	0.37	0.84	<5.0	2.4	0.62	2000	11.9[8]	550	<1.0	<1.0	570	8.33	20.8	NC	NC	NC	NC
MCES-001-MWB[8] (6.35 m)	03/28/13	**7200000**	160000	630000	910000	1400	29	15000	19	<0.01	<1000	<0.05	<0.01	<0.05	26	19	7.4	230	35000	7.1	5300	1400	1.7	24700	447	2.38	1.19	0.948	5.91	6.15
	07/25/13	**6500000**	148000	449000	868000	1400	25	12000	23	<0.01	<1000	<0.05	<0.01	<0.05	31	42	12	160	36000	7.42	4700	1400	3.4	21000	370	1.71	1.32	1.09	6.1	6.34
	11/14/13	**6500000**	160000	410000	830000	1300	10	13000	23	0.013	<1000	0.09	0.019	0.11	35	43	17	150	35000	7.32	4500	1300	2.5	22000	392	1.8	1.16	0.926	6.16	6.39
	12/10/14	**6800000**	160000	500000	900000	1500	6.7	11000	25	0.013	<1000	<0.05	<0.01	<0.05	33	39	17	130	34000	7.4	5000	1400	3.5	21000	346	7.51	1.38	1.14	6.03	6.27
	12/2/15	**6300000**	150000	480000	820000	1200	<2.0	13000	28	0.054	<1000	<0.050	0.013	<0.050	41	41	17	150	34000	7.49	4600	1200	3.4	22000	399	3.35	1.36	1.12	6.13	6.37
	11/25/16	**6200000**	150000	480000	790000	1200	<2.0	11000	28	0.04	<1000	<0.050	<0.010	<0.050	36	39	20	140	32000	7.42	4400	1200	3.1	19000	328	5.07	1.3	1.07	6.11	6.35
	12/15/17	**6300000**	150000	520000	820000	1500	<2.0	12000	28	0.013	<1000	<0.050	<0.010	<0.050	29	42	16	120	35,000	7.47	4700	1400	4.0	21000	379	0.52	1.46	1.22	6.01	6.25
	11-28-18 [10]	29000	13000	210000	<100	180	94	55	2.5	<0.010	<100	0.34	0.25	0.59	0.37	<5.0	3.2	0.25	1900	11.9[8]	530	<1.0	<1.0	520	7.20	25.7	NC	NC	NC	NC
	12/02/19	28000	13000	220000	<100	190	96	33	2.3	<0.010	<100	0.096	0.69	0.78	0.44	<5.0	3.0	2.5	2100	12[8]	550	<1.0	<1.0	510	6.84	29.8	NC	NC	NC	NC
MCES-006-MW (2.83 m)	03/28/13	14000	1300	100000	12000	280	34	17	13	0.062	<100	<0.05	<0.01	<0.05	0.17	14	11	310	610	7.50	310	280	<1.0	374	6.87	0.79	0.533	0.285	6.97	7.22
	07/26/13	13300	1030	103000	12100	300	28	20	13	<0.01	<100	<0.05	<0.01	<0.05	0.18	12	10	250	630	7.57	310	300	1	376	7.1	1.87	0.617	0.368	6.95	7.2
	11/05/13[L]	13000	1200	110000	12000	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/05/13	13000	1200	110000	12000	290	34	22	13	<0.01	<100	0.15	<0.01	0.15	0.29	17	10	100	640	7.61	320	290	1.1	390	7.21	1.34	0.664	0.415	6.95	7.2
	12/10/14	9600	5800	77000	3200	77	70	23	14	0.014	<100	1.4	0.11	1.5	0.18	10	3.6	10	360	8.91	200	71	5.4	260	3.77	10.7	1.24	0.99	7.67	7.92
	12/3/15	7800	5500	65000	1700	84	88	21	11	0.045	110	1.3	0.12	1.4	0.14	12	3.8	3.2	370	9.44	170	66	17	260	4.2	4.22	1.66	1.41	7.78	8.03
	12/02/16	7900	1800	59000	4700	100	48	17	14	0.015	<100	0.52	0.062	0.58	0.14	13	5.4	7.9	320	7.95	170	100	<1.0	220	3.58	2.19	0.334	0.084	7.62	7.87
	12/13/17	7600	3100	51000	2900	120	35	14	9.5	<0.010	<100	0.59	0.016	0.60	0.19	15	5.5	1.0	360	7.86	140	120	<1.0	200	3.57	5.15	0.262	0.012	7.60	7.85
	11/28/18	6800	3900	56000	1700	59	64	11	14	<0.010	<100	1.6	0.028	1.7	0.087	13	4.6	1.9	280	9.15	150	51	6.9	200	2.93	6.54	1.22	0.973	7.93	8.18
	12/02/19	6000	3400	58000	630	66	83	13	11	<0.010	<100	1.1	0.083	1.2	0.071	10	3.9	0.74	340	10.3[8]	150	18	37	220	3.48	2.65	1.97	1.72	8.37	8.62

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
COSCW-002-MWA (3.85 m)	03/26/13	9.5	<1	<0.6	21	<0.5	<2	<100	0.066	<1	<1	5	<100	<1	<4	<0.013	<4	<3	<1	<0.1	240	<0.8	<20	<3	3.9	<2	37
	07/17/13	7.1	<1	<1	21.7	<1	<2	<50	0.298	<1	<0.4	48.1	<50	0.68	<2	NM	<2	3.2	<1	<0.1	255	<0.1	<2	<2	3.87	<2	216
	10/24/13	16	<1	<1	24	<1	<2	51	0.36	<1	<0.4	37	<50	0.55	5.5	NM	<2	2.8	<1	<0.1	240	<0.1	<2	<2	4.6	<2	260
	12/12/14	17	<1	<1	22	<1	<2	<50	0.26	<1	<0.4	12	<50	<0.5	5.2	<0.013	<2	<2	<1	<0.1	250	<0.1	<2	<2	4.9	<2	59
	12/8/15	7.8	<1.0	<1.0	22	<1.0	<2.0	<50	0.14	<1.0	<0.40	65	<50	1	<2.0	<0.013	<2.0	2.9	<1.0	<0.10	240	<0.10	<2.0	<2.0	4.1	<2.0	210
	11/22/16	5.6	<1.0	<1.0	130	<1.0	<2.0	66	0.014	<1.0	<0.40	<2.0	<50	<0.50	18	<0.013	5.6	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	1.1	<2.0	<5.0
	12/8/17	7.0	<1.0	<1.0	23	<1.0	<2.0	<50	0.10	<1.0	<0.40	23	<50	<0.50	2.3	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	4.4	<2.0	110
	12/3/18	<5.0	<1.0	<1.0	22	<1.0	<2.0	<50	0.12	<1.0	<0.40	15	<50	<0.50	<2.0	<0.013	<2.0	<2.0	<1.0	<0.10	240	<0.10	<2.0	<2.0	3.8	<2.0	100
	11/29/19	6.9	<1.0	<1.0	24	<1.0	<2.0	<50	0.078	1.1	<0.40	4.8	<50	1.2	22	<0.013	<2.0	<2.0	<0.50	<0.10	230	<0.10	<2.0	3.1	3.5	<2.0	34
COSCW-002-MWB (2.47 m)	03/19/13[L]	6.1	<1	<0.6	26	<0.5	<2	<100	0.045	<1	<1	<2	<100	<1	130	NM	<4	<3	<1	<0.1	170	<0.8	<20	<3	2.7	<2	33
	03/19/13	6.3	<1	<0.6	26	<0.5	<2	<100	0.043	<1	<1	<2	<100	<1	130	<0.013	<4	<3	<1	<0.1	170	<0.8	<20	<3	2.6	<2	33
	07/17/13	10.2	<1	2.7	24.1	<1	<2	<50	<0.017	<1	0.44	<2	273	<0.5	470	NM	4.2	<2	<1	<0.1	173	<0.1	<2	<2	2.4	<2	13.9
	10/24/13[L]	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
	10/24/13	26	<1	2.3	30	<1	<2	<50	0.15	<1	<0.4	<2	320	<0.5	460	NM	5.4	<2	<1	<0.1	180	<0.1	<2	<2	2.3	<2	20
	12/12/14	11	<1	<1	34	<1	<2	<50	0.63	<1	<0.4	4.5	80	<0.5	130	<0.013	7.2	<2	<1	<0.1	190	<0.1	<2	<2	3.2	<2	47
	12/8/15	7.5	<1.0	<1.0	31	<1.0	<2.0	<50	0.038	<1.0	<0.40	6.3	61	0.65	110	<0.013	5.3	<2.0	<1.0	<0.10	150	<0.10	<2.0	<2.0	1.9	<2.0	38
	11/22/16	7.7	<1.0	<1.0	30	<1.0	<2.0	<50	0.23	<1.0	<0.40	2.3	130	<0.50	200	<0.013	7.1	<2.0	<1.0	<0.10	150	<0.10	<2.0	<2.0	1.7	<2.0	80
	12/8/17	<5.0	<1.0	<1.0	32	<1.0	<2.0	<50	0.031	<1.0	<0.40	3.9	130	<0.50	340	<0.013	5.3	<2.0	<1.0	<0.10	160	<0.10	<2.0	<2.0	1.7	<2.0	25
	12/3/18	15	<1.0	<1.0	34	<1.0	<2.0	<50	0.11	<1.0	<0.40	5.4	<50	<0.50	33	<0.013	3.7	<2.0	<1.0	<0.10	140	<0.10	<2.0	<2.0	1.6	<2.0	38
	11/29/19	10	<1.0	<1.0	37	<1.0	<2.0	<50	0.035	<1.0	<0.40	3.6	<50	1.6	47	<0.013	3.0	<2.0	<0.50	<0.10	150	<0.10	<2.0	<2.0	1.6	<2.0	20
COTS-001-MWA[3] (3.83 m)	11/15/13[L]	230	<1	<1	64	<1	<2	<50	0.59	<1	2.4	47	59	2.8	3200	NM	<2	7.2	<1	<0.1	300	<0.1	<2	<2	0.24	<2	160
	11/15/13	230	<1	<1	63	<1	<2	<50	0.57	<1	2.5	47	60	2.8	3100	NM	<2	7.2	<1	<0.1	300	<0.1	<2	<2	0.24	<2	160
	12/15/14	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
	12/08/14	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
COTS-001-MWB[3] (4.07 m)	12/08/15	6	<1.0	<1.0	43	<1.0	<2.0	<50	0.029	<1.0	<0.40	<2.0	<50	<0.50	22	<0.013	<2.0	<2.0	<1.0	<0.10	1600	<0.10	<2.0	<2.0	1	<2.0	<5.0
	11/28/16	11	<1.0	<1.0	38	<1.0	<2.0	<50	0.20	<1.0	<0.40	<2.0	<50	<0.50	1400	<0.013	<2.0	<2.0	<1.0	<0.10	1500	<0.10	<2.0	<2.0	0.62	<2.0	<5.0
	12/21/17	6.0	<1.0	2.8	44	<1.0	<2.0	<50	<0.010	<1.0	0.45	<2.0	530	<0.50	2100	<0.013	<2.0	<2.0	<1.0	<0.10	1600	<0.10	2.2	<2.0	0.52	<2.0	<5.0
	11/28/18	6.9	<1.0	<1.0	33	<1.0	<2.0	<50	0.031	<1.0	<0.40	<2.0	<50	<0.50	700	<0.013	<2.0	<2.0	<1.0	<0.10	1500	<0.10	3.2	<2.0	1.1	<2.0	<5.0
	11/29/19	6.6	<1.0	1.4	41	<1.0	<2.0	<50	0.029	<1.0	<0.40	<0.5	250	<0.50	1600	<0.013	<2.0	<2.0	<0.50	<0.10	1700	<0.10	<2.0	<2.0	0.48	<2.0	<5.0
MCES-001-MWA (5.81 m)	03/28/13[FD]	18	<1	0.9	150	<0.5	<2	<100	<0.017	<1	<1	4.7	100	3.9	<4	0.015	8.1	<3	4	<0.1	1100	<0.8	<20	<3	<0.15	26	12
	03/28/13	20	<1	<0.6	150	<0.5	<2	<100	<0.017	<1	<1	4.8	110	3.9	<4	0.015	8.3	<3	1.8	<0.1	1100	<0.8	<20	<3	<0.15	21	14
	07/24/13	30.8	<1	<1	159	<1	<2	<50	<0.017	<1	<0.4	13.3	<50	1.87	3.2	NM	9.4	<2	1.6	<0.1	1180	<0.1	<2	<2	<0.1	23.3	8.7
	12/10/14	310	<1	<1	160	<1	<2	<50	0.085	2.6	<0.4	10	<50	0.83	2.9	<0.013	9.5	<2	1.8	<0.1	1200	<0.1	<2	<2	<0.1	16	7.7
	12/2/15	53	<1.0	<1.0	150	<1.0	<2.0	<50	<0.010	<1.0	<0.40	2.7	<50	2.9	<2.0	<0.013	8.9	<2.0	1.5	<0.10	1300	<0.10	<2.0	<2.0	<0.10	20	<5.0
	11/25/16	79	<1.0	<1.0	160	<1.0	<2.0	<50	<0.010	2.6	<0.40	4.3	<50	5.1	<2.0	<0.013	9.3	<2.0	1.9	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	12/12/17 FD	54	<1.0	<1.0	140	<1.0	<2.0	<50	0.017	2.1	<0.40	4.3	<50	4.2	<2.0	<0.013	9.0	<2.0	1.8	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	12/12/17	52	<1.0	<1.0	140	<1.0	<2.0	<50	<0.010	2.0	<0.40	11	<50	4.0	<2.0	<0.013	8.5	<2.0	1.8	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	11/28/18	43	<1.0	<1.0	150	<1.0	<2.0	<50	0.018	7.9	<0.40	2.8	<50	4.9	<2.0	<0.013	9.0	<2.0	1.5	<0.10	1000	<0.10	<2.0	<2.0	<0.10	16	<5.0
	12/02/19	38	<1.0	<1.0	140	<1.0	<2.0	<50	<0.010	2.6	<0.40	2.8	<50	3.9	<2.0	<0.013	7.3	<2.0	1.6	<0.10	1100	<0.10	<2.0	<2.0	<0.10	18	<5.0
MCES-001-MWB[8] (6.35 m)	03/28/13	<50	<10	<6	3500	<5	<20	2200	0.19	<10	<10	<20	18000	<10	2200	<0.013	<40	<30	32	<1	68000	<8	<200	<30	6.6	49	110
	07/25/13	<50	<10	<10	5210	<10	<20	3260	<0.17	11	<4	<20	14700	<5	1220	NM	<20	<20	<10	<1	51000	<1	<20	<20	5	<20	<50
	11/14/13	110	<10	<10	7000	<10	<20	3600	<0.1	<10	<4	<20	15000	<5	1000	NM	<20	<20	<10	<1	41000	<1	<20	<20	3.7	<20	120
	12/10/14	86	<1	8.7	7200	<1	<2	3600	0.16	1.5	0.88	<2	14000	<0.5	1400	0.017	<2	<2	<1	<0.1	52000	<0.1	<2	3.3	2.5	2.3	10
	12/2/15	<50	<10	<10	7000	<10	<20	3500	<0.10	<10	<4.0	<20	11000	<5.0	1300	<0.013	<20	<20	<10	<1.0	54000	<1.0	<20	<20	1.9	<20	<50
	11/25/16	<50	<10	<10	7200	<10	<20	3700	<0.10	<10	<4.0	<20	10000	<5.0	1300	<0.013	<20	<20	<10	<1.0	54000	<1.0	<20	<20	1.3	<20	<50
	12/15/17	<50	<10	<10	7700	<10	<20	3300	<0.10	<10	<4.0	<2.0	11000	<5.0	1300	0.015	<20	<20	<10	<1.0	58000	<1.0	<20	<20	<1.0	<20	<50
	11-28-18 [10]	650	2.2	<1.0	260	<1.0	<2.0	<50	<0.010	5.8	<0.40	2.4	<50	<0.50	<2.0	<0.013	11	<2.0	1.8	<0.10	1100	<0.10	<2.0	<2.0	<0.10	2.7	<5.0
	12/02/19	21	<1.0	<1.0	260	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	<50	<0.50	<2.0	<0.013	10	2.3	1.6	<0.10	1100	<0.10	<2.0	<2.0	<0.10	2.1	<5.0
MCES-006-MW (2.83 m)	03/28/13	7.7	<1.0	13	490	<0.5	<2.0	<100	<0.017	<1.0	<1.0	<2.0	2000	<1.0	4500	<0.013	<4	<3.0	6.3	<0.1	860	<0.8	<20	<3.0	0.84	18	<5
	07/26/13	16.6	<1.0	12.1	588	<1.0	<2.0	<50	<0.017	<1.0	<0.4	<2.0	2200	<0.5	4520	NM	<2.0	<2.0	<1.0	<0.1	883	<0.1	<2.0	<2.0	0.89	7.6	<5
	11/05/13[L]	25	<1.0	12	520	<1.0	<2.0	<50	0.037	<1.0	<0.4	<2.0	2500	<0.5	4800	NM	<2.0	<2.0	<1.0	<0.1	830	<0.1	<2.0	<2.0	0.79	9.0	15
	11/05/13	27	<1.0	12	520	<1.0	<2.0	<50	0.038	<1.0	<0.4	<2.0	2500	<0.5	4800	NM	<2.0	<2.0	<1.0	<0.1	840	<0.1	<2.0	<2.0	0.79	9.1	16
	12/10/14	210	1.5	10	130	<1	<2	<50	0.041	<1	<0.4	9.3	110	<0.5	550	<0.013	4.5	<2	2.9	<0.1	730	<0.1	<2	<2	0.21	120	<5
	12/3/15	300	1.3	11	65	<1.0	<2.0	<50	<0.010	<1.0	0.47	13	<50	<0.50	160	<0.013	4.8	<2.0	3.3	<0.10	580	<0.10	<2.0	<2.0	0.37	140	<5.0
	12/02/16	23	<1.0	11	240	<1.0	<2.0	<50	0.049	<1.0	<0.40	2.5	650	<0.50	2700	<0.013	<2.0	<2.0	<1.0	<0.10	510	<0.10	<2.0	<2.0	0.6	16	<5.0
	12/13/17	20	<1.0	4.3	120	<1.0	<2.0	<50	0.018	<1.0	<0.40	5.2	130	<0.50	1100	<0.013	3.7	<2.0	1.7	<0.10	360	<0.10	<2.0	<2.0	0.91	23	<5.0
	11/28/18	200	<1.0	7.2	110	<1.0	<2.0	<50	0.048	<1.0	<0.40	5.1	220	<0.50	740	<0.013	2.7	<2.0	1.5	<0.10	440	<0.10	<2.0	<2.0	0.13	110	<5.0
	12/02/19	380	<1.0	6.4	60	<1.0	<2.0	<50	<0.010	<1.0	<0.40	6.1	<50	<0.50	170	<0.013	3.2	<2.0	2.2	<0.10	520	<0.10	<2.0	<2.0	<0.10	120	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_pH (@20C)	Sat_pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCES-204-MW[8] (4.17 m) (Destroyed 2017)	03/28/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	2.4	NM	NM	NM	24000	9.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/28/13	**4700000**	200000	630000	260000	53	1100	8600	<1.0	<0.01	<1000	<0.05	<0.01	<0.05	2.4	<5.0	<5.0	4.4	24000	9.1	2600	47	5.5	15600	267	0.91	1.67	1.43	7.43	7.67
	07/24/13	**4290000**	184000	618000	234000	25	1200	8100	<0.5	<0.01	<1000	<0.05	<0.01	<0.05	2.4	<5.0	0.75	3.6	24000	8.82	2500	23	1.4	14700	256	2.86	1.08	0.838	7.75	7.98
	11/07/13[L]	NM	NM	NM	NM	NM	1100	8100	0.83	<0.01	NM	NM	<0.01	<0.05	NM	7.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/07/13	**4500000**	190000	660000	230000	28	1100	8200	0.81	<0.01	<1000	<0.05	<0.01	<0.05	4.7	7.2	2.8	22	24000	8.93	2600	25	2.0	15000	256	0.29	1.26	1.02	7.67	7.91
	12/18/14[FD]	**4400000**	190000	610,000	260000	21	740	7500	<5	<10	<1000	<0.05	<0.01	<0.05	2.5	<5	<5	<0.1	22000	7.28	2600	21	<1	14000	228	3.91	-0.505	-0.742	7.78	8.02
	12/18/14	**4300000**	190000	610000	260000	22	730	7400	<5	<10	<100	<0.05	<0.01	<0.05	2.3	<5	<5	<0.1	23000	8	2600	22	<1	14000	224	4.44	0.228	-0.01	7.77	8.01
	12/10/15	**3900000**	180000	530000	250000	29	800	7700	<0.50	<0.010	<1000	<0.050	<0.010	<0.050	2.8	<5.0	NM	0.1	22000	8.51	2300	28	<1.0	13000	235	3.17	0.785	0.548	7.73	7.97
	11/25/16[FD]	**3700000**	180000	560000	200000	29	1100	6200	<0.50	0.012	<1000	<0.050	<0.010	<0.050	3.4	<5.0	53	0.15	20000	8.89	2200	27	2	12000	199	3.34	1.18	0.94	7.71	7.95
	11/25/16	**3700000**	180000	560000	200000	30	1100	5800	<0.50	0.013	<1000	<0.050	<0.010	<0.050	3.4	<5.0	1.3	0.22	20000	8.71	2200	28	1.4	12000	187	6.16	1.02	0.784	7.69	7.93
MCWS-009-MW (6.63 m) *Decommissioned 2015*	12/9/14[FD]	55000	1800	110000	9100	300	36	77	12	<10	<100	0.071	<0.01	0.071	<50	<5	1	0.8	810	7.29	320	300	<1	490	8.93	0.39	0.36	0.112	6.93	7.18
	12/9/14	55000	1700	110000	8900	300	37	76	12	<10	<100	0.079	<0.01	0.079	0.069	<5	1.1	1.1	810	7.3	320	300	<1.0	480	8.93	1.02	0.361	0.113	6.94	7.19
MCWS-113-MWB (1.49 m)	12/18/12	84000	7000	71000	11000	300	<2	92	9.9	<0.01	240	<0.05	<0.01	<0.05	2	5.5	<5	1.3	820	7.7	220	300	1.4	463	8.59	0.64	0.565	0.317	7.14	7.38
	03/27/13	91000	7200	83000	13000	300	<2	98	7.1	<0.01	<500	<0.05	<0.01	<0.05	1.6	9.8	4.6	13	820	7.4	260	300	<1	486	8.68	4.72	0.324	0.076	7.08	7.32
	07/24/13	72600	6710	73300	10800	310	<2	92	9.4	<0.01	315	<0.05	<0.01	<0.05	1.8	7.7	4.6	8.8	820	7.48	230	310	<1	458	8.72	3.69	0.371	0.123	7.11	7.36
	11/15/13	78000	7300	74000	11000	310	<2	93	10	<0.01	310	<0.05	<0.01	<0.05	1.8	8.1	<5	13	850	7.52	230	310	<1	470	8.87	2.78	0.42	0.172	7.1	7.35
	12/9/14	74000	6800	72000	12000	310	<2	100	10	<10	290	<0.05	<0.01	<0.05	1.9	11	<5	15	790	7.47	230	300	<1	470	9.03	5.18	0.354	0.106	7.12	7.37
	12/2/15	71000	6800	73000	12000	310	<2.0	91	10	0.017	310	<0.050	0.012	0.052	1.7	7.8	<5.0	20	760	7.65	230	300	1.3	460	8.69	3.51	0.542	0.294	7.11	7.36
	11/30/16	72000	7200	74000	13000	300	<2.0	91	9.9	0.012	160	<0.050	0.01	<0.050	1.7	12	5.2	16	780	7.78	240	300	1.7	460	8.66	2.61	0.677	0.429	7.11	7.35
	12/12/17	67000	6800	77000	13000	300	<2.0	98	10	<0.010	260	<0.050	<0.010	<0.050	1.7	7.0	0.97	7.9	810	7.85	250	300	2.0	460	8.86	4.05	0.760	0.512	7.09	7.34
	12/7/18	58000	6700	76000	12000	330	<2.0	60	10	<0.010	310	<0.050	<0.010	<0.050	1.4	8.8	7.5	5.6	740	7.60	240	330	1.2	430	8.30	3.75	0.544	0.295	7.05	7.30
	12-4-19[FD]	60000	6600	76000	13000	330	<2.0	58	9.7	<0.010	290	<0.080	0.011	0.084[11]	1.6	7.0	7.8	14	750	7.83	240	330	2.1	430	8.20	2.76	0.773	0.525	7.06	7.31
	12/4/19	60000	6400	76000	13000	350	<2.0	60	9.7	<0.010	280	<0.080	<0.010	<0.080[11]	1.6	7.4	7.1	14	760	7.86	240	340	2.4	440	8.63	4.92	0.827	0.579	7.04	7.29
MCWS-306-MWB (0.78 m)	03/27/13	43000	5400	110000	34000	210	280	51	11	0.011	<100	0.052	<0.01	0.052	<0.05	<5	1.2	94	990	7.6	420	210	<1	664	11.4	4.72	0.463	0.216	7.14	7.38
	07/24/13	31700	3990	109000	27700	230	230	21	11	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	1	46	870	7.61	390	230	<1	573	9.92	3.66	0.529	0.281	7.08	7.33
	11/15/13	23000	3900	110000	26000	250	170	14	12	0.012	<100	0.057	<0.01	0.057	<0.05	<5	2.7	>1000	810	7.71	370	250	1.2	510	8.95	2.29	0.672	0.424	7.04	7.29
	12/9/14	16000	2900	110000	20000	250	130	17	12	0.015	<100	<0.05	<0.01	<0.05	0.065	<5	1.2	83	700	7.46	350	250	<1	460	8.2	2.5	0.432	0.184	7.03	7.28
	12/2/15	16000	3000	110000	21000	290	140	16	13	0.018	<100	<0.050	0.01	<0.050	<0.050	<5.0	1.2	2.6	720	7.66	360	280	1.2	490	9.03	6.49	0.686	0.438	6.97	7.22
	11/30/16	23000	3900	130000	24000	270	190	16	13	0.015	<100	<0.050	<0.010	<0.050	0.12	<5.0	1.5	22	850	7.61	430	270	1	560	9.72	0.36	0.678	0.431	6.93	7.18
	12/12/17	13000	2600	110000	20000	280	95	16	13	<0.010	<100	<0.050	<0.010	<0.050	0.066	<5.0	1.5	1.5	710	7.61	350	280	1.1	440	8.02	2.30	0.627	0.378	6.98	7.23
	12/7/18	12000	2500	89000	18000	240	87	14	13	<0.010	<100	<0.050	<0.010	<0.050	0.063	<5.0	1.9	1.3	610	7.57	290	240	<1.0	380	6.93	3.43	0.444	0.196	7.12	7.37
	12/4/19	16000	3400	140000	19000	290	160	16	13	<0.010	<100	<0.080	<0.010	<0.080[11]	0.28	<5.0	2.1	5.1	830	7.66	420	290	1.3	550	9.60	1.69	0.792	0.545	6.87	7.12
MCWS-307-MWB (0.81 m)	03/27/13	180000	2200	70000	10000	330	110	160	11	<0.01	<100	0.064	<0.01	0.064	<0.05	<5	0.88	1.2	1200	7.8	220	330	2	738	13.4	5.02	0.65	0.404	7.15	7.4
	07/24/13	193000	2130	64300	10000	340	100	160	10	<0.01	<100	<0.05	<0.01	<0.05	0.063	<5	0.92	1.6	1300	7.77	200	340	1.9	744	13.4	3.52	0.592	0.346	7.18	7.42
	11/14/13	190000	2100	65000	9800	340	97	150	10	<0.01	<100	<0.05	<0.01	<0.05	0.11	<5	1.4	5.0	1300	7.72	200	340	1.7	730	13.1	3.14	0.556	0.309	7.16	7.41
	12/9/14	190000	2200	70000	11000	330	96	170	10	0.012	<100	0.088	0.011	0.099	0.12	<5	1	50	1200	7.73	220	330	1.7	750	13.3	2.46	0.432	0.336	7.15	7.39
	12/2/15	190000	2000	68000	10000	350	96	180	10	0.017	<100	<0.050	0.011	0.052	0.11	<5.0	0.93	3	1300	7.87	210	340	2.4	770	14	5.23	0.725	0.478	7.15	7.4
	12/02/16	200000	2100	71000	11000	360	90	200	11	0.016	<100	<0.050	<0.010	<0.050	0.1	<5.0	0.94	0.4	1200	7.7	220	350	1.7	790	14.5	5.1	0.582	0.335	7.12	7.37
	12/12/17	200000	2000	69000	11000	340	90	200	11	<0.010	<100	<0.050	<0.010	<0.050	0.087	<5.0	1.0	0.85	1400	7.91	220	340	2.6	790	14.2	3.51	0.752	0.506	7.16	7.40
	12/7/18	190000	2000	73000	11000	330	82	210	10	<0.010	<100	0.058	<0.010	0.058	0.083	<5.0	1.1	0.67	1400	7.85	230	330	2.2	770	14.1	4.07	0.709	0.462	7.14	7.39
	12/4/19	210000	2100	77000	12000	330	91	220	10	<0.010	<100	<0.080	<0.010	<0.080[11]	0.13	<5.0	1.2	2.1	1400	7.82	240	330	2.1	820	14.7	2.98	0.703	0.457	7.11	7.36
MCWS-309-MW (0.96 m)	03/29/13	170000	7300	5400	2900	280	84	37	14	0.093	180	<0.05	<0.01	<0.05	0.14	33	18	>1000	700	7.7	25	280	1.3	490	8.46	2.61	-0.583	-0.831	8.28	8.53
	07/26/13	177000	7870	4010	2230	250	84	39	8.1	0.11	179	<0.05	<0.01	<0.05	<0.05	19	12	170	760	7.68	19	250	1.1	475	7.92	2.22	-0.778	-1.03	8.46	8.71
	11/14/13	170000	8000	4000	2000	260	89	39	8.3	0.10	250	<0.05	<0.01	<0.05	<0.05	18	13	110	800	7.52	18	260	<1.0	480	8.26	2.93	-0.92	-1.17	8.44	8.69
	12/9/14	88000	4700	3900	1100	110	35	18	4.7	0.091	180	0.15	<0.01	0.15	0.13	21	<5	510	340	7.31	14	110	<1	220	3.4	11.5	0.432	-1.72	8.78	9.02
	12/3/15	160000	7700	5000	1800	250	95	48	7	0.095	180	<0.050	0.011	<0.050	0.13	18	9.4	910	750	7.62	20	250	<1.0	480	8.41	4.15	-0.742	-0.99	8.36	8.61
	12/02/16	170000	8400	8200	2200	310	88	49	10	0.067	150	<0.050	<0.010	<0.050	0.14	18	9.8	130	800	7.62	30	310	1.2	530	9.42	6.44	-0.453	-0.701	8.07	8.32
	12/12/17	180000	8800	6700	2200	310	90	51	7.9	0.14	190	<0.050	<0.010	<0.050	0.31	17	14	470	880	7.52	26	300	<1.0	540	9.42	3.80	-0.649	-0.896	8.17	8.42
	12/7/18	94000	6300	6100	1800	160	51	40	5.2	0.14	230	0.24	0.060	0.30	0.43	12	8.7	240	540	7.29	23	160	<1.0	310	5.45	6.97	-1.13	-1.38	8.42	8.67
	12/5/19	88000	6900	4300	1600	150	37	24	5.1	0.13	210	0.10	<0.010	0.10	0.60	15	<50[9]	>1000	430	7.81	17	150	<1.0	260	4.53	1.23	-0.782	-1.03	8.59	8.84

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
MCES-204-MW[8] (4.17 m) (Destroyed 2017)	03/28/13[L]	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
	03/28/13	62	<10	<6	75	<5.0	<20	1300	<0.17	<10	<10	<20	1600	<10	<40	0.028	<40	<30	**210**	<1.0	5400	<8	<200	<30	<1.5	52	<50
	07/24/13	<50	<10	<10	70	<10	<20	1240	<0.17	<10	<4.0	<20	<500	<5.0	31	NM	<20	<20	**120**	<1.0	4880	<1.0	<20	<20	<1.0	<20	<50
	11/07/13[L]	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
	11/07/13	59	<10	<10	71	<10	<20	1200	<0.10	<10	<4.0	<20	<500	<5.0	<20	NM	<20	<20	36	<1.0	5100	<1.0	<20	<20	<1.0	<20	<50
	12/18/14[FD]	27	<1	1.5	74	<1	<2	1100	0.43	<1	<0.4	<2	97	<0.5	18	<0.013	<2	<2	39	<0.1	5000	<0.1	<2	<2	<0.1	<2	<5
	12/18/14	20	<1	1.9	74	<1	<2	1100	0.21	<1	<0.4	<2	65	<0.5	19	<0.013	<2	<2	**67**	<0.1	5000	<0.1	<2	<2	<0.1	<2	<5
	12/10/15	<50	<10	<10	60	<10	<20	1200	0.43	<10	<4.0	<20	<500	<5.0	<20	<0.013	<20	<20	<10	<1.0	4700	<1.0	<20	<20	<1.0	<20	<50
	11/25/16[FD]	<50	<10	<10	64	<10	<20	1100	<0.10	<10	<4.0	<20	<500	<5.0	<20	<0.13	<20	<20	48	<1.0	4700	<1.0	<20	<20	<1.0	<20	<50
	11/25/16	<50	<10	<10	61	<10	<20	1200	<0.10	<10	<4.0	<20	<500	<5.0	<20	<0.13	<20	<20	**86**	<1.0	4800	<1.0	<20	<20	<1.0	<20	<50
MCWS-009-MW (6.63 m) *Decommissioned 2015*	12/9/14[FD]	8.3	<1	<1	74	<1	<2	<50	0.042	<1	<0.4	<2	<50	<0.5	130	<0.013	<2	<2	<1	<0.1	320	<0.1	<2	<2	0.69	<2	<5
	12/9/14	7.8	<1.0	<1	73	<1	<2	<50	0.033	<1	<0.4	<2	<50	<0.5	130	<0.013	<2	<2	<1	<0.1	310	<0.1	<2	<2	0.7	<2	<5
MCWS-113-MWB (1.49 m)	12/18/12	12	<1	<0.6	200	<0.5	<2	300	<0.017	<1	<1	<2	2000	<1	4600	<0.013	<4	<3	<1	<0.1	340	<0.8	<20	<3	<0.15	<2	17
	03/27/13	<25	<5	<3	210	<2.5	<10	<500	<0.085	<5	<5	<10	2300	<5	4900	0.014	<20	<15	<5	<0.5	340	<4	<100	<15	<0.75	<10	32
	07/24/13	13.2	<1	<1	218	<1	<2	253	<0.017	<1	<0.4	<2	2570	<0.5	4580	NM	<2	<2	<1	<0.1	357	<0.1	<2	<2	<0.1	<2	21.3
	11/15/13	16	<1	<1	210	<1	<2	330	0.041	<1	<0.4	<2	2200	<0.5	4600	NM	<2	<2	<1	<0.1	370	<0.1	<2	<2	<0.1	<2	41
	12/9/14	13	<1	<1	190	<1	<2	320	1.0	<1	<0.4	4.1	1800	<0.5	4300	<0.013	<2	<2	<1	<0.1	340	<0.1	<2	<2	<0.1	<2	45
	12/2/15	44	<1.0	<1.0	210	<1.0	<2.0	310	<0.010	<1.0	0.61	<2.0	2200	26	4300	<0.013	<2.0	<2.0	<1.0	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	13
	11/30/16	7.7	<1.0	<1.0	150	<1.0	<2.0	330	0.046	<1.0	<0.40	<2.0	1300	<0.50	3500	<0.013	<2.0	<2.0	<1.0	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	97
	12/12/17	5.1	<1.0	<1.0	210	<1.0	<2.0	300	<0.010	<1.0	<0.40	<2.0	2100	<0.50	3500	<0.013	<2.0	<2.0	<1.0	<0.10	360	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/7/18	6.6	<1.0	<1.0	210	<1.0	<2.0	290	0.043	<1.0	<0.40	<2.0	2100	<0.50	3600	<0.013	<2.0	<2.0	<1.0	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-4-19[FD]	8.3	<1.0	<1.0	200	<1.0	<2.0	320	0.087	<1.0	<0.40	<0.50	2000	<0.50	3300	<0.013	<2.0	<2.0	<0.50	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/4/19	6.4	<1.0	<1.0	200	<1.0	<2.0	310	0.014	<1.0	<0.40	<0.50	2000	<0.50	3300	<0.013	<2.0	<2.0	<0.50	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
MCWS-306-MWB (0.78 m)	03/27/13	12	<1	<0.6	17	<0.5	<2	110	0.38	<1	<1	<2	<100	<1	2600	0.018	5.7	<3	<1	<0.1	290	<0.8	<20	<3	1.7	<2	48
	07/24/13	8.1	<1	<1	20.2	<1	<2	97	0.108	<1	0.72	<2	<50	<0.5	2870	NM	3.5	2.2	<1	<0.1	250	<0.1	<2	<2	1.33	<2	33.9
	11/15/13	24	<1	<1	21	<1	<2	96	0.22	<1	0.95	<2	<50	<0.5	2800	NM	2.3	<2	<1	<0.1	250	<0.1	<2	<2	1.2	<2	5.3
	12/9/14	9.4	<1	<1	31	<1	<2	78	0.28	<1	0.85	<2	<50	<0.5	2200	<0.013	<2	<2	<1	<0.1	260	<0.1	<2	<2	0.89	<2	5.6
	12/2/15	9.7	<1.0	<1.0	46	<1.0	<2.0	73	0.12	<1.0	1.1	<2.0	150	<0.50	2900	<0.013	<2.0	2.2	<1.0	<0.10	280	<0.10	<2.0	<2.0	1.1	<2.0	<5.0
	11/30/16	16	<1.0	<1.0	58	<1.0	<2.0	84	0.038	<1.0	0.98	<2.0	320	<0.50	2900	<0.013	2.3	2	<1.0	<0.10	340	<0.10	<2.0	<2.0	1.9	<2.0	5.3
	12/12/17	<5.0	<1.0	<1.0	69	<1.0	<2.0	69	0.10	<1.0	1.2	<2.0	100	<0.50	3000	<0.013	<2.0	2.4	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.78	<2.0	<5.0
	12/7/18	7.7	<1.0	<1.0	88	<1.0	<2.0	60	0.27	<1.0	0.90	<2.0	<50	<0.50	1700	<0.013	<2.0	2.3	<1.0	<0.10	220	<0.10	<2.0	<2.0	1.0	<2.0	76
	12/4/19	<5.0	<1.0	2.7	110	<1.0	<2.0	78	0.019	<1.0	1.3	<0.50	920	<0.50	5100	<0.013	2.4	2.7	<0.50	<0.10	390	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
MCWS-307-MWB (0.81 m)	03/27/13	7.7	<1.0	3.7	25	<0.5	<2.0	120	0.051	<1.0	<1.0	2.9	<100	<1.0	110	<0.013	<4.0	<3.0	<1.0	<0.1	290	<0.8	<20	<3.0	1.3	<2.0	31
	07/24/13	9.5	<1.0	4.2	24.9	<1.0	<2.0	116	<0.017	<1.0	<0.4	2.2	<50	<0.5	162	NM	<2.0	<2.0	<1.0	<0.1	281	<0.1	<2.0	<2.0	1.25	<2.0	11.3
	11/14/13	21	<1.0	5.7	24	<1.0	<2.0	120	<0.01	<1.0	<0.4	<2.0	100	<0.5	140	NM	<2.0	<2.0	<1.0	<0.1	280	<0.1	<2.0	<2.0	1.2	<2.0	53
	12/9/14	20	<1	1.8	37	<1	<2	130	<0.01	<1	<0.4	<2	83	<0.5	120	<0.013	<2	<2	<1	<0.1	290	<0.1	<2	<2	1.3	<2	5.2
	12/2/15	7.1	<1.0	1.4	33	<1.0	<2.0	140	<0.010	<1.0	<0.40	<2.0	95	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	300	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
	12/02/16	13	<1.0	<1.0	33	<1.0	<2.0	120	0.14	<1.0	<0.40	<2.0	61	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	310	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
	12/12/17	5.4	<1.0	<1.0	31	<1.0	<2.0	120	0.020	<1.0	<0.40	<2.0	<50	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	320	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
	12/7/18	<5.0	<1.0	<1.0	32	<1.0	<2.0	120	0.039	<1.0	<0.40	<2.0	<50	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	310	<0.10	<2.0	<2.0	1.1	<2.0	8.7
	12/4/19	<5.0	<1.0	<1.0	34	<1.0	<2.0	120	<0.010	<1.0	<0.40	<0.50	110	<0.50	150	<0.013	<2.0	<2.0	<0.50	<0.10	340	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
MCWS-309-MW (0.96 m)	03/29/13	1800	<1.0	5.1	21	<0.5	<2.0	640	0.17	2.2	<1.0	11	2500	3	99	NM	5.4	<3.0	<1.0	<0.1	45	<0.8	<20	58	0.33	3.5	11
	07/26/13	145	<1.0	4.8	10.1	<1.0	<2.0	386	<0.017	<1.0	0.49	<2.0	352	<0.5	1030	NM	2.4	<2.0	<1.0	<0.1	20.9	<0.1	<2.0	<2.0	0.17	<2.0	5.7
	11/14/13	380	<1.0	4.7	13	<1.0	<2.0	390	0.013	<1.0	0.43	<2.0	690	0.61	880	NM	<2.0	<2.0	<1.0	<0.1	22	<0.1	<2.0	7.8	0.12	<2.0	14
	12/9/14	160	<1	2.7	6.3	<1	<2	210	0.023	<1	<0.4	<2	770	0.75	520	0.013	<2	<2	<1	<0.1	14	<0.1	<2	3.3	0.13	<2	10
	12/3/15	120	<1.0	2.3	9.3	<1.0	<2.0	370	0.072	<1.0	0.43	<2.0	190	<0.50	890	<0.013	2.0	<2.0	<1.0	<0.10	22	<0.10	<2.0	5.3	0.45	<2.0	<5.0
	12/02/16	60	<1.0	4.4	17	<1.0	<2.0	400	0.076	<1.0	<0.40	<2.0	590	<0.50	2000	0.013	2.3	<2.0	<1.0	<0.10	29	<0.10	<2.0	<2.0	0.19	<2.0	<5.0
	12/12/17	62	<1.0	3.6	12	<1.0	<2.0	410	0.019	<1.0	<0.40	<2.0	190	<0.50	1200	0.018	<2.0	<2.0	<1.0	<0.10	28	<0.10	<2.0	3.1	0.20	<2.0	<5.0
	12/7/18	72	<1.0	3.1	11	<1.0	<2.0	220	0.011	<1.0	0.74	<2.0	320	<0.50	1400	<0.013	3.2	<2.0	<1.0	<0.10	21	<0.10	<2.0	3.3	<0.10	<2.0	13
	12/5/19	7.7	<1.0	3.1	7.4	<1.0	<2.0	200	0.023	<1.0	<0.40	1.6	<50	<0.50	990	0.055	3.1	<2.0	<0.50	<0.10	17	<0.10	<2.0	<2.0	0.23	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCWS-310-MW (1.06 m)	03/29/13[L]	49000	3400	75000	10000	NM	NM	NM	9.5	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/29/13	51000	3600	79000	11000	240	49	51	9.5	<0.01	<100	2.7	<0.01	2.7	<0.05	<5	<0.5	0.24	650	7.6	240	240	<1	410	7.46	2.26	0.431	0.183	7.17	7.42
	07/26/13	76100	3430	97100	14200	210	120	120	10	<0.01	<100	1.7	0.016	1.7	<0.05	<5	0.77	0.4	980	7.68	300	210	<1	574	10.2	4.03	0.506	0.258	7.17	7.42
	11/14/13	43000	3700	75000	9600	220	46	46	9.5	<0.01	<100	2.3	0.023	2.4	<0.05	<5	1.3	0.37	640	7.89	230	210	1.6	370	6.72	1.9	0.653	0.405	7.24	7.49
	12/9/14	17000	1500	21000	2400	130	29	30	6.6	<10	<100	0.81	<0.01	0.81	0.097	11	1.3	31	400	7.42	61	130	<1	190	4.02	33.3	0.432	-0.796	7.97	8.22
	12/10/15[FD]	8200	3200	10000	1400	50	7.5	6.4	3.6	<0.010	<100	<0.050	<0.010	<0.050	0.15	25	NM	8.3	120	7.19	32	50	<1.0	72	1.33	8.13	-1.42	-1.67	8.61	8.86
	12/10/15	8000	3200	10000	1400	49	6.7	6.5	3.7	<0.010	<100	<0.050	<0.010	<0.050	0.16	27	NM	8.0	110	7.23	32	49	<1.0	71	1.31	8.26	-1.38	-1.63	8.62	8.87
	12/02/16	7600	3200	14000	1500	49	6.4	11	3.4	0.011	<100	<0.050	0.013	<0.050	0.053	14	1.7	3.2	120	7.15	42	49	<1.0	76	1.41	6.02	-1.33	-1.58	8.48	8.73
	12/12/17	16000	1600	29000	3800	52	10	12	2.6	<0.010	<100	0.22	<0.010	0.22	<0.25	26	6.9	12	150	7.43	89	52	<1.0	110	1.59	22.4	-0.737	-0.988	8.17	8.42
	12/7/18	8800	940	4900	860	16	5.9	15	1.6	0.011	<100	0.17	<0.010	0.17	<0.050	22	5.6	24	93	6.70	16	16	<1.0	48	0.880	10.0	-2.70	-2.95	9.40	9.65
	12/5/19	4700	1000	2700	500	7.7	3.7	10	1.0	0.011	<100	0.054	<0.010	0.054	<0.050	34	5.5	13	46	6.46	8.8	7.7	<1.0	29	0.520	11.8	-3.52	-3.77	9.97	10.2
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	89000	<6000	250000	27000	170	630	120	18	<0.01	<1000	<0.05	<0.01	<0.05	0.11	49	6.7	160	1600	7.3	730	170	<1	1260	19.9	2.57	0.355	0.11	6.95	7.19
	07/24/13[FD]	88300	1660	232000	27500	170	600	110	14	<0.01	<100	<0.05	<0.01	<0.05	0.13	130	5.8	130	1600	7.15	690	170	<1	1200	19	2.13	0.178	-0.067	6.97	7.22
	07/24/13[L]	89300	1690	234000	27600	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/24/13	88600	1650	237000	27600	170	600	110	14	<0.01	<100	<0.05	<0.01	<0.05	0.14	110	5.7	140	1600	7.14	710	170	<1	1200	19	1.36	0.181	-0.064	6.96	7.2
	11/05/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1700	6.88	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/05/13	92000	1700	240000	30000	160	630	110	14	<0.01	<100	0.057	<0.01	0.057	0.17	62	8.1	200	1700	6.9	730	160	<1	1300	19.6	0.750	-0.089	-0.334	6.99	7.23
	12/10/14[FD]	82000	1700	240000	27000	180	550	93	14	<10	<100	0.21	<0.01	0.21	0.19	96	6.3	130	1500	7.05	710	180	<1	1100	17.7	1.69	0.111	-0.135	6.94	7.18
	12/10/14	84000	1700	240000	28000	180	550	94	14	<10	<100	0.063	<0.01	0.063	0.19	91	6	110	1500	7.02	710	180	<1	1100	17.7	2.19	0.432	-0.157	6.93	7.18
	12/03/15	78000	1700	220000	27000	150	480	92	14	0.015	<100	<0.050	0.012	<0.050	0.23	15	6.5	200	1500	7.2	670	150	<1.0	1000	15.5	5.87	0.177	-0.069	7.03	7.27
MSES-004-MW (7.63 m)	03/26/13	12000	2300	320000	58000	61	1100	24	9.1	<0.01	<1000	<0.05	<0.01	<0.05	0.19	76	1.1	4.9	1800	6.3	1000	61	<1	1560	24.5	6.54	-1.02	-1.26	7.32	7.56
	07/26/13	14100	2400	345000	61400	70	1000	25	6.9	<0.01	<100	<0.05	<0.01	<0.05	0.18	68	1.3	2	1800	6.25	1100	70	<1	1550	23.8	1.64	-0.978	-1.22	7.23	7.47
	11/15/13	13000	2600	360000	60000	67	980	25	6.7	0.031	<100	<0.05	<0.01	<0.05	0.18	72	2.1	48	1900	6.15	1200	67	<1	1500	22.5	2.68	-1.07	-1.31	7.22	7.46
	12/10/14	11000	2100	300000	49000	92	690	21	5.4	<10	<100	<0.05	0.011	<0.05	0.19	30	1.5	12	1500	6.37	940	92	<1	1100	16.7	7.67	0.432	-1.01	7.13	7.38
	12/3/15	13000	2300	320000	55000	98	740	26	5.7	0.01	<100	<0.050	0.013	<0.050	0.28	25	1.9	7.5	1700	6.49	1000	98	<1.0	1200	18.1	8.41	-0.581	-0.826	7.07	7.32
	11/25/16	12000	2200	260000	44000	140	650	17	4.9	<0.010	<100	<0.050	<0.010	<0.050	0.21	13	2.3	15	1300	6.57	830	140	<1.0	1100	16.8	1	-0.444	-0.69	7.01	7.26
	12/13/17[FD]	12000	2000	260000	39000	130	630	17	4.6	<0.010	<100	<0.050	<0.010	<0.050	0.19	23	2.5	6.6	1300	6.61	810	130	<1.0	1000	16.1	2.04	-0.429	-0.674	7.04	7.28
	12/13/17	12000	2000	240000	39000	130	630	17	4.6	<0.010	<100	<0.050	<0.010	<0.050	0.18	21	2.4	4.6	1400	6.54	750	130	<1.0	1000	16.1	1.29	-0.536	-0.782	7.08	7.32
	12/10/18	12000	2100	240000	41000	130	680	17	5.0	<0.010	<100	<0.050	<0.010	<0.050	0.18	39	2.2	4.7	1400	6.51	770	130	<1.0	1100	17.4	4.07	-0.547	-0.793	7.05	7.30
	12/5/19	11000	1900	180000	30000	140	430	13	3.9	<0.010	<100	<0.050	<0.010	<0.050	0.18	7.0	1.9	7.7	1100	6.85	590	140	<1.0	760	12.1	0.610	-0.257	-0.504	7.11	7.36
MSES-006-MW (3.65 m)	03/26/13	130000	13000	450000	210000	330	2100	100	15	<0.01	<1000	<0.05	<0.01	<0.05	0.18	41	0.75	9.8	3500	6.9	2000	330	<1	3290	53.5	7.78	0.348	0.107	6.55	6.79
	07/24/13[L]	NM	NM	NM	NM	340	2100	110	12	<0.01	NM	NM	<0.01	<0.05	NM	68	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/24/13	142000	12900	483000	216000	340	2000	100	12	<0.01	<100	<0.05	<0.01	<0.05	0.17	81	0.51	8.4	3600	6.79	2100	340	<1	3230	51.3	2.9	0.278	0.037	6.51	6.75
	11/05/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/05/13	140000	14000	470000	230000	330	2200	100	12	<0.01	<100	<0.05	<0.01	<0.05	0.16	31	<0.5	11	3500	6.74	2100	330	<1	3400	54.2	5.25	0.2	-0.041	6.54	6.78
	12/10/14	25000	6900	430000	62000	250	790	52	23	<10	<100	<0.05	0.015	<0.05	0.22	5	1.7	4.6	2000	7.49	1300	250	<1	1500	22.9	9.74	0.432	0.667	6.58	6.83
	12/3/15	26000	7100	410000	64000	310	820	62	23	0.049	<100	<0.050	0.015	<0.050	0.45	<5.0	2.4	1.3	2100	7.42	1300	310	<1.0	1600	25.1	3.4	0.906	0.662	6.51	6.76
	11/25/16	130000	13000	470000	210000	350	1700	99	13	0.013	<100	<0.050	<0.010	<0.050	0.22	<5.0	2.6	9.1	3200	6.81	2000	350	<1.0	2900	44.5	1.92	0.327	0.085	6.48	6.73
	12/13/17	7000	2300	130000	18000	100	270	14	27	0.022	<100	<0.050	<0.010	<0.050	0.056	6.8	8.1	2.8	780	7.41	400	100	<1.0	540	8.16	1.27	0.067	-0.181	7.34	7.59
	12/10/18	120000	12000	450000	190000	360	1700	93	13	<0.010	<100	<0.050	<0.010	<0.050	0.18	35	0.84	7.2	3400	7.02	1900	360	<1.0	2800	44.3	0.290	0.527	0.285	6.49	6.73
	12/2/19	17000	4900	250000	38000	140	650	33	25	<0.010	<100	0.054	<0.010	0.054	0.30	5.7	2.4	9.3	1400	7.29	770	140	<1.0	1100	17.1	2.42	0.254	0.008	7.04	7.28
MSES-008-MW (4.10 m)	03/26/13[L]	NM	NM	NM	NM	190	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	2400	7.3	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/26/13	130000	6600	420000	28000	190	1000	190	32	<0.01	<1000	<0.05	<0.01	<0.05	0.1	37	1.2	130	2400	7.3	1200	180	<1	1950	30.2	0.38	0.55	0.307	6.75	6.99
	07/26/13	115000	5770	458000	28700	160	1100	200	24	<0.01	<100	<0.05	<0.01	<0.05	0.1	46	1.3	120	2500	7.25	1300	160	<1	2080	32.6	2.78	0.472	0.228	6.78	7.02
	11/15/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	2500	7.12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/15/13	120000	6100	430000	27000	200	930	200	27	<0.01	<100	<0.05	<0.01	<0.050	0.076	270	1.1	83	2500	7.11	1200	200	<1	1900	29	0.8	0.408	0.164	6.7	6.95
	12/10/14	120000	5400	420000	27000	180	760	150	27	<10	<100	<0.05	<0.01	<0.05	0.11	160	2.7	140	2300	6.96	1200	180	<1	1600	23.7	9.68	0.432	-0.024	6.74	6.98
	12/3/15[FD]	90000	4500	390000	24000	200	740	150	27	0.026	<100	<0.050	0.011	<0.050	0.092	24	1.4	120	2200	7.4	1100	200	<1.0	1600	23.6	4.69	0.676	0.432	6.72	6.96
	12/3/15	89000	4500	400000	24000	200	620	150	28	0.025	<100	<0.050	<0.010	<0.050	0.096	<5.0	1.5	110	2100	7.32	1100	200	<1.0	1400	21.2	10.3	0.614	0.369	6.71	6.96
	11/25/16[FD]	110000	5400	460000	31000	200	1000	200	28	0.02	<100	0.074	<0.010	0.074	0.088	<5.0	1.6	180	2400	7.11	1300	200	<1.0	2000	31	0.78	0.424	0.181	6.68	6.93
	11/25/16	110000	5400	450000	32000	210	990	210	29	0.02	<100	<0.050	<0.010	<0.050	0.099	<5.0	1.5	150	2400	7.09	1300	210	<1.0	2000	30.6	0.15	0.417	0.174	6.67	6.92
	12/13/17	100000	4900	410000	25000	180	840	190	27	<0.010	<100	<0.050	<0.010	<0.050	0.071	17	2.4	170	2300	7.34	1100	170	<1.0	1700	26.3	2.14	0.567	0.323	6.77	7.01
	12/10/18	110000	5000	360000	25000	200	870	190	28	<0.010	<100	<0.050	<0.010	<0.050	0.075	170	0.94	150	2200	7.14	1000	200	<1.0	1700	27.5	4.01	0.378	0.135	6.77	7.01
	12/2/19	100000	4900	380000	25000	200	800	170	26	<0.010	<100	0.10	<0.010	0.10	0.066	110	1.0	140	2200	7.38	1000	200	<1.0	1600	25.6	0.120	0.640	0.395	6.74	6.98
MSES-012-MWA (3.53 m)	03/15/13	290000	4900	240000	19000	180	510	360	35	<0.01	<100	0.43	<0.01	0.43	<0.05	17	0.85	5.5	2600	7.1	680	180	<1.0	1570	24.3	4.6	0.116	-0.129	6.98	7.23
	07/25/13[FDL]	NM	NM	NM	NM	200	480	330	37	<0.01	NM	NM	<0.01	0.23	NM	19	NM	10	2200	7.08	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/25/13[FD]	198000	4230	242000	24300	200	440	330	37	<0.01	<100	0.23	<0.01	0.23	<0.05	15	0.85	11	2200	7.07	700	200	<1.0	1410	22.7	0.37	0.168	-0.077	6.9	7.15
	07/25/13	197000	4170	244000	24500	190	`	330	37	<0.01	<100	0.22	<0.01	0.22	0.052	25	0.91	15	2200	7.19	710	190	<1.0	1470	23.9	1.9	0.259	0.015	6.93	7.18
	11/05/13	200000	4600	240000	25000	200	570	280	37	<0.01	<100	0.19	<0.01	0.19	0.33	70	1.5	49	2200	6.91	720	200	<1.0	1500	23.9	0.97	0.005	-0.240	6.91	7.15
	12/16/14	150000	3500	290000	26000	180	49	230	43	18	<100	0.052	<0.01	<0.01	0.088	46	1.3	18	2100	6.9	220	180	<1	290	21.5	0.29	0.022	-0.222	6.88	7.13
	12/3/15	180000	3700	350000	29000	180	600	320	47	0.035	<100	0.14	0.014	0.16	0.12	<5.0	0.88	3.5	2500	7.26	980	180	<1.0	1600	25.2	4.65	0.438	0.194	6.82	7.06
	11/22/16	140000	3300	330000	33000	200	740	170	45	0.031	<100	0.5	<0.010	0.5	<0.050	<5.0	1.3	20	2200	7.02	970	200	<1.0	1600	24.2	2.81	0.232	-0.013	6.79	7.03
	12/13/17	190000	3700	290000	23000	190	600	300	44	<0.010	<100	0.091	<0.010	0.091	<0.050	<5.0	1.5	8.7	2200	7.17	810	190	<1.0	1600	24.6	0.220	0.287	0.042	6.88	7.12
	12/10/18	110000	2400	230000	22000	200	540	140	42	<0.010	<100	0.78	<0.010	0.78	<0.050	<5.0	1.3	5.2	1700	7.56	660	200	<1.0	1200	19.4	3.69	0.635	0.390	6.92	7.17
	12/5/19	150000	3100	220000	22000	210	430	240	37	<0.010	<100	0.67	<0.010	0.67	<0.050	<5.0	1.3	22	1900	7.64	630	210	<1.0	1200	19.9	1.37	0.711	0.466	6.93	7.17

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
MCWS-310-MW (1.06 m)	03/29/13[L]	<5	<1.0	<0.6	60	<0.5	<2.0	100	<0.017	<1.0	<1.0	3.3	<100	<1.0	<4.0	NM	<4.0	<3.0	1.2	<0.1	2300	<0.8	<20	<3.0	0.89	<2.0	22
	03/29/13	<5	<1.0	<0.6	63	<0.5	<2.0	110	<0.017	<1.0	<1.0	3.6	<100	<1.0	<4.0	<0.013	<4.0	<3.0	<1.0	<0.1	2400	<0.8	<20	<3.0	0.93	<2.0	24
	07/26/13	12	<1.0	<1.0	76	<1.0	<2.0	122	0.035	<1.0	<0.4	2.8	<50	<0.5	90.1	NM	<2.0	<2.0	<1.0	<0.1	3210	<0.1	<2.0	<2.0	0.85	<2.0	13.7
	11/14/13	8.1	<1.0	<1.0	63	<1.0	<2.0	100	0.061	<1.0	<0.4	14	<50	<0.5	7.2	NM	<2.0	<2.0	<1.0	<0.1	2100	<0.1	<2.0	<2.0	0.9	<2.0	60
	12/9/14	84	<1	<1	23	<1	<2	<50	0.038	<1	<0.4	3.0	50	<0.5	4.1	<0.013	<2	<2	<1	<0.1	360	<0.1	<2	2.5	0.37	<2	410
	12/10/15[FD]	81	<1.0	<1.0	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	1100	<0.50	39	<0.013	<2.0	<2.0	<1.0	<0.10	110	<0.10	<2.0	<2.0	<0.10	<2.0	79
	12/10/15	78	<1.0	<1.0	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	990	<0.50	36	<0.013	<2.0	<2.0	<1.0	<0.10	100	<0.10	<2.0	2.2	<0.10	<2.0	82
	12/02/16	18	<1.0	<1.0	17	<1.0	<2.0	<50	0.048	<1.0	<0.40	<2.0	<50	<0.50	2.3	<0.013	<2.0	6	<1.0	<0.10	130	<0.10	<2.0	<2.0	<0.10	<2.0	440
	12/12/17	100	<1.0	<1.0	29	<1.0	<2.0	<50	0.023	<1.0	<0.40	<2.0	<50	<0.50	3.6	0.013	<2.0	<2.0	<1.0	<0.10	830	<0.10	<2.0	<2.0	0.40	<2.0	190
	12/7/18	85	<1.0	<1.0	11	<1.0	<2.0	<50	0.037	<1.0	<0.40	<2.0	<50	<0.50	2.9	<0.013	<2.0	<2.0	<1.0	<0.10	65	<0.10	<2.0	<2.0	<0.10	<2.0	130
	12/5/19	130	<1.0	<1.0	6.7	<1.0	<2.0	<50	0.050	<1.0	<0.40	<2.0	110	<0.50	4.3	<0.013	<2.0	<2.0	<0.50	<0.10	10	<0.10	<2.0	2.6	<0.10	<2.0	140
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	<50	<10	49	14	<5	<20	<1000	0.65	14	<10	<20	12000	<10	7900	0.015	<40	<30	<10	<1.0	1300	<8	<200	<30	<1.5	<20	78
	07/24/13[FD]	11	<1.0	54.3	14.6	<1.0	<2.0	<50	0.237	<1.0	1.57	<2.0	12900	<0.5	8210	NM	<2.0	<2.0	<1.0	<0.1	1220	<0.1	<2.0	<2.0	0.22	<2.0	16
	07/24/13[L]	7.3	<1.0	57	14.7	<1.0	<2.0	<50	0.194	<1.0	1.7	<2.0	13700	<0.5	8590	NM	<2.0	<2.0	<1.0	<0.1	1230	<0.1	<2.0	<2.0	0.26	<2.0	14.5
	07/24/13	11.2	<1.0	57.3	14.9	<1.0	<2.0	<50	0.225	<1.0	1.65	<2.0	13700	<0.5	8580	NM	<2.0	<2.0	<1.0	<0.1	1230	<0.1	<2.0	<2.0	0.23	<2.0	15.9
	11/05/13[L]	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
	11/05/13	13	<1.0	64	18	<1.0	<2.0	53	0.036	<1.0	1.9	12	19000	<0.5	11000	NM	<2.0	2.7	<1.0	<0.1	1300	<0.1	<2.0	<2.0	0.19	<2.0	87
	12/10/14[FD]	13	<1	67	14	<1	<2	64	0.08	<1	1.8	<2	14000	<0.5	8900	<0.013	<2	<2	<1	<0.1	1300	<0.1	<2	<2	0.23	<2	5.7
	12/10/14	11	<1	69	15	<1	<2	58	0.38	<1	1.7	<2	15000	<0.5	9100	<0.013	<2	<2	<1	<0.1	1300	<0.1	<2	<2	0.21	<2	7.5
	12/03/15	17	<1.0	65	15	<1.0	<2.0	58	0.013	<1.0	1.8	<2.0	16000	0.76	9700	<0.013	<2.0	<2.0	<1.0	<0.10	1200	<0.10	<2.0	<2.0	0.23	<2.0	<5.0
MSES-004-MW (7.63 m)	03/26/13	240	<10	<6	7.4	<5	<20	<1000	<0.17	<10	<10	<20	2500	<10	1300	<0.013	<40	<30	<10	<1	320	<8	<200	<30	<1.5	<20	210
	07/26/13	517	<1.0	1.7	8.8	<1.0	<2.0	91	0.179	<1.0	1.22	<2.0	2510	<0.5	1630	NM	<2.0	3.2	<1.0	<0.1	314	<0.1	<2.0	<2.0	0.18	3.3	69.9
	11/15/13	290	<1.0	1.8	7.3	<1.0	<2.0	82	0.14	<1.0	1.6	<2.0	2700	<0.5	1700	NM	<2.0	2.4	<1.0	<0.1	370	<0.1	<2.0	<2.0	0.12	<2.0	7.5
	12/10/14	170	<1	1.9	7.5	<1	<2	85	0.073	<1	0.91	<2	1900	<0.5	1200	<0.013	<2	2.0	<1	<0.1	290	<0.1	<2	<2	<0.1	<2	63
	12/3/15	130	<1.0	1.9	7.5	<1.0	<2.0	83	0.051	<1.0	1.1	<2.0	2000	<0.50	1500	<0.013	<2.0	3.0	<1.0	<0.10	340	<0.10	<2.0	<2.0	0.15	<2.0	97
	11/25/16	61	<1.0	2.5	8.6	<1.0	<2.0	81	0.14	<1.0	0.5	<2.0	1700	<0.50	1100	<0.013	<2.0	<2.0	<1.0	<0.10	280	<0.10	<2.0	<2.0	0.16	<2.0	140
	12/13/17[FD]	63	<1.0	2.1	9.3	<1.0	<2.0	82	0.016	<1.0	0.48	<2.0	1100	<0.50	860	<0.013	<2.0	<2.0	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.15	<2.0	100
	12/13/17	61	<1.0	1.9	9.4	<1.0	<2.0	80	0.027	<1.0	0.52	<2.0	1100	<0.50	860	<0.013	<2.0	<2.0	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.17	<2.0	99
	12/10/18	56	<1.0	2.2	8.9	<1.0	<2.0	82	0.032	<1.0	0.60	<2.0	1500	<0.50	1200	<0.013	<2.0	<2.0	<1.0	<0.10	280	<0.10	<2.0	<2.0	0.20	<2.0	130
	12/5/19	41	<1.0	1.8	9.0	<1.0	<2.0	76	0.029	<1.0	<0.40	2.4	880	<0.50	770	<0.013	<2.0	5.5	<0.50	<0.10	220	<0.10	<2.0	<2.0	0.14	<2.0	76
MSES-006-MW (3.65 m)	03/26/13	<50	<10	<6	13	<5	<20	<1000	0.24	<10	<10	<20	3000	<10	49000	0.017	<40	<30	<10	<1	3500	<8	<200	<30	4.3	<20	65
	07/24/13[L]	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
	07/24/13	35.9	<1	1.5	13.9	<1	<2	309	0.083	<1	5.29	<2	1940	<0.5	50300	NM	<2	12.6	<1	<0.1	3610	<0.1	<2	<2	4.95	<2	55.9
	11/05/13[L]	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
	11/05/13	11	<1	1.8	13	<1	<2	300	0.027	<1	5.4	<2	2200	<0.5	60000	NM	<2	14	<1	<0.1	3600	<0.1	<2	<2	4.4	<2	89
	12/10/14	34	<1	1.1	23	<1	<2	100	0.11	<1	<0.4	<2	160	<0.5	1900	<0.013	<2	<2	<1	<0.1	770	<0.1	<2	<2	4.3	4.4	6.2
	12/3/15	11	<1.0	<1.0	22	<1.0	<2.0	100	<0.010	<1.0	<0.40	<2.0	<50	<0.50	1800	<0.013	<2.0	<2.0	13	<0.10	810	<0.10	<2.0	<2.0	4.2	4.8	<5.0
	11/25/16	<5.0	<1.0	2.2	13	<1.0	<2.0	330	0.012	<1.0	4.6	<2.0	1900	<0.50	54000	<0.013	<2.0	13	<1.0	<0.10	3600	<0.10	<2.0	<2.0	4.4	<2.0	250
	12/13/17	8.9	<1.0	1.9	23	<1.0	<2.0	<50	0.013	1.1	<0.40	<2.0	<50	<0.50	86	<0.013	<2.0	<2.0	1.2	<0.10	330	<0.10	<2.0	<2.0	3.6	30	<5.0
	12/10/18	<5.0	<1.0	<1.0	11	<1.0	<2.0	320	0.30	<1.0	3.3	<2.0	1100	<0.50	47000	<0.013	<2.0	8.4	<1.0	<0.10	3400	<0.10	<2.0	<2.0	4.4	<2.0	<5.0
	12/2/19	12	<1.0	<1.0	20	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	790	<0.50	770	<0.013	<2.0	<2.0	0.75	<0.10	480	<0.10	<2.0	<2.0	4.0	13	<5.0
MSES-008-MW (4.10 m)	03/26/13[L]	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
	03/26/13	<50	<10	16	8.1	<5	<20	<1000	<0.17	<10	<10	<20	13000	<10	1400	<0.013	<40	<30	<10	<1.0	660	<8	<200	<30	<1.5	<20	69
	07/26/13	10.7	<1.0	11.6	8.3	<1.0	<2.0	68	0.107	<1.0	<0.4	<2.0	12200	<0.50	1190	NM	3.2	<2.0	<1.0	<0.10	707	<0.10	<2.0	<2.0	0.72	<2.0	19
	11/15/13[L]	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
	11/15/13	9.3	<1.0	11	9.9	<1.0	<2.0	66	0.073	<1	<0.40	<2.0	9200	<0.50	820	NM	2.9	<2.0	<1.0	<0.10	660	<0.10	<2.0	<2.0	0.68	<2.0	72
	12/10/14	100	<1	14	7.9	<1	<2	70	0.082	<1	<0.4	<2	15000	<0.5	1200	<0.013	3.1	<2	<1	<0.1	590	<0.1	<2	<2	0.6	<2	41
	12/3/15[FD]	5.2	<1.0	10	7.5	<1.0	<2.0	63	0.01	<1.0	<0.40	<2.0	9200	<0.50	650	<0.013	2.3	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	0.55	<2.0	39
	12/3/15	5.0	<1.0	10	7.7	<1.0	<2.0	67	0.016	<1.0	<0.40	<2.0	9200	<0.50	650	<0.013	2.4	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	0.55	<2.0	38
	11/25/16[FD]	6.8	<1.0	11	8.6	<1.0	<2.0	67	0.027	<1.0	<0.40	<2.0	11000	<0.50	990	<0.013	3	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.74	<2.0	100
	11/25/16	6.2	<1.0	12	8.7	<1.0	<2.0	66	0.013	<1.0	<0.40	<2.0	12000	<0.50	1000	<0.013	3	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.74	<2.0	110
	12/13/17	<5.0	<1.0	11	7.8	<1.0	<2.0	65	0.025	<1.0	<0.40	<2.0	13000	<0.50	1100	<0.013	2.4	<2.0	<1.0	<0.10	570	<0.10	<2.0	<2.0	0.57	<2.0	38
	12/10/18	<5.0	<1.0	11	7.9	<1.0	<2.0	71	<0.010	<1.0	<0.40	<2.0	10000	<0.50	920	<0.013	2.7	<2.0	<1.0	<0.10	520	<0.10	<2.0	<2.0	0.52	<2.0	40
	12/2/19	<5.0	<1.0	12	7.8	<1.0	<2.0	63	0.017	<1.0	<0.40	<0.50	10000	<0.50	780	<0.013	2.7	3.3	<0.50	<0.10	550	<0.10	<2.0	<2.0	0.56	<2.0	28
MSES-012-MWA (3.53 m)	03/15/13	14	<1.0	1.4	4.7	<0.5	<2.0	<100	0.039	<1.0	<1.0	<2.0	750	<1.0	110	<0.013	<4	3.3	9.3	<0.1	300	<0.8	<20	<3.0	0.3	2.5	58
	07/25/13[FDL]	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
	07/25/13[FD]	12.6	<1.0	<1.0	6.7	<1.0	<2.0	<50	0.028	<1.0	<0.40	<2.0	1960	<0.50	230	NM	<2.0	<2.0	6.7	<0.1	315	<0.1	<2.0	<2.0	0.34	<2.0	92
	07/25/13	21.4	<1.0	<1.0	7.1	<1.0	<2.0	<50	0.054	<1.0	<0.40	<2.0	2190	<0.50	253	NM	<2.0	2.1	6.6	<0.1	316	<0.1	<2.0	<2.0	0.31	<2.0	103
	11/05/13	17	<1.0	2.4	4.9	<1.0	<2.0	<50	0.069	<1.0	<0.40	<2.0	4800	<0.50	670	NM	<2.0	2.2	4.3	<0.1	300	<0.1	<2.0	<2.0	0.31	<2.0	190
	12/16/14	26	<1	<1	5.3	<1	<2	<50	0.37	<1	<0.4	3.7	1800	<0.5	230	<0.013	<2	<2	6.2	<0.1	320	<0.1	<2	<2	0.33	<2	52
	12/3/15	5.7	<1.0	<1.0	5.7	<1.0	<2.0	<50	0.042	<1.0	<0.40	<2.0	90	<0.50	20	<0.013	<2.0	<2.0	3.5	<0.10	410	<0.10	<2.0	<2.0	0.43	<2.0	39
	11/22/16	9.7	<1.0	<1.0	6.5	<1.0	<2.0	<50	0.066	<1.0	<0.40	20	180	<0.50	81	<0.013	<2.0	<2.0	13	<0.10	400	<0.10	<2.0	<2.0	0.47	<2.0	82
	12/13/17	7.0	<1.0	<1.0	4.7	<1.0	<2.0	<50	0.025	<1.0	<0.40	<2.0	670	<0.50	95	<0.013	<2.0	<2.0	3.5	<0.10	340	<0.10	<2.0	<2.0	0.38	<2.0	42
	12/10/18	<5.0	<1.0	<1.0	4.7	<1.0	<2.0	<50	0.026	<1.0	<0.40	3.6	480	<0.50	93	<0.013	<2.0	<2.0	15	<0.10	270	<0.10	<2.0	<2.0	0.33	<2.0	47
	12/5/19	8.1	<1.0	<1.0	5.0	<1.0	<2.0	<50	0.17	<1.0	<0.40	1.6	1200	<0.50	160	<0.013	<2.0	7.1	10	<0.10	280	<0.10	<2.0	<2.0	0.32	<2.0	41

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_pH (@20C)	Sat_pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MSES-104-MWA (1.97 m)	03/28/13	17000	5600	410000	38000	67	1100	53	4.8	<0.01	<100	<0.05	<0.01	<0.05	0.25	15	16	960	2000	7.60	1200	67	<1	1700	26.4	3.94	0.409	0.165	7.19	7.44
	12/10/14	29000	7700	530000	44000	59	1400	56	5.4	<10	<100	<0.05	0.011	<0.05	0.44	<5	1	12	2300	7.61	1500	59	<1	2100	30.9	1.42	0.432	0.217	7.15	7.4
	12/3/15	30000	8500	510000	42000	48	1200	62	4.6	0.012	110	<0.050	0.01	<0.050	0.62	<5.0	1.3	1.9	2300	8.07	1500	47	<1.0	1900	27.7	5.16	0.818	0.574	7.26	7.5
	11/25/16	28000	9300	470000	31000	35	1100	55	3.4	0.013	<100	<0.050	<0.010	<0.050	0.55	<5.0	1.7	13	2000	7.5	1300	35	<1.0	1700	25.2	4.18	0.087	-0.157	7.42	7.66
	12/13/17	32000	9200	560000	37000	35	1400	55	3.1	0.012	<100	<0.050	<0.010	<0.05	0.61	<5.0	1.6	0.6	2400	7.6	1500	35	<1.0	2100	30.4	3.30	0.244	0.000	7.36	7.60
	12/10/18	29000	8900	440000	28000	29	1200	47	2.5	0.012	<100	<0.050	<0.010	<0.050	0.64	<5.0	1.7	1.4	2100	7.45	1200	29	<1.0	1800	26.6	1.41	-0.0730	-0.317	7.52	7.77
	12-2-19[FD]	30000	9500	460000	30000	30	1100	47	2.4	0.012	<100	<0.10	<0.010	<0.10[11]	0.63	<5.0	1.8	3.7	2100	8.27	1300	29	<1.0	1700	25.4	2.79	0.770	0.526	7.50	7.75
	12/2/19	30000	9500	460000	30000	29	1100	47	2.1	0.012	<100	0.084	<0.010	0.084	0.62	<5.0	1.9	5.3	2100	8.07	1300	29	<1.0	1700	25.3	3.22	0.570	0.326	7.50	7.75
MSES-104-MWB (2.43 m)	03/26/13	170000	12000	420000	200000	320	2200	70	18	<0.01	<1000	<0.05	<0.01	<0.05	0.55	54	3.5	92	3500	6.9	1900	320	<1	3370	53.9	8.24	0.299	0.058	6.6	6.84
	07/24/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	78	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/24/13	189000	11900	426000	208000	350	2100	73	12	<0.01	<100	<0.05	<0.01	<0.05	0.45	190	3.7	77	3500	6.86	1900	350	<1	3340	53.1	5.81	0.302	0.061	6.56	6.8
	11/05/13[FD]	190000	12000	400000	200000	370	2000	71	13	<0.01	<100	<0.05	<0.01	<0.05	0.42	30	3.8	100	3500	6.88	1800	370	<1	3200	50.6	5.3	0.33	0.088	6.55	6.79
	11/05/13	190000	12000	390000	200000	370	2000	73	13	<0.01	<100	<0.05	<0.01	<0.05	0.42	40	4.1	99	3400	6.80	1800	370	<1	3200	51.8	6.56	0.242	0.000	6.56	6.8
	12/10/14	170000	13000	440000	210000	330	1800	70	14	<10	<100	<0.05	<0.01	<0.05	0.57	190	3.5	55	3400	6.67	2000	330	<1	3000	46.3	1.16	0.432	-0.13	6.56	6.8
	12/3/15	180000	13000	390000	190000	430	1000	77	13	0.016	<100	<0.050	0.014	<0.050	0.59	18	4.0	58	3400	7.00	1800	430	<1.0	2200	31.5	16.2	0.562	0.319	6.44	6.68
	11/25/16	160000	14000	380000	140000	570	1100	75	11	0.013	<100	<0.050	<0.010	<0.050	0.54	9.1	5.3	33	2700	6.96	1500	570	<1.0	2300	37.2	0.93	0.622	0.379	6.34	6.59
	12/13/17	150000	12000	370000	170000	410	1700	78	12	<0.010	<1000	<0.050	<0.010	<0.050	0.49	13	4.0	50	3400	7.07	1600	410	<1.0	2800	45.4	7.09	0.556	0.313	6.52	6.76
	12/10/18[FD]	140000	12000	400000	180000	340	1700	68	13	<0.010	<100	<0.050	<0.010	<0.050	0.60	110	3.5	68	3500	7.02	1800	340	<1.0	2800	43.6	1.99	0.463	0.221	6.56	6.80
	12/10/18	140000	12000	400000	180000	340	1700	70	13	<0.010	<100	<0.050	<0.010	<0.050	0.62	130	3.5	72	3400	6.91	1800	340	<1.0	2800	44.7	3.08	0.342	0.100	6.57	6.81
	12/2/19	150000	13000	380000	160000	490	1400	61	12	<0.010	<100	0.063	<0.010	0.063	0.51	39	5.4	45	3100	6.97	1600	490	<1.0	2500	41.2	3.07	0.554	0.312	6.42	6.66
MW2 SPAR RD (2.62 m) *Removed from the LTMM program in 2015/Decommissioned in 2019*	03/19/13[FD]	170000	5600	160000	5200	120	140	380	31	<0.01	<100	0.19	<0.01	0.19	<0.05	<5	0.66	0.49	1700	7.9	430	120	<1	967	16	0.16	0.636	0.39	7.26	7.51
	03/19/13[L]	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
	03/19/13	180000	5800	140000	5000	120	140	380	28	<0.01	<100	0.19	<0.01	0.19	<0.05	<5	0.61	0.51	1700	7.9	370	120	<1	949	16	1.72	0.575	0.329	7.33	7.57
	07/24/13	139000	8430	109000	5430	150	120	240	33	0.01	<100	<0.05	<0.01	<0.05	<0.05	5.8	0.86	3.2	1300	7.72	290	150	<1	743	12.3	0.53	0.417	0.171	7.3	7.55
	11/6/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/06/13	150000	8500	140000	6600	190	180	270	41	0.017	<100	<0.05	<0.01	<0.05	<0.05	5.6	1.3	7.7	1500	7.77	390	190	1.0	920	15.2	1.78	0.659	0.413	7.11	7.36
	12/16/14[FD]	160,000	7700	120,000	5400	180	170	210	39	0.018	<100	0.07	0.01	0.081	<50	6.3	1.7	1.6	1400	7.83	320	180	1.1	820	13	2.12	0.638	0.391	7.19	7.44
	12/16/14	160000	8100	120000	5400	180	170	210	39	<10	<100	0.099	<0.01	<0.01	0.095	7.1	1.8	3.0	1400	7.83	320	180	1.1	820	13.1	1.14	0.631	0.384	7.2	7.44
SCU11-001-MWA (2.77 m)	03/29/13	53000	5400	120000	14000	130	42	220	7.3	<0.01	<100	0.058	<0.01	0.058	<0.05	<5	0.89	>1000	1000	8.1	340	120	1.5	534	9.65	1.74	0.781	0.533	7.32	7.57
	07/17/13	55500	6280	132000	15600	97	39	260	8.4	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<50	>1000	1200	7.66	390	96	<1	570	9.95	2.31	0.28	0.033	7.38	7.63
	10/24/13	250000	5300	66000	9000	170	520	49	8.0	0.20	260	<0.05	0.016	0.066	1.2	<5	<5	85	1500	7.72	200	170	<1	1000	15.6	2.13	0.213	-0.032	7.51	7.75
	12/15/14	64000	6900	170000	19000	110	37	310	9.4	<10	<100	0.17	0.024	0.19	0.12	<5	<0.5	3.3	1400	7.52	490	110	<1	690	11.9	3.68	0.432	0.044	7.23	7.47
	12/11/15	27000	6100	62000	6800	110	6.1	170	6.2	0.15	240	0.11	0.016	0.12	2.7	6.6	NM	3.2	780	7.64	180	110	<1.0	350	7.04	15.4	0.022	-0.227	7.62	7.86
	11/23/16	51000	8000	140000	16000	160	6.8	320	9	0.55	780	<0.050	0.016	<0.050	2.7	8.1	7.1	8.2	1300	7.45	430	160	<1.0	660	12.3	4.98	0.303	0.056	7.14	7.39
	12/13/17	43000	8100	130000	14000	230	11	210	11	0.68	820	0.16	<0.010	0.16	7.1	8.3	3.0	4.5	1100	7.71	380	230	1.1	580	10.8	3.30	0.690	0.443	7.02	7.27
	12/10/18	70000	10000	190000	21000	170	11	410	11	<0.010	380	0.83	0.50	1.3	2.7	<5.0	3.3	8.7	1600	7.57	550	170	<1.0	830	15.3	2.41	0.559	0.313	7.02	7.26
	12/05/19	28000	7900	88000	8900	240	2.2	140	6.7	2.2	3100	0.20	0.019	0.22	22	25	11	21	890	7.70	260	240	1.1	460	8.94	4.81	0.556	0.308	7.14	7.39
SCU11-001-MWB (2.07 m)	03/29/13[L]	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
	03/29/13	220000	4500	45000	6200	160	440	43	5	<0.01	<100	<0.05	<0.01	<0.05	0.22	<5	1.8	>1000	1200	8.6	140	160	5.8	856	13.5	4.68	0.911	0.665	7.69	7.94
	07/17/13	246000	4620	60300	8370	140	500	51	8	0.026	<100	<0.05	<0.01	<0.05	0.081	<5	<5	240	1400	7.83	190	140	<1	967	14.7	0.79	0.213	-0.033	7.62	7.86
	10/24/13	63000	7300	150000	18000	120	38	310	8.7	<0.010	<100	0.1	0.033	0.13	0.13	<5	1.8	>1000	1300	7.64	440	120	<1	670	12.0	1.06	0.377	0.130	7.26	7.51
	12/15/14[FD]	31000	2800	29000	3300	38	13	82	3.4	0.054	110	0.1	0.029	0.13	0.79	8.2	4.7	13	360	6.9	86	38	<1	190	3.35	2.29	-1.44	-1.69	8.34	8.59
	12/15/14	31000	2900	29000	3400	39	12	83	3.4	0.054	130	0.075	0.028	0.1	0.74	9.1	4.4	5.1	360	7.02	87	39	<1	190	3.38	2.11	0.432	-1.55	8.32	8.57
	12/11/15	22000	4500	17000	2000	40	5.5	48	1.6	0.23	510	<0.050	<0.010	<0.050	1.8	30	NM	3.2	240	7.04	51	40	<1.0	130	2.28	0	-1.48	-1.73	8.52	8.77
	11/23/16	28000	8900	29000	3300	59	17	54	2.8	0.75	960	1.5	0.057	1.5	3.8	62	8.1	3.9	320	7.11	87	59	<1.0	190	3.21	3.75	-1.04	-1.29	8.15	8.4
	12/13/17	72000	10000	64000	7200	93	27	190	5.8	1.8	2000	<0.050	0.011	<0.050	3.3	44	8.4	2.5	860	7.30	190	92	<1.0	440	7.89	3.20	-0.384	-0.633	7.69	7.94
	12/05/18	49000	6000	47000	5200	60	22	150	5.4	0.89	1100	0.13	0.01	0.14	2.5	46	7.1	5.0	630	7.18	140	60	<1.0	330	5.88	5.47	-0.794	-1.04	7.98	8.23
	12-5-19[FD]	20000	4700	27000	3100	94	<2.0	38	7.7	0.16	370	<0.050	0.014	<0.050	1.7	61	6.8[12]	5.2	280	7.44	80	94	<1.0	160	2.97	1.89	-0.531	-0.781	7.97	8.22
	12/05/19	20000	4600	27000	3200	94	<2.0	38	7.3	0.14	380	<0.050	0.016	<0.050	1.6	56	5.9	11	280	7.45	81	94	<1.0	170	2.97	1.37	-0.513	-0.763	7.96	8.21

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
MSES-104-MWA (1.97 m)	03/28/13	8.9	<1	1.8	12	<0.5	<2	<100	<0.017	<1	<1	<2	1600	<1	400	0.28	<4	<3	3.4	<0.1	420	<0.8	<20	<3	<0.15	6.9	<5
	12/10/14	11	<1	1.8	16	<1	<2	<50	0.065	<1	<0.4	<2	890	<0.5	220	<0.013	5.6	<2	<1	<0.1	540	<0.1	<2	<2	<0.1	<2	<5
	12/3/15	<5.0	<1.0	1.5	20	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	580	<0.50	190	<0.013	5.7	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/25/16	33	<1.0	1.4	17	<1.0	<2.0	<50	0.64	<1.0	<0.40	<2.0	300	<0.50	100	<0.013	6.3	<2.0	<1.0	<0.10	520	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/13/17	<5.0	<1.0	1.4	17	<1.0	<2.0	<50	0.054	<1.0	<0.40	<2.0	200	<0.50	91	<0.013	6.8	<2.0	<1.0	<0.10	590	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/10/18	<5.0	<1.0	1.4	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	120	<0.50	64	<0.013	6.5	<2.0	<1.0	<0.10	510	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-2-19[FD]	<5.0	<1.0	1.7	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	83	<0.50	68	6.2	<2.0	9500	<0.50	<0.10	530	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/2/19	5.9	<1.0	1.7	16	<1.0	<2.0	<50	0.069	<1.0	<0.40	<0.50	86	<0.50	67	<0.013	6.0	<2.0	<0.50	<0.10	530	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
MSES-104-MWB (2.43 m)	03/26/13	400	<10	<6	19	<5	<20	<1000	<0.17	<10	44	<20	13000	<10	83000	0.014	<40	48	<10	<1	2300	<8	<200	<30	<1.5	<20	110
	07/24/13[L]	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
	07/24/13	239	<1	4.2	17.5	<1	<2	187	0.071	<1	23.8	<2	9590	<0.5	75000	NM	<2	33.9	<1	<0.1	2230	<0.1	<2	<2	1.26	<2	45.2
	11/05/13[FD]	110	<1	4.9	16	<1	<2	200	0.085	<1	7.1	<2	7000	<0.5	73000	NM	<2	25	<1	<0.1	2100	<0.1	<2	<2	1.3	<2	110
	11/05/13	150	<1	5.0	16	<1	<2	200	0.07	<1	7.3	<2	7100	<0.5	74000	NM	<2	30	<1	<0.1	2100	<0.1	<2	<2	1.3	<2	110
	12/10/14	550	<1	4.4	17	1.1	<2	200	0.14	<1	50	<2	11000	<0.5	88000	<0.013	<2	62	<1	<0.1	2400	<0.1	<2	<2	1.2	<2	34
	12/3/15	96	<1.0	4.7	16	<1.0	<2.0	200	0.076	<1.0	8.1	<2.0	5100	<0.50	68000	<0.013	<2.0	25	<1.0	<0.10	2100	<0.10	<2.0	<2.0	1.6	<2.0	<5.0
	11/25/16	42	<1.0	7.2	18	<1.0	<2.0	210	0.046	<1.0	2.4	<2.0	3500	9.6	37000	<0.013	<2.0	12	<1.0	<0.10	1600	<0.10	<2.0	<2.0	2	<2.0	<5.0
	12/13/17	89	<10	<10	15	<10	<20	<500	<0.10	<10	8.7	<20	4300	<5.0	63000	<0.013	<20	31	<10	<1.0	1900	<1.0	<20	<20	1.7	<20	<50
	12/10/18[FD]	750	<1.0	3.6	17	1.3	<2.0	190	0.14	<1.0	59	<2.0	6900	<0.50	84000	<0.013	<2.0	73	<1.0	<0.10	2100	<0.10	<2.0	<2.0	1.4	<2.0	42
	12/10/18	720	<1.0	3.6	18	1.3	<2.0	190	0.13	<1.0	59	<2.0	6800	<0.50	84000	<0.013	<2.0	72	<1.0	<0.10	2100	<0.10	<2.0	<2.0	1.5	<2.0	41
	12/2/19	56	<1.0	3.9	17	<1.0	<2.0	200	0.11	<1.0	4.9	<0.50	3500	<0.50	51000	<0.013	<2.0	20	<0.50	<0.10	1800	<0.10	<2.0	<2.0	2.1	2.0	<5.0
MW2 SPAR RD (2.62 m) *Removed from the LTMM program in 2015/Decommissioned in 2019*	03/19/13[FD]	9.7	10	13	78	<0.5	<2	<100	0.03	<1	<1	<2	<100	<1	<4	<0.013	<4	<3	6.5	<0.1	700	<0.8	<20	<3	3.2	4.1	12
	03/19/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/19/13	7.3	9.6	11	72	<0.5	<2	<100	0.037	<1	<1	<2	<100	<1	<4	<0.013	<4	<3	5.8	<0.1	680	<0.8	<20	<3	3.3	3	9.8
	07/24/13	11.9	4.2	12.6	57.1	<1	<2	58	0.026	<1	<0.4	<2	<50	<0.5	7.6	NM	2.2	<2	<1	<0.1	532	<0.1	<2	<2	1.54	<2	15
	11/6/13[L]	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
	11/06/13	13	6.7	14	68	<1.0	<2.0	73	0.024	<1	<0.4	3.0	<50	<0.5	4.0	NM	<2	<2	1.4	<0.1	690	<0.1	<2.0	<2	4.4	<2.0	22
	12/16/14[FD]	14	12	16	57	<1.0	<2.0	65	0.37	<1.0	<0.40	3.7	<50	<0.50	9.5	<0.013	2.1	<2.0	1.9	<0.10	560	<0.1	<2.0	<2.0	3.3	2.0	20
	12/16/14	13	12	16	53	<1.0	<2.0	65	0.38	<1.0	<0.40	<2.0	<50	<0.50	8.3	<0.013	2.1	<2.0	1.8	<0.10	560	<0.10	<2.0	<2.0	3.3	<2.0	18
SCU11-001-MWA (2.77 m)	03/29/13	37	<1	0.73	240	<0.5	<2	<100	0.11	<1	<1	<2	<100	<1	150	0.021	<4	<3	1.6	<0.1	2700	<0.8	<20	<3	3.6	4.5	14
	07/17/13	<5	<1	<1	244	<1	<2	<50	0.019	<1	<0.4	<2	<50	<0.5	292	NM	3.8	<2	<1	<0.1	3250	<0.1	<2	<2	3.47	<2	<5
	10/24/13	120	<1	<1	28	<1	<2	160	0.03	<1	<0.40	<2.0	97	<0.50	170	NM	7.3	<2	4.6	<0.1	2300	<0.1	<2	4.8	0.60	<2	<5
	12/15/14	13	<1	<1	230	<1	<2	56	0.59	<1	<0.4	<2	<50	<0.5	440	<0.013	3.7	<2	<1	<0.1	3700	<0.1	<2	<2	3.9	<2	5.3
	12/11/15	6.6	4	1.3	130	<1.0	<2.0	<50	0.022	<1.0	0.42	<2.0	<50	<0.50	1900	<0.013	<2.0	<2.0	<1.0	<0.10	1000	<0.10	<2.0	<2.0	0.22	<2.0	20
	11/23/16	8.9	<1.0	1.6	280	<1.0	<2.0	<50	0.013	<1.0	<0.40	<2.0	170	0.59	680	<0.013	<2.0	<2.0	<1.0	<0.10	3000	<0.10	<2.0	<2.0	0.22	<2.0	<5.0
	12/13/17	6.3	<1.0	2.0	350	<1.0	<2.0	<50	0.021	<1.0	<0.40	<2.0	200	<0.50	510	<0.013	<2.0	<2.0	<1.0	0.15	2100	<0.10	<2.0	<2.0	0.50	<2.0	<5.0
	12/10/18	<5.0	<1.0	7.1	710	<1.0	<2.0	63	0.029	<1.0	0.42	<2.0	640	<0.50	1200	<0.013	5.4	<2.0	<1.0	<0.10	4200	<0.10	<2.0	<2.0	2.3	<2.0	10
	12/05/19	6.7	<1.0	1.1	260	<1.0	<2.0	<50	0.026	<1.0	<0.40	0.85	860	<0.50	490	<0.013	<2.0	<2.0	<0.50	<0.10	1300	<0.10	<2.0	<2.0	<0.10	<2.0	5.3
SCU11-001-MWB (2.07 m)	03/29/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	<2.0	NM
	03/29/13	8.6	<1	<0.6	22	<0.5	<2	140	<0.017	<1	<1	<2	100	<1	60	<0.013	28	<3	<1	<0.1	1700	<0.8	<20	<3	2.2	3.3	<5
	07/17/13	139	<1	<1	27.9	<1	<2	164	<0.017	<1	<0.4	<2	200	<0.5	154	NM	37.3	<2	<1	<0.1	2190	<0.1	<2	2.1	0.57	<2	9
	10/24/13	18	<1	1.6	370	<1	<2	57	<0.01	<1	<0.4	<2	<50	<0.50	1000	NM	4.9	<2	<1	<0.1	3500	<0.1	<2	<2	3.9	<2	<5
	12/15/14[FD]	21	<1	<1	36	<1	<2	<50	0.16	<1	<0.4	<2	130	<0.5	500	<0.013	<2	<2	<1	<0.1	530	<0.1	<2	<2	<0.1	<2	8.2
	12/15/14	18	<1	<1	36	<1	<2	<50	0.12	<1	<0.4	<2	130	<0.5	510	<0.013	<2	<2	<1	<0.1	540	<0.1	<2	<2	<0.1	<2	7.3
	12/11/15	23	<1.0	<1.0	18	<1.0	<2.0	<50	0.011	<1.0	<0.40	<2.0	1900	<0.50	160	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/23/16	23	<1.0	<1.0	31	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	330	<0.50	240	<0.013	<2.0	<2.0	<1.0	<0.10	420	<0.10	<2.0	<2.0	<0.10	<2.0	11
	12/13/17	19	<1.0	<1.0	77	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	380	<0.50	520	<0.013	<2.0	<2.0	<1.0	<0.10	1200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/05/18	25	<1.0	<1.0	53	<1.0	<2.0	<50	0.059	<1.0	<0.40	<2.0	610	<0.50	340	<0.013	<2.0	<2.0	<1.0	<0.10	750	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12-5-19[FD]	8.6	<1.0	<1.0	40	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	4200	<0.50	700	<0.013	<2.0	<2.0	<0.50	<0.10	240	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/05/19	8.8	<1.0	<1.0	40	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	4200	<0.50	710	<0.013	<2.0	<2.0	<0.50	<0.10	240	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARDNESS	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless	unitless	unitless	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCU7-001-MW (1.76 m)	12/12/14	27000	2400	390000	15000	220	780	55	19	<10	<100	0.093	<0.01	0.093	0.69	<5	1.3	7.5	1800	7.05	1000	220	<1	1400	22.2	0.77	0.432	0.142	6.66	6.91
	12/10/15	18000	2000	290000	12000	200	550	35	15	0.015	<100	<0.050	<0.010	<0.050	0.099	<5.0	NM	21	1400	7.33	760	200	<1.0	1000	16.4	0.86	0.526	0.28	6.81	7.05
	12/02/16	24000	2500	410000	15000	230	770	92	18	0.02	<100	<0.050	<0.010	<0.050	0.11	<5.0	1.6	5.0	1700	7.21	1100	230	<1.0	1500	23.3	0.63	0.588	0.344	6.62	6.86
	12/15/17	38000	2700	510000	15000	230	1000	140	16	0.01	<1000	<0.050	<0.010	<0.050	0.12	<5.0	1.5	0.5	2300	7.26	1300	230	<1.0	1900	29.8	2.46	0.688	0.445	6.58	6.82
	12/07/18	51000	2300	520000	15000	180	1100	170	15	<0.010	<100	<0.050	<0.010	<0.050	0.12	<5.0	1.3	2.7	2300	7.22	1400	180	<1.0	2000	31.0	2.28	0.554	0.311	6.67	6.91
	12/05/19	53000	2200	500000	13000	140	950	200	11	<0.010	<100	<0.050	<0.010	<0.050	0.094	<5.0	1.2	4.2	2400	7.57	1300	140	<1.0	1800	28.1	0.780	0.794	0.550	6.78	7.03
SCU7-003-MW (1.11 m)	03/29/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.3	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/29/13	51000	6100	150000	13000	210	210	120	9.5	<0.01	<100	0.19	0.017	0.21	0.76	<5.0	1.1	67	1000	6.7	420	210	<1.0	685	11.9	4.92	-0.316	-0.563	7.02	7.26
	07/17/13[L]	NM	NM	NM	NM	NM	170	120	9	<0.01	NM	NM	<0.01	0.13	NM	<5.0	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/17/13	51000	5890	142000	14100	190	170	120	8.9	<0.01	<100	0.13	<0.01	0.13	1.1	<5.0	1.3	37	1100	7.0	410	190	<1.0	631	10.7	0	-0.073	-0.32	7.07	7.32
	11/07/13	63000	6100	130000	13000	180	180	130	8.7	<0.01	<100	<0.05	0.017	0.067	1.2	<5.0	1.1	41	1100	7.0	380	180	<1.0	640	10.9	1.44	-0.112	-0.359	7.11	7.36
	12/12/14	67000	5600	130000	12000	190	190	110	9.6	0.011	<100	0.97	0.02	0.99	1.0	<5	1.3	500	1000	6.75	360	190	<1	640	10.9	2.31	0.432	-0.622	7.13	7.37
	12/10/15	76000	6500	150000	15000	190	180	180	9.3	<0.010	<100	<0.050	<0.010	<0.050	1.2	11	NM	970	1200	7.01	430	190	<1.0	740	12.7	1.84	-0.057	-0.303	7.07	7.32
	11/30/16	81000	6000	130000	13000	170	190	160	9.6	0.011	<100	0.18	0.021	0.2	0.89	18	1.3	86	1100	6.99	380	170	<1.0	700	11.9	2.06	-0.173	-0.42	7.16	7.41
	12/15/17	87000	5900	130000	12000	170	170	180	9.3	<0.010	<100	0.069	<0.010	0.069	1.2	<5.0	1.6	4.6	1200	6.94	370	160	<1.0	700	12	2.74	-0.242	-0.489	7.19	7.43
	12/11/18	91000	5700	120000	12000	150	120	220	9.8	<0.010	<100	0.33	<0.010	0.33	0.79	<5.0	1.3	0.22	1200	7.02	340	150	<1.0	670	11.7	3.31	-0.228	-0.475	7.25	7.50
	12/5/19	90000	5900	110000	11000	150	120	210	9.0	<0.010	<100	<0.050	<0.010	<0.050	1.2	5.1	1.3	16	1100	7.16	320	150	<1.0	650	11.4	3.60	-0.128	-0.375	7.29	7.53

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
SCU7-001-MW (1.76 m)	12/12/14	12	<1	<1	51	<1	<2	<50	0.18	<1	<0.4	<2	<50	<0.5	160	<0.013	<2	<2	<1	<0.1	6100	<0.1	<2	<2	6.6	<2	6.7
	12/10/15	<5.0	<1.0	<1.0	69	<1.0	<2.0	<50	0.078	<1.0	<0.40	<2.0	<50	<0.50	79	<0.013	<2.0	<2.0	<1.0	<0.10	5200	<0.10	<2.0	<2.0	5.2	<2.0	<5.0
	12/02/16	8.1	<1.0	<1.0	62	<1.0	<2.0	<50	1.3	<1.0	<0.40	<2.0	<50	<0.50	69	<0.013	<2.0	<2.0	<1.0	<0.10	6900	<0.10	<2.0	<2.0	5.8	<2.0	<5.0
	12/15/17	<50	<10	<10	33	<10	<20	<500	0.19	<10	<4.0	<20	<500	<5.0	820	<0.013	<20	<20	<10	<1.0	9800	<1.0	<20	<20	5.7	<20	<50
	12/07/18	<5.0	<1.0	<1.0	23	<1.0	<2.0	<50	0.091	<1.0	<0.40	<2.0	65	<0.50	2500	<0.013	<2.0	2.2	<1.0	<0.10	12000	<0.10	<2.0	<2.0	2.9	<2.0	<5.0
	12/05/19	<5.0	<1.0	1.2	39	<1.0	<2.0	<50	0.038	<1.0	<0.40	<0.50	130	<0.50	3100	<0.013	<2.0	<2.0	<0.50	<0.10	12000	<0.10	<2.0	<2.0	2.0	<2.0	<5.0
SCU7-003-MW (1.11 m)	03/29/13[L]	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
	03/29/13	<5	<1.0	0.72	16	<0.5	<2.0	<100	0.26	<1.0	1.1	<2.0	<100	<1.0	3200	0.013	<4	<3	<1	<0.10	610	<0.8	<20	<3	0.19	<2.0	72
	07/17/13[L]	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
	07/17/13	5.2	<1.0	<1.0	17.5	<1.0	<2.0	99	0.213	<1.0	0.77	12.3	354	<0.5	2820	NM	<2.0	<2.0	<1.0	<0.10	586	<0.10	<2.0	<2.0	0.35	<2.0	93.2
	11/07/13	11	<1.0	<1.0	19	<1.0	<2.0	100	0.22	<1.0	0.80	4.3	360	<0.5	2400	NM	<2.0	<2.0	<1.0	<0.10	550	<0.10	<2.0	<2.0	0.38	<2.0	65
	12/12/14	10	<1	<1	17	<1	<2	100	0.31	<1	0.69	<2	190	<0.5	2400	<0.013	<2	<2	<1	<0.1	530	<0.1	<2	<2	0.28	<2	10
	12/10/15	7.4	<1.0	<1.0	19	<1.0	<2.0	110	0.32	<1.0	0.96	<2.0	380	<0.50	3300	<0.013	<2.0	<2.0	<1.0	<0.10	650	<0.10	<2.0	<2.0	0.27	<2.0	6.6
	11/30/16	6.6	<1.0	1.1	22	<1.0	<2.0	98	0.1	<1.0	1.2	<2.0	1100	<0.50	2900	<0.013	<2.0	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	0.26	<2.0	11
	12/15/17	<5.0	<1.0	<1.0	23	<1.0	<2.0	92	0.25	<1.0	0.88	<2.0	410	<0.50	2600	<0.013	<2.0	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	0.23	<2.0	<5.0
	12/11/18	<5.0	<1.0	<1.0	22	<1.0	<2.0	91	0.39	<1.0	0.80	<2.0	260	<0.50	2300	<0.013	<2.0	<2.0	<1.0	<0.10	520	<0.10	<2.0	<2.0	0.18	<2.0	8.3
	12/5/19	5.2	<1.0	6.3	75	<1.0	<2.0	76	0.04	<1.0	1.7	<0.50	1800	<0.50	3600	<0.013	<2.0	<2.0	<0.50	<0.10	600	<0.10	<2.0	<2.0	0.16	<2.0	23

NOTES:

FD - Field Duplicate

L - Lab Duplicate

NM - Not measured or not analyzed; lab duplicates do not analyze for all parameters.

mg/L - milligrams per litre

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, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011

3 - COTS-001-MWA could not be sampled during the December 2014 event due to insufficient water. COTS-001-MWB added to the LTMM program in 2015 in place of COTS-001-MWA.

4 - During the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsquently decommissioned.

5 - Bold and Shaded Exceeds MOE Table 3 Standards

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

7 - Although sodium concentrations are above the MOE standard, this standard was not intended for use in a marine (saltwater) environment. The concentration of sodium is natural as marine waters have sodium concentrations of 10,000,000 ug/L or higher. Sodium is not associated with contamination or remediation at the site.

8 - pH: Linear range exceedance. Extended linearity confirmed.

9 - Elevated reporting limit due to turbidity.

10 - A possible seal failure is suspected in MCES-001-MWB. Further investigative work is being implemented and well replacement may be necessary.

11 - Elevated reporting limit due to blank performance.

12 - Elevated reporting limit due to sample matrix.

Appendix B

QC Tables

TABLE B-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2019 OHP & HE
SUMMARY OF FIELD DUPLICATES AND TRIP BLANKS

Field Duplicate Sample - Laboratory Number	Date Sampled	Field Blank Sample - Laboratory Certificate Number	Date Sampled	Equipment Blank Sample - Laboratory Certificate Number	Date Sampled
FD16 - LLN161	29/11/2019	FB-05 - LML501	04/12/2019	EB-05 - LML502	04/12/2019
FD17 - LLU960	02/12/2019				
FD18 - LML500	04/12/2019				
FD19 - LMO959	05/12/2019				

TABLE B-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2019 OHP AND HE
RPD FOR FIELD DUPLICATES (GROUNDWATER) - PAHs

Sample Location	Sample	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																			
COBT-003-MWB	FD-16	Field Duplicate	2019-11-29	0.4	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.16	<0.010	1.2	0.98	12	<0.010	0.073	<0.010
		Regular		0.56	0.024	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.2	<0.010	1.7	1.4	16	<0.010	0.11	0.014
		RPD (%)		33.33%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.22%	NA	34.48%	35.29%	28.57%	NA	**40.44%**	NA
MSES-104-MWA	FD-17	Field Duplicate	2019-12-02	5.7	5.7	0.45	0.16	<0.050	<0.050	0.02	<0.030	<0.030	0.14	<0.010	2.3	1.8	<0.020	1.2	0.36	8.2	<0.010	0.52	1.5
		Regular		6.1	5.9	0.52	0.17	0.057	0.044	0.023	0.037	0.031	0.15	<0.010	2.4	1.8	0.018	1.2	0.37	8.5	<0.020	0.56	1.5
		RPD (%)		6.78%	3.45%	14.43%	6.06%	NA	NA	NA	NA	NA	6.90%	NA	4.26%	0.00%	NA	0.00%	2.74%	3.59%	NA	7.41%	0.00%
MCWS-113-MWB	FD-18	Field Duplicate	2019-12-04	<0.020	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.18
		Regular		<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	0.14
		RPD (%)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.00%
SCU11-001-MWB	FD-19	Field Duplicate	2019-12-05	0.015	<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
		Regular		0.015	<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
		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.

R - Sample analysis repeated due to a laboratory error.

TABLE B-3
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2019 OHP AND HE
RPD FOR FIELD DUPLICATES (GROUNDWATER) - INORGANIC CHEMISTRY

Sample Location	Sample	Type	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Al	Sb
				µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L
COBT-003-MWB	FD-16	Field Duplicate	29/11/2019	92000	2600	100000	11000	220	72	190	12	<0.010	<100	<0.050	<0.010	<0.050	0.097	<5.0	0.78	0.47	1000	7.49	300	220	<1.0	620	48	<1.0
		Regular		93000	2600	100000	11000	220	73	170	13	<0.010	<100	0.089	<0.010	0.089	0.065	<5.0	0.77	0.42	1100	7.54	310	220	<1.0	600	45	<1.0
		RPD (%)		1.08%	0.00%	0.00%	0.00%	0.00%	1.38%	11.11%	8.00%	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.52%	NA	3.28%	0.00%	NA	3.28%	NA	NA
MSES-104-MWA	FD-17	Field Duplicate	02/12/2019	30000	9500	460000	30000	30	1100	47	2.4	0.012	<100	<0.10	<0.010	<0.1011	0.63	<5.0	1.8	3.7	2100	8.27	1300	29	<1.0	1700	<5.0	<1.0
		Regular		30000	9500	460000	30000	29	1100	47	2.1	0.012	<100	0.084	<0.010	0.084	0.62	<5.0	1.9	5.3	2100	8.07	1300	29	<1.0	1700	5.9	<1.0
		RPD (%)		0.00%	0.00%	0.00%	0.00%	3.39%	0.00%	0.00%	NA	NA	NA	NA	NA	NA	1.60%	NA	NA	**35.56%**	0.00%	2.45%	0.00%	0.00%	NA	0.00%	NA	NA
MCWS-113-MWB	FD-18	Field Duplicate	04/12/2019	60000	6600	76000	13000	330	<2.0	58	9.7	<0.010	290	<0.080	0.011	0.084 11	1.6	7	7.8	14	750	7.83	240	330	2.1	430	8.3	<1.0
		Regular		60000	6400	76000	13000	350	<2.0	60	9.7	<0.010	280	<0.080	<0.010	<0.08011	1.6	7.4	7.1	14	760	7.86	240	340	2.4	440	6.4	<1.0
		RPD (%)		0.00%	3.08%	0.00%	0.00%	5.88%	NA	3.39%	0.00%	NA	NA	NA	NA	NA	0.00%	NA	9.40%	0.00%	1.32%	0.38%	0.00%	2.99%	NA	2.30%	NA	NA
SCU11-001-MWB	FD-19	Field Duplicate	05/12/2019	20000	4700	27000	3100	94	<2.0	38	7.7	0.16	370	<0.050	0.014	<0.050	1.7	61	6.8 12	5.2	280	7.44	80	94	<1.0	160	8.6	<1.0
		Regular		20000	4600	27000	3200	94	<2.0	38	7.3	0.14	380	<0.050	0.016	<0.050	1.6	56	5.9	11	280	7.45	81	94	<1.0	170	8.8	<1.0
		RPD (%)		0.00%	2.15%	0.00%	3.17%	0.00%	NA	0.00%	5.33%	13.33%	NA	NA	NA	NA	6.06%	NA	14.17%	**71.60%**	0.00%	0.13%	1.24%	0.00%	NA	6.06%	NA	NA

Sample Location	Sample	Type	Sample Date	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
				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	µg/L	µg/L	µg/L	µg/L
COBT-003-MWB	FD-16	Field Duplicate	29/11/2019	2	41	<1.0	<2.0	56	0.04	<1.0	0.56	0.6	130	<0.50	2400	<0.013	<2.0	<2.0	<0.50	<0.10	1200	<0.10	<2.0	<2.0	0.29	<2.0	9.2
		Regular		2	42	<1.0	<2.0	57	0.026	<1.0	0.58	0.78	120	<0.50	2400	<0.013	<2.0	<2.0	<0.50	<0.10	1200	<0.10	<2.0	<2.0	0.29	<2.0	8
		RPD (%)		NA	2.41%	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00%	NA	NA	NA	NA	0.00%	NA	NA	NA	NA	NA	13.95%	NA
MSES-104-MWA	FD-17	Field Duplicate	02/12/2019	1.7	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	83	<0.50	68	6.2	<2.0	9500	<0.50	<0.10	530	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
		Regular		1.7	16	<1.0	<2.0	<50	0.069	<1.0	<0.40	<0.50	86	<0.50	67	<0.013	6.0	<2.0	<0.50	<0.10	530	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
		RPD (%)		NA	6.45%	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.48%	NA	NA	NA	NA	NA	0.00%	NA	NA	NA	NA	NA	NA
MCWS-113-MWB	FD-18	Field Duplicate	04/12/2019	<1.0	200	<1.0	<2.0	320	0.087	<1.0	<0.40	<0.50	2000	<0.50	3300	<0.013	<2.0	<2.0	<0.50	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
		Regular		<1.0	200	<1.0	<2.0	310	0.014	<1.0	<0.40	<0.50	2000	<0.50	3300	<0.013	<2.0	<2.0	<0.50	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
		RPD (%)		NA	0.00%	NA	NA	3.17%	NA	NA	NA	NA	0.00%	NA	0.00%	NA	NA	NA	NA	NA	0.00%	NA	NA	NA	NA	NA	NA
SCU11-001-MWB	FD-19	Field Duplicate	05/12/2019	<1.0	40	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	4200	<0.50	700	<0.013	<2.0	<2.0	<0.50	<0.10	240	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
		Regular		<1.0	40	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<0.50	4200	<0.50	710	<0.013	<2.0	<2.0	<0.50	<0.10	240	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
		RPD (%)		NA	0.00%	NA	NA	NA	NA	NA	NA	NA	0.00%	NA	1.42%	NA	NA	NA	NA	NA	0.00%	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.

Appendix C

Laboratory Certificates

DILLON CONSULTING

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/10
Report #: R5999097
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X8600
Received: 2019/11/29, 16:22

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/12/06	N/A	SM 23 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide (1)	8	N/A	2019/12/09	N/A	SM 23 4500-CO2 D
Alkalinity (1)	2	N/A	2019/12/06	ATL SOP 00013	EPA 310.2 R1974 m
Alkalinity (1)	7	N/A	2019/12/09	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	9	N/A	2019/12/06	N/A	Auto Calc.
Chloride (1)	2	N/A	2019/12/06	ATL SOP 00014	SM 23 4500-Cl- E m
Chloride (1)	7	N/A	2019/12/09	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	2	N/A	2019/12/06	ATL SOP 00020	SM 23 2120C m
Colour (1)	7	N/A	2019/12/09	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	1	N/A	2019/12/06	ATL SOP 00004	SM 23 2510B m
Conductance - water (1)	8	N/A	2019/12/09	ATL SOP 00004	SM 23 2510B m
Hardness (calculated as CaCO3) (1)	8	N/A	2019/12/06	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3) (1)	1	N/A	2019/12/09	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	9	2019/12/04	2019/12/05	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	9	N/A	2019/12/06	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	1	N/A	2019/12/09	N/A	Auto Calc.
Ion Balance (% Difference) (1)	8	N/A	2019/12/10	N/A	Auto Calc.
Anion and Cation Sum (1)	7	N/A	2019/12/09	N/A	Auto Calc.
Anion and Cation Sum (1)	2	N/A	2019/12/10	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	9	N/A	2019/12/09	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	2	N/A	2019/12/07	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrate + Nitrite (1)	7	N/A	2019/12/09	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	2	N/A	2019/12/07	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrite (1)	7	N/A	2019/12/09	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	2	N/A	2019/12/09	ATL SOP 00018	ASTM D3867-16
Nitrogen - Nitrate (as N) (1)	7	N/A	2019/12/10	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	9	2019/12/05	2019/12/06	ATL SOP 00103	EPA 8270E R6 m
pH (1, 2)	1	N/A	2019/12/06	ATL SOP 00003	SM 23 4500-H+ B m
pH (1, 2)	8	N/A	2019/12/09	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	2	N/A	2019/12/06	ATL SOP 00021	SM 23 4500-P E m
Phosphorus - ortho (1)	7	N/A	2019/12/09	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	1	N/A	2019/12/09	ATL SOP 00049	Auto Calc.

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/10
Report #: R5999097
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X8600
Received: 2019/11/29, 16:22

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sat. pH and Langelier Index (@ 20C) (1)	8	N/A	2019/12/10	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	1	N/A	2019/12/09	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	8	N/A	2019/12/10	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	2	N/A	2019/12/06	ATL SOP 00022	EPA 366.0 m
Reactive Silica (1)	7	N/A	2019/12/09	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	2	N/A	2019/12/06	ATL SOP 00023	ASTM D516-16 m
Sulphate (1)	7	N/A	2019/12/09	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	1	N/A	2019/12/09	N/A	Auto Calc.
Total Dissolved Solids (TDS calc) (1)	8	N/A	2019/12/10	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	7	N/A	2019/12/05	ATL SOP 00203	SM 23 5310B m
Organic carbon - Total (TOC) (1, 3)	2	N/A	2019/12/06	ATL SOP 00203	SM 23 5310B m
Turbidity (1)	1	N/A	2019/12/06	ATL SOP 00011	EPA 180.1 R2 m
Turbidity (1)	8	N/A	2019/12/09	ATL SOP 00011	EPA 180.1 R2 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.

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/10
Report #: R5999097
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X8600
Received: 2019/11/29, 16:22

* 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

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories
10 Dec 2019 15:03:13

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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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.

BV Labs Job #: B9X8600
Report Date: 2019/12/10

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLN158			LLN159		
Sampling Date		2019/11/29			2019/11/29		
	UNITS	COSCW-002-MWA	RDL	QC Batch	COSCW-002-MWB	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	9.62	N/A	6473319	6.73	N/A	6473319
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	340	1.0	6473316	210	1.0	6473316
Calculated TDS	mg/L	520	1.0	6473327	380	1.0	6473327
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.1	1.0	6473316	1.2	1.0	6473316
Cation Sum	me/L	9.09	N/A	6473319	6.42	N/A	6473319
Hardness (CaCO3)	mg/L	440	1.0	6473289	270	1.0	6473289
Ion Balance (% Difference)	%	2.83	N/A	6473318	2.36	N/A	6473318
Langelier Index (@ 20C)	N/A	0.776		6473323	0.628		6473323
Langelier Index (@ 4C)	N/A	0.528		6473325	0.380		6473325
Nitrate (N)	mg/L	0.12	0.050	6473320	0.056	0.050	6473320
Saturation pH (@ 20C)	N/A	6.76		6473323	7.17		6473323
Saturation pH (@ 4C)	N/A	7.01		6473325	7.41		6473325
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L	340	25	6482888	210	25	6485903
Dissolved Chloride (Cl-)	mg/L	9.3	1.0	6482904	9.6	1.0	6485909
Colour	TCU	<5.0	5.0	6482911	<5.0	5.0	6485915
Nitrate + Nitrite (N)	mg/L	0.12	0.050	6482917	0.056	0.050	6485918
Nitrite (N)	mg/L	<0.010	0.010	6482923	<0.010	0.010	6485919
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	6486153	<0.050	0.050	6486153
Total Organic Carbon (C)	mg/L	<5.0 (1)	5.0	6480455	0.80	0.50	6480451
Orthophosphate (P)	mg/L	<0.010	0.010	6482915	<0.010	0.010	6485917
pH	pH	7.54	N/A	6485842	7.79	N/A	6485842
Reactive Silica (SiO2)	mg/L	13	0.50	6482910	9.4	0.50	6485911
Dissolved Sulphate (SO4)	mg/L	120	10	6482905	110	10	6485910
Turbidity	NTU	47	0.10	6485971	1.6	0.10	6485963
Conductivity	uS/cm	820	1.0	6485843	600	1.0	6485843

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to turbidity.

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BV Labs Job #: B9X8600
Report Date: 2019/12/10

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLN160			LLN161			LLN162		
Sampling Date		2019/11/29			2019/11/29			2019/11/29		
	UNITS	COSCW-001-MWB	RDL	QC Batch	COBT-003-MWB	RDL	QC Batch	COSB-002-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	6.32	N/A	6473319	10.7	N/A	6473319	18.8	N/A	6473319
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	250	1.0	6473316	220	1.0	6473316	190	1.0	6473316
Calculated TDS	mg/L	340	1.0	6473327	600	1.0	6473327	1200	1.0	6473327
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.0	6473316	<1.0	1.0	6473316	<1.0	1.0	6473316
Cation Sum	me/L	6.00	N/A	6473319	10.3	N/A	6473319	18.6	N/A	6473319
Hardness (CaCO3)	mg/L	250	1.0	6473289	310	1.0	6473289	900	1.0	6473289
Ion Balance (% Difference)	%	2.60	N/A	6473318	2.05	N/A	6473318	0.750	N/A	6473318
Langelier Index (@ 20C)	N/A	0.755		6473323	0.407		6473323	0.148		6473323
Langelier Index (@ 4C)	N/A	0.506		6473325	0.160		6473325	-0.0970		6473325
Nitrate (N)	mg/L	<0.050	0.050	6473320	0.089	0.050	6473320	0.33	0.050	6473320
Saturation pH (@ 20C)	N/A	7.15		6473323	7.14		6473323	6.83		6473323
Saturation pH (@ 4C)	N/A	7.39		6473325	7.39		6473325	7.08		6473325
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	250	25	6485903	220	25	6485926	190	25	6485903
Dissolved Chloride (Cl-)	mg/L	18	1.0	6485909	170	5.0	6485931	9.9	1.0	6485909
Colour	TCU	<5.0	5.0	6485915	<5.0	5.0	6485952	9.2	5.0	6485915
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	6485918	0.089	0.050	6485955	0.33	0.050	6485918
Nitrite (N)	mg/L	<0.010	0.010	6485919	<0.010	0.010	6485957	<0.010	0.010	6485919
Nitrogen (Ammonia Nitrogen)	mg/L	0.051	0.050	6486157	0.065	0.050	6486153	<0.050	0.050	6486153
Total Organic Carbon (C)	mg/L	2.3	0.50	6480451	0.77	0.50	6480455	1.9	0.50	6480451
Orthophosphate (P)	mg/L	<0.010	0.010	6485917	<0.010	0.010	6485953	<0.010	0.010	6485917
pH	pH	7.90	N/A	6485842	7.54	N/A	6485842	6.98	N/A	6485842
Reactive Silica (SiO2)	mg/L	13	0.50	6485911	13	0.50	6485950	20 (1)	1.0	6485911
Dissolved Sulphate (SO4)	mg/L	38	2.0	6485910	73	2.0	6485946	700	20	6485910
Turbidity	NTU	1.3	0.10	6485971	0.42	0.10	6485963	17	0.10	6485963
Conductivity	uS/cm	560	1.0	6485843	1100	1.0	6485843	1500	1.0	6485843

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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BV Labs Job #: B9X8600
Report Date: 2019/12/10

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLN163		LLN164			LLN165		
Sampling Date		2019/11/29		2019/11/29			2019/11/29		
	UNITS	COTS-001-MWB	RDL	COBP-006-MWA	RDL	QC Batch	CONPL-202-MWA	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	9.07	N/A	8.12	N/A	6473319	7.94	N/A	6473319
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	290	1.0	260	1.0	6473316	270	1.0	6473316
Calculated TDS	mg/L	500	1.0	460	1.0	6473327	440	1.0	6473327
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.6	1.0	<1.0	1.0	6473316	1.1	1.0	6473316
Cation Sum	me/L	8.56	N/A	8.18	N/A	6473319	7.81	N/A	6473319
Hardness (CaCO3)	mg/L	350	1.0	330	1.0	6473289	370	1.0	6473289
Ion Balance (% Difference)	%	2.89	N/A	0.370	N/A	6473318	0.830	N/A	6473318
Langelier Index (@ 20C)	N/A	0.847		0.210		6473323	0.674		6473323
Langelier Index (@ 4C)	N/A	0.599		-0.0380		6473325	0.425		6473325
Nitrate (N)	mg/L	0.065	0.050	<0.050	0.050	6473320	<0.050	0.050	6473320
Saturation pH (@ 20C)	N/A	6.93		7.01		6473323	6.95		6473323
Saturation pH (@ 4C)	N/A	7.18		7.26		6473325	7.20		6473325
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	290	25	260	25	6485903	270	25	6485903
Dissolved Chloride (Cl-)	mg/L	40	1.0	46	1.0	6485909	10	1.0	6485909
Colour	TCU	<5.0	5.0	<5.0	5.0	6485915	<5.0	5.0	6485915
Nitrate + Nitrite (N)	mg/L	0.065	0.050	<0.050	0.050	6485918	<0.050	0.050	6485918
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	6485919	<0.010	0.010	6485919
Nitrogen (Ammonia Nitrogen)	mg/L	1.2	0.050	1.5	0.050	6486153	<0.050	0.050	6486153
Total Organic Carbon (C)	mg/L	1.2	0.50	9.6 (1)	5.0	6480455	2.2	0.50	6480451
Orthophosphate (P)	mg/L	<0.010	0.010	<0.010	0.010	6485917	<0.010	0.010	6485917
pH	pH	7.78	N/A	7.22	N/A	6485844	7.63	N/A	6485844
Reactive Silica (SiO2)	mg/L	13	0.50	15	0.50	6485911	10	0.50	6485911
Dissolved Sulphate (SO4)	mg/L	100	4.0	74	2.0	6485910	110	10	6485910
Turbidity	NTU	0.94	0.10	150	1.0	6485963	8.1	0.10	6485966
Conductivity	uS/cm	810	1.0	750	1.0	6485851	720	1.0	6485851

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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BV Labs Job #: B9X8600
Report Date: 2019/12/10

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLN166		
Sampling Date		2019/11/29		
	UNITS	FD-16	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	11.3	N/A	6473319
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	1.0	6473316
Calculated TDS	mg/L	620	1.0	6473327
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6473316
Cation Sum	me/L	10.1	N/A	6473319
Hardness (CaCO3)	mg/L	300	1.0	6473289
Ion Balance (% Difference)	%	5.24	N/A	6473318
Langelier Index (@ 20C)	N/A	0.351		6473323
Langelier Index (@ 4C)	N/A	0.104		6473325
Nitrate (N)	mg/L	<0.050	0.050	6473320
Saturation pH (@ 20C)	N/A	7.14		6473323
Saturation pH (@ 4C)	N/A	7.38		6473325
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	220	25	6482794
Dissolved Chloride (Cl-)	mg/L	190	5.0	6482795
Colour	TCU	<5.0	5.0	6482806
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	6482812
Nitrite (N)	mg/L	<0.010	0.010	6482814
Nitrogen (Ammonia Nitrogen)	mg/L	0.097	0.050	6486168
Total Organic Carbon (C)	mg/L	0.78	0.50	6480451
Orthophosphate (P)	mg/L	<0.010	0.010	6482810
pH	pH	7.49	N/A	6482606
Reactive Silica (SiO2)	mg/L	12	0.50	6482803
Dissolved Sulphate (SO4)	mg/L	72	2.0	6482796
Turbidity	NTU	0.47	0.10	6482739
Conductivity	uS/cm	1000	1.0	6482607

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

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BV Labs Job #: B9X8600
Report Date: 2019/12/10

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		LLN158	LLN159	LLN160	LLN161	LLN162		
Sampling Date		2019/11/29	2019/11/29	2019/11/29	2019/11/29	2019/11/29		
	UNITS	COSCW-002-MWA	COSCW-002-MWB	COSCW-001-MWB	COBT-003-MWB	COSB-002-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	6477992

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LLN163		LLN164	LLN165	LLN166		
Sampling Date		2019/11/29		2019/11/29	2019/11/29	2019/11/29		
	UNITS	COTS-001-MWB	QC Batch	COBP-006-MWA	CONPL-202-MWA	FD-16	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	6477992	<0.013	<0.013	<0.013	0.013	6478002

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LLN158	LLN159	LLN160	LLN161	LLN162		
Sampling Date		2019/11/29	2019/11/29	2019/11/29	2019/11/29	2019/11/29		
	UNITS	COSCW-002-MWA	COSCW-002-MWB	COSCW-001-MWB	COBT-003-MWB	COSB-002-MWA	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	6.9	10	7.0	11	86	5.0	6480524
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6480524
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	2.0	<1.0	1.0	6480524
Dissolved Barium (Ba)	ug/L	24	37	150	42	26	1.0	6480524
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6480524
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Boron (B)	ug/L	<50	<50	61	57	68	50	6480524
Dissolved Cadmium (Cd)	ug/L	0.078	0.035	0.23	0.026	0.21	0.010	6480524
Dissolved Calcium (Ca)	ug/L	150000	89000	77000	100000	290000	100	6480524
Dissolved Chromium (Cr)	ug/L	1.1	<1.0	<1.0	<1.0	<1.0	1.0	6480524
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	0.58	0.42	0.40	6480524
Dissolved Copper (Cu)	ug/L	4.8	3.6	<0.50	0.78	0.76	0.50	6480524
Dissolved Iron (Fe)	ug/L	<50	<50	110	120	1000	50	6480524
Dissolved Lead (Pb)	ug/L	1.2	1.6	<0.50	<0.50	<0.50	0.50	6480524
Dissolved Magnesium (Mg)	ug/L	16000	11000	14000	11000	46000	100	6480524
Dissolved Manganese (Mn)	ug/L	22	47	130	2400	5100	2.0	6480524
Dissolved Molybdenum (Mo)	ug/L	<2.0	3.0	4.7	<2.0	<2.0	2.0	6480524
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	47	2.0	6480524
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	6480524
Dissolved Potassium (K)	ug/L	1300	1400	3400	2600	4300	100	6480524
Dissolved Selenium (Se)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6480524
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6480524
Dissolved Sodium (Na)	ug/L	7800	24000	21000	93000	8900	100	6480524
Dissolved Strontium (Sr)	ug/L	230	150	1600	1200	750	2.0	6480524
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6480524
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Titanium (Ti)	ug/L	3.1	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Uranium (U)	ug/L	3.5	1.6	1.8	0.29	0.45	0.10	6480524
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Zinc (Zn)	ug/L	34	20	<5.0	8.0	45	5.0	6480524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LLN163	LLN164	LLN165	LLN166		
Sampling Date		2019/11/29	2019/11/29	2019/11/29	2019/11/29		
	UNITS	COTS-001-MWB	COBP-006-MWA	CONPL-202-MWA	FD-16	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	6.6	50	<5.0	11	5.0	6480524
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	6480524
Dissolved Arsenic (As)	ug/L	1.4	<1.0	<1.0	2.0	1.0	6480524
Dissolved Barium (Ba)	ug/L	41	110	30	41	1.0	6480524
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	6480524
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Boron (B)	ug/L	<50	59	<50	56	50	6480524
Dissolved Cadmium (Cd)	ug/L	0.029	0.020	0.027	0.040	0.010	6480524
Dissolved Calcium (Ca)	ug/L	120000	110000	120000	100000	100	6480524
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	6480524
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	0.56	0.40	6480524
Dissolved Copper (Cu)	ug/L	<0.50	<0.50	<0.50	0.60	0.50	6480524
Dissolved Iron (Fe)	ug/L	250	13000	<50	130	50	6480524
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	6480524
Dissolved Magnesium (Mg)	ug/L	13000	14000	17000	11000	100	6480524
Dissolved Manganese (Mn)	ug/L	1600	4700	320	2400	2.0	6480524
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	100	6480524
Dissolved Potassium (K)	ug/L	2700	3900	1300	2600	100	6480524
Dissolved Selenium (Se)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	6480524
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	6480524
Dissolved Sodium (Na)	ug/L	32000	22000	11000	92000	100	6480524
Dissolved Strontium (Sr)	ug/L	1700	450	390	1200	2.0	6480524
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	6480524
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Uranium (U)	ug/L	0.48	<0.10	1.3	0.29	0.10	6480524
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6480524
Dissolved Zinc (Zn)	ug/L	<5.0	13	<5.0	9.2	5.0	6480524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LLN158	LLN159	LLN160	LLN161	LLN162		
Sampling Date		2019/11/29	2019/11/29	2019/11/29	2019/11/29	2019/11/29		
	UNITS	COSCW-002-MWA	COSCW-002-MWB	COSCW-001-MWB	COBT-003-MWB	COSB-002-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	2.5	2.9	<0.050	1.7	<0.050	0.050	6480220
2-Methylnaphthalene	ug/L	2.1	2.4	<0.050	1.4	<0.050	0.050	6480220
Acenaphthene	ug/L	1.1	0.98	<0.010	0.56	<0.010	0.010	6480220
Acenaphthylene	ug/L	0.042	0.040	<0.010	0.024	<0.010	0.010	6480220
Anthracene	ug/L	0.031	0.017	<0.010	<0.010	<0.010	0.010	6480220
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.011	<0.010	0.010	6480220
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	6473285
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Chrysene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Fluoranthene	ug/L	0.026	0.010	<0.010	0.014	<0.010	0.010	6480220
Fluorene	ug/L	0.40	0.38	<0.010	0.20	<0.010	0.010	6480220
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Naphthalene	ug/L	31	29	<0.20	16	<0.20	0.20	6480220
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	6480220
Phenanthrene	ug/L	0.31	0.21	<0.010	0.11	<0.010	0.010	6480220
Pyrene	ug/L	0.017	<0.010	<0.010	0.014	<0.010	0.010	6480220
Surrogate Recovery (%)								
D10-Anthracene	%	93	107	98	105	102		6480220
D14-Terphenyl	%	102 (1)	111	105	111	109		6480220
D8-Acenaphthylene	%	83	98	91	96	97		6480220

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

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LLN163		LLN164		LLN165	LLN166		
Sampling Date		2019/11/29		2019/11/29		2019/11/29	2019/11/29		
	UNITS	COTS-001-MWB	RDL	COBP-006-MWA	RDL	CONPL-202-MWA	FD-16	RDL	QC Batch
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	0.050	22	0.050	<0.050	1.2	0.050	6480220
2-Methylnaphthalene	ug/L	<0.050	0.050	0.95	0.050	<0.050	0.98	0.050	6480220
Acenaphthene	ug/L	<0.010	0.010	34	0.010	<0.010	0.40	0.010	6480220
Acenaphthylene	ug/L	0.018	0.010	0.40	0.010	<0.010	0.016	0.010	6480220
Anthracene	ug/L	<0.010	0.010	0.049	0.010	0.011	<0.010	0.010	6480220
Benzo(a)anthracene	ug/L	<0.010	0.010	0.084	0.010	0.028	<0.010	0.010	6480220
Benzo(a)pyrene	ug/L	<0.010	0.010	0.081	0.010	0.028	<0.010	0.010	6480220
Benzo(b)fluoranthene	ug/L	<0.010	0.010	0.058	0.010	0.019	<0.010	0.010	6480220
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	0.097	0.020	0.031	<0.020	0.020	6473285
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	0.043	0.010	0.012	<0.010	0.010	6480220
Benzo(j)fluoranthene	ug/L	<0.010	0.010	0.039	0.010	0.013	<0.010	0.010	6480220
Benzo(k)fluoranthene	ug/L	<0.010	0.010	0.033	0.010	<0.010	<0.010	0.010	6480220
Chrysene	ug/L	<0.010	0.010	0.085	0.010	0.029	<0.010	0.010	6480220
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	0.015	0.010	<0.010	<0.010	0.010	6480220
Fluoranthene	ug/L	<0.010	0.010	0.14	0.010	0.044	<0.010	0.010	6480220
Fluorene	ug/L	0.014	0.010	2.7	0.010	<0.010	0.16	0.010	6480220
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	0.039	0.010	0.011	<0.010	0.010	6480220
Naphthalene	ug/L	<0.20	0.20	61 (1)	2.0	<0.20	12	0.20	6480220
Perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6480220
Phenanthrene	ug/L	<0.010	0.010	0.37	0.010	0.032	0.073	0.010	6480220
Pyrene	ug/L	<0.010	0.010	0.13	0.010	0.038	<0.010	0.010	6480220
Surrogate Recovery (%)									
D10-Anthracene	%	104		96		102	96		6480220
D14-Terphenyl	%	108		102		109	100		6480220
D8-Acenaphthylene	%	100		102		98	96		6480220

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

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GENERAL COMMENTS

Sample LLN166 [FD-16] : Poor RCAp Ion Balance due to sample matrix. Cation sum does not include contribution from Mn and Sr.

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
6477992	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/05		103	%	80 - 120
6477992	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/05		106	%	80 - 120
6477992	NHU	Method Blank	Total Mercury (Hg)	2019/12/05	<0.013		ug/L	
6477992	NHU	RPD	Total Mercury (Hg)	2019/12/05	NC		%	20
6478002	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/05		104	%	80 - 120
6478002	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/05		105	%	80 - 120
6478002	NHU	Method Blank	Total Mercury (Hg)	2019/12/05	<0.013		ug/L	
6478002	NHU	RPD	Total Mercury (Hg)	2019/12/05	NC		%	20
6480220	LGE	Matrix Spike	D10-Anthracene	2019/12/06		103	%	50 - 130
			D14-Terphenyl	2019/12/06		109	%	50 - 130
			D8-Acenaphthylene	2019/12/06		93	%	50 - 130
			1-Methylnaphthalene	2019/12/06		95	%	50 - 130
			2-Methylnaphthalene	2019/12/06		95	%	50 - 130
			Acenaphthene	2019/12/06		104	%	50 - 130
			Acenaphthylene	2019/12/06		103	%	50 - 130
			Anthracene	2019/12/06		84	%	50 - 130
			Benzo(a)anthracene	2019/12/06		107	%	50 - 130
			Benzo(a)pyrene	2019/12/06		99	%	50 - 130
			Benzo(b)fluoranthene	2019/12/06		101	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/06		97	%	50 - 130
			Benzo(j)fluoranthene	2019/12/06		104	%	50 - 130
			Benzo(k)fluoranthene	2019/12/06		94	%	50 - 130
			Chrysene	2019/12/06		120	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/06		102	%	50 - 130
			Fluoranthene	2019/12/06		94	%	50 - 130
			Fluorene	2019/12/06		104	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/06		95	%	50 - 130
			Naphthalene	2019/12/06		103	%	50 - 130
			Perylene	2019/12/06		93	%	50 - 130
			Phenanthrene	2019/12/06		92	%	50 - 130
			Pyrene	2019/12/06		94	%	50 - 130
6480220	LGE	Spiked Blank	D10-Anthracene	2019/12/06		101	%	50 - 130
			D14-Terphenyl	2019/12/06		106	%	50 - 130
			D8-Acenaphthylene	2019/12/06		95	%	50 - 130
			1-Methylnaphthalene	2019/12/06		88	%	50 - 130
			2-Methylnaphthalene	2019/12/06		88	%	50 - 130
			Acenaphthene	2019/12/06		106	%	50 - 130
			Acenaphthylene	2019/12/06		104	%	50 - 130
			Anthracene	2019/12/06		88	%	50 - 130
			Benzo(a)anthracene	2019/12/06		100	%	50 - 130
			Benzo(a)pyrene	2019/12/06		98	%	50 - 130
			Benzo(b)fluoranthene	2019/12/06		104	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/06		99	%	50 - 130
			Benzo(j)fluoranthene	2019/12/06		110	%	50 - 130
			Benzo(k)fluoranthene	2019/12/06		100	%	50 - 130
			Chrysene	2019/12/06		111	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/06		98	%	50 - 130
			Fluoranthene	2019/12/06		90	%	50 - 130
			Fluorene	2019/12/06		111	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/06		97	%	50 - 130
			Naphthalene	2019/12/06		97	%	50 - 130
			Perylene	2019/12/06		93	%	50 - 130
			Phenanthrene	2019/12/06		116	%	50 - 130
			Pyrene	2019/12/06		89	%	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
6480220	LGE	Method Blank	D10-Anthracene	2019/12/05		109	%	50 - 130
			D14-Terphenyl	2019/12/05		112	%	50 - 130
			D8-Acenaphthylene	2019/12/05		93	%	50 - 130
			1-Methylnaphthalene	2019/12/05	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/05	<0.050		ug/L	
			Acenaphthene	2019/12/05	<0.010		ug/L	
			Acenaphthylene	2019/12/05	<0.010		ug/L	
			Anthracene	2019/12/05	<0.010		ug/L	
			Benzo(a)anthracene	2019/12/05	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/05	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/05	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/05	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/05	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/05	<0.010		ug/L	
			Chrysene	2019/12/05	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/05	<0.010		ug/L	
			Fluoranthene	2019/12/05	<0.010		ug/L	
			Fluorene	2019/12/05	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/05	<0.010		ug/L	
			Naphthalene	2019/12/05	<0.20		ug/L	
			Perylene	2019/12/05	<0.010		ug/L	
			Phenanthrene	2019/12/05	<0.010		ug/L	
			Pyrene	2019/12/05	<0.010		ug/L	
6480220	LGE	RPD	1-Methylnaphthalene	2019/12/06	NC		%	40
			2-Methylnaphthalene	2019/12/06	NC		%	40
			Acenaphthene	2019/12/06	NC		%	40
			Acenaphthylene	2019/12/06	NC		%	40
			Anthracene	2019/12/06	NC		%	40
			Benzo(a)anthracene	2019/12/06	NC		%	40
			Benzo(a)pyrene	2019/12/06	NC		%	40
			Benzo(b)fluoranthene	2019/12/06	NC		%	40
			Benzo(g,h,i)perylene	2019/12/06	NC		%	40
			Benzo(j)fluoranthene	2019/12/06	NC		%	40
			Benzo(k)fluoranthene	2019/12/06	NC		%	40
			Chrysene	2019/12/06	NC		%	40
			Dibenzo(a,h)anthracene	2019/12/06	NC		%	40
			Fluoranthene	2019/12/06	NC		%	40
			Fluorene	2019/12/06	NC		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/06	NC		%	40
			Naphthalene	2019/12/06	NC		%	40
			Perylene	2019/12/06	NC		%	40
			Phenanthrene	2019/12/06	NC		%	40
			Pyrene	2019/12/06	NC		%	40
6480451	SSI	Matrix Spike [LLN162-04]	Total Organic Carbon (C)	2019/12/05		97	%	85 - 115
6480451	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/05		98	%	80 - 120
6480451	SSI	Method Blank	Total Organic Carbon (C)	2019/12/05	<0.50		mg/L	
6480451	SSI	RPD [LLN162-04]	Total Organic Carbon (C)	2019/12/05	6.5		%	15
6480455	SSI	Matrix Spike	Total Organic Carbon (C)	2019/12/05		95	%	85 - 115
6480455	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/05		95	%	80 - 120
6480455	SSI	Method Blank	Total Organic Carbon (C)	2019/12/05	<0.50		mg/L	
6480455	SSI	RPD	Total Organic Carbon (C)	2019/12/05	NC		%	15
6480524	BAN	Matrix Spike [LLN161-02]	Dissolved Aluminum (Al)	2019/12/06		95	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/06		102	%	80 - 120
			Dissolved Arsenic (As)	2019/12/06		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)	2019/12/06		97	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/06		100	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/06		90	%	80 - 120
			Dissolved Boron (B)	2019/12/06		96	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/06		96	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/06		NC	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/06		96	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/06		94	%	80 - 120
			Dissolved Copper (Cu)	2019/12/06		90	%	80 - 120
			Dissolved Iron (Fe)	2019/12/06		97	%	80 - 120
			Dissolved Lead (Pb)	2019/12/06		100	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/06		NC	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/06		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/06		101	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/06		95	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/06		103	%	80 - 120
			Dissolved Potassium (K)	2019/12/06		101	%	80 - 120
			Dissolved Selenium (Se)	2019/12/06		88	%	80 - 120
			Dissolved Silver (Ag)	2019/12/06		71 (1)	%	80 - 120
			Dissolved Sodium (Na)	2019/12/06		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/06		NC	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/06		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/06		105	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/06		102	%	80 - 120
			Dissolved Uranium (U)	2019/12/06		106	%	80 - 120
			Dissolved Vanadium (V)	2019/12/06		101	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/06		95	%	80 - 120
6480524	BAN	Spiked Blank	Dissolved Aluminum (Al)	2019/12/06		96	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/06		99	%	80 - 120
			Dissolved Arsenic (As)	2019/12/06		95	%	80 - 120
			Dissolved Barium (Ba)	2019/12/06		99	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/06		98	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/06		100	%	80 - 120
			Dissolved Boron (B)	2019/12/06		96	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/06		95	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/06		100	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/06		96	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/06		95	%	80 - 120
			Dissolved Copper (Cu)	2019/12/06		93	%	80 - 120
			Dissolved Iron (Fe)	2019/12/06		98	%	80 - 120
			Dissolved Lead (Pb)	2019/12/06		101	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/06		98	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/06		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/06		98	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/06		96	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/06		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/06		102	%	80 - 120
			Dissolved Selenium (Se)	2019/12/06		94	%	80 - 120
			Dissolved Silver (Ag)	2019/12/06		97	%	80 - 120
			Dissolved Sodium (Na)	2019/12/06		95	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/06		101	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/06		100	%	80 - 120
			Dissolved Tin (Sn)	2019/12/06		105	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/06		101	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Uranium (U)	2019/12/06		106	%	80 - 120
			Dissolved Vanadium (V)	2019/12/06		99	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/06		97	%	80 - 120
6480524	BAN	Method Blank	Dissolved Aluminum (Al)	2019/12/06	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/06	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/06	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/06	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/06	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/06	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/06	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/06	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/06	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/06	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/06	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/06	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/06	<50		ug/L	
			Dissolved Lead (Pb)	2019/12/06	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/06	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/06	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/06	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/06	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/06	<100		ug/L	
			Dissolved Potassium (K)	2019/12/06	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/06	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/06	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/06	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/06	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/06	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/06	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/06	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/06	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/06	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/06	<5.0		ug/L	
6480524	BAN	RPD [LLN161-02]	Dissolved Aluminum (Al)	2019/12/06	NC		%	20
			Dissolved Antimony (Sb)	2019/12/06	NC		%	20
			Dissolved Arsenic (As)	2019/12/06	0.70		%	20
			Dissolved Barium (Ba)	2019/12/06	0.63		%	20
			Dissolved Beryllium (Be)	2019/12/06	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/06	NC		%	20
			Dissolved Boron (B)	2019/12/06	0.40		%	20
			Dissolved Cadmium (Cd)	2019/12/06	NC		%	20
			Dissolved Calcium (Ca)	2019/12/06	0.035		%	20
			Dissolved Chromium (Cr)	2019/12/06	NC		%	20
			Dissolved Cobalt (Co)	2019/12/06	9.3		%	20
			Dissolved Copper (Cu)	2019/12/06	0.51		%	20
			Dissolved Iron (Fe)	2019/12/06	2.8		%	20
			Dissolved Lead (Pb)	2019/12/06	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/06	0.55		%	20
			Dissolved Manganese (Mn)	2019/12/06	1.5		%	20
			Dissolved Molybdenum (Mo)	2019/12/06	NC		%	20
			Dissolved Nickel (Ni)	2019/12/06	NC		%	20
			Dissolved Phosphorus (P)	2019/12/06	NC		%	20
			Dissolved Potassium (K)	2019/12/06	3.4		%	20
			Dissolved Selenium (Se)	2019/12/06	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Silver (Ag)	2019/12/06	NC		%	20
			Dissolved Sodium (Na)	2019/12/06	0.82		%	20
			Dissolved Strontium (Sr)	2019/12/06	0.56		%	20
			Dissolved Thallium (Tl)	2019/12/06	NC		%	20
			Dissolved Tin (Sn)	2019/12/06	NC		%	20
			Dissolved Titanium (Ti)	2019/12/06	NC		%	20
			Dissolved Uranium (U)	2019/12/06	5.8		%	20
			Dissolved Vanadium (V)	2019/12/06	NC		%	20
			Dissolved Zinc (Zn)	2019/12/06	0.69		%	20
6482606	SHW	QC Standard	pH	2019/12/06		101	%	97 - 103
6482606	SHW	RPD	pH	2019/12/06	0.88		%	N/A
6482607	SHW	Spiked Blank	Conductivity	2019/12/06		100	%	80 - 120
6482607	SHW	Method Blank	Conductivity	2019/12/06	<1.0		uS/cm	
6482607	SHW	RPD	Conductivity	2019/12/06	1.0		%	10
6482739	SHW	QC Standard	Turbidity	2019/12/06		105	%	80 - 120
6482739	SHW	Spiked Blank	Turbidity	2019/12/06		100	%	80 - 120
6482739	SHW	Method Blank	Turbidity	2019/12/06	<0.10		NTU	
6482739	SHW	RPD [LLN166-01]	Turbidity	2019/12/06	NC		%	20
6482794	EMT	Matrix Spike [LLN166-01]	Total Alkalinity (Total as CaCO3)	2019/12/06		NC	%	80 - 120
6482794	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/06		100	%	80 - 120
6482794	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/06	<5.0		mg/L	
6482794	EMT	RPD [LLN166-01]	Total Alkalinity (Total as CaCO3)	2019/12/06	0.21		%	25
6482795	EMT	Matrix Spike [LLN166-01]	Dissolved Chloride (Cl-)	2019/12/06		NC	%	80 - 120
6482795	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/06		95	%	80 - 120
6482795	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/06	<1.0		mg/L	
6482795	EMT	RPD [LLN166-01]	Dissolved Chloride (Cl-)	2019/12/06	0.80		%	25
6482796	EMT	Matrix Spike [LLN166-01]	Dissolved Sulphate (SO4)	2019/12/06		NC	%	80 - 120
6482796	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/06		101	%	80 - 120
6482796	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/06	<2.0		mg/L	
6482796	EMT	RPD [LLN166-01]	Dissolved Sulphate (SO4)	2019/12/06	0.046		%	25
6482803	EMT	Matrix Spike [LLN166-01]	Reactive Silica (SiO2)	2019/12/06		NC	%	80 - 120
6482803	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/06		94	%	80 - 120
6482803	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/06	<0.50		mg/L	
6482803	EMT	RPD [LLN166-01]	Reactive Silica (SiO2)	2019/12/06	1.5		%	25
6482806	EMT	Spiked Blank	Colour	2019/12/06		98	%	80 - 120
6482806	EMT	Method Blank	Colour	2019/12/06	<5.0		TCU	
6482806	EMT	RPD [LLN166-01]	Colour	2019/12/06	NC		%	20
6482810	EMT	Matrix Spike [LLN166-01]	Orthophosphate (P)	2019/12/06		90	%	80 - 120
6482810	EMT	Spiked Blank	Orthophosphate (P)	2019/12/06		93	%	80 - 120
6482810	EMT	Method Blank	Orthophosphate (P)	2019/12/06	<0.010		mg/L	
6482810	EMT	RPD [LLN166-01]	Orthophosphate (P)	2019/12/06	NC		%	25
6482812	EMT	Matrix Spike [LLN166-01]	Nitrate + Nitrite (N)	2019/12/07		92	%	80 - 120
6482812	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/07		95	%	80 - 120
6482812	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/07	<0.050		mg/L	
6482812	EMT	RPD [LLN166-01]	Nitrate + Nitrite (N)	2019/12/07	NC		%	25
6482814	EMT	Matrix Spike [LLN166-01]	Nitrite (N)	2019/12/07		96	%	80 - 120
6482814	EMT	Spiked Blank	Nitrite (N)	2019/12/07		100	%	80 - 120
6482814	EMT	Method Blank	Nitrite (N)	2019/12/07	<0.010		mg/L	
6482814	EMT	RPD [LLN166-01]	Nitrite (N)	2019/12/07	NC		%	20
6482888	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/06		NC	%	80 - 120
6482888	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/06		99	%	80 - 120
6482888	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/06	<5.0		mg/L	
6482888	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/06	0.54		%	25
6482904	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/06		82	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6482904	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/06		98	%	80 - 120
6482904	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/06	<1.0		mg/L	
6482904	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/06	3.3		%	25
6482905	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/06		101	%	80 - 120
6482905	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/06		100	%	80 - 120
6482905	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/06	<2.0		mg/L	
6482905	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/06	3.3		%	25
6482910	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/06		85	%	80 - 120
6482910	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/06		91	%	80 - 120
6482910	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/06	<0.50		mg/L	
6482910	EMT	RPD	Reactive Silica (SiO2)	2019/12/06	3.1		%	25
6482911	EMT	Spiked Blank	Colour	2019/12/06		92	%	80 - 120
6482911	EMT	Method Blank	Colour	2019/12/06	<5.0		TCU	
6482911	EMT	RPD	Colour	2019/12/06	3.8		%	20
6482915	EMT	Matrix Spike	Orthophosphate (P)	2019/12/06		90	%	80 - 120
6482915	EMT	Spiked Blank	Orthophosphate (P)	2019/12/06		96	%	80 - 120
6482915	EMT	Method Blank	Orthophosphate (P)	2019/12/06	<0.010		mg/L	
6482915	EMT	RPD	Orthophosphate (P)	2019/12/06	NC		%	25
6482917	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/07		90	%	80 - 120
6482917	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/07		94	%	80 - 120
6482917	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/07	<0.050		mg/L	
6482917	EMT	RPD	Nitrate + Nitrite (N)	2019/12/07	0.021		%	25
6482923	EMT	Matrix Spike	Nitrite (N)	2019/12/07		95	%	80 - 120
6482923	EMT	Spiked Blank	Nitrite (N)	2019/12/07		102	%	80 - 120
6482923	EMT	Method Blank	Nitrite (N)	2019/12/07	<0.010		mg/L	
6482923	EMT	RPD	Nitrite (N)	2019/12/07	NC		%	20
6485842	SHW	QC Standard	pH	2019/12/09		101	%	97 - 103
6485842	SHW	RPD	pH	2019/12/09	0.041		%	N/A
6485843	SHW	Spiked Blank	Conductivity	2019/12/09		100	%	80 - 120
6485843	SHW	Method Blank	Conductivity	2019/12/09	<1.0		uS/cm	
6485843	SHW	RPD	Conductivity	2019/12/09	2.2		%	10
6485844	SHW	QC Standard	pH	2019/12/09		101	%	97 - 103
6485844	SHW	RPD	pH	2019/12/09	0.19		%	N/A
6485851	SHW	Spiked Blank	Conductivity	2019/12/09		101	%	80 - 120
6485851	SHW	Method Blank	Conductivity	2019/12/09	<1.0		uS/cm	
6485851	SHW	RPD	Conductivity	2019/12/09	1.0		%	10
6485903	EMT	Matrix Spike [LLN159-01]	Total Alkalinity (Total as CaCO3)	2019/12/09		NC	%	80 - 120
6485903	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/09		102	%	80 - 120
6485903	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/09	<5.0		mg/L	
6485903	EMT	RPD [LLN159-01]	Total Alkalinity (Total as CaCO3)	2019/12/09	0.90		%	25
6485909	EMT	Matrix Spike [LLN159-01]	Dissolved Chloride (Cl-)	2019/12/09		99	%	80 - 120
6485909	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/09		102	%	80 - 120
6485909	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/09	<1.0		mg/L	
6485909	EMT	RPD [LLN159-01]	Dissolved Chloride (Cl-)	2019/12/09	3.7		%	25
6485910	EMT	Matrix Spike [LLN159-01]	Dissolved Sulphate (SO4)	2019/12/09		NC	%	80 - 120
6485910	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/09		107	%	80 - 120
6485910	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/09	<2.0		mg/L	
6485910	EMT	RPD [LLN159-01]	Dissolved Sulphate (SO4)	2019/12/09	0.94		%	25
6485911	EMT	Matrix Spike [LLN159-01]	Reactive Silica (SiO2)	2019/12/09		93	%	80 - 120
6485911	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/09		96	%	80 - 120
6485911	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/09	<0.50		mg/L	
6485911	EMT	RPD [LLN159-01]	Reactive Silica (SiO2)	2019/12/09	0.34		%	25
6485915	EMT	Spiked Blank	Colour	2019/12/09		107	%	80 - 120
6485915	EMT	Method Blank	Colour	2019/12/09	<5.0		TCU	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6485915	EMT	RPD [LLN159-01]	Colour	2019/12/09	NC		%	20
6485917	EMT	Matrix Spike [LLN159-01]	Orthophosphate (P)	2019/12/09		90	%	80 - 120
6485917	EMT	Spiked Blank	Orthophosphate (P)	2019/12/09		93	%	80 - 120
6485917	EMT	Method Blank	Orthophosphate (P)	2019/12/09	<0.010		mg/L	
6485917	EMT	RPD [LLN159-01]	Orthophosphate (P)	2019/12/09	NC		%	25
6485918	EMT	Matrix Spike [LLN159-01]	Nitrate + Nitrite (N)	2019/12/09		92	%	80 - 120
6485918	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/09		98	%	80 - 120
6485918	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/09	<0.050		mg/L	
6485918	EMT	RPD [LLN159-01]	Nitrate + Nitrite (N)	2019/12/09	NC		%	25
6485919	EMT	Matrix Spike [LLN159-01]	Nitrite (N)	2019/12/09		96	%	80 - 120
6485919	EMT	Spiked Blank	Nitrite (N)	2019/12/09		104	%	80 - 120
6485919	EMT	Method Blank	Nitrite (N)	2019/12/09	<0.010		mg/L	
6485919	EMT	RPD [LLN159-01]	Nitrite (N)	2019/12/09	NC		%	20
6485926	EMT	Matrix Spike [LLN161-01]	Total Alkalinity (Total as CaCO3)	2019/12/09		NC	%	80 - 120
6485926	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/09		102	%	80 - 120
6485926	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/09	<5.0		mg/L	
6485926	EMT	RPD [LLN161-01]	Total Alkalinity (Total as CaCO3)	2019/12/09	3.4		%	25
6485931	EMT	Matrix Spike [LLN161-01]	Dissolved Chloride (Cl-)	2019/12/09		NC	%	80 - 120
6485931	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/09		97	%	80 - 120
6485931	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/09	<1.0		mg/L	
6485931	EMT	RPD [LLN161-01]	Dissolved Chloride (Cl-)	2019/12/09	1.0		%	25
6485946	EMT	Matrix Spike [LLN161-01]	Dissolved Sulphate (SO4)	2019/12/09		NC	%	80 - 120
6485946	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/09		101	%	80 - 120
6485946	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/09	<2.0		mg/L	
6485946	EMT	RPD [LLN161-01]	Dissolved Sulphate (SO4)	2019/12/09	0.85		%	25
6485950	EMT	Matrix Spike [LLN161-01]	Reactive Silica (SiO2)	2019/12/09		NC	%	80 - 120
6485950	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/09		96	%	80 - 120
6485950	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/09	<0.50		mg/L	
6485950	EMT	RPD [LLN161-01]	Reactive Silica (SiO2)	2019/12/09	0.40		%	25
6485952	EMT	Spiked Blank	Colour	2019/12/09		99	%	80 - 120
6485952	EMT	Method Blank	Colour	2019/12/09	<5.0		TCU	
6485952	EMT	RPD [LLN161-01]	Colour	2019/12/09	NC		%	20
6485953	EMT	Matrix Spike [LLN161-01]	Orthophosphate (P)	2019/12/09		88	%	80 - 120
6485953	EMT	Spiked Blank	Orthophosphate (P)	2019/12/09		93	%	80 - 120
6485953	EMT	Method Blank	Orthophosphate (P)	2019/12/09	<0.010		mg/L	
6485953	EMT	RPD [LLN161-01]	Orthophosphate (P)	2019/12/09	NC		%	25
6485955	EMT	Matrix Spike [LLN161-01]	Nitrate + Nitrite (N)	2019/12/09		83	%	80 - 120
6485955	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/09		92	%	80 - 120
6485955	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/09	<0.050		mg/L	
6485955	EMT	RPD [LLN161-01]	Nitrate + Nitrite (N)	2019/12/09	NC		%	25
6485957	EMT	Matrix Spike [LLN161-01]	Nitrite (N)	2019/12/09		97	%	80 - 120
6485957	EMT	Spiked Blank	Nitrite (N)	2019/12/09		101	%	80 - 120
6485957	EMT	Method Blank	Nitrite (N)	2019/12/09	<0.010		mg/L	
6485957	EMT	RPD [LLN161-01]	Nitrite (N)	2019/12/09	NC		%	20
6485963	SHW	QC Standard	Turbidity	2019/12/09		104	%	80 - 120
6485963	SHW	Spiked Blank	Turbidity	2019/12/09		101	%	80 - 120
6485963	SHW	Method Blank	Turbidity	2019/12/09	<0.10		NTU	
6485963	SHW	RPD [LLN161-01]	Turbidity	2019/12/09	11		%	20
6485966	SHW	QC Standard	Turbidity	2019/12/09		103	%	80 - 120
6485966	SHW	Spiked Blank	Turbidity	2019/12/09		101	%	80 - 120
6485966	SHW	Method Blank	Turbidity	2019/12/09	<0.10		NTU	
6485966	SHW	RPD	Turbidity	2019/12/09	NC		%	20
6485971	SHW	QC Standard	Turbidity	2019/12/09		103	%	80 - 120
6485971	SHW	Spiked Blank	Turbidity	2019/12/09		100	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6485971	SHW	Method Blank	Turbidity	2019/12/09	<0.10		NTU	
6485971	SHW	RPD	Turbidity	2019/12/09	8.2		%	20
6486153	EMT	Matrix Spike [LLN161-03]	Nitrogen (Ammonia Nitrogen)	2019/12/09		93	%	80 - 120
6486153	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/09		101	%	80 - 120
6486153	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/09	<0.050		mg/L	
6486153	EMT	RPD [LLN161-03]	Nitrogen (Ammonia Nitrogen)	2019/12/09	NC		%	20
6486157	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/09		NC	%	80 - 120
6486157	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/09		98	%	80 - 120
6486157	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/09	<0.050		mg/L	
6486157	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/09	0.98		%	20
6486168	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/09		98	%	80 - 120
6486168	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/09		101	%	80 - 120
6486168	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/09	<0.050		mg/L	
6486168	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/09	5.9		%	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).

(1) Recovery is within QC acceptance limits. < 10 % of compounds in multi-component analysis in violation.

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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)

Rosemarie MacDonald, 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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Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/12
Report #: R6002392
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X9874
Received: 2019/12/02, 16:30

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	11	N/A	2019/12/10	N/A	SM 23 4500-CO2 D
Alkalinity (1)	11	N/A	2019/12/10	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	10	N/A	2019/12/10	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (water) (1)	1	N/A	2019/12/11	N/A	Auto Calc.
Chloride (1)	11	N/A	2019/12/11	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	11	N/A	2019/12/10	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	11	N/A	2019/12/10	ATL SOP 00004	SM 23 2510B m
Hardness (calculated as CaCO3) (1)	11	N/A	2019/12/10	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	11	2019/12/09	2019/12/10	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	9	N/A	2019/12/09	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2019/12/10	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	11	N/A	2019/12/11	N/A	Auto Calc.
Anion and Cation Sum (1)	11	N/A	2019/12/11	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	11	N/A	2019/12/10	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	11	N/A	2019/12/10	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	11	N/A	2019/12/10	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	11	N/A	2019/12/11	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	2	2019/12/09	2019/12/09	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	9	2019/12/09	2019/12/10	ATL SOP 00103	EPA 8270E R6 m
pH (1, 2)	11	N/A	2019/12/10	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	10	N/A	2019/12/10	ATL SOP 00021	SM 23 4500-P E m
Phosphorus - ortho (1)	1	N/A	2019/12/12	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	11	N/A	2019/12/11	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	11	N/A	2019/12/11	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	11	N/A	2019/12/10	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	11	N/A	2019/12/10	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	11	N/A	2019/12/11	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	11	N/A	2019/12/10	ATL SOP 00203	SM 23 5310B m
Turbidity (1)	11	N/A	2019/12/10	ATL SOP 00011	EPA 180.1 R2 m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/12
Report #: R6002392
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X9874
Received: 2019/12/02, 16:30

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
(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

Bureau Veritas Laboratories
12 Dec 2019 15:27:47

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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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.

BV Labs Job #: B9X9874
Report Date: 2019/12/12

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLU909			LLU910			LLU911		
Sampling Date		2019/12/02			2019/12/02			2019/12/02		
	UNITS	MCES-001-MWA	RDL	QC Batch	MCES-001-MWB	RDL	QC Batch	MCES-006-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	8.33	N/A	6476038	6.84	N/A	6476038	3.48	N/A	6476038
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6476034	<1.0	1.0	6476034	18	1.0	6476034
Calculated TDS	mg/L	570	1.0	6476048	510	1.0	6476048	220	1.0	6476048
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6476034	<1.0	1.0	6476034	37	1.0	6476034
Cation Sum	me/L	12.7	N/A	6476038	12.6	N/A	6476038	3.30	N/A	6476038
Hardness (CaCO3)	mg/L	550	1.0	6476036	550	1.0	6476036	150	1.0	6476036
Ion Balance (% Difference)	%	20.8	N/A	6476037	29.8	N/A	6476037	2.65	N/A	6476037
Langelier Index (@ 20C)	N/A	NC		6476040	NC		6476040	1.97		6476040
Langelier Index (@ 4C)	N/A	NC		6476044	NC		6476044	1.72		6476044
Nitrate (N)	mg/L	0.086	0.050	6475711	0.096	0.050	6475711	1.1	0.050	6475711
Saturation pH (@ 20C)	N/A	NC		6476040	NC		6476040	8.37		6476040
Saturation pH (@ 4C)	N/A	NC		6476044	NC		6476044	8.62		6476044
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	240	25	6488033	190	25	6488033	66	5.0	6488033
Dissolved Chloride (Cl-)	mg/L	31	1.0	6488037	33	1.0	6488037	13	1.0	6488037
Colour	TCU	<5.0	5.0	6488040	<5.0	5.0	6488040	10	5.0	6488040
Nitrate + Nitrite (N)	mg/L	0.37	0.050	6488045	0.78	0.050	6488045	1.2	0.050	6488045
Nitrite (N)	mg/L	0.28	0.010	6488048	0.69	0.050	6488048	0.083	0.010	6488048
Nitrogen (Ammonia Nitrogen)	mg/L	0.84	0.050	6488306	0.44	0.050	6488306	0.071	0.050	6488306
Total Organic Carbon (C)	mg/L	2.4	0.50	6487889	3.0	0.50	6487889	3.9	0.50	6487889
Orthophosphate (P)	mg/L	<0.010	0.010	6488044	<0.010	0.010	6488044	<0.010	0.010	6493257
pH	pH	11.9 (1)	N/A	6487879	12.0 (1)	N/A	6487876	10.3 (1)	N/A	6487879
Reactive Silica (SiO2)	mg/L	2.8	0.50	6488039	2.3	0.50	6488039	11	0.50	6488039
Dissolved Sulphate (SO4)	mg/L	130	10	6488038	96	2.0	6488038	83	2.0	6488038
Turbidity	NTU	0.62	0.10	6487948	2.5	0.10	6487945	0.74	0.10	6487945
Conductivity	uS/cm	2000	1.0	6487880	2100	1.0	6487878	340	1.0	6487880

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) pH value is beyond linear range, extended linearity has been confirmed.

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BV Labs Job #: B9X9874
Report Date: 2019/12/12

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLU912			LLU913			LLU914		
Sampling Date		2019/12/02			2019/12/02			2019/12/02		
	UNITS	COBC-004-MWA	RDL	QC Batch	MSES-104-MWA	RDL	QC Batch	MSES-104-MWB	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	14.7	N/A	6476038	25.3	N/A	6476038	41.2	N/A	6476038
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	1.0	6476034	29	1.0	6476034	490	1.0	6476034
Calculated TDS	mg/L	870	1.0	6476048	1700	1.0	6476048	2500	1.0	6476048
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.2	1.0	6476034	<1.0	1.0	6476034	<1.0	1.0	6476034
Cation Sum	me/L	13.8	N/A	6476038	27.0	N/A	6476038	38.7	N/A	6476038
Hardness (CaCO3)	mg/L	490	1.0	6476036	1300	1.0	6476036	1600	1.0	6476036
Ion Balance (% Difference)	%	3.20	N/A	6476037	3.22	N/A	6476037	3.07	N/A	6476037
Langelier Index (@ 20C)	N/A	1.03		6476040	0.570		6476040	0.554		6476040
Langelier Index (@ 4C)	N/A	0.779		6476044	0.326		6476044	0.312		6476044
Nitrate (N)	mg/L	0.54	0.050	6475711	0.084	0.050	6475711	0.063	0.050	6475711
Saturation pH (@ 20C)	N/A	7.01		6476040	7.50		6476040	6.42		6476040
Saturation pH (@ 4C)	N/A	7.26		6476044	7.75		6476044	6.66		6476044
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	220	25	6488033	29	5.0	6488033	490	25	6488033
Dissolved Chloride (Cl-)	mg/L	140	5.0	6488037	47	1.0	6488037	61	1.0	6488037
Colour	TCU	<5.0	5.0	6488040	<5.0	5.0	6488040	39	5.0	6488040
Nitrate + Nitrite (N)	mg/L	0.62	0.050	6488045	0.084	0.050	6488045	0.063	0.050	6488045
Nitrite (N)	mg/L	0.074	0.010	6488048	<0.010	0.010	6488048	<0.010	0.010	6488048
Nitrogen (Ammonia Nitrogen)	mg/L	0.067	0.050	6488306	0.62	0.050	6488306	0.51	0.050	6488306
Total Organic Carbon (C)	mg/L	1.3	0.50	6487889	1.9	0.50	6487889	5.4	0.50	6487889
Orthophosphate (P)	mg/L	0.19	0.010	6488044	0.012	0.010	6488044	<0.010	0.010	6488044
pH	pH	8.03	N/A	6487879	8.07	N/A	6487879	6.97	N/A	6487879
Reactive Silica (SiO2)	mg/L	22	1.0	6488039	2.1	0.50	6488039	12	0.50	6488039
Dissolved Sulphate (SO4)	mg/L	300	10	6488038	1100	40	6488038	1400	40	6488038
Turbidity	NTU	1.6	0.10	6487948	5.3	0.10	6487945	45	0.10	6487948
Conductivity	uS/cm	1300	1.0	6487880	2100	1.0	6487880	3100	1.0	6487880

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

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BV Labs Job #: B9X9874
Report Date: 2019/12/12

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLU915			LLU916			LLU917		
Sampling Date		2019/12/02			2019/12/02			2019/12/02		
	UNITS	MSES-006-MW	RDL	QC Batch	MSES-008-MW	RDL	QC Batch	COBC-002-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	17.1	N/A	6476038	25.6	N/A	6476038	24.3	N/A	6476038
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	140	1.0	6476034	200	1.0	6476034	55	1.0	6476034
Calculated TDS	mg/L	1100	1.0	6476048	1600	1.0	6476048	1400	1.0	6476048
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6476034	<1.0	1.0	6476034	<1.0	1.0	6476034
Cation Sum	me/L	16.3	N/A	6476038	25.6	N/A	6476038	22.5	N/A	6476038
Hardness (CaCO3)	mg/L	770	1.0	6476036	1000	1.0	6476036	550	1.0	6476036
Ion Balance (% Difference)	%	2.42	N/A	6476037	0.120	N/A	6476037	3.79	N/A	6476037
Langelier Index (@ 20C)	N/A	0.254		6476040	0.640		6476040	-1.34		6476040
Langelier Index (@ 4C)	N/A	0.00800		6476044	0.395		6476044	-1.58		6476044
Nitrate (N)	mg/L	0.054	0.050	6475711	0.10	0.050	6475711	0.48	0.10	6475711
Saturation pH (@ 20C)	N/A	7.04		6476040	6.74		6476040	7.59		6476040
Saturation pH (@ 4C)	N/A	7.28		6476044	6.98		6476044	7.83		6476044
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	140	25	6488033	200	25	6488033	55	5.0	6488058
Dissolved Chloride (Cl-)	mg/L	33	1.0	6488037	170	5.0	6488037	690	30	6488061
Colour	TCU	5.7	5.0	6488040	110	25	6488040	<5.0	5.0	6488065
Nitrate + Nitrite (N)	mg/L	0.054	0.050	6488045	0.10	0.050	6488045	0.48 (1)	0.10	6488067
Nitrite (N)	mg/L	<0.010	0.010	6488048	<0.010	0.010	6488048	<0.010	0.010	6488068
Nitrogen (Ammonia Nitrogen)	mg/L	0.30	0.050	6488306	0.066	0.050	6488294	<0.050	0.050	6488294
Total Organic Carbon (C)	mg/L	2.4	0.50	6487889	1.0	0.50	6487889	1.6	0.50	6487889
Orthophosphate (P)	mg/L	<0.010	0.010	6488044	<0.010	0.010	6488044	<0.010	0.010	6488066
pH	pH	7.29	N/A	6487879	7.38	N/A	6487881	6.25	N/A	6487876
Reactive Silica (SiO2)	mg/L	25	1.0	6488039	26	1.0	6488039	2.7	0.50	6488064
Dissolved Sulphate (SO4)	mg/L	650	20	6488038	800	20	6488038	180	10	6488062
Turbidity	NTU	9.3	0.10	6487948	140	1.0	6487948	2.0	0.10	6487945
Conductivity	uS/cm	1400	1.0	6487880	2200	1.0	6487883	2500	1.0	6487878

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to method blank performance.

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BV Labs Job #: B9X9874
Report Date: 2019/12/12

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LLU959			LLU960		
Sampling Date		2019/12/02			2019/12/02		
	UNITS	COBC-001-MWA	RDL	QC Batch	FD-17	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	11.3	N/A	6476038	25.4	N/A	6476038
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	170	1.0	6476034	29	1.0	6476034
Calculated TDS	mg/L	690	1.0	6476048	1700	1.0	6476048
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6476034	<1.0	1.0	6476034
Cation Sum	me/L	11.1	N/A	6476038	26.9	N/A	6476038
Hardness (CaCO3)	mg/L	450	1.0	6476036	1300	1.0	6476036
Ion Balance (% Difference)	%	0.810	N/A	6476037	2.79	N/A	6476037
Langelier Index (@ 20C)	N/A	0.408		6476040	0.770		6476040
Langelier Index (@ 4C)	N/A	0.161		6476044	0.526		6476044
Nitrate (N)	mg/L	<0.10	0.10	6475711	<0.10	0.10	6475711
Saturation pH (@ 20C)	N/A	7.05		6476040	7.50		6476040
Saturation pH (@ 4C)	N/A	7.30		6476044	7.75		6476044
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L	170	25	6488058	30	5.0	6488058
Dissolved Chloride (Cl-)	mg/L	68	1.0	6488061	47	1.0	6488061
Colour	TCU	8.0	5.0	6488065	<5.0	5.0	6488065
Nitrate + Nitrite (N)	mg/L	<0.10 (1)	0.10	6488067	<0.10 (1)	0.10	6488067
Nitrite (N)	mg/L	<0.010	0.010	6488068	<0.010	0.010	6488068
Nitrogen (Ammonia Nitrogen)	mg/L	0.62	0.050	6488294	0.63	0.050	6488294
Total Organic Carbon (C)	mg/L	3.8	0.50	6487889	1.8	0.50	6487889
Orthophosphate (P)	mg/L	<0.010	0.010	6488066	0.012	0.010	6488066
pH	pH	7.46	N/A	6487879	8.27	N/A	6487879
Reactive Silica (SiO2)	mg/L	9.2	0.50	6488064	2.4	0.50	6488064
Dissolved Sulphate (SO4)	mg/L	280	10	6488062	1100	40	6488062
Turbidity	NTU	56	0.10	6487945	3.7	0.10	6487948
Conductivity	uS/cm	1000	1.0	6487880	2100	1.0	6487880

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to method blank performance.

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MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		LLU909	LLU910		LLU911	LLU912		
Sampling Date		2019/12/02	2019/12/02		2019/12/02	2019/12/02		
	UNITS	MCES-001-MWA	MCES-001-MWB	QC Batch	MCES-006-MW	COBC-004-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	6486199	<0.013	<0.013	0.013	6486317

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LLU913	LLU914	LLU915	LLU916	LLU917		
Sampling Date		2019/12/02	2019/12/02	2019/12/02	2019/12/02	2019/12/02		
	UNITS	MSES-104-MWA	MSES-104-MWB	MSES-006-MW	MSES-008-MW	COBC-002-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	6486317

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LLU959	LLU960		
Sampling Date		2019/12/02	2019/12/02		
	UNITS	COBC-001-MWA	FD-17	RDL	QC Batch
Metals					
Total Mercury (Hg)	ug/L	<0.013	<0.013	0.013	6486317

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LLU909	LLU910	LLU911	LLU912		
Sampling Date		2019/12/02	2019/12/02	2019/12/02	2019/12/02		
	UNITS	MCES-001-MWA	MCES-001-MWB	MCES-006-MW	COBC-004-MWA	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	38	21	380	5.7	5.0	6486099
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	1.8	1.0	6486099
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	6.4	6.1	1.0	6486099
Dissolved Barium (Ba)	ug/L	140	260	60	25	1.0	6486099
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	6486099
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6486099
Dissolved Boron (B)	ug/L	<50	<50	<50	85	50	6486099
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.029	0.010	6486099
Dissolved Calcium (Ca)	ug/L	220000	220000	58000	150000	100	6486099
Dissolved Chromium (Cr)	ug/L	2.6	<1.0	<1.0	<1.0	1.0	6486099
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	6486099
Dissolved Copper (Cu)	ug/L	2.8	<0.50	6.1	2.8	0.50	6486099
Dissolved Iron (Fe)	ug/L	<50	<50	<50	<50	50	6486099
Dissolved Lead (Pb)	ug/L	3.9	<0.50	<0.50	<0.50	0.50	6486099
Dissolved Magnesium (Mg)	ug/L	<100	<100	630	26000	100	6486099
Dissolved Manganese (Mn)	ug/L	<2.0	<2.0	170	180	2.0	6486099
Dissolved Molybdenum (Mo)	ug/L	7.3	10	3.2	7.3	2.0	6486099
Dissolved Nickel (Ni)	ug/L	<2.0	2.3	<2.0	<2.0	2.0	6486099
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	220	100	6486099
Dissolved Potassium (K)	ug/L	13000	13000	3400	4500	100	6486099
Dissolved Selenium (Se)	ug/L	1.6	1.6	2.2	3.3	0.50	6486099
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	6486099
Dissolved Sodium (Na)	ug/L	28000	28000	6000	90000	100	6486099
Dissolved Strontium (Sr)	ug/L	1100	1100	520	410	2.0	6486099
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	6486099
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6486099
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	6486099
Dissolved Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.74	0.10	6486099
Dissolved Vanadium (V)	ug/L	18	2.1	120	15	2.0	6486099
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	19	5.0	6486099

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LLU913		LLU914		LLU915	LLU916		
Sampling Date		2019/12/02		2019/12/02		2019/12/02	2019/12/02		
	UNITS	MSES-104-MWA	RDL	MSES-104-MWB	RDL	MSES-006-MW	MSES-008-MW	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	5.9	5.0	56	5.0	12	<5.0	5.0	6486104
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.0	6486104
Dissolved Arsenic (As)	ug/L	1.7	1.0	3.9	1.0	<1.0	12	1.0	6486104
Dissolved Barium (Ba)	ug/L	16	1.0	17	1.0	20	7.8	1.0	6486104
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.0	6486104
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<2.0	2.0	<2.0	<2.0	2.0	6486104
Dissolved Boron (B)	ug/L	<50	50	200	50	<50	63	50	6486104
Dissolved Cadmium (Cd)	ug/L	0.069	0.010	0.11	0.010	<0.010	0.017	0.010	6486104
Dissolved Calcium (Ca)	ug/L	460000	100	380000	100	250000	380000	100	6486104
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.0	6486104
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	4.9	0.40	<0.40	<0.40	0.40	6486104
Dissolved Copper (Cu)	ug/L	<0.50	0.50	<0.50	0.50	<0.50	<0.50	0.50	6486104
Dissolved Iron (Fe)	ug/L	86	50	3500	50	790	10000	50	6486104
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<0.50	0.50	<0.50	<0.50	0.50	6486104
Dissolved Magnesium (Mg)	ug/L	30000	100	160000	1000	38000	25000	100	6486104
Dissolved Manganese (Mn)	ug/L	67	2.0	51000	20	770	780	2.0	6486104
Dissolved Molybdenum (Mo)	ug/L	6.0	2.0	<2.0	2.0	<2.0	2.7	2.0	6486104
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	20	2.0	<2.0	3.3	2.0	6486104
Dissolved Phosphorus (P)	ug/L	<100	100	<100	100	<100	<100	100	6486104
Dissolved Potassium (K)	ug/L	9500	100	13000	100	4900	4900	100	6486104
Dissolved Selenium (Se)	ug/L	<0.50	0.50	<0.50	0.50	0.75	<0.50	0.50	6486104
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<0.10	0.10	<0.10	<0.10	0.10	6486104
Dissolved Sodium (Na)	ug/L	30000	100	150000	100	17000	100000	100	6486104
Dissolved Strontium (Sr)	ug/L	530	2.0	1800	2.0	480	550	2.0	6486104
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<0.10	0.10	<0.10	<0.10	0.10	6486104
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<2.0	2.0	<2.0	<2.0	2.0	6486104
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<2.0	2.0	<2.0	<2.0	2.0	6486104
Dissolved Uranium (U)	ug/L	<0.10	0.10	2.1	0.10	4.0	0.56	0.10	6486104
Dissolved Vanadium (V)	ug/L	<2.0	2.0	2.0	2.0	13	<2.0	2.0	6486104
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	<5.0	5.0	<5.0	28	5.0	6486104

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LLU917			LLU959		LLU960		
Sampling Date		2019/12/02			2019/12/02		2019/12/02		
	UNITS	COBC-002-MWA	RDL	QC Batch	COBC-001-MWA	RDL	FD-17	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	32	5.0	6486099	8.7	5.0	<5.0	5.0	6486104
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	6486099	<1.0	1.0	<1.0	1.0	6486104
Dissolved Arsenic (As)	ug/L	<1.0	1.0	6486099	1.9	1.0	1.7	1.0	6486104
Dissolved Barium (Ba)	ug/L	20	1.0	6486099	81	1.0	15	1.0	6486104
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6486099	<1.0	1.0	<1.0	1.0	6486104
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	6486099	<2.0	2.0	<2.0	2.0	6486104
Dissolved Boron (B)	ug/L	71	50	6486099	<50	50	<50	50	6486104
Dissolved Cadmium (Cd)	ug/L	0.20	0.010	6486099	0.024	0.010	<0.010	0.010	6486104
Dissolved Calcium (Ca)	ug/L	190000	100	6486099	160000	100	460000	100	6486104
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6486099	<1.0	1.0	<1.0	1.0	6486104
Dissolved Cobalt (Co)	ug/L	0.49	0.40	6486099	0.44	0.40	<0.40	0.40	6486104
Dissolved Copper (Cu)	ug/L	11	0.50	6486099	<0.50	0.50	<0.50	0.50	6486104
Dissolved Iron (Fe)	ug/L	<50	50	6486099	4000	50	83	50	6486104
Dissolved Lead (Pb)	ug/L	1.1	0.50	6486099	<0.50	0.50	<0.50	0.50	6486104
Dissolved Magnesium (Mg)	ug/L	21000	100	6486099	10000	100	30000	100	6486104
Dissolved Manganese (Mn)	ug/L	100	2.0	6486099	1700	2.0	68	2.0	6486104
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	6486099	<2.0	2.0	6.2	2.0	6486104
Dissolved Nickel (Ni)	ug/L	3.5	2.0	6486099	<2.0	2.0	<2.0	2.0	6486104
Dissolved Phosphorus (P)	ug/L	<100	100	6486099	<100	100	<100	100	6486104
Dissolved Potassium (K)	ug/L	3100	100	6486099	2500	100	9500	100	6486104
Dissolved Selenium (Se)	ug/L	4.7	0.50	6486099	<0.50	0.50	<0.50	0.50	6486104
Dissolved Silver (Ag)	ug/L	<0.10	0.10	6486099	<0.10	0.10	<0.10	0.10	6486104
Dissolved Sodium (Na)	ug/L	260000	100	6486099	42000	100	30000	100	6486104
Dissolved Strontium (Sr)	ug/L	890	2.0	6486099	5100	20	530	2.0	6486104
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6486099	<0.10	0.10	<0.10	0.10	6486104
Dissolved Tin (Sn)	ug/L	<2.0	2.0	6486099	<2.0	2.0	<2.0	2.0	6486104
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	6486099	<2.0	2.0	<2.0	2.0	6486104
Dissolved Uranium (U)	ug/L	<0.10	0.10	6486099	<0.10	0.10	<0.10	0.10	6486104
Dissolved Vanadium (V)	ug/L	<2.0	2.0	6486099	<2.0	2.0	<2.0	2.0	6486104
Dissolved Zinc (Zn)	ug/L	62	5.0	6486099	13	5.0	<5.0	5.0	6486104

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LLU909		LLU910		LLU911		LLU912		
Sampling Date		2019/12/02		2019/12/02		2019/12/02		2019/12/02		
	UNITS	MCES-001-MWA	RDL	MCES-001-MWB	RDL	MCES-006-MW	RDL	COBC-004-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	0.11	0.050	<0.050	0.050	3.1	0.050	1.1	0.050	6485906
2-Methylnaphthalene	ug/L	<0.050	0.050	<0.050	0.050	<0.050	0.050	0.87	0.050	6485906
Acenaphthene	ug/L	0.047	0.010	<0.010	0.010	9.6	0.010	0.46	0.010	6485906
Acenaphthylene	ug/L	0.062	0.010	<0.010	0.010	0.16	0.010	<0.030 (1)	0.030	6485906
Anthracene	ug/L	0.022	0.010	<0.020 (1)	0.020	0.14	0.010	0.011	0.010	6485906
Benzo(a)anthracene	ug/L	0.016	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Benzo(a)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Benzo(b)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	<0.020	0.020	<0.020	0.020	<0.020	0.020	6476124
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Benzo(j)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Benzo(k)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Chrysene	ug/L	<0.030 (1)	0.030	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Fluoranthene	ug/L	0.082	0.010	<0.010	0.010	0.13	0.010	<0.010	0.010	6485906
Fluorene	ug/L	0.086	0.010	<0.010	0.010	2.4	0.010	0.15	0.010	6485906
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Naphthalene	ug/L	<0.20	0.20	<0.20	0.20	<0.20	0.20	12	0.20	6485906
Perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Phenanthrene	ug/L	0.051	0.010	<0.020 (1)	0.020	0.97	0.010	0.067	0.010	6485906
Pyrene	ug/L	0.19	0.010	<0.010	0.010	0.086	0.010	<0.010	0.010	6485906
Surrogate Recovery (%)										
D10-Anthracene	%	92		89		92		96		6485906
D14-Terphenyl	%	98		98		98		102		6485906
D8-Acenaphthylene	%	97		97		93		99		6485906

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LLU913		LLU914		LLU915	LLU916		
Sampling Date		2019/12/02		2019/12/02		2019/12/02	2019/12/02		
	UNITS	MSES-104-MWA	RDL	MSES-104-MWB	RDL	MSES-006-MW	MSES-008-MW	RDL	QC Batch
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	1.2	0.050	52 (1)	0.50	0.14	0.94	0.050	6485906
2-Methylnaphthalene	ug/L	0.37	0.050	0.051	0.050	<0.050	0.62	0.050	6485906
Acenaphthene	ug/L	6.1	0.010	20	0.010	0.35	2.0	0.010	6485906
Acenaphthylene	ug/L	5.9	0.010	37 (1)	0.10	0.62	2.5	0.010	6485906
Anthracene	ug/L	0.52	0.010	1.2	0.010	<0.010	0.14	0.010	6485906
Benzo(a)anthracene	ug/L	0.17	0.010	0.027	0.010	<0.010	0.061	0.010	6485906
Benzo(a)pyrene	ug/L	0.057	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Benzo(b)fluoranthene	ug/L	0.044	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Benzo(b/j)fluoranthene	ug/L	0.081	0.020	<0.020	0.020	<0.020	<0.020	0.020	6476124
Benzo(g,h,i)perylene	ug/L	0.023	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Benzo(j)fluoranthene	ug/L	0.037	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Benzo(k)fluoranthene	ug/L	0.031	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Chrysene	ug/L	0.15	0.010	0.017	0.010	<0.010	0.044	0.010	6485906
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Fluoranthene	ug/L	2.4	0.010	0.64	0.010	<0.010	1.2	0.010	6485906
Fluorene	ug/L	1.8	0.010	14	0.010	0.098	3.6	0.010	6485906
Indeno(1,2,3-cd)pyrene	ug/L	0.018	0.010	<0.010	0.010	<0.010	<0.010	0.010	6485906
Naphthalene	ug/L	8.5	0.20	5.2	0.20	<0.20	7.7	0.20	6485906
Perylene	ug/L	<0.020 (2)	0.020	<0.010	0.010	<0.010	<0.010	0.010	6485906
Phenanthrene	ug/L	0.56	0.010	9.3	0.010	<0.010	0.36	0.010	6485906
Pyrene	ug/L	1.5	0.010	0.34	0.010	<0.010	0.92	0.010	6485906
Surrogate Recovery (%)									
D10-Anthracene	%	89		98		92	83		6485906
D14-Terphenyl	%	96		97		99	97		6485906
D8-Acenaphthylene	%	94		96		97	102		6485906

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.
(2) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LLU917		LLU959		LLU960		
Sampling Date		2019/12/02		2019/12/02		2019/12/02		
	UNITS	COBC-002-MWA	RDL	COBC-001-MWA	RDL	FD-17	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	0.71	0.050	0.72	0.050	1.2	0.050	6485906
2-Methylnaphthalene	ug/L	0.57	0.050	0.53	0.050	0.36	0.050	6485906
Acenaphthene	ug/L	0.31	0.010	9.9	0.010	5.7	0.010	6485906
Acenaphthylene	ug/L	0.029	0.010	1.7	0.010	5.7	0.010	6485906
Anthracene	ug/L	<0.010	0.010	0.038	0.010	0.45	0.010	6485906
Benzo(a)anthracene	ug/L	<0.010	0.010	0.011	0.010	0.16	0.010	6485906
Benzo(a)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.050 (1)	0.050	6485906
Benzo(b)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.050 (1)	0.050	6485906
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	<0.020	0.020	<0.080	0.080	6476124
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	<0.010	0.010	0.020	0.010	6485906
Benzo(j)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.030 (1)	0.030	6485906
Benzo(k)fluoranthene	ug/L	<0.030 (1)	0.030	<0.010	0.010	<0.030 (1)	0.030	6485906
Chrysene	ug/L	<0.010	0.010	0.011	0.010	0.14	0.010	6485906
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Fluoranthene	ug/L	0.011	0.010	0.070	0.010	2.3	0.010	6485906
Fluorene	ug/L	0.11	0.010	0.35	0.010	1.8	0.010	6485906
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.020 (1)	0.020	6485906
Naphthalene	ug/L	6.5	0.20	5.3	0.20	8.2	0.20	6485906
Perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	6485906
Phenanthrene	ug/L	0.045	0.010	0.062	0.010	0.52	0.010	6485906
Pyrene	ug/L	<0.010	0.010	0.065	0.010	1.5	0.010	6485906
Surrogate Recovery (%)								
D10-Anthracene	%	82		89		88		6485906
D14-Terphenyl	%	96		100		100		6485906
D8-Acenaphthylene	%	96		95		92		6485906

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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GENERAL COMMENTS

Sample LLU909 [MCES-001-MWA] : Poor RCAp Ion Balance due to sample matrix.

Sample LLU910 [MCES-001-MWB] : Poor RCAp Ion Balance 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
6485906	KKE	Matrix Spike [LLU910-06]	D10-Anthracene	2019/12/09		97	%	50 - 130
			D14-Terphenyl	2019/12/09		97	%	50 - 130
			D8-Acenaphthylene	2019/12/09		95	%	50 - 130
			1-Methylnaphthalene	2019/12/09		91	%	50 - 130
			2-Methylnaphthalene	2019/12/09		88	%	50 - 130
			Acenaphthene	2019/12/09		105	%	50 - 130
			Acenaphthylene	2019/12/09		109	%	50 - 130
			Anthracene	2019/12/09		99	%	50 - 130
			Benzo(a)anthracene	2019/12/09		100	%	50 - 130
			Benzo(a)pyrene	2019/12/09		113	%	50 - 130
			Benzo(b)fluoranthene	2019/12/09		116	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/09		106	%	50 - 130
			Benzo(j)fluoranthene	2019/12/09		108	%	50 - 130
			Benzo(k)fluoranthene	2019/12/09		110	%	50 - 130
			Chrysene	2019/12/09		94	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/09		87	%	50 - 130
			Fluoranthene	2019/12/09		99	%	50 - 130
			Fluorene	2019/12/09		105	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/09		102	%	50 - 130
			Naphthalene	2019/12/09		97	%	50 - 130
			Perylene	2019/12/09		103	%	50 - 130
			Phenanthrene	2019/12/09		111	%	50 - 130
			Pyrene	2019/12/09		100	%	50 - 130
6485906	KKE	Spiked Blank	D10-Anthracene	2019/12/09		94	%	50 - 130
			D14-Terphenyl	2019/12/09		96	%	50 - 130
			D8-Acenaphthylene	2019/12/09		96	%	50 - 130
			1-Methylnaphthalene	2019/12/09		96	%	50 - 130
			2-Methylnaphthalene	2019/12/09		93	%	50 - 130
			Acenaphthene	2019/12/09		106	%	50 - 130
			Acenaphthylene	2019/12/09		109	%	50 - 130
			Anthracene	2019/12/09		102	%	50 - 130
			Benzo(a)anthracene	2019/12/09		99	%	50 - 130
			Benzo(a)pyrene	2019/12/09		102	%	50 - 130
			Benzo(b)fluoranthene	2019/12/09		113	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/09		99	%	50 - 130
			Benzo(j)fluoranthene	2019/12/09		101	%	50 - 130
			Benzo(k)fluoranthene	2019/12/09		102	%	50 - 130
			Chrysene	2019/12/09		96	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/09		89	%	50 - 130
			Fluoranthene	2019/12/09		99	%	50 - 130
			Fluorene	2019/12/09		102	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/09		99	%	50 - 130
			Naphthalene	2019/12/09		101	%	50 - 130
			Perylene	2019/12/09		99	%	50 - 130
			Phenanthrene	2019/12/09		99	%	50 - 130
			Pyrene	2019/12/09		98	%	50 - 130
6485906	KKE	Method Blank	D10-Anthracene	2019/12/09		88	%	50 - 130
			D14-Terphenyl	2019/12/09		98	%	50 - 130
			D8-Acenaphthylene	2019/12/09		94	%	50 - 130
			1-Methylnaphthalene	2019/12/09	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/09	<0.050		ug/L	
			Acenaphthene	2019/12/09	<0.010		ug/L	
			Acenaphthylene	2019/12/09	<0.010		ug/L	
			Anthracene	2019/12/09	<0.010		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(a)anthracene	2019/12/09	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/09	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/09	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/09	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/09	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/09	<0.010		ug/L	
			Chrysene	2019/12/09	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/09	<0.010		ug/L	
			Fluoranthene	2019/12/09	<0.010		ug/L	
			Fluorene	2019/12/09	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/09	<0.010		ug/L	
			Naphthalene	2019/12/09	<0.20		ug/L	
			Perylene	2019/12/09	<0.010		ug/L	
			Phenanthrene	2019/12/09	<0.010		ug/L	
			Pyrene	2019/12/09	<0.010		ug/L	
6485906	KKE	RPD [LLU909-06]	1-Methylnaphthalene	2019/12/09	4.8		%	40
			2-Methylnaphthalene	2019/12/09	NC		%	40
			Acenaphthene	2019/12/09	7.2		%	40
			Acenaphthylene	2019/12/09	11		%	40
			Anthracene	2019/12/09	1.4		%	40
			Benzo(a)anthracene	2019/12/09	NC		%	40
			Benzo(a)pyrene	2019/12/09	NC		%	40
			Benzo(b)fluoranthene	2019/12/09	NC		%	40
			Benzo(g,h,i)perylene	2019/12/09	NC		%	40
			Benzo(j)fluoranthene	2019/12/09	NC		%	40
			Benzo(k)fluoranthene	2019/12/09	NC		%	40
			Chrysene	2019/12/09	NC (1)		%	40
			Dibenzo(a,h)anthracene	2019/12/09	NC		%	40
			Fluoranthene	2019/12/09	30		%	40
			Fluorene	2019/12/09	6.2		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/09	NC		%	40
			Naphthalene	2019/12/09	NC		%	40
			Perylene	2019/12/09	NC		%	40
			Phenanthrene	2019/12/09	3.2		%	40
			Pyrene	2019/12/09	47 (2)		%	40
6486099	BAN	Matrix Spike [LLU917-02]	Dissolved Aluminum (Al)	2019/12/09		102	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/09		98	%	80 - 120
			Dissolved Arsenic (As)	2019/12/09		99	%	80 - 120
			Dissolved Barium (Ba)	2019/12/09		95	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/09		101	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/09		92	%	80 - 120
			Dissolved Boron (B)	2019/12/09		101	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/09		93	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/09		NC	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/09		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/09		94	%	80 - 120
			Dissolved Copper (Cu)	2019/12/09		91	%	80 - 120
			Dissolved Iron (Fe)	2019/12/09		99	%	80 - 120
			Dissolved Lead (Pb)	2019/12/09		93	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/09		NC	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/09		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/09		101	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/09		94	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/09		102	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Potassium (K)	2019/12/09		99	%	80 - 120
			Dissolved Selenium (Se)	2019/12/09		96	%	80 - 120
			Dissolved Silver (Ag)	2019/12/09		96	%	80 - 120
			Dissolved Sodium (Na)	2019/12/09		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/09		NC	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/09		96	%	80 - 120
			Dissolved Tin (Sn)	2019/12/09		101	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/09		98	%	80 - 120
			Dissolved Uranium (U)	2019/12/09		103	%	80 - 120
			Dissolved Vanadium (V)	2019/12/09		98	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/09		94	%	80 - 120
6486099	BAN	Spiked Blank	Dissolved Aluminum (Al)	2019/12/09		101	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/09		96	%	80 - 120
			Dissolved Arsenic (As)	2019/12/09		95	%	80 - 120
			Dissolved Barium (Ba)	2019/12/09		95	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/09		97	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/09		98	%	80 - 120
			Dissolved Boron (B)	2019/12/09		95	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/09		94	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/09		101	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/09		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/09		94	%	80 - 120
			Dissolved Copper (Cu)	2019/12/09		96	%	80 - 120
			Dissolved Iron (Fe)	2019/12/09		100	%	80 - 120
			Dissolved Lead (Pb)	2019/12/09		97	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/09		102	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/09		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/09		99	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/09		97	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/09		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/09		101	%	80 - 120
			Dissolved Selenium (Se)	2019/12/09		96	%	80 - 120
			Dissolved Silver (Ag)	2019/12/09		95	%	80 - 120
			Dissolved Sodium (Na)	2019/12/09		99	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/09		95	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/09		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/09		100	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/09		99	%	80 - 120
			Dissolved Uranium (U)	2019/12/09		101	%	80 - 120
			Dissolved Vanadium (V)	2019/12/09		96	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/09		98	%	80 - 120
6486099	BAN	Method Blank	Dissolved Aluminum (Al)	2019/12/09	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/09	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/09	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/09	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/09	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/09	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/09	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/09	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/09	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/09	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/09	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/09	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/09	<50		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Lead (Pb)	2019/12/09	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/09	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/09	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/09	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/09	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/09	<100		ug/L	
			Dissolved Potassium (K)	2019/12/09	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/09	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/09	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/09	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/09	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/09	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/09	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/09	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/09	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/09	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/09	<5.0		ug/L	
6486099	BAN	RPD [LLU917-02]	Dissolved Aluminum (Al)	2019/12/09	0.52		%	20
			Dissolved Antimony (Sb)	2019/12/09	NC		%	20
			Dissolved Arsenic (As)	2019/12/09	NC		%	20
			Dissolved Barium (Ba)	2019/12/09	0.42		%	20
			Dissolved Beryllium (Be)	2019/12/09	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/09	NC		%	20
			Dissolved Boron (B)	2019/12/09	2.9		%	20
			Dissolved Cadmium (Cd)	2019/12/09	0.47		%	20
			Dissolved Calcium (Ca)	2019/12/09	0.84		%	20
			Dissolved Chromium (Cr)	2019/12/09	NC		%	20
			Dissolved Cobalt (Co)	2019/12/09	0.30		%	20
			Dissolved Copper (Cu)	2019/12/09	2.1		%	20
			Dissolved Iron (Fe)	2019/12/09	NC		%	20
			Dissolved Lead (Pb)	2019/12/09	0.87		%	20
			Dissolved Magnesium (Mg)	2019/12/09	2.0		%	20
			Dissolved Manganese (Mn)	2019/12/09	2.4		%	20
			Dissolved Molybdenum (Mo)	2019/12/09	NC		%	20
			Dissolved Nickel (Ni)	2019/12/09	4.4		%	20
			Dissolved Phosphorus (P)	2019/12/09	NC		%	20
			Dissolved Potassium (K)	2019/12/09	0.15		%	20
			Dissolved Selenium (Se)	2019/12/09	3.2		%	20
			Dissolved Silver (Ag)	2019/12/09	NC		%	20
			Dissolved Sodium (Na)	2019/12/09	1.7		%	20
			Dissolved Strontium (Sr)	2019/12/09	1.5		%	20
			Dissolved Thallium (Tl)	2019/12/09	NC		%	20
			Dissolved Tin (Sn)	2019/12/09	NC		%	20
			Dissolved Titanium (Ti)	2019/12/09	NC		%	20
			Dissolved Uranium (U)	2019/12/09	NC		%	20
			Dissolved Vanadium (V)	2019/12/09	NC		%	20
			Dissolved Zinc (Zn)	2019/12/09	2.1		%	20
6486104	BAN	Matrix Spike	Dissolved Aluminum (Al)	2019/12/09		100	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/09		100	%	80 - 120
			Dissolved Arsenic (As)	2019/12/09		98	%	80 - 120
			Dissolved Barium (Ba)	2019/12/09		NC	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/09		99	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/09		95	%	80 - 120
			Dissolved Boron (B)	2019/12/09		107	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Cadmium (Cd)	2019/12/09		95	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/09		NC	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/09		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/09		97	%	80 - 120
			Dissolved Copper (Cu)	2019/12/09		94	%	80 - 120
			Dissolved Iron (Fe)	2019/12/09		NC	%	80 - 120
			Dissolved Lead (Pb)	2019/12/09		97	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/09		102	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/09		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/09		100	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/09		95	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/09		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/09		101	%	80 - 120
			Dissolved Selenium (Se)	2019/12/09		99	%	80 - 120
			Dissolved Silver (Ag)	2019/12/09		95	%	80 - 120
			Dissolved Sodium (Na)	2019/12/09		92	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/09		NC	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/09		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/09		104	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/09		98	%	80 - 120
			Dissolved Uranium (U)	2019/12/09		106	%	80 - 120
			Dissolved Vanadium (V)	2019/12/09		98	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/09		98	%	80 - 120
6486104	BAN	Spiked Blank	Dissolved Aluminum (Al)	2019/12/09		102	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/09		95	%	80 - 120
			Dissolved Arsenic (As)	2019/12/09		98	%	80 - 120
			Dissolved Barium (Ba)	2019/12/09		97	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/09		100	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/09		95	%	80 - 120
			Dissolved Boron (B)	2019/12/09		103	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/09		96	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/09		101	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/09		98	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/09		100	%	80 - 120
			Dissolved Copper (Cu)	2019/12/09		97	%	80 - 120
			Dissolved Iron (Fe)	2019/12/09		102	%	80 - 120
			Dissolved Lead (Pb)	2019/12/09		98	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/09		105	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/09		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/09		101	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/09		100	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/09		103	%	80 - 120
			Dissolved Potassium (K)	2019/12/09		103	%	80 - 120
			Dissolved Selenium (Se)	2019/12/09		99	%	80 - 120
			Dissolved Silver (Ag)	2019/12/09		99	%	80 - 120
			Dissolved Sodium (Na)	2019/12/09		100	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/09		100	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/09		100	%	80 - 120
			Dissolved Tin (Sn)	2019/12/09		101	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/09		104	%	80 - 120
			Dissolved Uranium (U)	2019/12/09		106	%	80 - 120
			Dissolved Vanadium (V)	2019/12/09		100	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/09		99	%	80 - 120
6486104	BAN	Method Blank	Dissolved Aluminum (Al)	2019/12/09	<5.0		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Antimony (Sb)	2019/12/09	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/09	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/09	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/09	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/09	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/09	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/09	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/09	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/09	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/09	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/09	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/09	<50		ug/L	
			Dissolved Lead (Pb)	2019/12/09	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/09	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/09	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/09	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/09	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/09	<100		ug/L	
			Dissolved Potassium (K)	2019/12/09	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/09	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/09	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/09	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/09	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/09	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/09	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/09	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/09	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/09	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/09	<5.0		ug/L	
6486104	BAN	RPD	Dissolved Aluminum (Al)	2019/12/09	2.7		%	20
			Dissolved Antimony (Sb)	2019/12/09	NC		%	20
			Dissolved Arsenic (As)	2019/12/09	0.43		%	20
			Dissolved Barium (Ba)	2019/12/09	0.27		%	20
			Dissolved Beryllium (Be)	2019/12/09	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/09	NC		%	20
			Dissolved Boron (B)	2019/12/09	NC		%	20
			Dissolved Cadmium (Cd)	2019/12/09	11		%	20
			Dissolved Calcium (Ca)	2019/12/09	0.39		%	20
			Dissolved Chromium (Cr)	2019/12/09	NC		%	20
			Dissolved Cobalt (Co)	2019/12/09	8.3		%	20
			Dissolved Copper (Cu)	2019/12/09	NC		%	20
			Dissolved Iron (Fe)	2019/12/09	0.20		%	20
			Dissolved Lead (Pb)	2019/12/09	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/09	0.68		%	20
			Dissolved Manganese (Mn)	2019/12/09	0.14		%	20
			Dissolved Molybdenum (Mo)	2019/12/09	NC		%	20
			Dissolved Nickel (Ni)	2019/12/09	NC		%	20
			Dissolved Phosphorus (P)	2019/12/09	NC		%	20
			Dissolved Potassium (K)	2019/12/09	3.7		%	20
			Dissolved Selenium (Se)	2019/12/09	NC		%	20
			Dissolved Silver (Ag)	2019/12/09	NC		%	20
			Dissolved Sodium (Na)	2019/12/09	0.86		%	20
			Dissolved Strontium (Sr)	2019/12/09	0.20		%	20
			Dissolved Thallium (Tl)	2019/12/09	NC		%	20

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Tin (Sn)	2019/12/09	NC		%	20
			Dissolved Titanium (Ti)	2019/12/09	NC		%	20
			Dissolved Uranium (U)	2019/12/09	NC		%	20
			Dissolved Vanadium (V)	2019/12/09	NC		%	20
			Dissolved Zinc (Zn)	2019/12/09	NC		%	20
6486199	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/10		103	%	80 - 120
6486199	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/10		103	%	80 - 120
6486199	NHU	Method Blank	Total Mercury (Hg)	2019/12/10	<0.013		ug/L	
6486199	NHU	RPD	Total Mercury (Hg)	2019/12/10	NC		%	20
6486317	NHU	Matrix Spike [LLU912-05]	Total Mercury (Hg)	2019/12/10		103	%	80 - 120
6486317	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/10		104	%	80 - 120
6486317	NHU	Method Blank	Total Mercury (Hg)	2019/12/10	<0.013		ug/L	
6486317	NHU	RPD [LLU911-05]	Total Mercury (Hg)	2019/12/10	NC		%	20
6487876	SHW	QC Standard	pH	2019/12/10		100	%	97 - 103
6487876	SHW	RPD	pH	2019/12/10	0.95		%	N/A
6487878	SHW	Spiked Blank	Conductivity	2019/12/10		100	%	80 - 120
6487878	SHW	Method Blank	Conductivity	2019/12/10	<1.0		uS/cm	
6487878	SHW	RPD	Conductivity	2019/12/10	0.93		%	10
6487879	SHW	QC Standard	pH	2019/12/10		101	%	97 - 103
6487879	SHW	RPD	pH	2019/12/10	0.57		%	N/A
6487880	SHW	Spiked Blank	Conductivity	2019/12/10		102	%	80 - 120
6487880	SHW	Method Blank	Conductivity	2019/12/10	<1.0		uS/cm	
6487880	SHW	RPD	Conductivity	2019/12/10	0.98		%	10
6487881	SHW	QC Standard	pH	2019/12/10		101	%	97 - 103
6487881	SHW	RPD	pH	2019/12/10	1.4		%	N/A
6487883	SHW	Spiked Blank	Conductivity	2019/12/10		102	%	80 - 120
6487883	SHW	Method Blank	Conductivity	2019/12/10	<1.0		uS/cm	
6487883	SHW	RPD	Conductivity	2019/12/10	2.0		%	10
6487889	SSI	Matrix Spike [LLU915-04]	Total Organic Carbon (C)	2019/12/10		95	%	85 - 115
6487889	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/10		94	%	80 - 120
6487889	SSI	Method Blank	Total Organic Carbon (C)	2019/12/10	<0.50		mg/L	
6487889	SSI	RPD [LLU915-04]	Total Organic Carbon (C)	2019/12/10	5.1		%	15
6487945	SHW	QC Standard	Turbidity	2019/12/10		103	%	80 - 120
6487945	SHW	Spiked Blank	Turbidity	2019/12/10		101	%	80 - 120
6487945	SHW	Method Blank	Turbidity	2019/12/10	<0.10		NTU	
6487945	SHW	RPD [LLU911-01]	Turbidity	2019/12/10	2.7		%	20
6487948	SHW	QC Standard	Turbidity	2019/12/10		103	%	80 - 120
6487948	SHW	Spiked Blank	Turbidity	2019/12/10		101	%	80 - 120
6487948	SHW	Method Blank	Turbidity	2019/12/10	<0.10		NTU	
6487948	SHW	RPD	Turbidity	2019/12/10	6.0		%	20
6488033	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/10		100	%	80 - 120
6488033	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/10		107	%	80 - 120
6488033	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/10	<5.0		mg/L	
6488033	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/10	NC		%	25
6488037	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/11		95	%	80 - 120
6488037	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/11		96	%	80 - 120
6488037	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/11	<1.0		mg/L	
6488037	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/11	0.23		%	25
6488038	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/10		113	%	80 - 120
6488038	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/10		108	%	80 - 120
6488038	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/10	<2.0		mg/L	
6488038	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/10	NC		%	25
6488039	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/10		93	%	80 - 120
6488039	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/10		96	%	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
6488039	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/11	<0.50		mg/L	
6488039	EMT	RPD	Reactive Silica (SiO2)	2019/12/10	1.4		%	25
6488040	EMT	Spiked Blank	Colour	2019/12/10		98	%	80 - 120
6488040	EMT	Method Blank	Colour	2019/12/10	<5.0		TCU	
6488040	EMT	RPD	Colour	2019/12/10	3.6		%	20
6488044	EMT	Matrix Spike	Orthophosphate (P)	2019/12/10		86	%	80 - 120
6488044	EMT	Spiked Blank	Orthophosphate (P)	2019/12/10		94	%	80 - 120
6488044	EMT	Method Blank	Orthophosphate (P)	2019/12/10	<0.010		mg/L	
6488044	EMT	RPD	Orthophosphate (P)	2019/12/10	NC		%	25
6488045	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/10		87	%	80 - 120
6488045	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/10		99	%	80 - 120
6488045	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/10	<0.050		mg/L	
6488045	EMT	RPD	Nitrate + Nitrite (N)	2019/12/10	NC		%	25
6488048	EMT	Matrix Spike	Nitrite (N)	2019/12/10		89	%	80 - 120
6488048	EMT	Spiked Blank	Nitrite (N)	2019/12/10		105	%	80 - 120
6488048	EMT	Method Blank	Nitrite (N)	2019/12/10	<0.010		mg/L	
6488048	EMT	RPD	Nitrite (N)	2019/12/10	NC		%	20
6488058	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/10		101	%	80 - 120
6488058	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/10		113	%	80 - 120
6488058	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/10	<5.0		mg/L	
6488058	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/10	NC		%	25
6488061	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/11		94	%	80 - 120
6488061	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/11		97	%	80 - 120
6488061	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/11	<1.0		mg/L	
6488061	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/11	12		%	25
6488062	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/10		112	%	80 - 120
6488062	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/10		104	%	80 - 120
6488062	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/10	<2.0		mg/L	
6488062	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/10	NC		%	25
6488064	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/10		94	%	80 - 120
6488064	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/10		97	%	80 - 120
6488064	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/11	<0.50		mg/L	
6488064	EMT	RPD	Reactive Silica (SiO2)	2019/12/10	0.085		%	25
6488065	EMT	Spiked Blank	Colour	2019/12/10		97	%	80 - 120
6488065	EMT	Method Blank	Colour	2019/12/10	<5.0		TCU	
6488065	EMT	RPD	Colour	2019/12/10	3.6		%	20
6488066	EMT	Matrix Spike	Orthophosphate (P)	2019/12/10		85	%	80 - 120
6488066	EMT	Spiked Blank	Orthophosphate (P)	2019/12/10		92	%	80 - 120
6488066	EMT	Method Blank	Orthophosphate (P)	2019/12/10	<0.010		mg/L	
6488066	EMT	RPD	Orthophosphate (P)	2019/12/10	NC		%	25
6488067	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/10		89	%	80 - 120
6488067	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/10		97	%	80 - 120
6488067	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/10	0.087, RDL=0.050		mg/L	
6488067	EMT	RPD	Nitrate + Nitrite (N)	2019/12/10	NC (3)		%	25
6488068	EMT	Matrix Spike	Nitrite (N)	2019/12/10		92	%	80 - 120
6488068	EMT	Spiked Blank	Nitrite (N)	2019/12/10		103	%	80 - 120
6488068	EMT	Method Blank	Nitrite (N)	2019/12/10	<0.010		mg/L	
6488068	EMT	RPD	Nitrite (N)	2019/12/10	NC		%	20
6488294	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/10		97	%	80 - 120
6488294	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/10		101	%	80 - 120
6488294	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/10	<0.050		mg/L	
6488294	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/10	NC		%	20
6488306	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/10		95	%	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
6488306	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/10		98	%	80 - 120
6488306	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/10	<0.050		mg/L	
6488306	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/10	NC		%	20
6493257	EMT	Matrix Spike	Orthophosphate (P)	2019/12/12		91	%	80 - 120
6493257	EMT	Spiked Blank	Orthophosphate (P)	2019/12/12		91	%	80 - 120
6493257	EMT	Method Blank	Orthophosphate (P)	2019/12/12	<0.010		mg/L	
6493257	EMT	RPD	Orthophosphate (P)	2019/12/12	2.8		%	25

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).

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

(2) Duplicate: results are outside acceptance limit. Insufficient sample for repeat analysis.

(3) Elevated reporting limit due to method blank performance.

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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

Mike MacGillivray, Scientific Specialist (Inorganics)

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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Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/13
Report #: R6004191
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y2698
Received: 2019/12/04, 16:35

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	9	N/A	2019/12/12	N/A	SM 23 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/12/13	N/A	SM 23 4500-CO2 D
Alkalinity (1)	10	N/A	2019/12/12	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	10	N/A	2019/12/11	N/A	Auto Calc.
Chloride (1)	10	N/A	2019/12/12	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	10	N/A	2019/12/12	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	9	N/A	2019/12/12	ATL SOP 00004	SM 23 2510B m
Conductance - water (1)	1	N/A	2019/12/13	ATL SOP 00004	SM 23 2510B m
Hardness (calculated as CaCO3) (1)	8	N/A	2019/12/12	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3) (1)	2	N/A	2019/12/13	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	10	2019/12/11	2019/12/12	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	8	N/A	2019/12/11	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2019/12/12	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	9	N/A	2019/12/13	N/A	Auto Calc.
Anion and Cation Sum (1)	4	N/A	2019/12/12	N/A	Auto Calc.
Anion and Cation Sum (1)	6	N/A	2019/12/13	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	6	N/A	2019/12/11	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen Ammonia - water (1)	4	N/A	2019/12/12	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	10	N/A	2019/12/12	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	10	N/A	2019/12/12	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	10	N/A	2019/12/13	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	2	2019/12/10	2019/12/10	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	8	2019/12/10	2019/12/11	ATL SOP 00103	EPA 8270E R6 m
pH (1, 2)	9	N/A	2019/12/12	ATL SOP 00003	SM 23 4500-H+ B m
pH (1, 2)	1	N/A	2019/12/13	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	10	N/A	2019/12/12	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	10	N/A	2019/12/13	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	10	N/A	2019/12/13	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	10	N/A	2019/12/12	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	10	N/A	2019/12/12	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	10	N/A	2019/12/13	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	10	N/A	2019/12/12	ATL SOP 00203	SM 23 5310B m

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/13
Report #: R6004191
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y2698
Received: 2019/12/04, 16:35

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Turbidity (1)	10	N/A	2019/12/12	ATL SOP 00011	EPA 180.1 R2 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
(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.

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Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/13
Report #: R6004191
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y2698
Received: 2019/12/04, 16:35

Encryption Key

AUTHORIZED REPORT
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Bureau Veritas Laboratories
13 Dec 2019 16:27:45

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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BV Labs Job #: B9Y2698
Report Date: 2019/12/13

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LML493			LML494			LML495		
Sampling Date		2019/12/04			2019/12/04			2019/12/04		
	UNITS	MCWS-113-MWB	RDL	QC Batch	MCWS-306-MWB	RDL	QC Batch	MCWS-307-MWB	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	8.63	N/A	6482641	9.60	N/A	6482641	14.7	N/A	6482641
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	340	1.0	6482624	290	1.0	6482624	330	1.0	6482624
Calculated TDS	mg/L	440	1.0	6482656	550	1.0	6482656	820	1.0	6482656
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.4	1.0	6482624	1.3	1.0	6482624	2.1	1.0	6482624
Cation Sum	me/L	7.82	N/A	6482641	9.28	N/A	6482641	13.8	N/A	6482641
Hardness (CaCO3)	mg/L	240	1.0	6482630	420	1.0	6482630	240	1.0	6482630
Ion Balance (% Difference)	%	4.92	N/A	6482634	1.69	N/A	6482634	2.98	N/A	6482634
Langelier Index (@ 20C)	N/A	0.827		6482648	0.792		6482648	0.703		6482648
Langelier Index (@ 4C)	N/A	0.579		6482652	0.545		6482652	0.457		6482652
Nitrate (N)	mg/L	<0.080	0.080	6482646	<0.080	0.080	6481510	<0.080	0.080	6481510
Saturation pH (@ 20C)	N/A	7.04		6482648	6.87		6482648	7.11		6482648
Saturation pH (@ 4C)	N/A	7.29		6482652	7.12		6482652	7.36		6482652
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	350	25	6492835	290	25	6492835	330	25	6492835
Dissolved Chloride (Cl-)	mg/L	60	1.0	6492842	16	1.0	6492842	220	5.0	6492842
Colour	TCU	7.4	5.0	6492846	<5.0	5.0	6492846	<5.0	5.0	6492846
Nitrate + Nitrite (N)	mg/L	<0.080 (1)	0.080	6492848	<0.080 (1)	0.080	6492848	<0.080 (1)	0.080	6492848
Nitrite (N)	mg/L	<0.010	0.010	6492849	<0.010	0.010	6492849	<0.010	0.010	6492849
Nitrogen (Ammonia Nitrogen)	mg/L	1.6	0.050	6493705	0.28	0.050	6493719	0.13	0.050	6491012
Total Organic Carbon (C)	mg/L	7.1	0.50	6493094	2.1	0.50	6492883	1.2	0.50	6492883
Orthophosphate (P)	mg/L	<0.010	0.010	6492847	<0.010	0.010	6492847	<0.010	0.010	6492847
pH	pH	7.86	N/A	6492964	7.66	N/A	6492878	7.82	N/A	6492878
Reactive Silica (SiO2)	mg/L	9.7	0.50	6492845	13	0.50	6492845	10	0.50	6492845
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	6492844	160	10	6492844	91	2.0	6492844
Turbidity	NTU	14	0.10	6493059	5.1	0.10	6493059	2.1	0.10	6493059
Conductivity	uS/cm	760	1.0	6492966	830	1.0	6492880	1400	1.0	6492880

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to blank performance.

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BV Labs Job #: B9Y2698
Report Date: 2019/12/13

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LML496			LML497			LML498		
Sampling Date		2019/12/04			2019/12/04			2019/12/04		
	UNITS	CONCW-101-MWB	RDL	QC Batch	CODT-105-MW	RDL	QC Batch	CODT-206-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	6.44	N/A	6480184	11.3	N/A	6480184	3.44	N/A	6480184
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	110	1.0	6480181	390	1.0	6480181	88	1.0	6480181
Calculated TDS	mg/L	400	1.0	6480190	620	1.0	6480190	220	1.0	6480190
Carb. Alkalinity (calc. as CaCO3)	mg/L	3.4	1.0	6480181	2.5	1.0	6480181	<1.0	1.0	6480181
Cation Sum	me/L	6.29	N/A	6480184	10.6	N/A	6480184	3.14	N/A	6480184
Hardness (CaCO3)	mg/L	200	1.0	6480182	490	1.0	6480182	140	1.0	6480182
Ion Balance (% Difference)	%	1.18	N/A	6480183	3.24	N/A	6480183	4.56	N/A	6480183
Langelier Index (@ 20C)	N/A	0.962		6480188	1.14		6480188	0.366		6480188
Langelier Index (@ 4C)	N/A	0.713		6480189	0.888		6480189	0.116		6480189
Nitrate (N)	mg/L	0.73	0.080	6481510	2.2	0.25	6481510	0.18	0.080	6481510
Saturation pH (@ 20C)	N/A	7.55		6480188	6.69		6480188	7.71		6480188
Saturation pH (@ 4C)	N/A	7.80		6480189	6.94		6480189	7.96		6480189
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	110	25	6492835	390	25	6492835	89	5.0	6492835
Dissolved Chloride (Cl-)	mg/L	69	1.0	6492842	16	1.0	6492842	10	1.0	6492842
Colour	TCU	6.6	5.0	6492846	<5.0	5.0	6492846	7.9	5.0	6492846
Nitrate + Nitrite (N)	mg/L	0.77 (1)	0.080	6492848	2.2	0.25	6492848	0.18 (1)	0.080	6492848
Nitrite (N)	mg/L	0.042	0.010	6492849	<0.010	0.010	6492849	<0.010	0.010	6492849
Nitrogen (Ammonia Nitrogen)	mg/L	0.23	0.050	6493705	<0.050	0.050	6493705	<0.050	0.050	6491012
Total Organic Carbon (C)	mg/L	3.1	0.50	6492883	2.8	0.50	6492883	3.9	0.50	6492883
Orthophosphate (P)	mg/L	0.024	0.010	6492847	0.021	0.010	6492847	0.017	0.010	6492847
pH	pH	8.52	N/A	6492964	7.83	N/A	6492878	8.08	N/A	6492964
Reactive Silica (SiO2)	mg/L	23	1.0	6492845	18	0.50	6492845	23	1.0	6492845
Dissolved Sulphate (SO4)	mg/L	100	10	6492844	140	10	6492844	65	2.0	6492844
Turbidity	NTU	1.1	0.10	6493059	0.36	0.10	6493059	7.6	0.10	6493062
Conductivity	uS/cm	670	1.0	6492966	940	1.0	6492880	330	1.0	6492966

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to blank performance.

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BV Labs Job #: B9Y2698
Report Date: 2019/12/13

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LML499		LML500			LML501		
Sampling Date		2019/12/04		2019/12/04			2019/12/04		
	UNITS	CODT-205-MWA	QC Batch	FD-18	RDL	QC Batch	FB-05	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	5.40	6480184	8.20	N/A	6480184	0.0100	N/A	6480184
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	6480181	330	1.0	6480181	<1.0	1.0	6480181
Calculated TDS	mg/L	290	6480190	430	1.0	6480190	<1.0	1.0	6480190
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	6480181	2.1	1.0	6480181	<1.0	1.0	6480181
Cation Sum	me/L	5.06	6480184	7.76	N/A	6480184	0.00	N/A	6480184
Hardness (CaCO3)	mg/L	200	6480182	240	1.0	6480182	<1.0	1.0	6480182
Ion Balance (% Difference)	%	3.25	6480183	2.76	N/A	6480183	100	N/A	6480183
Langelier Index (@ 20C)	N/A	0.721	6480188	0.773		6480188	NC		6480188
Langelier Index (@ 4C)	N/A	0.472	6480189	0.525		6480189	NC		6480189
Nitrate (N)	mg/L	0.12	6481510	<0.080	0.080	6480185	0.097	0.080	6480185
Saturation pH (@ 20C)	N/A	7.24	6480188	7.06		6480188	NC		6480188
Saturation pH (@ 4C)	N/A	7.49	6480189	7.31		6480189	NC		6480189
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	230	6492835	330	25	6492835	<5.0	5.0	6492835
Dissolved Chloride (Cl-)	mg/L	16	6492842	58	1.0	6492842	<1.0	1.0	6492842
Colour	TCU	8.7	6492846	7.0	5.0	6492846	<5.0	5.0	6492846
Nitrate + Nitrite (N)	mg/L	0.12 (1)	6492848	0.084 (1)	0.080	6492848	0.097 (1)	0.080	6492848
Nitrite (N)	mg/L	<0.010	6492849	0.011	0.010	6492849	<0.010	0.010	6492849
Nitrogen (Ammonia Nitrogen)	mg/L	0.16	6491012	1.6	0.050	6491012	<0.050	0.050	6491012
Total Organic Carbon (C)	mg/L	7.4	6492883	7.8	0.50	6492883	<0.50	0.50	6492883
Orthophosphate (P)	mg/L	<0.010	6492847	<0.010	0.010	6492847	<0.010	0.010	6492847
pH	pH	7.96	6492964	7.83	N/A	6492964	6.48	N/A	6495553
Reactive Silica (SiO2)	mg/L	14	6492845	9.7	0.50	6492845	<0.50	0.50	6492845
Dissolved Sulphate (SO4)	mg/L	20	6492844	<2.0	2.0	6492844	<2.0	2.0	6492844
Turbidity	NTU	16	6493062	14	0.10	6493062	0.16	0.10	6493062
Conductivity	uS/cm	480	6492966	750	1.0	6492966	1.4	1.0	6495554

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to blank performance.

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RESULTS OF ANALYSES OF WATER

BV Labs ID		LML502		
Sampling Date		2019/12/04		
	UNITS	EB-05	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	0.00	N/A	6480184
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6480181
Calculated TDS	mg/L	<1.0	1.0	6480190
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6480181
Cation Sum	me/L	0.00	N/A	6480184
Hardness (CaCO3)	mg/L	<1.0	1.0	6480182
Langelier Index (@ 20C)	N/A	NC		6480188
Langelier Index (@ 4C)	N/A	NC		6480189
Nitrate (N)	mg/L	<0.080	0.080	6480185
Saturation pH (@ 20C)	N/A	NC		6480188
Saturation pH (@ 4C)	N/A	NC		6480189
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	<5.0	5.0	6492835
Dissolved Chloride (Cl-)	mg/L	<1.0	1.0	6492842
Colour	TCU	<5.0	5.0	6492846
Nitrate + Nitrite (N)	mg/L	<0.080 (1)	0.080	6492848
Nitrite (N)	mg/L	<0.010	0.010	6492849
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	6491012
Total Organic Carbon (C)	mg/L	<0.50	0.50	6492883
Orthophosphate (P)	mg/L	<0.010	0.010	6492847
pH	pH	6.49	N/A	6492964
Reactive Silica (SiO2)	mg/L	<0.50	0.50	6492845
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	6492844
Turbidity	NTU	0.21	0.10	6493062
Conductivity	uS/cm	1.5	1.0	6492966

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to blank performance.

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BV Labs Job #: B9Y2698
Report Date: 2019/12/13

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		LML493	LML494	LML495	LML496	LML497		
Sampling Date		2019/12/04	2019/12/04	2019/12/04	2019/12/04	2019/12/04		
	UNITS	MCWS-113-MWB	MCWS-306-MWB	MCWS-307-MWB	CONCW-101-MWB	CODT-105-MW	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	6490658

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LML498	LML499	LML500	LML501	LML502		
Sampling Date		2019/12/04	2019/12/04	2019/12/04	2019/12/04	2019/12/04		
	UNITS	CODT-206-MW	CODT-205-MWA	FD-18	FB-05	EB-05	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	6490658

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LML493	LML494	LML495	LML496	LML497		
Sampling Date		2019/12/04	2019/12/04	2019/12/04	2019/12/04	2019/12/04		
	UNITS	MCWS-113-MWB	MCWS-306-MWB	MCWS-307-MWB	CONCW-101-MWB	CODT-105-MW	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	6.4	<5.0	<5.0	32	15	5.0	6490405
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	2.2	1.0	6490405
Dissolved Arsenic (As)	ug/L	<1.0	2.7	<1.0	10	2.3	1.0	6490405
Dissolved Barium (Ba)	ug/L	200	110	34	36	33	1.0	6490405
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490405
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Boron (B)	ug/L	310	78	120	55	73	50	6490405
Dissolved Cadmium (Cd)	ug/L	0.014	0.019	<0.010	<0.010	0.041	0.010	6490405
Dissolved Calcium (Ca)	ug/L	76000	140000	77000	71000	160000	100	6490405
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	6490405
Dissolved Cobalt (Co)	ug/L	<0.40	1.3	<0.40	<0.40	<0.40	0.40	6490405
Dissolved Copper (Cu)	ug/L	<0.50	<0.50	<0.50	1.3	6.3	0.50	6490405
Dissolved Iron (Fe)	ug/L	2000	920	110	<50	<50	50	6490405
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	1.2	0.50	6490405
Dissolved Magnesium (Mg)	ug/L	13000	19000	12000	5600	23000	100	6490405
Dissolved Manganese (Mn)	ug/L	3300	5100	150	27	2.2	2.0	6490405
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.4	<2.0	7.4	5.0	2.0	6490405
Dissolved Nickel (Ni)	ug/L	<2.0	2.7	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Phosphorus (P)	ug/L	280	<100	<100	<100	<100	100	6490405
Dissolved Potassium (K)	ug/L	6400	3400	2100	5300	5400	100	6490405
Dissolved Selenium (Se)	ug/L	<0.50	<0.50	<0.50	1.6	17	0.50	6490405
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6490405
Dissolved Sodium (Na)	ug/L	60000	16000	210000	50000	13000	100	6490405
Dissolved Strontium (Sr)	ug/L	350	390	340	440	440	2.0	6490405
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6490405
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Uranium (U)	ug/L	<0.10	1.2	1.2	1.6	3.1	0.10	6490405
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	7.8	4.3	2.0	6490405
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	100	5.0	6490405

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LML498	LML499	LML500	LML501	LML502		
Sampling Date		2019/12/04	2019/12/04	2019/12/04	2019/12/04	2019/12/04		
	UNITS	CODT-206-MW	CODT-205-MWA	FD-18	FB-05	EB-05	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	18	19	8.3	<5.0	<5.0	5.0	6490405
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490405
Dissolved Arsenic (As)	ug/L	1.2	3.9	<1.0	<1.0	<1.0	1.0	6490405
Dissolved Barium (Ba)	ug/L	40	190	200	<1.0	<1.0	1.0	6490405
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490405
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Boron (B)	ug/L	<50	<50	320	<50	<50	50	6490405
Dissolved Cadmium (Cd)	ug/L	0.016	0.017	0.087	<0.010	<0.010	0.010	6490405
Dissolved Calcium (Ca)	ug/L	55000	67000	76000	<100	<100	100	6490405
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490405
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	6490405
Dissolved Copper (Cu)	ug/L	13	0.57	<0.50	<0.50	<0.50	0.50	6490405
Dissolved Iron (Fe)	ug/L	<50	1200	2000	<50	<50	50	6490405
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6490405
Dissolved Magnesium (Mg)	ug/L	2000	8500	13000	<100	<100	100	6490405
Dissolved Manganese (Mn)	ug/L	<2.0	650	3300	<2.0	<2.0	2.0	6490405
Dissolved Molybdenum (Mo)	ug/L	<2.0	5.1	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Phosphorus (P)	ug/L	<100	<100	290	<100	<100	100	6490405
Dissolved Potassium (K)	ug/L	1700	3700	6600	<100	<100	100	6490405
Dissolved Selenium (Se)	ug/L	0.98	<0.50	<0.50	<0.50	<0.50	0.50	6490405
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6490405
Dissolved Sodium (Na)	ug/L	4800	20000	60000	<100	<100	100	6490405
Dissolved Strontium (Sr)	ug/L	300	2600	350	<2.0	<2.0	2.0	6490405
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6490405
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Uranium (U)	ug/L	1.9	0.56	<0.10	<0.10	<0.10	0.10	6490405
Dissolved Vanadium (V)	ug/L	2.6	<2.0	<2.0	<2.0	<2.0	2.0	6490405
Dissolved Zinc (Zn)	ug/L	20	29	<5.0	<5.0	<5.0	5.0	6490405

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LML493		LML494		LML495	LML496		
Sampling Date		2019/12/04		2019/12/04		2019/12/04	2019/12/04		
	UNITS	MCWS-113-MWB	RDL	MCWS-306-MWB	RDL	MCWS-307-MWB	CONCW-101-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	0.050	<0.050	0.050	<0.050	0.81	0.050	6488016
2-Methylnaphthalene	ug/L	<0.050	0.050	<0.050	0.050	<0.050	0.66	0.050	6488016
Acenaphthene	ug/L	<0.010	0.010	0.088	0.010	<0.010	0.28	0.010	6488016
Acenaphthylene	ug/L	<0.010	0.010	0.043	0.010	<0.010	0.030	0.010	6488016
Anthracene	ug/L	<0.010	0.010	<0.020 (1)	0.020	<0.010	0.020	0.010	6488016
Benzo(a)anthracene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Benzo(a)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Benzo(b)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	<0.020	0.020	<0.020	<0.020	0.020	6480852
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Benzo(j)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Benzo(k)fluoranthene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Chrysene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Fluoranthene	ug/L	<0.010	0.010	0.047	0.010	<0.010	0.022	0.010	6488016
Fluorene	ug/L	<0.010	0.010	<0.020 (1)	0.020	<0.010	0.096	0.010	6488016
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Naphthalene	ug/L	<0.20	0.20	<0.20	0.20	<0.20	7.1	0.20	6488016
Perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	6488016
Phenanthrene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.085	0.010	6488016
Pyrene	ug/L	0.14	0.010	0.032	0.010	<0.010	0.022	0.010	6488016
Surrogate Recovery (%)									
D10-Anthracene	%	83		96		87	109		6488016
D14-Terphenyl	%	102		103		95	113		6488016
D8-Acenaphthylene	%	70		105		96	107		6488016

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LML497	LML498	LML499		LML500		LML501		
Sampling Date		2019/12/04	2019/12/04	2019/12/04		2019/12/04		2019/12/04		
	UNITS	CODT-105-MW	CODT-206-MW	CODT-205-MWA	RDL	FD-18	RDL	FB-05	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	<0.050	<0.050	0.35	0.050	<0.050	0.050	<0.050	0.050	6488016
2-Methylnaphthalene	ug/L	<0.050	<0.050	0.18	0.050	<0.050	0.050	<0.050	0.050	6488016
Acenaphthene	ug/L	0.22	0.014	0.27	0.010	<0.020 (1)	0.020	<0.010	0.010	6488016
Acenaphthylene	ug/L	0.013	<0.010	0.16	0.010	<0.020 (1)	0.020	<0.010	0.010	6488016
Anthracene	ug/L	<0.010	0.025	0.015	0.010	<0.010	0.010	<0.010	0.010	6488016
Benzo(a)anthracene	ug/L	<0.010	0.029	0.012	0.010	<0.010	0.010	<0.010	0.010	6488016
Benzo(a)pyrene	ug/L	<0.010	0.048	0.011	0.010	<0.010	0.010	<0.010	0.010	6488016
Benzo(b)fluoranthene	ug/L	<0.010	0.036	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Benzo(b/j)fluoranthene	ug/L	<0.020	0.055	<0.020	0.020	<0.020	0.020	<0.020	0.020	6480852
Benzo(g,h,i)perylene	ug/L	<0.010	0.038	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Benzo(j)fluoranthene	ug/L	<0.010	0.019	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Benzo(k)fluoranthene	ug/L	<0.010	0.019	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Chrysene	ug/L	<0.010	0.041	0.012	0.010	<0.010	0.010	<0.010	0.010	6488016
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Fluoranthene	ug/L	<0.010	0.076	0.051	0.010	<0.010	0.010	<0.010	0.010	6488016
Fluorene	ug/L	<0.010	0.010	0.15	0.010	<0.030 (1)	0.030	<0.010	0.010	6488016
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.027	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Naphthalene	ug/L	<0.20	<0.20	2.8	0.20	<0.20	0.20	<0.20	0.20	6488016
Perylene	ug/L	<0.010	0.020	<0.010	0.010	<0.010	0.010	<0.010	0.010	6488016
Phenanthrene	ug/L	<0.010	0.051	0.047	0.010	<0.010	0.010	<0.010	0.010	6488016
Pyrene	ug/L	<0.010	0.061	0.038	0.010	0.18	0.010	<0.010	0.010	6488016
Surrogate Recovery (%)										
D10-Anthracene	%	97	109	94		72		95		6488016
D14-Terphenyl	%	99	111	95		114		93		6488016
D8-Acenaphthylene	%	102	95	99		66		95		6488016

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LML502		
Sampling Date		2019/12/04		
	UNITS	EB-05	RDL	QC Batch
Polyaromatic Hydrocarbons				
1-Methylnaphthalene	ug/L	<0.050	0.050	6488016
2-Methylnaphthalene	ug/L	<0.050	0.050	6488016
Acenaphthene	ug/L	<0.010	0.010	6488016
Acenaphthylene	ug/L	<0.010	0.010	6488016
Anthracene	ug/L	<0.010	0.010	6488016
Benzo(a)anthracene	ug/L	<0.010	0.010	6488016
Benzo(a)pyrene	ug/L	<0.010	0.010	6488016
Benzo(b)fluoranthene	ug/L	<0.010	0.010	6488016
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	6480852
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	6488016
Benzo(j)fluoranthene	ug/L	<0.010	0.010	6488016
Benzo(k)fluoranthene	ug/L	<0.010	0.010	6488016
Chrysene	ug/L	<0.010	0.010	6488016
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	6488016
Fluoranthene	ug/L	<0.010	0.010	6488016
Fluorene	ug/L	<0.010	0.010	6488016
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	6488016
Naphthalene	ug/L	<0.20	0.20	6488016
Perylene	ug/L	<0.010	0.010	6488016
Phenanthrene	ug/L	<0.010	0.010	6488016
Pyrene	ug/L	<0.010	0.010	6488016
Surrogate Recovery (%)				
D10-Anthracene	%	98		6488016
D14-Terphenyl	%	102		6488016
D8-Acenaphthylene	%	106		6488016

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Sample LML501 [FB-05] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

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
6488016	LGE	Matrix Spike [LML494-06]	D10-Anthracene	2019/12/10		103	%	50 - 130
			D14-Terphenyl	2019/12/10		108	%	50 - 130
			D8-Acenaphthylene	2019/12/10		105	%	50 - 130
			1-Methylnaphthalene	2019/12/10		94	%	50 - 130
			2-Methylnaphthalene	2019/12/10		102	%	50 - 130
			Acenaphthene	2019/12/10		105	%	50 - 130
			Acenaphthylene	2019/12/10		111	%	50 - 130
			Anthracene	2019/12/10		99	%	50 - 130
			Benzo(a)anthracene	2019/12/10		103	%	50 - 130
			Benzo(a)pyrene	2019/12/10		104	%	50 - 130
			Benzo(b)fluoranthene	2019/12/10		106	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/10		107	%	50 - 130
			Benzo(j)fluoranthene	2019/12/10		95	%	50 - 130
			Benzo(k)fluoranthene	2019/12/10		106	%	50 - 130
			Chrysene	2019/12/10		98	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/10		98	%	50 - 130
			Fluoranthene	2019/12/10		102	%	50 - 130
			Fluorene	2019/12/10		97	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/10		102	%	50 - 130
			Naphthalene	2019/12/10		103	%	50 - 130
			Perylene	2019/12/10		102	%	50 - 130
			Phenanthrene	2019/12/10		107	%	50 - 130
			Pyrene	2019/12/10		102	%	50 - 130
6488016	LGE	Spiked Blank	D10-Anthracene	2019/12/10		100	%	50 - 130
			D14-Terphenyl	2019/12/10		99	%	50 - 130
			D8-Acenaphthylene	2019/12/10		103	%	50 - 130
			1-Methylnaphthalene	2019/12/10		102	%	50 - 130
			2-Methylnaphthalene	2019/12/10		103	%	50 - 130
			Acenaphthene	2019/12/10		104	%	50 - 130
			Acenaphthylene	2019/12/10		116	%	50 - 130
			Anthracene	2019/12/10		91	%	50 - 130
			Benzo(a)anthracene	2019/12/10		97	%	50 - 130
			Benzo(a)pyrene	2019/12/10		103	%	50 - 130
			Benzo(b)fluoranthene	2019/12/10		107	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/10		104	%	50 - 130
			Benzo(j)fluoranthene	2019/12/10		101	%	50 - 130
			Benzo(k)fluoranthene	2019/12/10		96	%	50 - 130
			Chrysene	2019/12/10		93	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/10		98	%	50 - 130
			Fluoranthene	2019/12/10		99	%	50 - 130
			Fluorene	2019/12/10		98	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/10		99	%	50 - 130
			Naphthalene	2019/12/10		105	%	50 - 130
			Perylene	2019/12/10		100	%	50 - 130
			Phenanthrene	2019/12/10		94	%	50 - 130
			Pyrene	2019/12/10		98	%	50 - 130
6488016	LGE	Method Blank	D10-Anthracene	2019/12/10		111	%	50 - 130
			D14-Terphenyl	2019/12/10		107	%	50 - 130
			D8-Acenaphthylene	2019/12/10		104	%	50 - 130
			1-Methylnaphthalene	2019/12/10	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/10	<0.050		ug/L	
			Acenaphthene	2019/12/10	<0.010		ug/L	
			Acenaphthylene	2019/12/10	<0.010		ug/L	
			Anthracene	2019/12/10	<0.010		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(a)anthracene	2019/12/10	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/10	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/10	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/10	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/10	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/10	<0.010		ug/L	
			Chrysene	2019/12/10	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/10	<0.010		ug/L	
			Fluoranthene	2019/12/10	<0.010		ug/L	
			Fluorene	2019/12/10	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/10	<0.010		ug/L	
			Naphthalene	2019/12/10	<0.20		ug/L	
			Perylene	2019/12/10	<0.010		ug/L	
			Phenanthrene	2019/12/10	<0.010		ug/L	
			Pyrene	2019/12/10	<0.010		ug/L	
6488016	LGE	RPD [LML493-06]	1-Methylnaphthalene	2019/12/10	NC		%	40
			2-Methylnaphthalene	2019/12/10	NC		%	40
			Acenaphthene	2019/12/10	NC		%	40
			Acenaphthylene	2019/12/10	NC		%	40
			Anthracene	2019/12/10	NC		%	40
			Benzo(a)anthracene	2019/12/10	NC		%	40
			Benzo(a)pyrene	2019/12/10	NC		%	40
			Benzo(b)fluoranthene	2019/12/10	NC		%	40
			Benzo(g,h,i)perylene	2019/12/10	NC		%	40
			Benzo(j)fluoranthene	2019/12/10	NC		%	40
			Benzo(k)fluoranthene	2019/12/10	NC		%	40
			Chrysene	2019/12/10	NC		%	40
			Dibenzo(a,h)anthracene	2019/12/10	NC		%	40
			Fluoranthene	2019/12/10	120 (1)		%	40
			Fluorene	2019/12/10	NC		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/10	NC		%	40
			Naphthalene	2019/12/10	NC		%	40
			Perylene	2019/12/10	NC		%	40
			Phenanthrene	2019/12/10	NC (2)		%	40
			Pyrene	2019/12/10	12		%	40
6490405	BAN	Matrix Spike [LML496-02]	Dissolved Aluminum (Al)	2019/12/11		94	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/11		97	%	80 - 120
			Dissolved Arsenic (As)	2019/12/11		98	%	80 - 120
			Dissolved Barium (Ba)	2019/12/11		95	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/11		101	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/11		95	%	80 - 120
			Dissolved Boron (B)	2019/12/11		97	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/11		95	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/11		NC	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/11		97	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/11		98	%	80 - 120
			Dissolved Copper (Cu)	2019/12/11		95	%	80 - 120
			Dissolved Iron (Fe)	2019/12/11		97	%	80 - 120
			Dissolved Lead (Pb)	2019/12/11		96	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/11		94	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/11		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/11		97	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/11		96	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/11		101	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Potassium (K)	2019/12/11		96	%	80 - 120
			Dissolved Selenium (Se)	2019/12/11		96	%	80 - 120
			Dissolved Silver (Ag)	2019/12/11		83	%	80 - 120
			Dissolved Sodium (Na)	2019/12/11		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/11		NC	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/11		97	%	80 - 120
			Dissolved Tin (Sn)	2019/12/11		97	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/11		102	%	80 - 120
			Dissolved Uranium (U)	2019/12/11		103	%	80 - 120
			Dissolved Vanadium (V)	2019/12/11		100	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/11		97	%	80 - 120
6490405	BAN	Spiked Blank	Dissolved Aluminum (Al)	2019/12/11		96	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/11		96	%	80 - 120
			Dissolved Arsenic (As)	2019/12/11		97	%	80 - 120
			Dissolved Barium (Ba)	2019/12/11		96	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/11		100	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/11		99	%	80 - 120
			Dissolved Boron (B)	2019/12/11		99	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/11		94	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/11		101	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/11		97	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/11		99	%	80 - 120
			Dissolved Copper (Cu)	2019/12/11		97	%	80 - 120
			Dissolved Iron (Fe)	2019/12/11		100	%	80 - 120
			Dissolved Lead (Pb)	2019/12/11		98	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/11		101	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/11		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/11		101	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/11		99	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/11		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/11		100	%	80 - 120
			Dissolved Selenium (Se)	2019/12/11		98	%	80 - 120
			Dissolved Silver (Ag)	2019/12/11		96	%	80 - 120
			Dissolved Sodium (Na)	2019/12/11		97	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/11		100	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/11		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/11		96	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/11		104	%	80 - 120
			Dissolved Uranium (U)	2019/12/11		103	%	80 - 120
			Dissolved Vanadium (V)	2019/12/11		101	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/11		99	%	80 - 120
6490405	BAN	Method Blank	Dissolved Aluminum (Al)	2019/12/11	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/11	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/11	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/11	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/11	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/11	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/11	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/11	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/11	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/11	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/11	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/11	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/11	<50		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Lead (Pb)	2019/12/11	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/11	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/11	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/11	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/11	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/11	<100		ug/L	
			Dissolved Potassium (K)	2019/12/11	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/11	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/11	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/11	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/11	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/11	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/11	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/11	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/11	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/11	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/11	<5.0		ug/L	
6490405	BAN	RPD [LML496-02]	Dissolved Aluminum (Al)	2019/12/11	1.6		%	20
			Dissolved Antimony (Sb)	2019/12/11	NC		%	20
			Dissolved Arsenic (As)	2019/12/11	2.1		%	20
			Dissolved Barium (Ba)	2019/12/11	0.12		%	20
			Dissolved Beryllium (Be)	2019/12/11	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/11	NC		%	20
			Dissolved Boron (B)	2019/12/11	0.77		%	20
			Dissolved Cadmium (Cd)	2019/12/11	NC		%	20
			Dissolved Calcium (Ca)	2019/12/11	0.83		%	20
			Dissolved Chromium (Cr)	2019/12/11	0.11		%	20
			Dissolved Cobalt (Co)	2019/12/11	NC		%	20
			Dissolved Copper (Cu)	2019/12/11	1.5		%	20
			Dissolved Iron (Fe)	2019/12/11	NC		%	20
			Dissolved Lead (Pb)	2019/12/11	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/11	1.2		%	20
			Dissolved Manganese (Mn)	2019/12/11	0.056		%	20
			Dissolved Molybdenum (Mo)	2019/12/11	3.3		%	20
			Dissolved Nickel (Ni)	2019/12/11	NC		%	20
			Dissolved Phosphorus (P)	2019/12/11	NC		%	20
			Dissolved Potassium (K)	2019/12/11	1.4		%	20
			Dissolved Selenium (Se)	2019/12/11	2.1		%	20
			Dissolved Silver (Ag)	2019/12/11	NC		%	20
			Dissolved Sodium (Na)	2019/12/11	1.0		%	20
			Dissolved Strontium (Sr)	2019/12/11	0.80		%	20
			Dissolved Thallium (Tl)	2019/12/11	NC		%	20
			Dissolved Tin (Sn)	2019/12/11	NC		%	20
			Dissolved Titanium (Ti)	2019/12/11	NC		%	20
			Dissolved Uranium (U)	2019/12/11	1.2		%	20
			Dissolved Vanadium (V)	2019/12/11	4.0		%	20
			Dissolved Zinc (Zn)	2019/12/11	NC		%	20
6490658	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/12		102	%	80 - 120
6490658	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/12		103	%	80 - 120
6490658	NHU	Method Blank	Total Mercury (Hg)	2019/12/12	<0.013		ug/L	
6490658	NHU	RPD	Total Mercury (Hg)	2019/12/12	NC		%	20
6491012	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/11		97	%	80 - 120
6491012	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/11		101	%	80 - 120
6491012	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/11	<0.050		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6491012	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/11	NC		%	20
6492835	EMT	Matrix Spike [LML493-01]	Total Alkalinity (Total as CaCO3)	2019/12/12		NC	%	80 - 120
6492835	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/12		105	%	80 - 120
6492835	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/12	<5.0		mg/L	
6492835	EMT	RPD [LML493-01]	Total Alkalinity (Total as CaCO3)	2019/12/12	6.1		%	25
6492842	EMT	Matrix Spike [LML493-01]	Dissolved Chloride (Cl-)	2019/12/12		NC	%	80 - 120
6492842	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/12		96	%	80 - 120
6492842	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/12	<1.0		mg/L	
6492842	EMT	RPD [LML493-01]	Dissolved Chloride (Cl-)	2019/12/12	3.6		%	25
6492844	EMT	Matrix Spike [LML493-01]	Dissolved Sulphate (SO4)	2019/12/12		100	%	80 - 120
6492844	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/12		108	%	80 - 120
6492844	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/12	<2.0		mg/L	
6492844	EMT	RPD [LML493-01]	Dissolved Sulphate (SO4)	2019/12/12	NC		%	25
6492845	EMT	Matrix Spike [LML493-01]	Reactive Silica (SiO2)	2019/12/12		87	%	80 - 120
6492845	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/12		94	%	80 - 120
6492845	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/12	<0.50		mg/L	
6492845	EMT	RPD [LML493-01]	Reactive Silica (SiO2)	2019/12/12	0.42		%	25
6492846	EMT	Spiked Blank	Colour	2019/12/12		93	%	80 - 120
6492846	EMT	Method Blank	Colour	2019/12/12	<5.0		TCU	
6492846	EMT	RPD [LML493-01]	Colour	2019/12/12	15		%	20
6492847	EMT	Matrix Spike [LML493-01]	Orthophosphate (P)	2019/12/12		88	%	80 - 120
6492847	EMT	Spiked Blank	Orthophosphate (P)	2019/12/12		95	%	80 - 120
6492847	EMT	Method Blank	Orthophosphate (P)	2019/12/12	<0.010		mg/L	
6492847	EMT	RPD [LML493-01]	Orthophosphate (P)	2019/12/12	NC		%	25
6492848	EMT	Matrix Spike [LML493-01]	Nitrate + Nitrite (N)	2019/12/12		92	%	80 - 120
6492848	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/12		103	%	80 - 120
6492848	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/13	0.075, RDL=0.050		mg/L	
6492848	EMT	RPD [LML493-01]	Nitrate + Nitrite (N)	2019/12/12	NC		%	25
6492849	EMT	Matrix Spike [LML493-01]	Nitrite (N)	2019/12/12		97	%	80 - 120
6492849	EMT	Spiked Blank	Nitrite (N)	2019/12/12		111	%	80 - 120
6492849	EMT	Method Blank	Nitrite (N)	2019/12/12	<0.010		mg/L	
6492849	EMT	RPD [LML493-01]	Nitrite (N)	2019/12/12	NC		%	20
6492878	SHW	QC Standard	pH	2019/12/12		101	%	97 - 103
6492878	SHW	RPD	pH	2019/12/12	0.59		%	N/A
6492880	SHW	Spiked Blank	Conductivity	2019/12/12		100	%	80 - 120
6492880	SHW	Method Blank	Conductivity	2019/12/12	<1.0		uS/cm	
6492880	SHW	RPD	Conductivity	2019/12/12	2.0		%	10
6492883	SSI	Matrix Spike	Total Organic Carbon (C)	2019/12/12		97	%	85 - 115
6492883	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/12		97	%	80 - 120
6492883	SSI	Method Blank	Total Organic Carbon (C)	2019/12/12	<0.50		mg/L	
6492883	SSI	RPD	Total Organic Carbon (C)	2019/12/12	8.6		%	15
6492964	SHW	QC Standard	pH	2019/12/12		101	%	97 - 103
6492964	SHW	RPD	pH	2019/12/12	1.1		%	N/A
6492966	SHW	Spiked Blank	Conductivity	2019/12/12		100	%	80 - 120
6492966	SHW	Method Blank	Conductivity	2019/12/12	1.2, RDL=1.0		uS/cm	
6492966	SHW	RPD	Conductivity	2019/12/12	0.28		%	10
6493059	SHW	QC Standard	Turbidity	2019/12/12		104	%	80 - 120
6493059	SHW	Spiked Blank	Turbidity	2019/12/12		100	%	80 - 120
6493059	SHW	Method Blank	Turbidity	2019/12/12	<0.10		NTU	
6493059	SHW	RPD [LML493-01]	Turbidity	2019/12/12	5.5		%	20
6493062	SHW	QC Standard	Turbidity	2019/12/12		104	%	80 - 120
6493062	SHW	Spiked Blank	Turbidity	2019/12/12		100	%	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
6493062	SHW	Method Blank	Turbidity	2019/12/12	<0.10		NTU	
6493062	SHW	RPD	Turbidity	2019/12/12	3.4		%	20
6493094	SSI	Matrix Spike	Total Organic Carbon (C)	2019/12/12		97	%	85 - 115
6493094	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/12		100	%	80 - 120
6493094	SSI	Method Blank	Total Organic Carbon (C)	2019/12/12	<0.50		mg/L	
6493094	SSI	RPD	Total Organic Carbon (C)	2019/12/12	NC		%	15
6493705	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/12		NC	%	80 - 120
6493705	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/12		102	%	80 - 120
6493705	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/12	<0.050		mg/L	
6493705	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/12	0.66		%	20
6493719	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/12		102	%	80 - 120
6493719	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/12		104	%	80 - 120
6493719	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/12	<0.050		mg/L	
6493719	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/12	NC		%	20
6495553	SHW	QC Standard	pH	2019/12/13		101	%	97 - 103
6495553	SHW	RPD	pH	2019/12/13	0.30		%	N/A
6495554	SHW	Spiked Blank	Conductivity	2019/12/13		100	%	80 - 120
6495554	SHW	Method Blank	Conductivity	2019/12/13	<1.0		uS/cm	
6495554	SHW	RPD	Conductivity	2019/12/13	0.60		%	10

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).

(1) Duplicate: results are outside acceptance limit. Insufficient sample for repeat analysis.

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

Rosemarie MacDonald, 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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Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: D35779

Attention: Nadine Wambolt

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

Report Date: 2019/12/16
Report #: R6007300
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y3372
Received: 2019/12/05, 16:10

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	9	N/A	2019/12/13	N/A	SM 23 4500-CO2 D
Alkalinity (1)	8	N/A	2019/12/13	ATL SOP 00013	EPA 310.2 R1974 m
Alkalinity (1)	1	N/A	2019/12/16	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	1	N/A	2019/12/12	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (water) (1)	8	N/A	2019/12/13	N/A	Auto Calc.
Chloride (1)	1	N/A	2019/12/13	ATL SOP 00014	SM 23 4500-Cl- E m
Chloride (1)	8	N/A	2019/12/16	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	9	N/A	2019/12/13	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	9	N/A	2019/12/13	ATL SOP 00004	SM 23 2510B m
Hardness (calculated as CaCO3) (1)	6	N/A	2019/12/12	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3) (1)	3	N/A	2019/12/13	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	9	2019/12/12	2019/12/13	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (1, 2)	1	N/A	2019/12/12	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd) (1)	5	N/A	2019/12/11	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS (as rec'd) (1)	3	N/A	2019/12/12	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	9	N/A	2019/12/16	N/A	Auto Calc.
Anion and Cation Sum (1)	9	N/A	2019/12/13	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	9	N/A	2019/12/13	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	9	N/A	2019/12/13	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	9	N/A	2019/12/13	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	9	N/A	2019/12/16	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	1	2019/12/10	2019/12/11	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	2	2019/12/12	2019/12/12	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	6	2019/12/12	2019/12/13	ATL SOP 00103	EPA 8270E R6 m
pH (1, 3)	9	N/A	2019/12/13	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	9	N/A	2019/12/13	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	9	N/A	2019/12/16	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	9	N/A	2019/12/16	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	9	N/A	2019/12/13	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	9	N/A	2019/12/13	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	9	N/A	2019/12/16	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 4)	9	N/A	2019/12/13	ATL SOP 00203	SM 23 5310B m

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST
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Attention: Nadine Wambolt

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275 Charlotte St
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CANADA B1P 1C6

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CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y3372
Received: 2019/12/05, 16:10

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Turbidity (1)	6	N/A	2019/12/13	ATL SOP 00011	EPA 180.1 R2 m
Turbidity (1)	3	N/A	2019/12/16	ATL SOP 00011	EPA 180.1 R2 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
(2) Sample filtered in laboratory prior to analysis for dissolved metals.
(3) 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.
(4) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

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Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: D35779

Attention: Nadine Wambolt

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

Report Date: 2019/12/16
Report #: R6007300
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y3372
Received: 2019/12/05, 16:10

Encryption Key

AUTHORIZED REPORT
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Bureau Veritas Laboratories
16 Dec 2019 15:58:55

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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BV Labs Job #: B9Y3372
Report Date: 2019/12/16

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LMO951			LMO952			LMO953		
Sampling Date		2019/12/05			2019/12/05			2019/12/05		
COC Number		D35779			D35779			D35779		
	UNITS	MCWS-310-MW	RDL	QC Batch	MCWS-309-MW	RDL	QC Batch	SCU11-001-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	0.520	N/A	6482645	4.53	N/A	6482645	8.94	N/A	6482645
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	7.7	1.0	6482626	150	1.0	6482626	240	1.0	6482626
Calculated TDS	mg/L	29	1.0	6482658	260	1.0	6482658	460	1.0	6482658
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6482626	<1.0	1.0	6482626	1.1	1.0	6482626
Cation Sum	me/L	0.410	N/A	6482645	4.42	N/A	6482645	8.12	N/A	6482645
Hardness (CaCO3)	mg/L	8.8	1.0	6482632	17	1.0	6482632	260	1.0	6482632
Ion Balance (% Difference)	%	11.8	N/A	6482639	1.23	N/A	6482639	4.81	N/A	6482639
Langelier Index (@ 20C)	N/A	-3.52		6482650	-0.782		6482650	0.556		6482650
Langelier Index (@ 4C)	N/A	-3.77		6482654	-1.03		6482654	0.308		6482654
Nitrate (N)	mg/L	0.054	0.050	6482646	0.10	0.050	6482646	0.20	0.050	6482646
Saturation pH (@ 20C)	N/A	9.97		6482650	8.59		6482650	7.14		6482650
Saturation pH (@ 4C)	N/A	10.2		6482654	8.84		6482654	7.39		6482654
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	7.7	5.0	6496229	150	25	6496229	240	25	6496229
Dissolved Chloride (Cl-)	mg/L	10	1.0	6496238	24	1.0	6496238	140	5.0	6496238
Colour	TCU	34	5.0	6496241	15	5.0	6496241	25	5.0	6496241
Nitrate + Nitrite (N)	mg/L	0.054	0.050	6496246	0.10	0.050	6496246	0.22	0.050	6496246
Nitrite (N)	mg/L	<0.010	0.010	6496248	<0.010	0.010	6496248	0.019	0.010	6496248
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	6493821	0.60	0.050	6493784	22	2.5	6493784
Total Organic Carbon (C)	mg/L	5.5	0.50	6495782	<50 (1)	50	6495785	11	0.50	6495782
Orthophosphate (P)	mg/L	0.011	0.010	6496243	0.13	0.010	6496243	2.2	0.050	6496243
pH	pH	6.46	N/A	6495555	7.81	N/A	6495555	7.70	N/A	6495555
Reactive Silica (SiO2)	mg/L	1.0	0.50	6496240	5.1	0.50	6496240	6.7	0.50	6496240
Dissolved Sulphate (SO4)	mg/L	3.7	2.0	6496239	37	2.0	6496239	2.2	2.0	6496239
Turbidity	NTU	13	0.10	6495763	>1000	1.0	6498862	21	0.10	6495763
Conductivity	uS/cm	46	1.0	6495556	430	1.0	6495556	890	1.0	6495556

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to turbidity.

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BV Labs Job #: B9Y3372
Report Date: 2019/12/16

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LMO954			LMO955			LMO956		
Sampling Date		2019/12/05			2019/12/05			2019/12/05		
COC Number		D35779			D35779			D35779		
	UNITS	SCU11-001-MWB	RDL	QC Batch	SCU7-001-MW	RDL	QC Batch	SCU7-003-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	2.97	N/A	6482645	28.1	N/A	6482645	11.4	N/A	6482645
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	94	1.0	6482626	140	1.0	6482626	150	1.0	6482626
Calculated TDS	mg/L	170	1.0	6482658	1800	1.0	6482658	650	1.0	6482658
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6482626	<1.0	1.0	6482626	<1.0	1.0	6482626
Cation Sum	me/L	2.89	N/A	6482645	28.6	N/A	6482645	10.6	N/A	6482645
Hardness (CaCO3)	mg/L	81	1.0	6482632	1300	1.0	6482632	320	1.0	6482632
Ion Balance (% Difference)	%	1.37	N/A	6482639	0.780	N/A	6482639	3.60	N/A	6482639
Langelier Index (@ 20C)	N/A	-0.513		6482650	0.794		6482650	-0.128		6482650
Langelier Index (@ 4C)	N/A	-0.763		6482654	0.550		6482654	-0.375		6482654
Nitrate (N)	mg/L	<0.050	0.050	6482646	<0.050	0.050	6482646	<0.050	0.050	6482646
Saturation pH (@ 20C)	N/A	7.96		6482650	6.78		6482650	7.29		6482650
Saturation pH (@ 4C)	N/A	8.21		6482654	7.03		6482654	7.53		6482654
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	94	5.0	6496229	140	25	6496229	150	25	6496311
Dissolved Chloride (Cl-)	mg/L	38	1.0	6496238	200	5.0	6496238	210	5.0	6496312
Colour	TCU	56	25	6496241	<5.0	5.0	6496241	5.1	5.0	6496324
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	6496246	<0.050	0.050	6496246	<0.050	0.050	6496337
Nitrite (N)	mg/L	0.016	0.010	6496248	<0.010	0.010	6496248	<0.010	0.010	6496338
Nitrogen (Ammonia Nitrogen)	mg/L	1.6	0.050	6493821	0.094	0.050	6493821	1.2	0.050	6493784
Total Organic Carbon (C)	mg/L	5.9	0.50	6495785	1.2	0.50	6495782	1.3	0.50	6495782
Orthophosphate (P)	mg/L	0.14	0.010	6496243	<0.010	0.010	6496243	<0.010	0.010	6496333
pH	pH	7.45	N/A	6495555	7.57	N/A	6495555	7.16	N/A	6495555
Reactive Silica (SiO2)	mg/L	7.3	0.50	6496240	11	0.50	6496240	9.0	0.50	6496320
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	6496239	950	20	6496239	120	10	6496319
Turbidity	NTU	11	0.10	6495760	4.2	0.10	6495763	16	0.10	6495763
Conductivity	uS/cm	280	1.0	6495556	2400	1.0	6495556	1100	1.0	6495556

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

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BV Labs Job #: B9Y3372
Report Date: 2019/12/16

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LMO957			LMO958			LMO959		
Sampling Date		2019/12/05			2019/12/05			2019/12/05		
COC Number		D35779			D35779			D35779		
	UNITS	MSES-004-MW	RDL	QC Batch	MSES-012-MWA	RDL	QC Batch	FD-19	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	12.1	N/A	6482645	19.9	N/A	6482645	2.97	N/A	6482645
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	140	1.0	6482626	210	1.0	6482626	94	1.0	6482626
Calculated TDS	mg/L	760	1.0	6482658	1200	1.0	6482658	160	1.0	6482658
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	6482626	<1.0	1.0	6482626	<1.0	1.0	6482626
Cation Sum	me/L	12.3	N/A	6482645	19.4	N/A	6482645	2.86	N/A	6482645
Hardness (CaCO3)	mg/L	590	1.0	6482632	630	1.0	6482632	80	1.0	6482632
Ion Balance (% Difference)	%	0.610	N/A	6482639	1.37	N/A	6482639	1.89	N/A	6482639
Langelier Index (@ 20C)	N/A	-0.257		6482650	0.711		6482650	-0.531		6482650
Langelier Index (@ 4C)	N/A	-0.504		6482654	0.466		6482654	-0.781		6482654
Nitrate (N)	mg/L	<0.050	0.050	6482646	0.67	0.050	6482646	<0.050	0.050	6482646
Saturation pH (@ 20C)	N/A	7.11		6482650	6.93		6482650	7.97		6482650
Saturation pH (@ 4C)	N/A	7.36		6482654	7.17		6482654	8.22		6482654
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	140	25	6496229	210	25	6496229	94	5.0	6496255
Dissolved Chloride (Cl-)	mg/L	13	1.0	6496238	240	5.0	6496238	38	1.0	6496262
Colour	TCU	7.0	5.0	6496241	<5.0	5.0	6496241	61	25	6496304
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	6496246	0.67	0.050	6496246	<0.050	0.050	6496309
Nitrite (N)	mg/L	<0.010	0.010	6496248	<0.010	0.010	6496248	0.014	0.010	6496310
Nitrogen (Ammonia Nitrogen)	mg/L	0.18	0.050	6493821	<0.050	0.050	6493821	1.7	0.050	6493784
Total Organic Carbon (C)	mg/L	1.9	0.50	6495782	1.3	0.50	6495782	6.8 (1)	5.0	6495782
Orthophosphate (P)	mg/L	<0.010	0.010	6496243	<0.010	0.010	6496243	0.16	0.010	6496307
pH	pH	6.85	N/A	6495555	7.64	N/A	6495555	7.44	N/A	6495555
Reactive Silica (SiO2)	mg/L	3.9	0.50	6496240	37	1.0	6496240	7.7	0.50	6496300
Dissolved Sulphate (SO4)	mg/L	430	10	6496239	430	10	6496239	<2.0	2.0	6496264
Turbidity	NTU	7.7	0.10	6495763	22	0.10	6498862	5.2	0.10	6498862
Conductivity	uS/cm	1100	1.0	6495556	1900	1.0	6495556	280	1.0	6495556

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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BV Labs Job #: B9Y3372
Report Date: 2019/12/16

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		LMO951	LMO952	LMO953	LMO954	LMO955		
Sampling Date		2019/12/05	2019/12/05	2019/12/05	2019/12/05	2019/12/05		
COC Number		D35779	D35779	D35779	D35779	D35779		
	UNITS	MCWS-310-MW	MCWS-309-MW	SCU11-001-MWA	SCU11-001-MWB	SCU7-001-MW	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	0.055	<0.013	<0.013	<0.013	0.013	6493477

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LMO956	LMO957	LMO958		LMO959		
Sampling Date		2019/12/05	2019/12/05	2019/12/05		2019/12/05		
COC Number		D35779	D35779	D35779		D35779		
	UNITS	SCU7-003-MW	MSES-004-MW	MSES-012-MWA	QC Batch	FD-19	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	6493477	<0.013	0.013	6493489

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LMO951		LMO952		LMO953	LMO954		
Sampling Date		2019/12/05		2019/12/05		2019/12/05	2019/12/05		
COC Number		D35779		D35779		D35779	D35779		
	UNITS	MCWS-310-MW	QC Batch	MCWS-309-MW	QC Batch	SCU11-001-MWA	SCU11-001-MWB	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	130	6490946	7.7	6493250	6.7	8.8	5.0	6490946
Dissolved Antimony (Sb)	ug/L	<1.0	6490946	<1.0	6493250	<1.0	<1.0	1.0	6490946
Dissolved Arsenic (As)	ug/L	<1.0	6490946	3.1	6493250	1.1	<1.0	1.0	6490946
Dissolved Barium (Ba)	ug/L	6.7	6490946	7.4	6493250	260	40	1.0	6490946
Dissolved Beryllium (Be)	ug/L	<1.0	6490946	<1.0	6493250	<1.0	<1.0	1.0	6490946
Dissolved Bismuth (Bi)	ug/L	<2.0	6490946	<2.0	6493250	<2.0	<2.0	2.0	6490946
Dissolved Boron (B)	ug/L	<50	6490946	200	6493250	<50	<50	50	6490946
Dissolved Cadmium (Cd)	ug/L	0.050	6490946	0.023	6493250	0.026	<0.010	0.010	6490946
Dissolved Calcium (Ca)	ug/L	2700	6490946	4300	6493250	88000	27000	100	6490946
Dissolved Chromium (Cr)	ug/L	<1.0	6490946	<1.0	6493250	<1.0	<1.0	1.0	6490946
Dissolved Cobalt (Co)	ug/L	<0.40	6490946	<0.40	6493250	<0.40	<0.40	0.40	6490946
Dissolved Copper (Cu)	ug/L	2.0	6490946	1.6	6493250	0.85	<0.50	0.50	6490946
Dissolved Iron (Fe)	ug/L	110	6490946	<50	6493250	860	4200	50	6490946
Dissolved Lead (Pb)	ug/L	<0.50	6490946	<0.50	6493250	<0.50	<0.50	0.50	6490946
Dissolved Magnesium (Mg)	ug/L	500	6490946	1600	6493250	8900	3200	100	6490946
Dissolved Manganese (Mn)	ug/L	4.3	6490946	990	6493250	490	710	2.0	6490946
Dissolved Molybdenum (Mo)	ug/L	<2.0	6490946	3.1	6493250	<2.0	<2.0	2.0	6490946
Dissolved Nickel (Ni)	ug/L	<2.0	6490946	<2.0	6493250	<2.0	<2.0	2.0	6490946
Dissolved Phosphorus (P)	ug/L	<100	6490946	210	6493250	3100	380	100	6490946
Dissolved Potassium (K)	ug/L	1000	6490946	6900	6493250	7900	4600	100	6490946
Dissolved Selenium (Se)	ug/L	<0.50	6490946	<0.50	6493250	<0.50	<0.50	0.50	6490946
Dissolved Silver (Ag)	ug/L	<0.10	6490946	<0.10	6493250	<0.10	<0.10	0.10	6490946
Dissolved Sodium (Na)	ug/L	4700	6490946	88000	6493250	28000	20000	100	6490946
Dissolved Strontium (Sr)	ug/L	10	6490946	17	6493250	1300	240	2.0	6490946
Dissolved Thallium (Tl)	ug/L	<0.10	6490946	<0.10	6493250	<0.10	<0.10	0.10	6490946
Dissolved Tin (Sn)	ug/L	<2.0	6490946	<2.0	6493250	<2.0	<2.0	2.0	6490946
Dissolved Titanium (Ti)	ug/L	2.6	6490946	<2.0	6493250	<2.0	<2.0	2.0	6490946
Dissolved Uranium (U)	ug/L	<0.10	6490946	0.23	6493250	<0.10	<0.10	0.10	6490946
Dissolved Vanadium (V)	ug/L	<2.0	6490946	<2.0	6493250	<2.0	<2.0	2.0	6490946
Dissolved Zinc (Zn)	ug/L	140	6490946	<5.0	6493250	5.3	<5.0	5.0	6490946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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BV Labs Job #: B9Y3372
Report Date: 2019/12/16

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LMO955		LMO956	LMO957	LMO958	LMO959		
Sampling Date		2019/12/05		2019/12/05	2019/12/05	2019/12/05	2019/12/05		
COC Number		D35779		D35779	D35779	D35779	D35779		
	UNITS	SCU7-001-MW	RDL	SCU7-003-MW	MSES-004-MW	MSES-012-MWA	FD-19	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	<5.0	5.0	5.2	41	8.1	8.6	5.0	6490946
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490946
Dissolved Arsenic (As)	ug/L	1.2	1.0	6.3	1.8	<1.0	<1.0	1.0	6490946
Dissolved Barium (Ba)	ug/L	39	1.0	75	9.0	5.0	40	1.0	6490946
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490946
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490946
Dissolved Boron (B)	ug/L	<50	50	76	76	<50	<50	50	6490946
Dissolved Cadmium (Cd)	ug/L	0.038	0.010	0.040	0.029	0.17	<0.010	0.010	6490946
Dissolved Calcium (Ca)	ug/L	500000	100	110000	180000	220000	27000	100	6490946
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	1.0	6490946
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	1.7	<0.40	<0.40	<0.40	0.40	6490946
Dissolved Copper (Cu)	ug/L	<0.50	0.50	<0.50	2.4	1.6	<0.50	0.50	6490946
Dissolved Iron (Fe)	ug/L	130	50	1800	880	1200	4200	50	6490946
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<0.50	<0.50	<0.50	<0.50	0.50	6490946
Dissolved Magnesium (Mg)	ug/L	13000	100	11000	30000	22000	3100	100	6490946
Dissolved Manganese (Mn)	ug/L	3100	2.0	3600	770	160	700	2.0	6490946
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490946
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	<2.0	5.5	7.1	<2.0	2.0	6490946
Dissolved Phosphorus (P)	ug/L	<100	100	<100	<100	<100	370	100	6490946
Dissolved Potassium (K)	ug/L	2200	100	5900	1900	3100	4700	100	6490946
Dissolved Selenium (Se)	ug/L	<0.50	0.50	<0.50	<0.50	10	<0.50	0.50	6490946
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<0.10	<0.10	<0.10	<0.10	0.10	6490946
Dissolved Sodium (Na)	ug/L	53000	100	90000	11000	150000	20000	100	6490946
Dissolved Strontium (Sr)	ug/L	12000	20	600	220	280	240	2.0	6490946
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<0.10	<0.10	<0.10	<0.10	0.10	6490946
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490946
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490946
Dissolved Uranium (U)	ug/L	2.0	0.10	0.16	0.14	0.32	<0.10	0.10	6490946
Dissolved Vanadium (V)	ug/L	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6490946
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	23	76	41	<5.0	5.0	6490946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LMO951		LMO952	LMO953	LMO954		
Sampling Date		2019/12/05		2019/12/05	2019/12/05	2019/12/05		
COC Number		D35779		D35779	D35779	D35779		
	UNITS	MCWS-310-MW	QC Batch	MCWS-309-MW	SCU11-001-MWA	SCU11-001-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	6488307	<0.050	<0.050	<0.050	0.050	6492918
2-Methylnaphthalene	ug/L	<0.050	6488307	<0.050	<0.050	<0.050	0.050	6492918
Acenaphthene	ug/L	<0.010	6488307	0.010	<0.010	0.015	0.010	6492918
Acenaphthylene	ug/L	<0.010	6488307	0.055	<0.010	<0.010	0.010	6492918
Anthracene	ug/L	<0.010	6488307	0.10	<0.010	<0.010	0.010	6492918
Benzo(a)anthracene	ug/L	<0.010	6488307	0.23	<0.010	<0.010	0.010	6492918
Benzo(a)pyrene	ug/L	<0.010	6488307	0.17	<0.010	<0.010	0.010	6492918
Benzo(b)fluoranthene	ug/L	<0.010	6488307	0.12	<0.010	<0.010	0.010	6492918
Benzo(b/j)fluoranthene	ug/L	<0.020	6480852	0.21	<0.020	<0.020	0.020	6480852
Benzo(g,h,i)perylene	ug/L	<0.010	6488307	0.092	<0.010	<0.010	0.010	6492918
Benzo(j)fluoranthene	ug/L	<0.010	6488307	0.097	<0.010	<0.010	0.010	6492918
Benzo(k)fluoranthene	ug/L	<0.010	6488307	0.096	<0.010	<0.010	0.010	6492918
Chrysene	ug/L	<0.010	6488307	0.22	<0.010	<0.010	0.010	6492918
Dibenzo(a,h)anthracene	ug/L	<0.010	6488307	0.013	<0.010	<0.010	0.010	6492918
Fluoranthene	ug/L	<0.010	6488307	0.65	0.013	<0.010	0.010	6492918
Fluorene	ug/L	<0.010	6488307	0.061	<0.010	<0.010	0.010	6492918
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	6488307	0.065	<0.010	<0.010	0.010	6492918
Naphthalene	ug/L	<0.20	6488307	<0.20	<0.20	<0.20	0.20	6492918
Perylene	ug/L	<0.010	6488307	0.043	<0.010	<0.010	0.010	6492918
Phenanthrene	ug/L	<0.010	6488307	0.30	0.019	<0.010	0.010	6492918
Pyrene	ug/L	<0.010	6488307	0.49	0.010	<0.010	0.010	6492918
Surrogate Recovery (%)								
D10-Anthracene	%	76	6488307	70	66	63		6492918
D14-Terphenyl	%	85	6488307	83 (1)	83	75		6492918
D8-Acenaphthylene	%	87	6488307	91	92	86		6492918

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

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LMO955	LMO956	LMO957	LMO958	LMO959		
Sampling Date		2019/12/05	2019/12/05	2019/12/05	2019/12/05	2019/12/05		
COC Number		D35779	D35779	D35779	D35779	D35779		
	UNITS	SCU7-001-MW	SCU7-003-MW	MSES-004-MW	MSES-012-MWA	FD-19	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	<0.050	0.34	0.37	<0.050	0.050	6492918
2-Methylnaphthalene	ug/L	<0.050	<0.050	0.28	0.27	<0.050	0.050	6492918
Acenaphthene	ug/L	<0.010	<0.010	0.13	0.17	0.015	0.010	6492918
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	0.063	<0.010	0.010	6492918
Anthracene	ug/L	<0.010	<0.010	<0.010	0.20	<0.010	0.010	6492918
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.33	<0.010	0.010	6492918
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.21	<0.010	0.010	6492918
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.12	<0.010	0.010	6492918
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	0.23	<0.020	0.020	6480852
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	0.061	<0.010	0.010	6492918
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.11	<0.010	0.010	6492918
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.11	<0.010	0.010	6492918
Chrysene	ug/L	<0.010	<0.010	<0.010	0.27	<0.010	0.010	6492918
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	0.011	<0.010	0.010	6492918
Fluoranthene	ug/L	<0.010	<0.010	<0.010	0.78	<0.010	0.010	6492918
Fluorene	ug/L	<0.010	<0.010	0.046	0.15	<0.010	0.010	6492918
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	0.047	<0.010	0.010	6492918
Naphthalene	ug/L	<0.20	<0.20	2.9	2.9	<0.20	0.20	6492918
Perylene	ug/L	<0.010	<0.010	<0.010	0.041	<0.010	0.010	6492918
Phenanthrene	ug/L	<0.010	<0.010	0.024	0.48	<0.010	0.010	6492918
Pyrene	ug/L	<0.010	<0.010	<0.010	0.58	<0.010	0.010	6492918
Surrogate Recovery (%)								
D10-Anthracene	%	73	92	71	66	62		6492918
D14-Terphenyl	%	87	98	89	82	76		6492918
D8-Acenaphthylene	%	95	100	84	93	88		6492918

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Sample LMO951 [MCWS-310-MW] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

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
6488307	LGE	Matrix Spike	D10-Anthracene	2019/12/11		63	%	50 - 130
			D14-Terphenyl	2019/12/11		80	%	50 - 130
			D8-Acenaphthylene	2019/12/11		96	%	50 - 130
			1-Methylnaphthalene	2019/12/11		97	%	50 - 130
			2-Methylnaphthalene	2019/12/11		103	%	50 - 130
			Acenaphthene	2019/12/11		101	%	50 - 130
			Acenaphthylene	2019/12/11		107	%	50 - 130
			Anthracene	2019/12/11		103	%	50 - 130
			Benzo(a)anthracene	2019/12/11		118	%	50 - 130
			Benzo(a)pyrene	2019/12/11		96	%	50 - 130
			Benzo(b)fluoranthene	2019/12/11		101	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/11		88	%	50 - 130
			Benzo(j)fluoranthene	2019/12/11		104	%	50 - 130
			Benzo(k)fluoranthene	2019/12/11		107	%	50 - 130
			Chrysene	2019/12/11		114	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/11		63	%	50 - 130
			Fluoranthene	2019/12/11		110	%	50 - 130
			Fluorene	2019/12/11		102	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/11		69	%	50 - 130
			Naphthalene	2019/12/11		100	%	50 - 130
			Perylene	2019/12/11		96	%	50 - 130
			Phenanthrene	2019/12/11		105	%	50 - 130
			Pyrene	2019/12/11		112	%	50 - 130
6488307	LGE	Spiked Blank	D10-Anthracene	2019/12/11		66	%	50 - 130
			D14-Terphenyl	2019/12/11		87	%	50 - 130
			D8-Acenaphthylene	2019/12/11		105	%	50 - 130
			1-Methylnaphthalene	2019/12/11		106	%	50 - 130
			2-Methylnaphthalene	2019/12/11		112	%	50 - 130
			Acenaphthene	2019/12/11		110	%	50 - 130
			Acenaphthylene	2019/12/11		115	%	50 - 130
			Anthracene	2019/12/11		118	%	50 - 130
			Benzo(a)anthracene	2019/12/11		122	%	50 - 130
			Benzo(a)pyrene	2019/12/11		97	%	50 - 130
			Benzo(b)fluoranthene	2019/12/11		104	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/11		101	%	50 - 130
			Benzo(j)fluoranthene	2019/12/11		116	%	50 - 130
			Benzo(k)fluoranthene	2019/12/11		117	%	50 - 130
			Chrysene	2019/12/11		123	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/11		56	%	50 - 130
			Fluoranthene	2019/12/11		120	%	50 - 130
			Fluorene	2019/12/11		110	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/11		72	%	50 - 130
			Naphthalene	2019/12/11		112	%	50 - 130
			Perylene	2019/12/11		102	%	50 - 130
			Phenanthrene	2019/12/11		122	%	50 - 130
			Pyrene	2019/12/11		122	%	50 - 130
6488307	LGE	Method Blank	D10-Anthracene	2019/12/11		97	%	50 - 130
			D14-Terphenyl	2019/12/11		102	%	50 - 130
			D8-Acenaphthylene	2019/12/11		100	%	50 - 130
			1-Methylnaphthalene	2019/12/11	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/11	<0.050		ug/L	
			Acenaphthene	2019/12/11	<0.010		ug/L	
			Acenaphthylene	2019/12/11	<0.010		ug/L	
			Anthracene	2019/12/11	<0.010		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(a)anthracene	2019/12/11	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/11	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/11	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/11	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/11	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/11	<0.010		ug/L	
			Chrysene	2019/12/11	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/11	<0.010		ug/L	
			Fluoranthene	2019/12/11	<0.010		ug/L	
			Fluorene	2019/12/11	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/11	<0.010		ug/L	
			Naphthalene	2019/12/11	<0.20		ug/L	
			Perylene	2019/12/11	<0.010		ug/L	
			Phenanthrene	2019/12/11	<0.010		ug/L	
			Pyrene	2019/12/11	<0.010		ug/L	
6488307	LGE	RPD	1-Methylnaphthalene	2019/12/11	NC		%	40
			2-Methylnaphthalene	2019/12/11	NC		%	40
			Acenaphthene	2019/12/11	NC		%	40
			Acenaphthylene	2019/12/11	NC		%	40
			Anthracene	2019/12/11	NC		%	40
			Benzo(a)anthracene	2019/12/11	NC		%	40
			Benzo(a)pyrene	2019/12/11	NC		%	40
			Benzo(b)fluoranthene	2019/12/11	NC		%	40
			Benzo(g,h,i)perylene	2019/12/11	NC		%	40
			Benzo(j)fluoranthene	2019/12/11	NC		%	40
			Benzo(k)fluoranthene	2019/12/11	NC		%	40
			Chrysene	2019/12/11	NC		%	40
			Dibenzo(a,h)anthracene	2019/12/11	NC		%	40
			Fluoranthene	2019/12/11	NC		%	40
			Fluorene	2019/12/11	NC		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/11	NC		%	40
			Naphthalene	2019/12/11	NC		%	40
			Perylene	2019/12/11	NC		%	40
			Phenanthrene	2019/12/11	NC		%	40
			Pyrene	2019/12/11	NC		%	40
6490946	BAN	Matrix Spike	Dissolved Aluminum (Al)	2019/12/11		101	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/11		94	%	80 - 120
			Dissolved Arsenic (As)	2019/12/11		96	%	80 - 120
			Dissolved Barium (Ba)	2019/12/11		98	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/11		97	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/11		95	%	80 - 120
			Dissolved Boron (B)	2019/12/11		92	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/11		98	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/11		104	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/11		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/11		99	%	80 - 120
			Dissolved Copper (Cu)	2019/12/11		95	%	80 - 120
			Dissolved Iron (Fe)	2019/12/11		98	%	80 - 120
			Dissolved Lead (Pb)	2019/12/11		100	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/11		102	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/11		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/11		94	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/11		97	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/11		102	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Potassium (K)	2019/12/11		102	%	80 - 120
			Dissolved Selenium (Se)	2019/12/11		100	%	80 - 120
			Dissolved Silver (Ag)	2019/12/11		96	%	80 - 120
			Dissolved Sodium (Na)	2019/12/11		98	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/11		99	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/11		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/11		98	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/11		99	%	80 - 120
			Dissolved Uranium (U)	2019/12/11		104	%	80 - 120
			Dissolved Vanadium (V)	2019/12/11		98	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/11		97	%	80 - 120
6490946	BAN	Spiked Blank	Dissolved Aluminum (Al)	2019/12/11		96	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/11		93	%	80 - 120
			Dissolved Arsenic (As)	2019/12/11		97	%	80 - 120
			Dissolved Barium (Ba)	2019/12/11		96	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/11		98	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/11		97	%	80 - 120
			Dissolved Boron (B)	2019/12/11		93	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/11		97	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/11		100	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/11		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/11		99	%	80 - 120
			Dissolved Copper (Cu)	2019/12/11		97	%	80 - 120
			Dissolved Iron (Fe)	2019/12/11		96	%	80 - 120
			Dissolved Lead (Pb)	2019/12/11		100	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/11		99	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/11		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/11		98	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/11		99	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/11		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/11		99	%	80 - 120
			Dissolved Selenium (Se)	2019/12/11		97	%	80 - 120
			Dissolved Silver (Ag)	2019/12/11		97	%	80 - 120
			Dissolved Sodium (Na)	2019/12/11		96	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/11		101	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/11		98	%	80 - 120
			Dissolved Tin (Sn)	2019/12/11		100	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/11		97	%	80 - 120
			Dissolved Uranium (U)	2019/12/11		105	%	80 - 120
			Dissolved Vanadium (V)	2019/12/11		99	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/11		100	%	80 - 120
6490946	BAN	Method Blank	Dissolved Aluminum (Al)	2019/12/11	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/11	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/11	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/11	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/11	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/11	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/11	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/11	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/11	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/11	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/11	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/11	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/11	<50		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Lead (Pb)	2019/12/11	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/11	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/11	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/11	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/11	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/11	<100		ug/L	
			Dissolved Potassium (K)	2019/12/11	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/11	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/11	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/11	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/11	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/11	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/11	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/11	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/11	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/11	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/11	<5.0		ug/L	
6490946	BAN	RPD	Dissolved Aluminum (Al)	2019/12/11	NC		%	20
			Dissolved Antimony (Sb)	2019/12/11	NC		%	20
			Dissolved Arsenic (As)	2019/12/11	NC		%	20
			Dissolved Barium (Ba)	2019/12/11	NC		%	20
			Dissolved Beryllium (Be)	2019/12/11	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/11	NC		%	20
			Dissolved Boron (B)	2019/12/11	NC		%	20
			Dissolved Cadmium (Cd)	2019/12/11	NC		%	20
			Dissolved Calcium (Ca)	2019/12/11	NC		%	20
			Dissolved Chromium (Cr)	2019/12/11	NC		%	20
			Dissolved Cobalt (Co)	2019/12/11	NC		%	20
			Dissolved Copper (Cu)	2019/12/11	NC		%	20
			Dissolved Iron (Fe)	2019/12/11	NC		%	20
			Dissolved Lead (Pb)	2019/12/11	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/11	NC		%	20
			Dissolved Manganese (Mn)	2019/12/11	NC		%	20
			Dissolved Molybdenum (Mo)	2019/12/11	NC		%	20
			Dissolved Nickel (Ni)	2019/12/11	NC		%	20
			Dissolved Phosphorus (P)	2019/12/11	NC		%	20
			Dissolved Potassium (K)	2019/12/11	NC		%	20
			Dissolved Selenium (Se)	2019/12/11	NC		%	20
			Dissolved Silver (Ag)	2019/12/11	NC		%	20
			Dissolved Sodium (Na)	2019/12/11	18		%	20
			Dissolved Strontium (Sr)	2019/12/11	NC		%	20
			Dissolved Thallium (Tl)	2019/12/11	NC		%	20
			Dissolved Tin (Sn)	2019/12/11	NC		%	20
			Dissolved Titanium (Ti)	2019/12/11	NC		%	20
			Dissolved Uranium (U)	2019/12/11	NC		%	20
			Dissolved Vanadium (V)	2019/12/11	NC		%	20
			Dissolved Zinc (Zn)	2019/12/11	NC		%	20
6492918	LGE	Matrix Spike [LMO953-06]	D10-Anthracene	2019/12/12		51	%	50 - 130
			D14-Terphenyl	2019/12/12		69	%	50 - 130
			D8-Acenaphthylene	2019/12/12		86	%	50 - 130
			1-Methylnaphthalene	2019/12/12		82	%	50 - 130
			2-Methylnaphthalene	2019/12/12		84	%	50 - 130
			Acenaphthene	2019/12/12		85	%	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	2019/12/12		91	%	50 - 130
			Anthracene	2019/12/12		86	%	50 - 130
			Benzo(a)anthracene	2019/12/12		106	%	50 - 130
			Benzo(a)pyrene	2019/12/12		85	%	50 - 130
			Benzo(b)fluoranthene	2019/12/12		86	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/12		77	%	50 - 130
			Benzo(j)fluoranthene	2019/12/12		96	%	50 - 130
			Benzo(k)fluoranthene	2019/12/12		96	%	50 - 130
			Chrysene	2019/12/12		98	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/12		55	%	50 - 130
			Fluoranthene	2019/12/12		97	%	50 - 130
			Fluorene	2019/12/12		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/12		63	%	50 - 130
			Naphthalene	2019/12/12		83	%	50 - 130
			Perylene	2019/12/12		81	%	50 - 130
			Phenanthrene	2019/12/12		93	%	50 - 130
			Pyrene	2019/12/12		96	%	50 - 130
6492918	LGE	Spiked Blank	D10-Anthracene	2019/12/12		63	%	50 - 130
			D14-Terphenyl	2019/12/12		86	%	50 - 130
			D8-Acenaphthylene	2019/12/12		102	%	50 - 130
			1-Methylnaphthalene	2019/12/12		98	%	50 - 130
			2-Methylnaphthalene	2019/12/12		102	%	50 - 130
			Acenaphthene	2019/12/12		106	%	50 - 130
			Acenaphthylene	2019/12/12		112	%	50 - 130
			Anthracene	2019/12/12		111	%	50 - 130
			Benzo(a)anthracene	2019/12/12		118	%	50 - 130
			Benzo(a)pyrene	2019/12/12		97	%	50 - 130
			Benzo(b)fluoranthene	2019/12/12		96	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/12		99	%	50 - 130
			Benzo(j)fluoranthene	2019/12/12		112	%	50 - 130
			Benzo(k)fluoranthene	2019/12/12		103	%	50 - 130
			Chrysene	2019/12/12		118	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/12		73	%	50 - 130
			Fluoranthene	2019/12/12		119	%	50 - 130
			Fluorene	2019/12/12		107	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/12		70	%	50 - 130
			Naphthalene	2019/12/12		103	%	50 - 130
			Perylene	2019/12/12		99	%	50 - 130
			Phenanthrene	2019/12/12		125	%	50 - 130
			Pyrene	2019/12/12		121	%	50 - 130
6492918	LGE	Method Blank	D10-Anthracene	2019/12/12		88	%	50 - 130
			D14-Terphenyl	2019/12/12		88	%	50 - 130
			D8-Acenaphthylene	2019/12/12		93	%	50 - 130
			1-Methylnaphthalene	2019/12/12	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/12	<0.050		ug/L	
			Acenaphthene	2019/12/12	<0.010		ug/L	
			Acenaphthylene	2019/12/12	<0.010		ug/L	
			Anthracene	2019/12/12	<0.010		ug/L	
			Benzo(a)anthracene	2019/12/12	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/12	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/12	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/12	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/12	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/12	<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
			Chrysene	2019/12/12	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/12	<0.010		ug/L	
			Fluoranthene	2019/12/12	<0.010		ug/L	
			Fluorene	2019/12/12	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/12	<0.010		ug/L	
			Naphthalene	2019/12/12	<0.20		ug/L	
			Perylene	2019/12/12	<0.010		ug/L	
			Phenanthrene	2019/12/12	<0.010		ug/L	
			Pyrene	2019/12/12	<0.010		ug/L	
6492918	LGE	RPD [LMO952-06]	1-Methylnaphthalene	2019/12/12	NC		%	40
			2-Methylnaphthalene	2019/12/12	NC		%	40
			Acenaphthene	2019/12/12	18		%	40
			Acenaphthylene	2019/12/12	56 (1)		%	40
			Anthracene	2019/12/12	63 (1)		%	40
			Benzo(a)anthracene	2019/12/12	67 (1)		%	40
			Benzo(a)pyrene	2019/12/12	73 (1)		%	40
			Benzo(b)fluoranthene	2019/12/12	68 (1)		%	40
			Benzo(g,h,i)perylene	2019/12/12	63 (1)		%	40
			Benzo(j)fluoranthene	2019/12/12	64 (1)		%	40
			Benzo(k)fluoranthene	2019/12/12	71 (1)		%	40
			Chrysene	2019/12/12	65 (1)		%	40
			Dibenzo(a,h)anthracene	2019/12/12	NC		%	40
			Fluoranthene	2019/12/12	55 (1)		%	40
			Fluorene	2019/12/12	54 (1)		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/12	65 (1)		%	40
			Naphthalene	2019/12/12	NC		%	40
			Perylene	2019/12/12	60 (1)		%	40
			Phenanthrene	2019/12/12	53 (1)		%	40
			Pyrene	2019/12/12	58 (1)		%	40
6493250	BAN	Matrix Spike [LMO952-01]	Dissolved Aluminum (Al)	2019/12/12		100	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/12		97	%	80 - 120
			Dissolved Arsenic (As)	2019/12/12		97	%	80 - 120
			Dissolved Barium (Ba)	2019/12/12		99	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/12		101	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/12		94	%	80 - 120
			Dissolved Boron (B)	2019/12/12		105	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/12		96	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/12		101	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/12		96	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/12		95	%	80 - 120
			Dissolved Copper (Cu)	2019/12/12		91	%	80 - 120
			Dissolved Iron (Fe)	2019/12/12		98	%	80 - 120
			Dissolved Lead (Pb)	2019/12/12		97	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/12		99	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/12		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/12		102	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/12		94	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/12		100	%	80 - 120
			Dissolved Potassium (K)	2019/12/12		93	%	80 - 120
			Dissolved Selenium (Se)	2019/12/12		99	%	80 - 120
			Dissolved Silver (Ag)	2019/12/12		81	%	80 - 120
			Dissolved Sodium (Na)	2019/12/12		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/12		95	%	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 Thallium (Tl)	2019/12/12		97	%	80 - 120
			Dissolved Tin (Sn)	2019/12/12		104	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/12		101	%	80 - 120
			Dissolved Uranium (U)	2019/12/12		103	%	80 - 120
			Dissolved Vanadium (V)	2019/12/12		100	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/12		96	%	80 - 120
6493250	BAN	Spiked Blank	Dissolved Aluminum (Al)	2019/12/12		99	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/12		93	%	80 - 120
			Dissolved Arsenic (As)	2019/12/12		96	%	80 - 120
			Dissolved Barium (Ba)	2019/12/12		101	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/12		100	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/12		97	%	80 - 120
			Dissolved Boron (B)	2019/12/12		101	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/12		97	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/12		101	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/12		99	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/12		98	%	80 - 120
			Dissolved Copper (Cu)	2019/12/12		96	%	80 - 120
			Dissolved Iron (Fe)	2019/12/12		98	%	80 - 120
			Dissolved Lead (Pb)	2019/12/12		98	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/12		101	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/12		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/12		100	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/12		98	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/12		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/12		103	%	80 - 120
			Dissolved Selenium (Se)	2019/12/12		99	%	80 - 120
			Dissolved Silver (Ag)	2019/12/12		95	%	80 - 120
			Dissolved Sodium (Na)	2019/12/12		98	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/12		99	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/12		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/12		102	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/12		103	%	80 - 120
			Dissolved Uranium (U)	2019/12/12		103	%	80 - 120
			Dissolved Vanadium (V)	2019/12/12		101	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/12		100	%	80 - 120
6493250	BAN	Method Blank	Dissolved Aluminum (Al)	2019/12/12	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/12	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/12	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/12	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/12	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/12	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/12	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/12	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/12	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/12	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/12	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/12	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/12	<50		ug/L	
			Dissolved Lead (Pb)	2019/12/12	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/12	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/12	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/12	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/12	<2.0		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Phosphorus (P)	2019/12/12	<100		ug/L	
			Dissolved Potassium (K)	2019/12/12	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/12	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/12	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/12	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/12	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/12	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/12	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/12	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/12	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/12	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/12	<5.0		ug/L	
6493250	BAN	RPD [LMO952-01]	Dissolved Aluminum (Al)	2019/12/12	0.46		%	20
			Dissolved Antimony (Sb)	2019/12/12	NC		%	20
			Dissolved Arsenic (As)	2019/12/12	1.9		%	20
			Dissolved Barium (Ba)	2019/12/12	0.52		%	20
			Dissolved Beryllium (Be)	2019/12/12	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/12	NC		%	20
			Dissolved Boron (B)	2019/12/12	2.5		%	20
			Dissolved Cadmium (Cd)	2019/12/12	7.0		%	20
			Dissolved Calcium (Ca)	2019/12/12	1.5		%	20
			Dissolved Chromium (Cr)	2019/12/12	NC		%	20
			Dissolved Cobalt (Co)	2019/12/12	NC		%	20
			Dissolved Copper (Cu)	2019/12/12	11		%	20
			Dissolved Iron (Fe)	2019/12/12	NC		%	20
			Dissolved Lead (Pb)	2019/12/12	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/12	1.8		%	20
			Dissolved Manganese (Mn)	2019/12/12	1.9		%	20
			Dissolved Molybdenum (Mo)	2019/12/12	3.3		%	20
			Dissolved Nickel (Ni)	2019/12/12	NC		%	20
			Dissolved Phosphorus (P)	2019/12/12	1.9		%	20
			Dissolved Potassium (K)	2019/12/12	3.5		%	20
			Dissolved Selenium (Se)	2019/12/12	NC		%	20
			Dissolved Silver (Ag)	2019/12/12	NC		%	20
			Dissolved Sodium (Na)	2019/12/12	1.6		%	20
			Dissolved Strontium (Sr)	2019/12/12	2.8		%	20
			Dissolved Thallium (Tl)	2019/12/12	NC		%	20
			Dissolved Tin (Sn)	2019/12/12	NC		%	20
			Dissolved Titanium (Ti)	2019/12/12	NC		%	20
			Dissolved Uranium (U)	2019/12/12	7.2		%	20
			Dissolved Vanadium (V)	2019/12/12	NC		%	20
			Dissolved Zinc (Zn)	2019/12/12	NC		%	20
6493477	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/13		105	%	80 - 120
6493477	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/13		106	%	80 - 120
6493477	NHU	Method Blank	Total Mercury (Hg)	2019/12/13	<0.013		ug/L	
6493477	NHU	RPD	Total Mercury (Hg)	2019/12/13	NC		%	20
6493489	NHU	Matrix Spike [LMO959-05]	Total Mercury (Hg)	2019/12/13		105	%	80 - 120
6493489	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/13		104	%	80 - 120
6493489	NHU	Method Blank	Total Mercury (Hg)	2019/12/13	<0.013		ug/L	
6493489	NHU	RPD	Total Mercury (Hg)	2019/12/13	2.5		%	20
6493784	EMT	Matrix Spike [LMO953-03]	Nitrogen (Ammonia Nitrogen)	2019/12/13		NC	%	80 - 120
6493784	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/13		104	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6493784	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/13	<0.050		mg/L	
6493784	EMT	RPD [LMO953-03]	Nitrogen (Ammonia Nitrogen)	2019/12/13	5.8		%	20
6493821	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/13		100	%	80 - 120
6493821	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/13		104	%	80 - 120
6493821	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/13	<0.050		mg/L	
6493821	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/13	1.7		%	20
6495555	SHW	QC Standard	pH	2019/12/13		101	%	97 - 103
6495555	SHW	RPD	pH	2019/12/13	0.13		%	N/A
6495556	SHW	Spiked Blank	Conductivity	2019/12/13		101	%	80 - 120
6495556	SHW	Method Blank	Conductivity	2019/12/13	<1.0		uS/cm	
6495556	SHW	RPD	Conductivity	2019/12/13	0.89		%	10
6495760	SHW	QC Standard	Turbidity	2019/12/13		104	%	80 - 120
6495760	SHW	Spiked Blank	Turbidity	2019/12/13		101	%	80 - 120
6495760	SHW	Method Blank	Turbidity	2019/12/13	<0.10		NTU	
6495760	SHW	RPD	Turbidity	2019/12/13	1.2		%	20
6495763	SHW	QC Standard	Turbidity	2019/12/13		103	%	80 - 120
6495763	SHW	Spiked Blank	Turbidity	2019/12/13		100	%	80 - 120
6495763	SHW	Method Blank	Turbidity	2019/12/13	<0.10		NTU	
6495763	SHW	RPD	Turbidity	2019/12/13	4.4		%	20
6495782	SSI	Matrix Spike	Total Organic Carbon (C)	2019/12/13		96	%	85 - 115
6495782	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/13		97	%	80 - 120
6495782	SSI	Method Blank	Total Organic Carbon (C)	2019/12/13	<0.50		mg/L	
6495782	SSI	RPD	Total Organic Carbon (C)	2019/12/13	8.7		%	15
6495785	SSI	Matrix Spike [LMO954-04]	Total Organic Carbon (C)	2019/12/13		97	%	85 - 115
6495785	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/13		97	%	80 - 120
6495785	SSI	Method Blank	Total Organic Carbon (C)	2019/12/13	<0.50		mg/L	
6495785	SSI	RPD [LMO954-04]	Total Organic Carbon (C)	2019/12/13	5.2		%	15
6496229	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/13		NC	%	80 - 120
6496229	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/13		106	%	80 - 120
6496229	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/13	<5.0		mg/L	
6496229	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/13	0.60		%	25
6496238	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/16		NC	%	80 - 120
6496238	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/13		96	%	80 - 120
6496238	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/13	<1.0		mg/L	
6496238	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/16	1.1		%	25
6496239	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/13		NC	%	80 - 120
6496239	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/14		101	%	80 - 120
6496239	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/14	<2.0		mg/L	
6496239	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/13	3.6		%	25
6496240	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/13		87	%	80 - 120
6496240	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/13		90	%	80 - 120
6496240	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/13	<0.50		mg/L	
6496240	EMT	RPD	Reactive Silica (SiO2)	2019/12/13	10		%	25
6496241	EMT	Spiked Blank	Colour	2019/12/13		108	%	80 - 120
6496241	EMT	Method Blank	Colour	2019/12/13	<5.0		TCU	
6496241	EMT	RPD	Colour	2019/12/13	NC		%	20
6496243	EMT	Matrix Spike	Orthophosphate (P)	2019/12/13		85	%	80 - 120
6496243	EMT	Spiked Blank	Orthophosphate (P)	2019/12/13		88	%	80 - 120
6496243	EMT	Method Blank	Orthophosphate (P)	2019/12/13	<0.010		mg/L	
6496243	EMT	RPD	Orthophosphate (P)	2019/12/13	NC		%	25
6496246	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/13		105	%	80 - 120
6496246	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/13		92	%	80 - 120
6496246	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/13	<0.050		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6496246	EMT	RPD	Nitrate + Nitrite (N)	2019/12/16	NC		%	25
6496248	EMT	Matrix Spike	Nitrite (N)	2019/12/13		93	%	80 - 120
6496248	EMT	Spiked Blank	Nitrite (N)	2019/12/13		105	%	80 - 120
6496248	EMT	Method Blank	Nitrite (N)	2019/12/13	<0.010		mg/L	
6496248	EMT	RPD	Nitrite (N)	2019/12/13	12		%	20
6496255	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/13		NC	%	80 - 120
6496255	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/13		104	%	80 - 120
6496255	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/13	<5.0		mg/L	
6496255	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/13	8.9		%	25
6496262	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/16		NC	%	80 - 120
6496262	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/16		95	%	80 - 120
6496262	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/16	<1.0		mg/L	
6496262	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/16	0.70		%	25
6496264	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/13		100	%	80 - 120
6496264	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/13		99	%	80 - 120
6496264	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/13	<2.0		mg/L	
6496264	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/13	2.2		%	25
6496300	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/13		86	%	80 - 120
6496300	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/14		92	%	80 - 120
6496300	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/13	<0.50		mg/L	
6496300	EMT	RPD	Reactive Silica (SiO2)	2019/12/13	3.9		%	25
6496304	EMT	Spiked Blank	Colour	2019/12/13		97	%	80 - 120
6496304	EMT	Method Blank	Colour	2019/12/13	<5.0		TCU	
6496304	EMT	RPD	Colour	2019/12/13	NC		%	20
6496307	EMT	Matrix Spike	Orthophosphate (P)	2019/12/13		87	%	80 - 120
6496307	EMT	Spiked Blank	Orthophosphate (P)	2019/12/13		90	%	80 - 120
6496307	EMT	Method Blank	Orthophosphate (P)	2019/12/13	<0.010		mg/L	
6496307	EMT	RPD	Orthophosphate (P)	2019/12/13	NC		%	25
6496309	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/13		92	%	80 - 120
6496309	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/13		100	%	80 - 120
6496309	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/13	<0.050		mg/L	
6496309	EMT	RPD	Nitrate + Nitrite (N)	2019/12/13	NC		%	25
6496310	EMT	Matrix Spike	Nitrite (N)	2019/12/13		96	%	80 - 120
6496310	EMT	Spiked Blank	Nitrite (N)	2019/12/13		105	%	80 - 120
6496310	EMT	Method Blank	Nitrite (N)	2019/12/13	<0.010		mg/L	
6496310	EMT	RPD	Nitrite (N)	2019/12/13	5.2		%	20
6496311	EMT	Matrix Spike [LMO956-01]	Total Alkalinity (Total as CaCO3)	2019/12/16		NC	%	80 - 120
6496311	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/13		105	%	80 - 120
6496311	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/13	<5.0		mg/L	
6496311	EMT	RPD [LMO956-01]	Total Alkalinity (Total as CaCO3)	2019/12/16	0.90		%	25
6496312	EMT	Matrix Spike [LMO956-01]	Dissolved Chloride (Cl-)	2019/12/13		NC	%	80 - 120
6496312	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/16		95	%	80 - 120
6496312	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/16	<1.0		mg/L	
6496312	EMT	RPD [LMO956-01]	Dissolved Chloride (Cl-)	2019/12/13	1.7		%	25
6496319	EMT	Matrix Spike [LMO956-01]	Dissolved Sulphate (SO4)	2019/12/13		NC	%	80 - 120
6496319	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/13		101	%	80 - 120
6496319	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/13	<2.0		mg/L	
6496319	EMT	RPD [LMO956-01]	Dissolved Sulphate (SO4)	2019/12/13	0.48		%	25
6496320	EMT	Matrix Spike [LMO956-01]	Reactive Silica (SiO2)	2019/12/13		87	%	80 - 120
6496320	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/13		89	%	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
6496320	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/13	<0.50		mg/L	
6496320	EMT	RPD [LMO956-01]	Reactive Silica (SiO2)	2019/12/13	0.94		%	25
6496324	EMT	Spiked Blank	Colour	2019/12/13		95	%	80 - 120
6496324	EMT	Method Blank	Colour	2019/12/13	<5.0		TCU	
6496324	EMT	RPD [LMO956-01]	Colour	2019/12/13	NC		%	20
6496333	EMT	Matrix Spike [LMO956-01]	Orthophosphate (P)	2019/12/13		86	%	80 - 120
6496333	EMT	Spiked Blank	Orthophosphate (P)	2019/12/13		89	%	80 - 120
6496333	EMT	Method Blank	Orthophosphate (P)	2019/12/13	<0.010		mg/L	
6496333	EMT	RPD [LMO956-01]	Orthophosphate (P)	2019/12/13	NC		%	25
6496337	EMT	Matrix Spike [LMO956-01]	Nitrate + Nitrite (N)	2019/12/13		88	%	80 - 120
6496337	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/13		92	%	80 - 120
6496337	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/13	<0.050		mg/L	
6496337	EMT	RPD [LMO956-01]	Nitrate + Nitrite (N)	2019/12/13	NC		%	25
6496338	EMT	Matrix Spike [LMO956-01]	Nitrite (N)	2019/12/13		97	%	80 - 120
6496338	EMT	Spiked Blank	Nitrite (N)	2019/12/13		108	%	80 - 120
6496338	EMT	Method Blank	Nitrite (N)	2019/12/13	<0.010		mg/L	
6496338	EMT	RPD [LMO956-01]	Nitrite (N)	2019/12/13	NC		%	20
6498862	SHW	QC Standard	Turbidity	2019/12/16		103	%	80 - 120
6498862	SHW	Spiked Blank	Turbidity	2019/12/16		99	%	80 - 120
6498862	SHW	Method Blank	Turbidity	2019/12/16	<0.10		NTU	

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).

(1) Duplicate: results are outside acceptance limit. Insufficient sample for repeat analysis.

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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)

Rosemarie MacDonald, 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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Your Project #: 14-1360
Site Location: OHP/HE
Your C.O.C. #: D35783

Attention: Nadine Wambolt

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

Report Date: 2019/12/18
Report #: R6010739
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y5967
Received: 2019/12/09, 10:15

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/12/17	N/A	SM 23 4500-CO2 D
Alkalinity (1)	1	N/A	2019/12/17	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	1	N/A	2019/12/17	N/A	Auto Calc.
Chloride (1)	1	N/A	2019/12/17	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	1	N/A	2019/12/17	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	1	N/A	2019/12/17	ATL SOP 00004	SM 23 2510B m
Hardness (calculated as CaCO3) (1)	1	N/A	2019/12/17	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	1	2019/12/16	2019/12/17	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2019/12/16	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	1	N/A	2019/12/18	N/A	Auto Calc.
Anion and Cation Sum (1)	1	N/A	2019/12/17	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	1	N/A	2019/12/16	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	1	N/A	2019/12/18	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	1	N/A	2019/12/17	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	1	N/A	2019/12/18	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	1	2019/12/16	2019/12/17	ATL SOP 00103	EPA 8270E R6 m
pH (1, 2)	1	N/A	2019/12/17	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	1	N/A	2019/12/17	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	1	N/A	2019/12/18	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	1	N/A	2019/12/18	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	1	N/A	2019/12/17	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	1	N/A	2019/12/17	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	1	N/A	2019/12/18	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	1	N/A	2019/12/17	ATL SOP 00203	SM 23 5310B m
Turbidity (1)	1	N/A	2019/12/17	ATL SOP 00011	EPA 180.1 R2 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

Your Project #: 14-1360
Site Location: OHP/HE
Your C.O.C. #: D35783

Attention: Nadine Wambolt

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

Report Date: 2019/12/18
Report #: R6010739
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y5967
Received: 2019/12/09, 10:15

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) 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

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories
18 Dec 2019 15:53:05

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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BV Labs Job #: B9Y5967
Report Date: 2019/12/18

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OHP/HE

RESULTS OF ANALYSES OF WATER

BV Labs ID		LNE420		
Sampling Date		2019/12/09		
COC Number		D35783		
	UNITS	COSCW-001-MWA	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	5.54	N/A	6485936
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	210	1.0	6485932
Calculated TDS	mg/L	300	1.0	6485944
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.4	1.0	6485932
Cation Sum	me/L	5.33	N/A	6485936
Hardness (CaCO3)	mg/L	240	1.0	6486389
Ion Balance (% Difference)	%	1.93	N/A	6485935
Langelier Index (@ 20C)	N/A	0.665		6485940
Langelier Index (@ 4C)	N/A	0.416		6485942
Nitrate (N)	mg/L	0.051	0.050	6485937
Saturation pH (@ 20C)	N/A	7.19		6485940
Saturation pH (@ 4C)	N/A	7.44		6485942
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	210	25	6501020
Dissolved Chloride (Cl-)	mg/L	12	1.0	6501022
Colour	TCU	<5.0	5.0	6501026
Nitrate + Nitrite (N)	mg/L	0.062	0.050	6501028
Nitrite (N)	mg/L	0.010	0.010	6501029
Nitrogen (Ammonia Nitrogen)	mg/L	0.061	0.050	6499515
Total Organic Carbon (C)	mg/L	0.86	0.50	6500820
Orthophosphate (P)	mg/L	<0.010	0.010	6501027
pH	pH	7.86	N/A	6500842
Reactive Silica (SiO2)	mg/L	11	0.50	6501025
Dissolved Sulphate (SO4)	mg/L	46	2.0	6501024
Turbidity	NTU	210	1.0	6500875
Conductivity	uS/cm	490	1.0	6500843

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

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BV Labs Job #: B9Y5967
Report Date: 2019/12/18

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OHP/HE

MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		LNE420		
Sampling Date		2019/12/09		
COC Number		D35783		
	UNITS	COSCW-001-MWA	RDL	QC Batch
Metals				
Total Mercury (Hg)	ug/L	<0.013	0.013	6499490

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LNE420		
Sampling Date		2019/12/09		
COC Number		D35783		
	UNITS	COSCW-001-MWA	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	9.0	5.0	6499183
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	6499183
Dissolved Arsenic (As)	ug/L	<1.0	1.0	6499183
Dissolved Barium (Ba)	ug/L	51	1.0	6499183
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6499183
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	6499183
Dissolved Boron (B)	ug/L	<50	50	6499183
Dissolved Cadmium (Cd)	ug/L	0.054	0.010	6499183
Dissolved Calcium (Ca)	ug/L	80000	100	6499183
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6499183
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	6499183
Dissolved Copper (Cu)	ug/L	10	0.50	6499183
Dissolved Iron (Fe)	ug/L	<50	50	6499183
Dissolved Lead (Pb)	ug/L	<0.50	0.50	6499183
Dissolved Magnesium (Mg)	ug/L	8700	100	6499183
Dissolved Manganese (Mn)	ug/L	150	2.0	6499183
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	6499183
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	6499183
Dissolved Phosphorus (P)	ug/L	<100	100	6499183
Dissolved Potassium (K)	ug/L	1600	100	6499183
Dissolved Selenium (Se)	ug/L	<0.50	0.50	6499183
Dissolved Silver (Ag)	ug/L	<0.10	0.10	6499183
Dissolved Sodium (Na)	ug/L	13000	100	6499183
Dissolved Strontium (Sr)	ug/L	560	2.0	6499183
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6499183
Dissolved Tin (Sn)	ug/L	<2.0	2.0	6499183
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	6499183
Dissolved Uranium (U)	ug/L	0.73	0.10	6499183
Dissolved Vanadium (V)	ug/L	<2.0	2.0	6499183
Dissolved Zinc (Zn)	ug/L	34	5.0	6499183

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LNE420		
Sampling Date		2019/12/09		
COC Number		D35783		
	UNITS	COSCW-001-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons				
1-Methylnaphthalene	ug/L	0.20	0.050	6499153
2-Methylnaphthalene	ug/L	0.15	0.050	6499153
Acenaphthene	ug/L	0.075	0.010	6499153
Acenaphthylene	ug/L	<0.010	0.010	6499153
Anthracene	ug/L	<0.010	0.010	6499153
Benzo(a)anthracene	ug/L	<0.010	0.010	6499153
Benzo(a)pyrene	ug/L	<0.010	0.010	6499153
Benzo(b)fluoranthene	ug/L	<0.010	0.010	6499153
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	6485933
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	6499153
Benzo(j)fluoranthene	ug/L	<0.010	0.010	6499153
Benzo(k)fluoranthene	ug/L	<0.010	0.010	6499153
Chrysene	ug/L	<0.010	0.010	6499153
Dibenzo(a,h)anthracene	ug/L	<0.010	0.010	6499153
Fluoranthene	ug/L	<0.010	0.010	6499153
Fluorene	ug/L	0.028	0.010	6499153
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	6499153
Naphthalene	ug/L	1.5	0.20	6499153
Perylene	ug/L	<0.010	0.010	6499153
Phenanthrene	ug/L	0.018	0.010	6499153
Pyrene	ug/L	<0.010	0.010	6499153
Surrogate Recovery (%)				
D10-Anthracene	%	101		6499153
D14-Terphenyl	%	109		6499153
D8-Acenaphthylene	%	101		6499153

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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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
6499153	LGE	Matrix Spike	D10-Anthracene	2019/12/16		86	%	50 - 130
			D14-Terphenyl	2019/12/16		92	%	50 - 130
			D8-Acenaphthylene	2019/12/16		86	%	50 - 130
			1-Methylnaphthalene	2019/12/16		91	%	50 - 130
			2-Methylnaphthalene	2019/12/16		88	%	50 - 130
			Acenaphthene	2019/12/16		95	%	50 - 130
			Acenaphthylene	2019/12/16		91	%	50 - 130
			Anthracene	2019/12/16		82	%	50 - 130
			Benzo(a)anthracene	2019/12/16		94	%	50 - 130
			Benzo(a)pyrene	2019/12/16		83	%	50 - 130
			Benzo(b)fluoranthene	2019/12/16		90	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/16		73	%	50 - 130
			Benzo(j)fluoranthene	2019/12/16		85	%	50 - 130
			Benzo(k)fluoranthene	2019/12/16		84	%	50 - 130
			Chrysene	2019/12/16		94	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/16		75	%	50 - 130
			Fluoranthene	2019/12/16		85	%	50 - 130
			Fluorene	2019/12/16		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/16		73	%	50 - 130
			Naphthalene	2019/12/16		91	%	50 - 130
			Perylene	2019/12/16		74	%	50 - 130
			Phenanthrene	2019/12/16		91	%	50 - 130
			Pyrene	2019/12/16		84	%	50 - 130
6499153	LGE	Spiked Blank	D10-Anthracene	2019/12/16		103	%	50 - 130
			D14-Terphenyl	2019/12/16		108	%	50 - 130
			D8-Acenaphthylene	2019/12/16		102	%	50 - 130
			1-Methylnaphthalene	2019/12/16		105	%	50 - 130
			2-Methylnaphthalene	2019/12/16		104	%	50 - 130
			Acenaphthene	2019/12/16		112	%	50 - 130
			Acenaphthylene	2019/12/16		109	%	50 - 130
			Anthracene	2019/12/16		101	%	50 - 130
			Benzo(a)anthracene	2019/12/16		115	%	50 - 130
			Benzo(a)pyrene	2019/12/16		101	%	50 - 130
			Benzo(b)fluoranthene	2019/12/16		110	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/16		93	%	50 - 130
			Benzo(j)fluoranthene	2019/12/16		103	%	50 - 130
			Benzo(k)fluoranthene	2019/12/16		100	%	50 - 130
			Chrysene	2019/12/16		113	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/16		87	%	50 - 130
			Fluoranthene	2019/12/16		102	%	50 - 130
			Fluorene	2019/12/16		110	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/16		95	%	50 - 130
			Naphthalene	2019/12/16		108	%	50 - 130
			Perylene	2019/12/16		93	%	50 - 130
			Phenanthrene	2019/12/16		113	%	50 - 130
			Pyrene	2019/12/16		104	%	50 - 130
6499153	LGE	Method Blank	D10-Anthracene	2019/12/16		101	%	50 - 130
			D14-Terphenyl	2019/12/16		104	%	50 - 130
			D8-Acenaphthylene	2019/12/16		100	%	50 - 130
			1-Methylnaphthalene	2019/12/16	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/16	<0.050		ug/L	
			Acenaphthene	2019/12/16	<0.010		ug/L	
			Acenaphthylene	2019/12/16	<0.010		ug/L	
			Anthracene	2019/12/16	<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	2019/12/16	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/16	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/16	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/16	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/16	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/16	<0.010		ug/L	
			Chrysene	2019/12/16	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/16	<0.010		ug/L	
			Fluoranthene	2019/12/16	<0.010		ug/L	
			Fluorene	2019/12/16	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/16	<0.010		ug/L	
			Naphthalene	2019/12/16	<0.20		ug/L	
			Perylene	2019/12/16	<0.010		ug/L	
			Phenanthrene	2019/12/16	<0.010		ug/L	
			Pyrene	2019/12/16	<0.010		ug/L	
6499153	LGE	RPD	1-Methylnaphthalene	2019/12/16	NC		%	40
			2-Methylnaphthalene	2019/12/16	NC		%	40
			Acenaphthene	2019/12/16	NC		%	40
			Acenaphthylene	2019/12/16	NC		%	40
			Anthracene	2019/12/16	NC		%	40
			Benzo(a)anthracene	2019/12/16	NC		%	40
			Benzo(a)pyrene	2019/12/16	NC		%	40
			Benzo(b)fluoranthene	2019/12/16	NC		%	40
			Benzo(g,h,i)perylene	2019/12/16	NC		%	40
			Benzo(j)fluoranthene	2019/12/16	NC		%	40
			Benzo(k)fluoranthene	2019/12/16	NC		%	40
			Chrysene	2019/12/16	NC		%	40
			Dibenzo(a,h)anthracene	2019/12/16	NC		%	40
			Fluoranthene	2019/12/16	NC		%	40
			Fluorene	2019/12/16	NC		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/16	NC		%	40
			Naphthalene	2019/12/16	NC		%	40
			Perylene	2019/12/16	NC		%	40
			Phenanthrene	2019/12/16	6.7		%	40
			Pyrene	2019/12/16	NC		%	40
6499183	MLB	Matrix Spike	Dissolved Aluminum (Al)	2019/12/16		99	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/16		102	%	80 - 120
			Dissolved Arsenic (As)	2019/12/16		98	%	80 - 120
			Dissolved Barium (Ba)	2019/12/16		95	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/16		95	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/16		88	%	80 - 120
			Dissolved Boron (B)	2019/12/16		93	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/16		100	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/16		NC	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/16		96	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/16		98	%	80 - 120
			Dissolved Copper (Cu)	2019/12/16		94	%	80 - 120
			Dissolved Iron (Fe)	2019/12/16		98	%	80 - 120
			Dissolved Lead (Pb)	2019/12/16		100	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/16		100	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/16		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/16		103	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/16		96	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/16		100	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Potassium (K)	2019/12/16		92	%	80 - 120
			Dissolved Selenium (Se)	2019/12/16		90	%	80 - 120
			Dissolved Silver (Ag)	2019/12/16		71 (1)	%	80 - 120
			Dissolved Sodium (Na)	2019/12/16		92	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/16		NC	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/16		98	%	80 - 120
			Dissolved Tin (Sn)	2019/12/16		105	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/16		101	%	80 - 120
			Dissolved Uranium (U)	2019/12/16		104	%	80 - 120
			Dissolved Vanadium (V)	2019/12/16		100	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/16		96	%	80 - 120
6499183	MLB	Spiked Blank	Dissolved Aluminum (Al)	2019/12/16		101	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/16		96	%	80 - 120
			Dissolved Arsenic (As)	2019/12/16		97	%	80 - 120
			Dissolved Barium (Ba)	2019/12/16		97	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/16		98	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/16		98	%	80 - 120
			Dissolved Boron (B)	2019/12/16		97	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/16		98	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/16		102	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/16		98	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/16		101	%	80 - 120
			Dissolved Copper (Cu)	2019/12/16		98	%	80 - 120
			Dissolved Iron (Fe)	2019/12/16		103	%	80 - 120
			Dissolved Lead (Pb)	2019/12/16		105	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/16		105	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/16		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/16		101	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/16		100	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/16		101	%	80 - 120
			Dissolved Potassium (K)	2019/12/16		102	%	80 - 120
			Dissolved Selenium (Se)	2019/12/16		98	%	80 - 120
			Dissolved Silver (Ag)	2019/12/16		97	%	80 - 120
			Dissolved Sodium (Na)	2019/12/16		100	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/16		99	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/16		99	%	80 - 120
			Dissolved Tin (Sn)	2019/12/16		101	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/16		102	%	80 - 120
			Dissolved Uranium (U)	2019/12/16		105	%	80 - 120
			Dissolved Vanadium (V)	2019/12/16		101	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/16		100	%	80 - 120
6499183	MLB	Method Blank	Dissolved Aluminum (Al)	2019/12/16	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/16	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/16	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/16	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/16	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/16	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/16	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/16	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/16	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/16	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/16	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/16	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/16	<50		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Lead (Pb)	2019/12/16	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/16	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/16	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/16	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/16	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/16	<100		ug/L	
			Dissolved Potassium (K)	2019/12/16	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/16	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/16	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/16	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/16	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/16	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/16	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/16	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/16	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/16	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/16	<5.0		ug/L	
6499183	MLB	RPD	Dissolved Aluminum (Al)	2019/12/16	1.4		%	20
			Dissolved Antimony (Sb)	2019/12/16	NC		%	20
			Dissolved Arsenic (As)	2019/12/16	NC		%	20
			Dissolved Barium (Ba)	2019/12/16	0.49		%	20
			Dissolved Beryllium (Be)	2019/12/16	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/16	NC		%	20
			Dissolved Boron (B)	2019/12/16	5.1		%	20
			Dissolved Cadmium (Cd)	2019/12/16	NC		%	20
			Dissolved Calcium (Ca)	2019/12/16	0.37		%	20
			Dissolved Chromium (Cr)	2019/12/16	4.9		%	20
			Dissolved Cobalt (Co)	2019/12/16	NC		%	20
			Dissolved Copper (Cu)	2019/12/16	17		%	20
			Dissolved Iron (Fe)	2019/12/16	NC		%	20
			Dissolved Lead (Pb)	2019/12/16	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/16	NC		%	20
			Dissolved Manganese (Mn)	2019/12/16	NC		%	20
			Dissolved Molybdenum (Mo)	2019/12/16	1.2		%	20
			Dissolved Nickel (Ni)	2019/12/16	NC		%	20
			Dissolved Phosphorus (P)	2019/12/16	NC		%	20
			Dissolved Potassium (K)	2019/12/16	2.3		%	20
			Dissolved Selenium (Se)	2019/12/16	5.6		%	20
			Dissolved Silver (Ag)	2019/12/16	NC		%	20
			Dissolved Sodium (Na)	2019/12/16	0.026		%	20
			Dissolved Strontium (Sr)	2019/12/16	1.6		%	20
			Dissolved Thallium (Tl)	2019/12/16	NC		%	20
			Dissolved Tin (Sn)	2019/12/16	NC		%	20
			Dissolved Titanium (Ti)	2019/12/16	NC		%	20
			Dissolved Uranium (U)	2019/12/16	NC		%	20
			Dissolved Vanadium (V)	2019/12/16	0.34		%	20
			Dissolved Zinc (Zn)	2019/12/16	NC		%	20
6499490	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/17		101	%	80 - 120
6499490	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/17		101	%	80 - 120
6499490	NHU	Method Blank	Total Mercury (Hg)	2019/12/17	<0.013		ug/L	
6499490	NHU	RPD	Total Mercury (Hg)	2019/12/17	NC		%	20
6499515	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2019/12/16		97	%	80 - 120
6499515	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/16		100	%	80 - 120
6499515	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/16	<0.050		mg/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6499515	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2019/12/16	NC		%	20
6500820	SSI	Matrix Spike [LNE420-04]	Total Organic Carbon (C)	2019/12/17		97	%	85 - 115
6500820	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/17		98	%	80 - 120
6500820	SSI	Method Blank	Total Organic Carbon (C)	2019/12/17	<0.50		mg/L	
6500820	SSI	RPD [LNE420-04]	Total Organic Carbon (C)	2019/12/17	9.0		%	15
6500842	SHW	QC Standard	pH	2019/12/17		101	%	97 - 103
6500842	SHW	RPD [LNE420-01]	pH	2019/12/17	0.66		%	N/A
6500843	SHW	Spiked Blank	Conductivity	2019/12/17		101	%	80 - 120
6500843	SHW	Method Blank	Conductivity	2019/12/17	1.4, RDL=1.0		uS/cm	
6500843	SHW	RPD [LNE420-01]	Conductivity	2019/12/17	1.4		%	10
6500875	SHW	QC Standard	Turbidity	2019/12/17		104	%	80 - 120
6500875	SHW	Spiked Blank	Turbidity	2019/12/17		100	%	80 - 120
6500875	SHW	Method Blank	Turbidity	2019/12/17	<0.10		NTU	
6500875	SHW	RPD	Turbidity	2019/12/17	8.0		%	20
6501020	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/18		4.8 (2)	%	80 - 120
6501020	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/17		106	%	80 - 120
6501020	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/17	<5.0		mg/L	
6501020	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/18	19		%	25
6501022	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/17		92	%	80 - 120
6501022	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/17		96	%	80 - 120
6501022	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/17	<1.0		mg/L	
6501022	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/17	1.9		%	25
6501024	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/17		NC	%	80 - 120
6501024	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/17		102	%	80 - 120
6501024	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/17	<2.0		mg/L	
6501024	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/17	0.30		%	25
6501025	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/17		77 (3)	%	80 - 120
6501025	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/17		92	%	80 - 120
6501025	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/17	<0.50		mg/L	
6501025	EMT	RPD	Reactive Silica (SiO2)	2019/12/17	0.65		%	25
6501026	EMT	Spiked Blank	Colour	2019/12/17		105	%	80 - 120
6501026	EMT	Method Blank	Colour	2019/12/17	<5.0		TCU	
6501026	EMT	RPD	Colour	2019/12/17	36 (4)		%	20
6501027	EMT	Matrix Spike	Orthophosphate (P)	2019/12/17		75 (2)	%	80 - 120
6501027	EMT	Spiked Blank	Orthophosphate (P)	2019/12/17		95	%	80 - 120
6501027	EMT	Method Blank	Orthophosphate (P)	2019/12/17	<0.010		mg/L	
6501027	EMT	RPD	Orthophosphate (P)	2019/12/17	NC		%	25
6501028	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/18		90	%	80 - 120
6501028	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/18		104	%	80 - 120
6501028	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/18	<0.050		mg/L	
6501028	EMT	RPD	Nitrate + Nitrite (N)	2019/12/18	10		%	25
6501029	EMT	Matrix Spike	Nitrite (N)	2019/12/17		70 (3)	%	80 - 120
6501029	EMT	Spiked Blank	Nitrite (N)	2019/12/17		105	%	80 - 120
6501029	EMT	Method Blank	Nitrite (N)	2019/12/17	<0.010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6501029	EMT	RPD	Nitrite (N)	2019/12/17	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).

(1) Recovery is within QC acceptance limits. < 10 % of compounds in multi-component analysis in violation.

(2) Poor spike recovery due to sample matrix, result confirmed by repeat analysis.

(3) Poor spike recovery due to probable matrix interference.

(4) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

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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)

Rosemarie MacDonald, 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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Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/09
Report #: R5997491
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X6249
Received: 2019/11/28, 16:15

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide (1)	6	N/A	2019/12/05	N/A	SM 23 4500-CO2 D
Alkalinity (1)	6	N/A	2019/12/06	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	6	N/A	2019/12/06	N/A	Auto Calc.
Chloride (1)	6	N/A	2019/12/06	ATL SOP 00014	SM 23 4500-Cl- E m
Colour (1)	6	N/A	2019/12/06	ATL SOP 00020	SM 23 2120C m
Conductance - water (1)	6	N/A	2019/12/05	ATL SOP 00004	SM 23 2510B m
TEH in Water (PIRI) (1)	1	2019/12/04	2019/12/06	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO3) (1)	6	N/A	2019/12/06	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	6	2019/12/04	2019/12/05	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	6	N/A	2019/12/05	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference) (1)	6	N/A	2019/12/09	N/A	Auto Calc.
Anion and Cation Sum (1)	6	N/A	2019/12/06	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	6	N/A	2019/12/06	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	6	N/A	2019/12/07	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	6	N/A	2019/12/07	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	6	N/A	2019/12/09	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	4	2019/12/03	2019/12/06	ATL SOP 00103	EPA 8270E R6 m
PAH in Water by GC/MS (SIM) (1)	2	2019/12/05	2019/12/06	ATL SOP 00103	EPA 8270E R6 m
pH (1, 2)	6	N/A	2019/12/05	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho (1)	6	N/A	2019/12/06	ATL SOP 00021	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	6	N/A	2019/12/09	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	6	N/A	2019/12/09	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	6	N/A	2019/12/06	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	6	N/A	2019/12/06	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	6	N/A	2019/12/09	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	6	N/A	2019/12/04	ATL SOP 00203	SM 23 5310B m
ModTPH (T1) Calc. for Water (1)	1	N/A	2019/12/06	N/A	Atl. RBCA v3 m
Turbidity (1)	6	N/A	2019/12/05	ATL SOP 00011	EPA 180.1 R2 m
VPH in Water (PIRI) (1)	1	N/A	2019/12/04	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

Your Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

Attention: Nadine Wambolt

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

Report Date: 2019/12/09
Report #: R5997491
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X6249
Received: 2019/11/28, 16:15

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
(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

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories
09 Dec 2019 15:07:03

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.
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BV Labs Job #: B9X6249
Report Date: 2019/12/09

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LKZ547			LKZ562			LKZ579		
Sampling Date		2019/11/28			2019/11/28			2019/11/28		
	UNITS	CODT-201-MWA	RDL	QC Batch	CODT-201-MWC	RDL	QC Batch	CODT-203-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	6.99	N/A	6468277	5.36	N/A	6468277	6.84	N/A	6468277
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	230	1.0	6468265	200	1.0	6468265	140	1.0	6468265
Calculated TDS	mg/L	400	1.0	6468290	290	1.0	6468290	430	1.0	6468290
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.7	1.0	6468265	2.5	1.0	6468265	<1.0	1.0	6468265
Cation Sum	me/L	6.86	N/A	6468277	5.15	N/A	6468277	6.77	N/A	6468277
Hardness (CaCO3)	mg/L	320	1.0	6468272	120	1.0	6468272	210	1.0	6468272
Ion Balance (% Difference)	%	0.940	N/A	6468274	2.00	N/A	6468274	0.510	N/A	6468274
Langelier Index (@ 20C)	N/A	0.858		6468284	0.597		6468284	0.405		6468284
Langelier Index (@ 4C)	N/A	0.610		6468286	0.348		6468286	0.157		6468286
Nitrate (N)	mg/L	2.0	0.25	6468279	<0.050	0.050	6468279	0.16	0.050	6468279
Saturation pH (@ 20C)	N/A	7.03		6468284	7.53		6468284	7.40		6468284
Saturation pH (@ 4C)	N/A	7.28		6468286	7.78		6468286	7.65		6468286
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	230	25	6482794	200	25	6482794	140	25	6482794
Dissolved Chloride (Cl-)	mg/L	14	1.0	6482795	47	1.0	6482795	43	1.0	6482795
Colour	TCU	<5.0	5.0	6482806	<5.0	5.0	6482806	5.8	5.0	6482806
Nitrate + Nitrite (N)	mg/L	2.0	0.25	6482812	<0.050	0.050	6482812	0.16	0.050	6482812
Nitrite (N)	mg/L	<0.010	0.010	6482814	<0.010	0.010	6482814	<0.010	0.010	6482814
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	6481092	0.68	0.050	6481092	0.062	0.050	6481092
Total Organic Carbon (C)	mg/L	3.4	0.50	6478347	14	0.50	6478347	4.1	0.50	6478347
Orthophosphate (P)	mg/L	0.017	0.010	6482810	0.011	0.010	6482810	0.011	0.010	6482810
pH	pH	7.89	N/A	6480146	8.13	N/A	6480150	7.81	N/A	6480146
Reactive Silica (SiO2)	mg/L	14	0.50	6482803	11	0.50	6482803	20	1.0	6482803
Dissolved Sulphate (SO4)	mg/L	85	2.0	6482796	2.1	2.0	6482796	130	10	6482796
Turbidity	NTU	20	0.10	6480245	1.6	0.10	6480245	1.9	0.10	6480245
Conductivity	uS/cm	590	1.0	6480149	480	1.0	6480151	650	1.0	6480149

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

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BV Labs Job #: B9X6249
Report Date: 2019/12/09

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

BV Labs ID		LKZ580			LKZ581	LKZ582		
Sampling Date		2019/11/28			2019/11/28	2019/11/28		
	UNITS	CODT-008-MWB	RDL	QC Batch	COBB-004-MWA	COCP-110-MW	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	5.58	N/A	6468277	8.96	9.30	N/A	6468277
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	4.0	1.0	6468265	210	180	1.0	6468265
Calculated TDS	mg/L	350	1.0	6468290	550	590	1.0	6468290
Carb. Alkalinity (calc. as CaCO3)	mg/L	41	1.0	6468265	1.9	1.6	1.0	6468265
Cation Sum	me/L	5.66	N/A	6468277	8.95	9.57	N/A	6468277
Hardness (CaCO3)	mg/L	190	1.0	6468272	420	380	1.0	6468272
Ion Balance (% Difference)	%	0.710	N/A	6468274	0.0600	1.43	N/A	6468274
Langelier Index (@ 20C)	N/A	2.08		6468284	1.04	0.880		6468284
Langelier Index (@ 4C)	N/A	1.83		6468286	0.789	0.632		6468286
Nitrate (N)	mg/L	0.11	0.050	6468279	<0.050	<0.050	0.050	6468279
Saturation pH (@ 20C)	N/A	8.96		6468284	6.97	7.12		6468284
Saturation pH (@ 4C)	N/A	9.21		6468286	7.21	7.37		6468286
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	100	25	6482794	210	180	25	6482794
Dissolved Chloride (Cl-)	mg/L	62	1.0	6482795	18	54	1.0	6482795
Colour	TCU	17	5.0	6482806	5.8	7.6	5.0	6482806
Nitrate + Nitrite (N)	mg/L	0.30	0.050	6482812	<0.050	<0.050	0.050	6482812
Nitrite (N)	mg/L	0.18	0.010	6482814	<0.010	<0.010	0.010	6482814
Nitrogen (Ammonia Nitrogen)	mg/L	0.37	0.050	6481092	0.13	1.5	0.050	6481092
Total Organic Carbon (C)	mg/L	5.2	0.50	6478347	8.2	3.3	0.50	6478347
Orthophosphate (P)	mg/L	<0.010	0.010	6482810	0.017	<0.010	0.010	6482810
pH	pH	11.0 (1)	N/A	6480150	8.00	8.00	N/A	6480146
Reactive Silica (SiO2)	mg/L	20	1.0	6482803	22	29	1.0	6482803
Dissolved Sulphate (SO4)	mg/L	86	2.0	6482796	210	200	10	6482796
Turbidity	NTU	1.2	0.10	6480245	0.62	43	0.10	6480245
Conductivity	uS/cm	640	1.0	6480151	760	850	1.0	6480149

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) pH value is beyond linear range, extended linearity has been confirmed.

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MERCURY BY COLD VAPOUR AA (WATER)

BV Labs ID		LKZ547	LKZ562	LKZ579	LKZ580		
Sampling Date		2019/11/28	2019/11/28	2019/11/28	2019/11/28		
	UNITS	CODT-201-MWA	CODT-201-MWC	CODT-203-MW	CODT-008-MWB	RDL	QC Batch
Metals							
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	0.027	0.013	6477981

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LKZ581	LKZ582		
Sampling Date		2019/11/28	2019/11/28		
	UNITS	COBB-004-MWA	COCP-110-MW	RDL	QC Batch
Metals					
Total Mercury (Hg)	ug/L	<0.013	<0.013	0.013	6477992

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LKZ547	LKZ562	LKZ579	LKZ580	LKZ581		
Sampling Date		2019/11/28	2019/11/28	2019/11/28	2019/11/28	2019/11/28		
	UNITS	CODT-201-MWA	CODT-201-MWC	CODT-203-MW	CODT-008-MWB	COBB-004-MWA	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	12	5.4	11	410	7.1	5.0	6480378
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6480378
Dissolved Arsenic (As)	ug/L	<1.0	3.4	1.0	3.4	2.5	1.0	6480378
Dissolved Barium (Ba)	ug/L	21	510	52	43	60	1.0	6480378
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6480378
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480378
Dissolved Boron (B)	ug/L	<50	87	<50	<50	90	50	6480378
Dissolved Cadmium (Cd)	ug/L	0.053	<0.010	0.077	<0.010	0.019	0.010	6480378
Dissolved Calcium (Ca)	ug/L	110000	39000	80000	74000	160000	100	6480378
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.2	<1.0	1.0	6480378
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	0.43	0.40	6480378
Dissolved Copper (Cu)	ug/L	7.7	<0.50	5.6	3.9	<0.50	0.50	6480378
Dissolved Iron (Fe)	ug/L	<50	<50	<50	<50	130	50	6480378
Dissolved Lead (Pb)	ug/L	3.2	<0.50	5.0	<0.50	<0.50	0.50	6480378
Dissolved Magnesium (Mg)	ug/L	11000	4500	3500	450	6900	100	6480378
Dissolved Manganese (Mn)	ug/L	3.7	740	270	<2.0	1500	2.0	6480378
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	2.1	7.8	15	2.0	6480378
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480378
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	6480378
Dissolved Potassium (K)	ug/L	3000	2400	2500	4500	3600	100	6480378
Dissolved Selenium (Se)	ug/L	4.7	1.0	0.77	1.6	<0.50	0.50	6480378
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6480378
Dissolved Sodium (Na)	ug/L	7500	63000	55000	41000	8500	100	6480378
Dissolved Strontium (Sr)	ug/L	290	560	330	780	590	2.0	6480378
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	0.29	<0.10	<0.10	0.10	6480378
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480378
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6480378
Dissolved Uranium (U)	ug/L	0.68	<0.10	1.1	0.65	7.2	0.10	6480378
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	9.3	<2.0	2.0	6480378
Dissolved Zinc (Zn)	ug/L	18	<5.0	16	<5.0	<5.0	5.0	6480378

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

BV Labs ID		LKZ582		
Sampling Date		2019/11/28		
	UNITS	COCP-110-MW	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	17	5.0	6480378
Dissolved Antimony (Sb)	ug/L	1.1	1.0	6480378
Dissolved Arsenic (As)	ug/L	27	1.0	6480378
Dissolved Barium (Ba)	ug/L	63	1.0	6480378
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6480378
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	6480378
Dissolved Boron (B)	ug/L	75	50	6480378
Dissolved Cadmium (Cd)	ug/L	0.011	0.010	6480378
Dissolved Calcium (Ca)	ug/L	130000	100	6480378
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6480378
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	6480378
Dissolved Copper (Cu)	ug/L	0.97	0.50	6480378
Dissolved Iron (Fe)	ug/L	4700	50	6480378
Dissolved Lead (Pb)	ug/L	<0.50	0.50	6480378
Dissolved Magnesium (Mg)	ug/L	11000	100	6480378
Dissolved Manganese (Mn)	ug/L	350	2.0	6480378
Dissolved Molybdenum (Mo)	ug/L	7.1	2.0	6480378
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	6480378
Dissolved Phosphorus (P)	ug/L	250	100	6480378
Dissolved Potassium (K)	ug/L	11000	100	6480378
Dissolved Selenium (Se)	ug/L	<0.50	0.50	6480378
Dissolved Silver (Ag)	ug/L	<0.10	0.10	6480378
Dissolved Sodium (Na)	ug/L	34000	100	6480378
Dissolved Strontium (Sr)	ug/L	500	2.0	6480378
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6480378
Dissolved Tin (Sn)	ug/L	<2.0	2.0	6480378
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	6480378
Dissolved Uranium (U)	ug/L	1.6	0.10	6480378
Dissolved Vanadium (V)	ug/L	3.0	2.0	6480378
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6480378

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LKZ547		LKZ562		LKZ579		LKZ580		
Sampling Date		2019/11/28		2019/11/28		2019/11/28		2019/11/28		
	UNITS	CODT-201-MWA	RDL	CODT-201-MWC	RDL	CODT-203-MW	RDL	CODT-008-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	0.053	0.050	680 (1)	5.0	0.33	0.050	0.91	0.050	6475446
2-Methylnaphthalene	ug/L	0.054	0.050	600 (1)	5.0	0.38	0.050	0.35	0.050	6475446
Acenaphthene	ug/L	0.46	0.010	280 (1)	1.0	2.6	0.010	0.31	0.010	6475446
Acenaphthylene	ug/L	0.048	0.010	10	0.010	0.038	0.010	0.056	0.010	6475446
Anthracene	ug/L	1.4	0.010	5.4	0.010	6.4	0.010	<0.080 (2)	0.080	6475446
Benzo(a)anthracene	ug/L	3.7	0.010	0.042	0.010	12	0.010	0.040	0.010	6475446
Benzo(a)pyrene	ug/L	2.9	0.010	<0.010	0.010	9.7	0.010	0.037	0.010	6475446
Benzo(b)fluoranthene	ug/L	2.0	0.010	<0.010	0.010	6.8	0.010	0.026	0.010	6475446
Benzo(b/j)fluoranthene	ug/L	3.4	0.020	<0.020	0.020	11	0.020	<0.030	0.030	6468266
Benzo(g,h,i)perylene	ug/L	1.2	0.010	<0.010	0.010	3.6	0.010	0.020	0.010	6475446
Benzo(j)fluoranthene	ug/L	1.4	0.010	<0.010	0.010	4.1	0.010	<0.020 (2)	0.020	6475446
Benzo(k)fluoranthene	ug/L	1.5	0.010	<0.010	0.010	4.2	0.010	0.015	0.010	6475446
Chrysene	ug/L	3.2	0.010	0.033	0.010	11	0.010	0.050	0.010	6475446
Dibenzo(a,h)anthracene	ug/L	0.20	0.010	<0.010	0.010	1.0	0.010	<0.010	0.010	6475446
Fluoranthene	ug/L	6.9	0.010	3.0	0.010	22	0.010	0.17	0.010	6475446
Fluorene	ug/L	0.44	0.010	120 (1)	1.0	2.9	0.010	0.13	0.010	6475446
Indeno(1,2,3-cd)pyrene	ug/L	0.87	0.010	<0.010	0.010	3.3	0.010	0.013	0.010	6475446
Naphthalene	ug/L	<0.20	0.20	8300 (1)	100	0.39	0.20	0.20	0.20	6475446
Perylene	ug/L	0.52	0.010	<0.010	0.010	1.8	0.010	<0.010	0.010	6475446
Phenanthrene	ug/L	5.1	0.010	88 (1)	1.0	21	0.010	<0.030 (2)	0.030	6475446
Pyrene	ug/L	5.5	0.010	1.5	0.010	17	0.010	0.32	0.010	6475446
Surrogate Recovery (%)										
D10-Anthracene	%	67		53		59		64		6475446
D14-Terphenyl	%	91 (3)		67		85 (3)		84		6475446
D8-Acenaphthylene	%	106		121		105		106		6475446

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.
(2) Elevated PAH RDL(s) due to matrix / co-extractive interference.
(3) PAH sample contained sediment.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID		LKZ581	LKZ582		
Sampling Date		2019/11/28	2019/11/28		
	UNITS	COBB-004-MWA	COCP-110-MW	RDL	QC Batch
Polyaromatic Hydrocarbons					
1-Methylnaphthalene	ug/L	<0.050	<0.050	0.050	6480220
2-Methylnaphthalene	ug/L	<0.050	<0.050	0.050	6480220
Acenaphthene	ug/L	<0.010	0.030	0.010	6480220
Acenaphthylene	ug/L	<0.010	<0.010	0.010	6480220
Anthracene	ug/L	<0.010	0.010	0.010	6480220
Benzo(a)anthracene	ug/L	<0.010	0.012	0.010	6480220
Benzo(a)pyrene	ug/L	<0.010	<0.010	0.010	6480220
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	0.010	6480220
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	0.020	6468266
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	0.010	6480220
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	0.010	6480220
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	0.010	6480220
Chrysene	ug/L	<0.010	0.019	0.010	6480220
Dibenzo(a,h)anthracene	ug/L	<0.010	<0.010	0.010	6480220
Fluoranthene	ug/L	<0.010	0.029	0.010	6480220
Fluorene	ug/L	<0.010	0.014	0.010	6480220
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	0.010	6480220
Naphthalene	ug/L	<0.20	<0.20	0.20	6480220
Perylene	ug/L	<0.010	<0.010	0.010	6480220
Phenanthrene	ug/L	<0.010	0.030	0.010	6480220
Pyrene	ug/L	<0.010	0.076	0.010	6480220
Surrogate Recovery (%)					
D10-Anthracene	%	94	105		6480220
D14-Terphenyl	%	100	112		6480220
D8-Acenaphthylene	%	95	96		6480220

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ATLANTIC RBCA HYDROCARBONS (WATER)

BV Labs ID		LKZ562		
Sampling Date		2019/11/28		
	UNITS	CODT-201-MWC	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/L	0.097	0.0010	6475314
Toluene	mg/L	0.21	0.0010	6475314
Ethylbenzene	mg/L	0.13	0.0010	6475314
Total Xylenes	mg/L	0.54	0.0020	6475314
C6 - C10 (less BTEX)	mg/L	0.52	0.10	6475314
>C10-C16 Hydrocarbons	mg/L	17	1.0	6478303
>C16-C21 Hydrocarbons	mg/L	<1.0	1.0	6478303
>C21-<C32 Hydrocarbons	mg/L	<2.0	2.0	6478303
Modified TPH (Tier1)	mg/L	18	2.0	6470245
Reached Baseline at C32	mg/L	Yes	N/A	6478303
Hydrocarbon Resemblance	mg/L	COMMENT (1)	N/A	6478303
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	104		6478303
n-Dotriacontane - Extractable	%	107 (2)		6478303
Isobutylbenzene - Volatile	%	93		6475314

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) One product in the gas/fuel oil range.
(2) Elevated TEH RDL(s) due to sample dilution.

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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
6475314	JPA	Matrix Spike	Isobutylbenzene - Volatile	2019/12/04		107	%	70 - 130
			Benzene	2019/12/04		103	%	70 - 130
			Toluene	2019/12/04		109	%	70 - 130
			Ethylbenzene	2019/12/04		107	%	70 - 130
			Total Xylenes	2019/12/04		109	%	70 - 130
6475314	JPA	Spiked Blank	Isobutylbenzene - Volatile	2019/12/04		103	%	70 - 130
			Benzene	2019/12/04		109	%	70 - 130
			Toluene	2019/12/04		112	%	70 - 130
			Ethylbenzene	2019/12/04		109	%	70 - 130
			Total Xylenes	2019/12/04		109	%	70 - 130
6475314	JPA	Method Blank	Isobutylbenzene - Volatile	2019/12/04		105	%	70 - 130
			Benzene	2019/12/04	<0.0010		mg/L	
			Toluene	2019/12/04	<0.0010		mg/L	
			Ethylbenzene	2019/12/04	<0.0010		mg/L	
			Total Xylenes	2019/12/04	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2019/12/04	<0.10		mg/L	
6475314	JPA	RPD [LKZ562-08]	Benzene	2019/12/04	2.0		%	40
			Toluene	2019/12/04	1.9		%	40
			Ethylbenzene	2019/12/04	4.7		%	40
			Total Xylenes	2019/12/04	1.9		%	40
			C6 - C10 (less BTEX)	2019/12/04	18		%	40
6475446	LGE	Matrix Spike	D10-Anthracene	2019/12/05		66	%	50 - 130
			D14-Terphenyl	2019/12/05		84	%	50 - 130
			D8-Acenaphthylene	2019/12/05		95	%	50 - 130
			1-Methylnaphthalene	2019/12/05		100	%	50 - 130
			2-Methylnaphthalene	2019/12/05		102	%	50 - 130
			Acenaphthene	2019/12/05		106	%	50 - 130
			Acenaphthylene	2019/12/05		112	%	50 - 130
			Anthracene	2019/12/05		112	%	50 - 130
			Benzo(a)anthracene	2019/12/05		116	%	50 - 130
			Benzo(a)pyrene	2019/12/05		98	%	50 - 130
			Benzo(b)fluoranthene	2019/12/05		97	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/05		89	%	50 - 130
			Benzo(j)fluoranthene	2019/12/05		118	%	50 - 130
			Benzo(k)fluoranthene	2019/12/05		120	%	50 - 130
			Chrysene	2019/12/05		116	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/05		58	%	50 - 130
			Fluoranthene	2019/12/05		117	%	50 - 130
			Fluorene	2019/12/05		107	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/05		68	%	50 - 130
			Naphthalene	2019/12/05		102	%	50 - 130
			Perylene	2019/12/05		99	%	50 - 130
			Phenanthrene	2019/12/05		114	%	50 - 130
			Pyrene	2019/12/05		121	%	50 - 130
6475446	LGE	Spiked Blank	D10-Anthracene	2019/12/05		60	%	50 - 130
			D14-Terphenyl	2019/12/05		83	%	50 - 130
			D8-Acenaphthylene	2019/12/05		101	%	50 - 130
			1-Methylnaphthalene	2019/12/05		103	%	50 - 130
			2-Methylnaphthalene	2019/12/05		107	%	50 - 130
			Acenaphthene	2019/12/05		110	%	50 - 130
			Acenaphthylene	2019/12/05		117	%	50 - 130
			Anthracene	2019/12/05		109	%	50 - 130
			Benzo(a)anthracene	2019/12/05		116	%	50 - 130
			Benzo(a)pyrene	2019/12/05		107	%	50 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(b)fluoranthene	2019/12/05		105	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/05		98	%	50 - 130
			Benzo(j)fluoranthene	2019/12/05		111	%	50 - 130
			Benzo(k)fluoranthene	2019/12/05		114	%	50 - 130
			Chrysene	2019/12/05		116	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/05		71	%	50 - 130
			Fluoranthene	2019/12/05		116	%	50 - 130
			Fluorene	2019/12/05		110	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/05		79	%	50 - 130
			Naphthalene	2019/12/05		106	%	50 - 130
			Perylene	2019/12/05		103	%	50 - 130
			Phenanthrene	2019/12/05		118	%	50 - 130
			Pyrene	2019/12/05		117	%	50 - 130
6475446	LGE	Method Blank	D10-Anthracene	2019/12/05		89	%	50 - 130
			D14-Terphenyl	2019/12/05		99	%	50 - 130
			D8-Acenaphthylene	2019/12/05		97	%	50 - 130
			1-Methylnaphthalene	2019/12/05	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/05	<0.050		ug/L	
			Acenaphthene	2019/12/05	<0.010		ug/L	
			Acenaphthylene	2019/12/05	<0.010		ug/L	
			Anthracene	2019/12/05	<0.010		ug/L	
			Benzo(a)anthracene	2019/12/05	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/05	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/05	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/05	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/05	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/05	<0.010		ug/L	
			Chrysene	2019/12/05	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/05	<0.010		ug/L	
			Fluoranthene	2019/12/05	<0.010		ug/L	
			Fluorene	2019/12/05	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2019/12/05	<0.010		ug/L	
			Naphthalene	2019/12/05	<0.20		ug/L	
			Perylene	2019/12/05	<0.010		ug/L	
			Phenanthrene	2019/12/05	<0.010		ug/L	
			Pyrene	2019/12/05	<0.010		ug/L	
6475446	LGE	RPD	1-Methylnaphthalene	2019/12/05	NC		%	40
			2-Methylnaphthalene	2019/12/05	NC		%	40
			Acenaphthene	2019/12/05	NC		%	40
			Acenaphthylene	2019/12/05	NC		%	40
			Anthracene	2019/12/05	NC		%	40
			Benzo(a)anthracene	2019/12/05	NC		%	40
			Benzo(a)pyrene	2019/12/05	NC		%	40
			Benzo(b)fluoranthene	2019/12/05	NC		%	40
			Benzo(g,h,i)perylene	2019/12/05	NC		%	40
			Benzo(j)fluoranthene	2019/12/05	NC		%	40
			Benzo(k)fluoranthene	2019/12/05	NC		%	40
			Chrysene	2019/12/05	NC		%	40
			Dibenzo(a,h)anthracene	2019/12/05	NC		%	40
			Fluoranthene	2019/12/05	NC		%	40
			Fluorene	2019/12/05	NC		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/05	NC		%	40
			Naphthalene	2019/12/05	NC		%	40
			Perylene	2019/12/05	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
			Phenanthrene	2019/12/05	NC		%	40
			Pyrene	2019/12/05	NC		%	40
6477981	NHU	Matrix Spike	Total Mercury (Hg)	2019/12/05		103	%	80 - 120
6477981	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/05		105	%	80 - 120
6477981	NHU	Method Blank	Total Mercury (Hg)	2019/12/05	<0.013		ug/L	
6477981	NHU	RPD	Total Mercury (Hg)	2019/12/05	NC		%	20
6477992	NHU	Matrix Spike [LKZ582-05]	Total Mercury (Hg)	2019/12/05		103	%	80 - 120
6477992	NHU	Spiked Blank	Total Mercury (Hg)	2019/12/05		106	%	80 - 120
6477992	NHU	Method Blank	Total Mercury (Hg)	2019/12/05	<0.013		ug/L	
6477992	NHU	RPD [LKZ581-05]	Total Mercury (Hg)	2019/12/05	NC		%	20
6478303	MSK	Matrix Spike	Isobutylbenzene - Extractable	2019/12/05		104	%	70 - 130
			n-Dotriacontane - Extractable	2019/12/05		115	%	70 - 130
			>C10-C16 Hydrocarbons	2019/12/05		99	%	70 - 130
			>C16-C21 Hydrocarbons	2019/12/05		91	%	70 - 130
			>C21-<C32 Hydrocarbons	2019/12/05		109	%	70 - 130
6478303	MSK	Spiked Blank	Isobutylbenzene - Extractable	2019/12/05		103	%	70 - 130
			n-Dotriacontane - Extractable	2019/12/05		120	%	70 - 130
			>C10-C16 Hydrocarbons	2019/12/05		97	%	70 - 130
			>C16-C21 Hydrocarbons	2019/12/05		87	%	70 - 130
			>C21-<C32 Hydrocarbons	2019/12/05		109	%	70 - 130
6478303	MSK	Method Blank	Isobutylbenzene - Extractable	2019/12/05		101	%	70 - 130
			n-Dotriacontane - Extractable	2019/12/05		117	%	70 - 130
			>C10-C16 Hydrocarbons	2019/12/05	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2019/12/05	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2019/12/05	<0.10		mg/L	
6478303	MSK	RPD	>C10-C16 Hydrocarbons	2019/12/05	NC		%	40
			>C16-C21 Hydrocarbons	2019/12/05	NC		%	40
			>C21-<C32 Hydrocarbons	2019/12/05	NC		%	40
6478347	SSI	Matrix Spike	Total Organic Carbon (C)	2019/12/04		106	%	85 - 115
6478347	SSI	Spiked Blank	Total Organic Carbon (C)	2019/12/04		107	%	80 - 120
6478347	SSI	Method Blank	Total Organic Carbon (C)	2019/12/04	<0.50		mg/L	
6478347	SSI	RPD	Total Organic Carbon (C)	2019/12/04	NC		%	15
6480146	SHW	QC Standard	pH	2019/12/05		101	%	97 - 103
6480146	SHW	RPD	pH	2019/12/05	0.028		%	N/A
6480149	SHW	Spiked Blank	Conductivity	2019/12/05		101	%	80 - 120
6480149	SHW	Method Blank	Conductivity	2019/12/05	1.0, RDL=1.0		uS/cm	
6480149	SHW	RPD	Conductivity	2019/12/05	1.1		%	10
6480150	SHW	QC Standard	pH	2019/12/05		101	%	97 - 103
6480150	SHW	RPD	pH	2019/12/05	1.2		%	N/A
6480151	SHW	Spiked Blank	Conductivity	2019/12/05		101	%	80 - 120
6480151	SHW	Method Blank	Conductivity	2019/12/05	1.1, RDL=1.0		uS/cm	
6480151	SHW	RPD	Conductivity	2019/12/05	0.96		%	10
6480220	LGE	Matrix Spike [LKZ582-06]	D10-Anthracene	2019/12/06		103	%	50 - 130
			D14-Terphenyl	2019/12/06		109	%	50 - 130
			D8-Acenaphthylene	2019/12/06		93	%	50 - 130
			1-Methylnaphthalene	2019/12/06		95	%	50 - 130
			2-Methylnaphthalene	2019/12/06		95	%	50 - 130
			Acenaphthene	2019/12/06		104	%	50 - 130
			Acenaphthylene	2019/12/06		103	%	50 - 130
			Anthracene	2019/12/06		84	%	50 - 130
			Benzo(a)anthracene	2019/12/06		107	%	50 - 130
			Benzo(a)pyrene	2019/12/06		99	%	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(b)fluoranthene	2019/12/06		101	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/06		97	%	50 - 130
			Benzo(j)fluoranthene	2019/12/06		104	%	50 - 130
			Benzo(k)fluoranthene	2019/12/06		94	%	50 - 130
			Chrysene	2019/12/06		120	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/06		102	%	50 - 130
			Fluoranthene	2019/12/06		94	%	50 - 130
			Fluorene	2019/12/06		104	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/06		95	%	50 - 130
			Naphthalene	2019/12/06		103	%	50 - 130
			Perylene	2019/12/06		93	%	50 - 130
			Phenanthrene	2019/12/06		92	%	50 - 130
			Pyrene	2019/12/06		94	%	50 - 130
6480220	LGE	Spiked Blank	D10-Anthracene	2019/12/06		101	%	50 - 130
			D14-Terphenyl	2019/12/06		106	%	50 - 130
			D8-Acenaphthylene	2019/12/06		95	%	50 - 130
			1-Methylnaphthalene	2019/12/06		88	%	50 - 130
			2-Methylnaphthalene	2019/12/06		88	%	50 - 130
			Acenaphthene	2019/12/06		106	%	50 - 130
			Acenaphthylene	2019/12/06		104	%	50 - 130
			Anthracene	2019/12/06		88	%	50 - 130
			Benzo(a)anthracene	2019/12/06		100	%	50 - 130
			Benzo(a)pyrene	2019/12/06		98	%	50 - 130
			Benzo(b)fluoranthene	2019/12/06		104	%	50 - 130
			Benzo(g,h,i)perylene	2019/12/06		99	%	50 - 130
			Benzo(j)fluoranthene	2019/12/06		110	%	50 - 130
			Benzo(k)fluoranthene	2019/12/06		100	%	50 - 130
			Chrysene	2019/12/06		111	%	50 - 130
			Dibenzo(a,h)anthracene	2019/12/06		98	%	50 - 130
			Fluoranthene	2019/12/06		90	%	50 - 130
			Fluorene	2019/12/06		111	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/12/06		97	%	50 - 130
			Naphthalene	2019/12/06		97	%	50 - 130
			Perylene	2019/12/06		93	%	50 - 130
			Phenanthrene	2019/12/06		116	%	50 - 130
			Pyrene	2019/12/06		89	%	50 - 130
6480220	LGE	Method Blank	D10-Anthracene	2019/12/05		109	%	50 - 130
			D14-Terphenyl	2019/12/05		112	%	50 - 130
			D8-Acenaphthylene	2019/12/05		93	%	50 - 130
			1-Methylnaphthalene	2019/12/05	<0.050		ug/L	
			2-Methylnaphthalene	2019/12/05	<0.050		ug/L	
			Acenaphthene	2019/12/05	<0.010		ug/L	
			Acenaphthylene	2019/12/05	<0.010		ug/L	
			Anthracene	2019/12/05	<0.010		ug/L	
			Benzo(a)anthracene	2019/12/05	<0.010		ug/L	
			Benzo(a)pyrene	2019/12/05	<0.010		ug/L	
			Benzo(b)fluoranthene	2019/12/05	<0.010		ug/L	
			Benzo(g,h,i)perylene	2019/12/05	<0.010		ug/L	
			Benzo(j)fluoranthene	2019/12/05	<0.010		ug/L	
			Benzo(k)fluoranthene	2019/12/05	<0.010		ug/L	
			Chrysene	2019/12/05	<0.010		ug/L	
			Dibenzo(a,h)anthracene	2019/12/05	<0.010		ug/L	
			Fluoranthene	2019/12/05	<0.010		ug/L	
			Fluorene	2019/12/05	<0.010		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Indeno(1,2,3-cd)pyrene	2019/12/05	<0.010		ug/L	
			Naphthalene	2019/12/05	<0.20		ug/L	
			Perylene	2019/12/05	<0.010		ug/L	
			Phenanthrene	2019/12/05	<0.010		ug/L	
			Pyrene	2019/12/05	<0.010		ug/L	
6480220	LGE	RPD [LKZ581-06]	1-Methylnaphthalene	2019/12/06	NC		%	40
			2-Methylnaphthalene	2019/12/06	NC		%	40
			Acenaphthene	2019/12/06	NC		%	40
			Acenaphthylene	2019/12/06	NC		%	40
			Anthracene	2019/12/06	NC		%	40
			Benzo(a)anthracene	2019/12/06	NC		%	40
			Benzo(a)pyrene	2019/12/06	NC		%	40
			Benzo(b)fluoranthene	2019/12/06	NC		%	40
			Benzo(g,h,i)perylene	2019/12/06	NC		%	40
			Benzo(j)fluoranthene	2019/12/06	NC		%	40
			Benzo(k)fluoranthene	2019/12/06	NC		%	40
			Chrysene	2019/12/06	NC		%	40
			Dibenzo(a,h)anthracene	2019/12/06	NC		%	40
			Fluoranthene	2019/12/06	NC		%	40
			Fluorene	2019/12/06	NC		%	40
			Indeno(1,2,3-cd)pyrene	2019/12/06	NC		%	40
			Naphthalene	2019/12/06	NC		%	40
			Perylene	2019/12/06	NC		%	40
			Phenanthrene	2019/12/06	NC		%	40
			Pyrene	2019/12/06	NC		%	40
6480245	SHW	QC Standard	Turbidity	2019/12/05		104	%	80 - 120
6480245	SHW	Spiked Blank	Turbidity	2019/12/05		101	%	80 - 120
6480245	SHW	Method Blank	Turbidity	2019/12/05	<0.10		NTU	
6480245	SHW	RPD	Turbidity	2019/12/05	1.8		%	20
6480378	MLB	Matrix Spike	Dissolved Aluminum (Al)	2019/12/05		97	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/05		99	%	80 - 120
			Dissolved Arsenic (As)	2019/12/05		100	%	80 - 120
			Dissolved Barium (Ba)	2019/12/05		100	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/05		109	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/05		91	%	80 - 120
			Dissolved Boron (B)	2019/12/05		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/05		99	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/05		NC	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/05		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/05		95	%	80 - 120
			Dissolved Copper (Cu)	2019/12/05		92	%	80 - 120
			Dissolved Iron (Fe)	2019/12/05		NC	%	80 - 120
			Dissolved Lead (Pb)	2019/12/05		97	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/05		NC	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/05		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/05		102	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/05		96	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/05		105	%	80 - 120
			Dissolved Potassium (K)	2019/12/05		105	%	80 - 120
			Dissolved Selenium (Se)	2019/12/05		97	%	80 - 120
			Dissolved Silver (Ag)	2019/12/05		92	%	80 - 120
			Dissolved Sodium (Na)	2019/12/05		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/05		NC	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/05		95	%	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 Tin (Sn)	2019/12/05		100	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/05		102	%	80 - 120
			Dissolved Uranium (U)	2019/12/05		105	%	80 - 120
			Dissolved Vanadium (V)	2019/12/05		102	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/05		92	%	80 - 120
6480378	MLB	Spiked Blank	Dissolved Aluminum (Al)	2019/12/05		104	%	80 - 120
			Dissolved Antimony (Sb)	2019/12/05		95	%	80 - 120
			Dissolved Arsenic (As)	2019/12/05		100	%	80 - 120
			Dissolved Barium (Ba)	2019/12/05		98	%	80 - 120
			Dissolved Beryllium (Be)	2019/12/05		100	%	80 - 120
			Dissolved Bismuth (Bi)	2019/12/05		96	%	80 - 120
			Dissolved Boron (B)	2019/12/05		93	%	80 - 120
			Dissolved Cadmium (Cd)	2019/12/05		99	%	80 - 120
			Dissolved Calcium (Ca)	2019/12/05		104	%	80 - 120
			Dissolved Chromium (Cr)	2019/12/05		98	%	80 - 120
			Dissolved Cobalt (Co)	2019/12/05		97	%	80 - 120
			Dissolved Copper (Cu)	2019/12/05		99	%	80 - 120
			Dissolved Iron (Fe)	2019/12/05		107	%	80 - 120
			Dissolved Lead (Pb)	2019/12/05		99	%	80 - 120
			Dissolved Magnesium (Mg)	2019/12/05		108	%	80 - 120
			Dissolved Manganese (Mn)	2019/12/05		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/12/05		98	%	80 - 120
			Dissolved Nickel (Ni)	2019/12/05		102	%	80 - 120
			Dissolved Phosphorus (P)	2019/12/05		107	%	80 - 120
			Dissolved Potassium (K)	2019/12/05		105	%	80 - 120
			Dissolved Selenium (Se)	2019/12/05		99	%	80 - 120
			Dissolved Silver (Ag)	2019/12/05		99	%	80 - 120
			Dissolved Sodium (Na)	2019/12/05		104	%	80 - 120
			Dissolved Strontium (Sr)	2019/12/05		103	%	80 - 120
			Dissolved Thallium (Tl)	2019/12/05		98	%	80 - 120
			Dissolved Tin (Sn)	2019/12/05		99	%	80 - 120
			Dissolved Titanium (Ti)	2019/12/05		104	%	80 - 120
			Dissolved Uranium (U)	2019/12/05		104	%	80 - 120
			Dissolved Vanadium (V)	2019/12/05		103	%	80 - 120
			Dissolved Zinc (Zn)	2019/12/05		100	%	80 - 120
6480378	MLB	Method Blank	Dissolved Aluminum (Al)	2019/12/05	<5.0		ug/L	
			Dissolved Antimony (Sb)	2019/12/05	<1.0		ug/L	
			Dissolved Arsenic (As)	2019/12/05	<1.0		ug/L	
			Dissolved Barium (Ba)	2019/12/05	<1.0		ug/L	
			Dissolved Beryllium (Be)	2019/12/05	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2019/12/05	<2.0		ug/L	
			Dissolved Boron (B)	2019/12/05	<50		ug/L	
			Dissolved Cadmium (Cd)	2019/12/05	<0.010		ug/L	
			Dissolved Calcium (Ca)	2019/12/05	<100		ug/L	
			Dissolved Chromium (Cr)	2019/12/05	<1.0		ug/L	
			Dissolved Cobalt (Co)	2019/12/05	<0.40		ug/L	
			Dissolved Copper (Cu)	2019/12/05	<0.50		ug/L	
			Dissolved Iron (Fe)	2019/12/05	<50		ug/L	
			Dissolved Lead (Pb)	2019/12/05	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/12/05	<100		ug/L	
			Dissolved Manganese (Mn)	2019/12/05	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/12/05	<2.0		ug/L	
			Dissolved Nickel (Ni)	2019/12/05	<2.0		ug/L	
			Dissolved Phosphorus (P)	2019/12/05	<100		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 Potassium (K)	2019/12/05	<100		ug/L	
			Dissolved Selenium (Se)	2019/12/05	<0.50		ug/L	
			Dissolved Silver (Ag)	2019/12/05	<0.10		ug/L	
			Dissolved Sodium (Na)	2019/12/05	<100		ug/L	
			Dissolved Strontium (Sr)	2019/12/05	<2.0		ug/L	
			Dissolved Thallium (Tl)	2019/12/05	<0.10		ug/L	
			Dissolved Tin (Sn)	2019/12/05	<2.0		ug/L	
			Dissolved Titanium (Ti)	2019/12/05	<2.0		ug/L	
			Dissolved Uranium (U)	2019/12/05	<0.10		ug/L	
			Dissolved Vanadium (V)	2019/12/05	<2.0		ug/L	
			Dissolved Zinc (Zn)	2019/12/05	<5.0		ug/L	
6480378	MLB	RPD	Dissolved Aluminum (Al)	2019/12/05	NC		%	20
			Dissolved Antimony (Sb)	2019/12/05	NC		%	20
			Dissolved Arsenic (As)	2019/12/05	NC		%	20
			Dissolved Barium (Ba)	2019/12/05	1.5		%	20
			Dissolved Beryllium (Be)	2019/12/05	NC		%	20
			Dissolved Bismuth (Bi)	2019/12/05	NC		%	20
			Dissolved Boron (B)	2019/12/05	1.3		%	20
			Dissolved Cadmium (Cd)	2019/12/05	NC		%	20
			Dissolved Calcium (Ca)	2019/12/05	0.58		%	20
			Dissolved Chromium (Cr)	2019/12/05	NC		%	20
			Dissolved Cobalt (Co)	2019/12/05	3.6		%	20
			Dissolved Copper (Cu)	2019/12/05	NC		%	20
			Dissolved Iron (Fe)	2019/12/05	0.29		%	20
			Dissolved Lead (Pb)	2019/12/05	NC		%	20
			Dissolved Magnesium (Mg)	2019/12/05	0.16		%	20
			Dissolved Manganese (Mn)	2019/12/05	0.58		%	20
			Dissolved Molybdenum (Mo)	2019/12/05	NC		%	20
			Dissolved Nickel (Ni)	2019/12/05	NC		%	20
			Dissolved Phosphorus (P)	2019/12/05	NC		%	20
			Dissolved Potassium (K)	2019/12/05	0.23		%	20
			Dissolved Selenium (Se)	2019/12/05	NC		%	20
			Dissolved Silver (Ag)	2019/12/05	NC		%	20
			Dissolved Sodium (Na)	2019/12/05	0.48		%	20
			Dissolved Strontium (Sr)	2019/12/05	1.3		%	20
			Dissolved Thallium (Tl)	2019/12/05	NC		%	20
			Dissolved Tin (Sn)	2019/12/05	NC		%	20
			Dissolved Titanium (Ti)	2019/12/05	NC		%	20
			Dissolved Uranium (U)	2019/12/05	NC		%	20
			Dissolved Vanadium (V)	2019/12/05	NC		%	20
			Dissolved Zinc (Zn)	2019/12/05	NC		%	20
6481092	EMT	Matrix Spike [LKZ582-03]	Nitrogen (Ammonia Nitrogen)	2019/12/06		NC	%	80 - 120
6481092	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2019/12/06		109	%	80 - 120
6481092	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2019/12/06	<0.050		mg/L	
6481092	EMT	RPD [LKZ582-03]	Nitrogen (Ammonia Nitrogen)	2019/12/06	1.2		%	20
6482794	EMT	Matrix Spike	Total Alkalinity (Total as CaCO3)	2019/12/06		NC	%	80 - 120
6482794	EMT	Spiked Blank	Total Alkalinity (Total as CaCO3)	2019/12/06		100	%	80 - 120
6482794	EMT	Method Blank	Total Alkalinity (Total as CaCO3)	2019/12/06	<5.0		mg/L	
6482794	EMT	RPD	Total Alkalinity (Total as CaCO3)	2019/12/06	0.21		%	25
6482795	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2019/12/06		NC	%	80 - 120
6482795	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2019/12/06		95	%	80 - 120
6482795	EMT	Method Blank	Dissolved Chloride (Cl-)	2019/12/06	<1.0		mg/L	
6482795	EMT	RPD	Dissolved Chloride (Cl-)	2019/12/06	0.80		%	25
6482796	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2019/12/06		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
6482796	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2019/12/06		101	%	80 - 120
6482796	EMT	Method Blank	Dissolved Sulphate (SO4)	2019/12/06	<2.0		mg/L	
6482796	EMT	RPD	Dissolved Sulphate (SO4)	2019/12/06	0.046		%	25
6482803	EMT	Matrix Spike	Reactive Silica (SiO2)	2019/12/06		NC	%	80 - 120
6482803	EMT	Spiked Blank	Reactive Silica (SiO2)	2019/12/06		94	%	80 - 120
6482803	EMT	Method Blank	Reactive Silica (SiO2)	2019/12/06	<0.50		mg/L	
6482803	EMT	RPD	Reactive Silica (SiO2)	2019/12/06	1.5		%	25
6482806	EMT	Spiked Blank	Colour	2019/12/06		98	%	80 - 120
6482806	EMT	Method Blank	Colour	2019/12/06	<5.0		TCU	
6482806	EMT	RPD	Colour	2019/12/06	NC		%	20
6482810	EMT	Matrix Spike	Orthophosphate (P)	2019/12/06		90	%	80 - 120
6482810	EMT	Spiked Blank	Orthophosphate (P)	2019/12/06		93	%	80 - 120
6482810	EMT	Method Blank	Orthophosphate (P)	2019/12/06	<0.010		mg/L	
6482810	EMT	RPD	Orthophosphate (P)	2019/12/06	NC		%	25
6482812	EMT	Matrix Spike	Nitrate + Nitrite (N)	2019/12/07		92	%	80 - 120
6482812	EMT	Spiked Blank	Nitrate + Nitrite (N)	2019/12/07		95	%	80 - 120
6482812	EMT	Method Blank	Nitrate + Nitrite (N)	2019/12/07	<0.050		mg/L	
6482812	EMT	RPD	Nitrate + Nitrite (N)	2019/12/07	NC		%	25
6482814	EMT	Matrix Spike	Nitrite (N)	2019/12/07		96	%	80 - 120
6482814	EMT	Spiked Blank	Nitrite (N)	2019/12/07		100	%	80 - 120
6482814	EMT	Method Blank	Nitrite (N)	2019/12/07	<0.010		mg/L	
6482814	EMT	RPD	Nitrite (N)	2019/12/07	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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BV Labs Job #: B9X6249
Report Date: 2019/12/09

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

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)

Rosemarie MacDonald, 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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Appendix D

Mann-Kendall Tables

DILLON CONSULTING

MANN-KENDALL PLUME STABILITY ANALYSIS

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.011	0.002	0.00013	0.043	0.00019	0.00015	0.00004				
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	1	-1	-1	-1	0	0	0	-4
Row 2: Compare to Event 2:			-1	1	-1	-1	-1	0	0	0	-3
Row 3: Compare to Event 3:				1	1	1	-1	0	0	0	2
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-11**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11				X			
± 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

MANN-KENDALL PLUME STABILITY ANALYSIS

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: CODT-008-MWB										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Benzo(a)pyrene	0.0026	0.000032	0.0012	0.0025	0.00022	0.00011	0.000037				
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	-1	-1	-1	-1	0	0	0	-6
Row 2: Compare to Event 2:			1	1	1	1	1	0	0	0	5
Row 3: Compare to Event 3:				1	-1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.0046	0.000058	0.00096	0.006	0.00029	0.00017	0.00005				
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	1	-1	-1	-1	0	0	0	-4
Row 2: Compare to Event 2:			1	1	1	1	-1	0	0	0	3
Row 3: Compare to Event 3:				1	-1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 mg/L

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

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	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

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MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB						
	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	0.00064	0.000018	0.00031	0.0025	0.0001	0.000056	0.000013				
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	1	-1	-1	-1	0	0	0	-4
Row 2: Compare to Event 2:			1	1	1	1	-1	0	0	0	3
Row 3: Compare to Event 3:				1	-1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 mg/L

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

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	0.0028	0.0001	0.0001	4.1	0.0001	0.00069	0.0002				
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	1	-1	-1	-1	0	0	0	-4
Row 2: Compare to Event 2:			0	1	0	1	1	0	0	0	3
Row 3: Compare to Event 3:				1	0	1	1	0	0	0	3
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.0.00020 mg/L

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0				X			
± 1							
± 2							
± 3							
± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0017	0.0025	0.0023	0.00085	0.0037	0.00049	0.0014				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	-1	1	-1	-1	0	0	0	0
Row 2: Compare to Event 2:			-1	-1	1	-1	-1	0	0	0	-3
Row 3: Compare to Event 3:				-1	1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					1	-1	1	0	0	0	1
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 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

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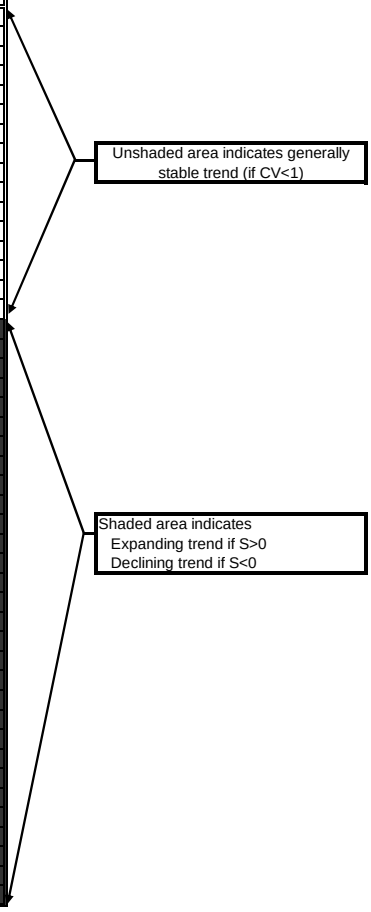
MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Benzo(a)pyrene	0.0025	0.0037	0.0047	0.0018	0.0069	0.00099	0.0029				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	-1	1	-1	1	0	0	0	2
Row 2: Compare to Event 2:			1	-1	1	-1	-1	0	0	0	-1
Row 3: Compare to Event 3:				-1	1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					1	-1	1	0	0	0	1
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1				X			
± 2							
± 3							
± 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							



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

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MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.0029	0.0045	0.0051	0.0021	0.0086	0.0014	0.0032				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	-1	1	-1	1	0	0	0	2
Row 2: Compare to Event 2:			1	-1	1	-1	-1	0	0	0	-1
Row 3: Compare to Event 3:				-1	1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					1	-1	1	0	0	0	1
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1				X			
± 2							
± 3							
± 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

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MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA					
	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	0.0011	0.0015	0.0019	0.00078	0.0029	0.00049	0.00087				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	-1	1	-1	-1	0	0	0	0
Row 2: Compare to Event 2:			1	-1	1	-1	-1	0	0	0	-1
Row 3: Compare to Event 3:				-1	1	-1	-1	0	0	0	-2
Row 4: Compare to Event 4:					1	-1	1	0	0	0	1
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

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

Confidence Level Chart

S	Total No. of Sampling Events						
Value	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

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MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	0.00001	0.046	0.0001	0.0001	0.0001	0.05	0.0001				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	1	1	1	1	0	0	0	6
Row 2: Compare to Event 2:			-1	-1	-1	1	-1	0	0	0	-3
Row 3: Compare to Event 3:				0	0	1	0	0	0	0	1
Row 4: Compare to Event 4:					0	1	0	0	0	0	1
Row 5: Compare to Event 5:						1	0	0	0	0	1
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 mg/L

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

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWC						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0033	0.0059	0.005	0.0033	0.0045	0.0042	0.0054				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	0	1	1	1	0	0	0	5
Row 2: Compare to Event 2:			-1	-1	-1	-1	-1	0	0	0	-5
Row 3: Compare to Event 3:				-1	-1	-1	1	0	0	0	-2
Row 4: Compare to Event 4:					1	1	1	0	0	0	3
Row 5: Compare to Event 5:						-1	1	0	0	0	0
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **2**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2				X			
± 3							
± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWC						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.000032	0.000048	0.005	0.000036	0.000042	0.000056	0.000033				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		1	1	1	1	1	1	0	0	0	6
Row 2: Compare to Event 2:			1	-1	-1	1	-1	0	0	0	-1
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					1	1	-1	0	0	0	1
Row 5: Compare to Event 5:						1	-1	0	0	0	0
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1				X			
± 2							
± 3							
± 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							
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± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWC					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	6.3	7.2	9.5	7.5	6.2	7.8	8.3				
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17	5-Dec-18					
Row 1: Compare to Event 1:		1	1	1	-1	1	1	0	0	0	4
Row 2: Compare to Event 2:			1	1	-1	1	1	0	0	0	3
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					-1	1	1	0	0	0	1
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **7**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7				X			
±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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-203-MW					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0025	0.00055	0.00046	0.00079	0.00027	0.00027	0.0064				
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	-1	-1	-1	1	0	0	0	-4
Row 2: Compare to Event 2:			-1	1	-1	-1	1	0	0	0	-1
Row 3: Compare to Event 3:				1	-1	-1	1	0	0	0	0
Row 4: Compare to Event 4:					-1	-1	1	0	0	0	-1
Row 5: Compare to Event 5:						0	1	0	0	0	1
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-4**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4				X			
± 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

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MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-203-MW						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Benzo(a)pyrene	0.0011	0.00069	0.00061	0.0015	0.00024	0.00027	0.0097				
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	1	-1	-1	1	0	0	0	-2
Row 2: Compare to Event 2:			-1	1	-1	-1	1	0	0	0	-1
Row 3: Compare to Event 3:				1	-1	-1	1	0	0	0	0
Row 4: Compare to Event 4:					-1	-1	1	0	0	0	-1
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1				X			
± 2							
± 3							
± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: CODT-203-MW							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.0012	0.00083	0.00073	0.0016	0.00035	0.0004	0.011				
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	1	-1	-1	1	0	0	0	-2
Row 2: Compare to Event 2:			-1	1	-1	-1	1	0	0	0	-1
Row 3: Compare to Event 3:				1	-1	-1	1	0	0	0	0
Row 4: Compare to Event 4:					-1	-1	1	0	0	0	-1
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1				X			
± 2							
± 3							
± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-203-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	0.00029	0.00028	0.00029	0.00064	0.0001	0.00011	0.0033				
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	0	1	-1	-1	1	0	0	0	-1
Row 2: Compare to Event 2:			1	1	-1	-1	1	0	0	0	1
Row 3: Compare to Event 3:				1	-1	-1	1	0	0	0	0
Row 4: Compare to Event 4:					-1	-1	1	0	0	0	-1
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **2**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2				X			
± 3							
± 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							
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± 33							
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± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-203-MW						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	0.0015	0.0001	0.0001	0.0001	0.00052	0.0016	0.00039				
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17	5-Dec-18	28-Nov-19				
Row 1: Compare to Event 1:		-1	-1	-1	-1	1	-1	0	0	0	-4
Row 2: Compare to Event 2:			0	0	1	1	1	0	0	0	3
Row 3: Compare to Event 3:				0	1	1	1	0	0	0	3
Row 4: Compare to Event 4:					1	1	1	0	0	0	3
Row 5: Compare to Event 5:						1	-1	0	0	0	0
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **4**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4				X			
± 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							
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± 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

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MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
pH	7.61	8.91	9.44	7.95	7.86	9.15	10.3				
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	1	1	1	1	1	0	0	0	6
Row 2: Compare to Event 2:			1	-1	-1	1	1	0	0	0	1
Row 3: Compare to Event 3:				-1	-1	-1	1	0	0	0	-2
Row 4: Compare to Event 4:					-1	1	1	0	0	0	1
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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

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

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
SO4	34	70	88	48	35	64	83				
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	1	1	1	1	1	0	0	0	6
Row 2: Compare to Event 2:			1	-1	-1	-1	1	0	0	0	-1
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					-1	1	1	0	0	0	1
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.001 mg/L

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

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
TDS	390	260	260	220	200	200	220				
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		-1	-1	-1	-1	-1	-1	0	0	0	-6
Row 2: Compare to Event 2:			0	-1	-1	-1	-1	0	0	0	-4
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					-1	-1	0	0	0	0	-2
Row 5: Compare to Event 5:						0	1	0	0	0	1
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.001 mg/L

Mann-Kendall (S) Statistic = **-14**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14				X			
± 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

MANN-KENDALL PLUME STABILITY ANALYSIS

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Nova Scotia Lands

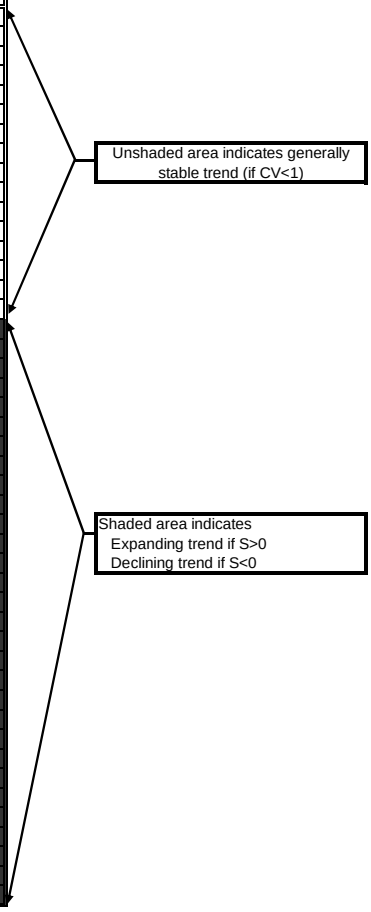
141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Selenium	0.0005	0.0029	0.0033	0.0005	0.0017	0.0015	0.0022				
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	1	0	1	1	1	0	0	0	5
Row 2: Compare to Event 2:			1	-1	-1	-1	-1	0	0	0	-3
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					1	1	1	0	0	0	3
Row 5: Compare to Event 5:						-1	1	0	0	0	0
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.001 mg/L

Mann-Kendall (S) Statistic = **2**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2				X			
± 3							
± 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							



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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-001-MWA										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
pH	11.8	11.9	11.8	11.9	12	12	11.9				
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	0	1	1	1	1	0	0	0	5
Row 2: Compare to Event 2:			-1	0	1	1	0	0	0	0	1
Row 3: Compare to Event 3:				1	1	1	1	0	0	0	4
Row 4: Compare to Event 4:					1	1	0	0	0	0	2
Row 5: Compare to Event 5:						0	-1	0	0	0	-1
Row 6: Compare to Event 6:							-1	0	0	0	-1
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

Mann-Kendall (S) Statistic = **10**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10				X			
± 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)
	S < 0 Diminishing Plume
X	S > 0 Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

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Nova Scotia Lands

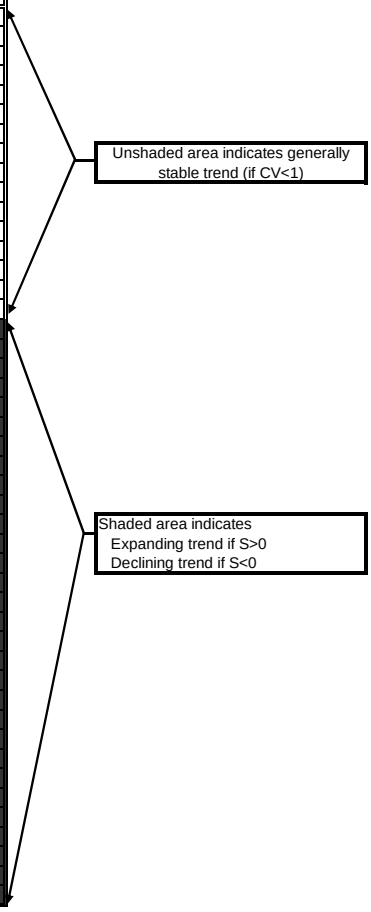
141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWA							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
SO4	160	120	160	190	160	110	130				
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		-1	0	1	0	-1	-1	0	0	0	-2
Row 2: Compare to Event 2:			1	1	1	-1	1	0	0	0	3
Row 3: Compare to Event 3:				1	0	-1	-1	0	0	0	-1
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.001 mg/L

Mann-Kendall (S) Statistic = **-4**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4				X			
± 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							



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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-001-MWA										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
TDS	542	730	540	730	560	580	570				
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	-1	1	1	1	1	0	0	0	4
Row 2: Compare to Event 2:			-1	0	-1	-1	-1	0	0	0	-4
Row 3: Compare to Event 3:				1	1	1	1	0	0	0	4
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.001 mg/L

Mann-Kendall (S) Statistic = **2**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2				X			
± 3							
± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWA							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Selenium	0.0016	0.0018	0.0015	0.0019	0.0018	0.0015	0.0016				
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	-1	1	1	-1	0	0	0	0	1
Row 2: Compare to Event 2:			-1	1	0	-1	-1	0	0	0	-2
Row 3: Compare to Event 3:				1	1	0	1	0	0	0	3
Row 4: Compare to Event 4:					-1	-1	-1	0	0	0	-3
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.001 mg/L

Mann-Kendall (S) Statistic = **-2**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2				X			
± 3							
± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
pH	7.32	7.4	7.49	7.42	7.47	11.9	12				
	14-Nov-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		1	1	1	1	1	1	0	0	0	6
Row 2: Compare to Event 2:			1	1	1	1	1	0	0	0	5
Row 3: Compare to Event 3:				-1	-1	1	1	0	0	0	0
Row 4: Compare to Event 4:					1	1	1	0	0	0	3
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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

Mann-Kendall (S) Statistic = **17**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17				X			
± 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)
	S < 0 Diminishing Plume
X	S > 0 Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
SO4	10	6.7	1	1	1	94	96				
	14-Nov-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		-1	-1	-1	-1	1	1	0	0	0	-2
Row 2: Compare to Event 2:			-1	-1	-1	1	1	0	0	0	-1
Row 3: Compare to Event 3:				0	0	1	1	0	0	0	2
Row 4: Compare to Event 4:					0	1	1	0	0	0	2
Row 5: Compare to Event 5:						1	1	0	0	0	2
Row 6: Compare to Event 6:							1	0	0	0	1
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 0.001 mg/L

Mann-Kendall (S) Statistic = **4**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4				X			
± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
TDS	22000	21000	22000	19000	21000	520	510				
	14-Nov-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17	28-Nov-18	2-Dec-19				
Row 1: Compare to Event 1:		-1	0	-1	-1	-1	-1	0	0	0	-5
Row 2: Compare to Event 2:			1	-1	0	-1	-1	0	0	0	-2
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					1	-1	-1	0	0	0	-1
Row 5: Compare to Event 5:						-1	-1	0	0	0	-2
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.001 mg/L

Mann-Kendall (S) Statistic = -15

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15				X			
± 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

MANN-KENDALL PLUME STABILITY ANALYSIS

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-204-MW							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.0017	0.0018	0.0025	0.0019	0.0018	0.0017					
	28-Mar-13	24-Jul-13	7-Nov-13	18-Dec-14	10-Dec-15	25-Nov-16					
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
Row 2: Compare to Event 2:			1	1	0	-1	0	0	0	0	1
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1			X				
± 2							
± 3							
± 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							
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± 31							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-204-MW							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0036	0.0033	0.0042	0.0019	0.0026	0.002					
	28-Mar-13	24-Jul-13	7-Nov-13	18-Dec-14	10-Dec-15	25-Nov-16					
Row 1: Compare to Event 1:		-1	1	-1	-1	-1	0	0	0	0	-3
Row 2: Compare to Event 2:			1	-1	-1	-1	0	0	0	0	-2
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 0.00001 mg/L

Mann-Kendall (S) Statistic = **-7**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7			X				
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-204-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Selenium	0.21	0.12	0.036	0.067	0.005	0.086					
	28-Mar-13	24-Jul-13	7-Nov-13	18-Dec-14	10-Dec-15	25-Nov-16					
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	1
Row 4: Compare to Event 4:					-1	1	0	0	0	0	0
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 0.001 mg/L

Mann-Kendall (S) Statistic = **-7**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7			X				
±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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MSES-008-MW							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.0042	0.0032	0.0041	0.0027	0.0025	0.0018	0.0019	0.0023	0.0025		
	26-Mar-13	26-Jul-13	15-Nov-13	10-Dec-14	3-Dec-15	25-Nov-16	13-Dec-17	10-Dec-18	2-Dec-19		
Row 1: Compare to Event 1:		-1	-1	-1	-1	-1	-1	-1	-1	0	-8
Row 2: Compare to Event 2:			1	-1	-1	-1	-1	-1	-1	0	-5
Row 3: Compare to Event 3:				-1	-1	-1	-1	-1	-1	0	-6
Row 4: Compare to Event 4:					-1	-1	-1	-1	-1	0	-5
Row 5: Compare to Event 5:						-1	-1	-1	0	0	-3
Row 6: Compare to Event 6:							1	1	1	0	3
Row 7: Compare to Event 7:								1	1	0	2
Row 8: Compare to Event 8:									1	0	1
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-21**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21						X	
± 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

Only fields outlined in blue can be manipulated, all other cells are protected
Begin by entering the Site info in Setup Tab cells B11, C11, D11 (minimum 4 events before Mann Kendall trends can be identified)
enter monitoring well label details number in cell G11 (ex MW1 or MW07-01, etc)
enter parameter analyzed in cell A13 (ie Benzene, Toluene, MtBE, etc.)
enter number of non-detect in Cell O7 and default detection limit in cell A25
Change worksheet Tab label to identify MW and parameter (ex MW1 B for Benzene in MW1)

MANN-KENDALL PLUME STABILITY ANALYSIS

OHP & HE
Nova Scotia Lands
141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	MSES-104-MWA						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.0069	0.0056	0.0075	0.0064	0.0063	0.0065	0.0059				
	28-Mar-13	10-Dec-14	3-Dec-15	25-Nov-16	13-Dec-17	10-Dec-18	2-Dec-19				
Row 1: Compare to Event 1:		-1	1	-1	-1	-1	-1	0	0	0	-4
Row 2: Compare to Event 2:			1	1	1	1	1	0	0	0	5
Row 3: Compare to Event 3:				-1	-1	-1	-1	0	0	0	-4
Row 4: Compare to Event 4:					-1	1	-1	0	0	0	-1
Row 5: Compare to Event 5:						1	-1	0	0	0	0
Row 6: Compare to Event 6:							-1	0	0	0	-1
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 0.001 mg/L

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

Confidence Level Chart

S	Total No. of Sampling Events						
Value	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)

MANN-KENDALL PLUME STABILITY ANALYSIS

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2019

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MSES-104-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.03	0.036	0.032	0.033	0.031	0.045	0.028	0.024	0.379		
	26-Mar-13	24-Jul-13	5-Nov-13	10-Dec-14	3-Dec-15	25-Nov-16	13-Dec-17	10-Dec-18	2-Dec-19		
Row 1: Compare to Event 1:		1	1	1	1	1	-1	-1	1	0	4
Row 2: Compare to Event 2:			-1	-1	-1	1	-1	-1	1	0	-3
Row 3: Compare to Event 3:				1	-1	1	-1	-1	1	0	0
Row 4: Compare to Event 4:					-1	1	-1	-1	1	0	-1
Row 5: Compare to Event 5:						1	-1	-1	1	0	0
Row 6: Compare to Event 6:							-1	-1	1	0	-1
Row 7: Compare to Event 7:								-1	1	0	0
Row 8: Compare to Event 8:									1	0	1
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0						X	
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
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± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
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± 31							
± 32							
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± 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

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- Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.