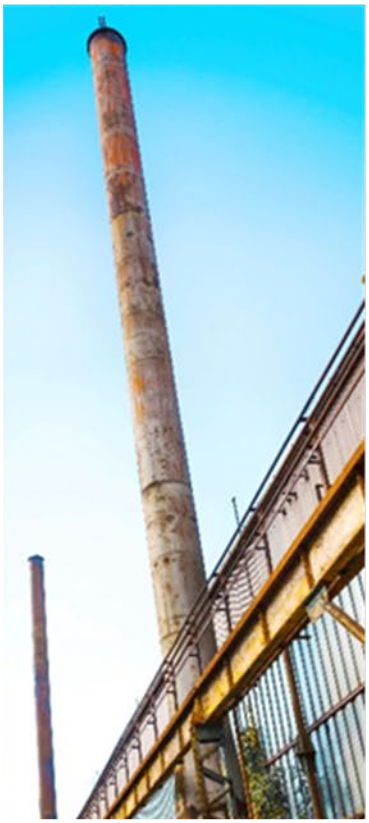
2020 Annual Groundwater Monitoring Report

Clean Harbors Lambton Facility Landfill

Clean Harbors Canada Inc.



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1. Introduction

GHD has prepared this Annual Groundwater Monitoring Report (Report) on behalf of Clean Harbors Canada Inc. (Clean Harbors) to present the results of the 2020 Groundwater Monitoring Program for the Landfill at the Lambton Facility, located on Lot 9 and part of Lot 8 in the Township of St. Clair, Lambton Ontario (Landfill, Site, or Facility).

The address for the Site is 4090 Telfer Road and the Site entrance is on Telfer Road. Figure 1 provides the Site location with respect to the surrounding area. This Report presents the groundwater monitoring data and data interpretations, in relation to the current environmental performance and regulatory compliance of the Landfill. This Report covers the groundwater monitoring activities conducted from January 1 through December 31, 2020 (reporting period).

1.1 Site Background

Waste disposal operations at the Facility commenced in the early 1960s by Goodfellows Enterprises (Sarnia) Limited as an integrated waste management facility, accepting both industrial and municipal solid waste. Waste disposal at the Site occurred through landfilling in excavations (5.5 to 9 m), deep well disposal (starting in 1961), liquid waste incineration (starting in 1968), and pit/lagoon storage.

In 1973, the Facility was acquired by Tricil Ltd. Tricil restricted the waste disposal operations to hazardous wastes, decommissioned the pits/lagoons (with the exception of the S-Pit), discontinued the deep well disposal in 1976, and constructed a new liquid incinerator in 1983. From 1976 to 1986, Cells 1 through 15 were constructed, with cell depths of 18.3 metres (m). In 1986, the Ontario Ministry of the Environment (MOE) approved Cells 16 and 17 and the shallow entombment method for waste placement. Cells 16 and 17 were constructed with a cell depth of 18.3 m, although the top of waste was 6.1 m below grade and a low permeability clay cap was installed to ground surface. Cell 16 operated from 1986 to 1990 and Cell 17 operated from 1990 to 1997.

In 1990, Laidlaw Inc. (later changed to Laidlaw Environmental Services and then to Safety-Kleen Ltd) acquired the Facility. In 1997, Cell 18 was approved with the maximum cell depth of 24.4 m and a waste cap thickness of 5.1 m. Cell 18 was constructed in sub-cells, with Sub-Cells 1 and 2 excavated and filled in 1997 and 1998. In 1999 during the construction of Sub-Cell 3, basal instability was observed. Landfill operations in Sub-Cell 3 were discontinued and remedial measures were installed (further discussed in Section 2.2). Subsequent sub-cells (Sub-cells 4 to 12) had a reduced maximum depth of 18.3 m.

Clean Harbors acquired Safety-Kleen's Chemical Services Division in September 2002. Since 2002, several waste treatment facilities were installed, including the Land Disposal Regulation (LDR) Facility in 2007 for treatment of inorganic waste streams, and the Thermal Desorption Unit (TDU) in 2010. In 2003, a site design amendment was obtained to recover waste capacity that was lost due to changes from Sub-Cell 3.

Currently, the Facility operates as a hazardous waste landfill and waste processing facility. Hazardous solid waste, select non-hazardous waste, liquid waste, and untreated and pre-treated hazardous waste is accepted at the Facility. Waste is accepted from Ontario, other Canadian provinces, and the United States. Most waste classes under *Ontario Regulation* (O. Reg.) 347 are

accepted, with the exception of polychlorinated biphenyl (PCB) waste, radioactive waste, or pathological waste. The two waste disposal operations at the Facility are landfilling and high temperature incineration.

In 2015, the Site received approval for a vertical expansion of the landfill over existing waste cells. The vertical expansion will provide an additional disposal capacity of 3.87 million cubic metres (m^3). The height of the vertical expansion will be limited to the maximum height of the perimeter berms. Engineered components were designed for the landfill expansion, including the addition of a hydraulic control layer, a perimeter leachate collection system, and improved surface water management. The groundwater monitoring programs were enhanced to evaluate the performance of the engineered components on achieving hydraulic containment and on maintaining inward hydraulic gradients.

During the 2020 reporting period, the following work was completed at the Site:

- Cell 19-3 was constructed and the perimeter leachate collection trench was extended in the south-east portion of the disposal area
- Disposal occurred in Cell 19-2 and Cell 19-3
- Interim cover was installed over the majority of Cell 19-2, with the exception of the active landfilling area (Cell 19-2D, Cell 19-2G, and Cell 19-3A)
- Final cover on Cell 19-1 was completed and vegetated
- The waste transport route to Cell 19-3 was adjusted and extended
- The revised surface water management system was developed, consisting of four ponds identified as Pond A, B, C, and D.

In 2021, the proposed work is the construction of Cell 20-1 that is located in the south-east section of the Site in accordance with the concept presented in the approved Design and Operations Plan for the Site.

1.2 Site Setting

1.2.1 Facility Location and Plan

The Facility is located on Lots 8 and 9 of Concession 10, in St. Clair Township, Lambton County (Figure 2). The Site has a total property area of 140 hectares (ha). The property boundary, as set out in the Environmental Compliance Approval (ECA) A031806, is identified in Figure 2. Figure 2 also depicts the existing surface elevation contours, limit of waste, and existing site features. The landfill has a waste disposal footprint of 61 ha (including historical fill areas for Cell 18 Sub-Cells 1, 2 and 3).

The Facility has a buffer area around the waste disposal areas. The buffer areas contains the perimeter screening berms, access roads, surface water ditches and ponds, process water ponds, the administration offices and facilities, the Site entrance, and Site monitoring locations. In accordance with Township of St. Clair Comprehensive Zoning By-Law[1], the setback distance from

[1] Township of St. Clair Comprehensive Zoning By-Law, By-Law 17 of 2003, Section 10.4 – Waste Disposal Industrial (M4) Zone

the property boundary to the waste disposal limit is set at 153 m for non-industrial adjacent lands and 15 m for industrial lands.

1.2.2 Site Topography and Drainage

The topography of St. Clair Township is generally flat, with an overall western slope towards the St. Clair River. The land surrounding the Facility also has limited topography. The Facility is primarily surrounded by agricultural land, with woodlots located to the south, east, and west. The Site topography has been altered through the Facility operations and waste disposal operations. The perimeter berms are currently the highest ground elevation on-Site and range from 211 to 212 m above mean sea level (mAMSL). A section of the eastern perimeter berm has been increased to 219.5 mAMSL to provide temporary storage of soils excavated from the Site. The final elevation of the waste mound following completion of the vertical expansion will be approximately 212 mAMSL.

Surface water is generated from non-operational areas at the Facility. Non-impacted surface water runoff from undeveloped portions of the Site, perimeter berms, and capped and closed landfill cells, and waste disposal cells with interim cover is directed through a series of on-Site drainage ditches and surface water storage ponds. As discussed in Section 1.1, the revised surface water management system was developed during the reporting period. The previous surface water management system (prior to early 2020) consisted of two on-Site surface water storage ponds (West Pond and East Pond). In 2020, the revised surface water management system was constructed, consisting of four ponds identified as Pond A, B, C, and D. The four ponds are located in the southern portion of the Site and incorporated portions of the former East and West Ponds. The ponds are linked and operate as one large pond from a surface water point of view. The surface water from the revised surface water management system is still processed by the surface water treatment plant (SWTP). Treated surface water from of the Site eventually drains into Bear Creek to the south. Surface water generated from the exterior of the perimeter northern and eastern berm drains into the Perch Creek.

Runoff from operational areas, including haul roads and uncapped areas of waste, is classified as process water and is collected and stored in four process water ponds. Process water is directed to process water ponds by ditches, culverts, and storm sewers that have been constructed in the process water catchment area. Process water is used as quench water in the incinerator.

1.2.3 Site Geology

A detailed description of the geologic and hydrogeologic setting is provided in the *Geology and Hydrogeology Existing Conditions Report* prepared by RWDI (October 2014).

The Facility is located on the physiographic region of the St. Clair Clay Plain, characterized by thick clay sediments overlying Paleozoic shale bedrock from the Kettle Point Formation. The overburden

at the Site is between 37 and 42 m thick and is characterized by five overburden units, as shown in Table 1.1.

Table 1.1 Description of Site Geology

Classification	Unit	Description	Thickness/ Depth
Overburden	Beach Strand	Medium to silty fine to coarse sand	Less than 1 m thick
	St. Joseph Till	Massive to laminated clay/silt with thin, discontinuous layers of silty sand and isolated lenses of sand. Upper portion shows signs of weathering and fractures between 3.5 to 5 m.	14 m thick; observed between 1 and 15 mbgs
	Mackinaw Interstadial Silt and Sand	Discontinuous black medium sand and silt containing shale fragments	Less than 0.5 m thick; observed between 10 and 14 mbgs
	Black Shale Till	Massive to laminated clayey silt, with shale clasts	27 m thick; observed to between 15 and 45 mbgs
	Basal Till	Dense to hard cobbly, sandy clayey silt till with shale fragments and occasional lenses of fine gravel and coarse sand.	1 to 2.6 m thick
Bedrock	Kettle Point Formation	Brown to black, bituminous shale with occasional interbeds of grey-green shale	Observed to at approximately 40 mbgs

Notes:
mbgs – Metres below ground surface

1.2.1 Site Hydrogeology

The geology described above has been extensively examined based on its ability to conduct groundwater movement. Hydrostratigraphic units at the Site are described below:

- **Active Aquitard:** The weathered and fractured upper portion of the St. Joseph Till unit is referred to as the Active Aquitard. The Active Aquitard has a relatively high hydraulic conductivity compared to the rest of the St. Joseph Till due to fracturing. Groundwater flow is primarily within the fractures of the upper weathered portion of the clay. The groundwater flow direction is influenced by local surface topography and the water table is found at approximately 1.5 mbgs. Water levels within the Active Aquitard show seasonal variability.
- **Transition Zone:** The middle portion of the St. Joseph Till characterized by decreased fracture frequency resulting in reduced hydraulic activity.
- **Inactive Aquitard:** The lower portion of the St. Joseph Till and Black Shale Till conduct groundwater flow at extremely slow rates. Groundwater movement through the discontinuous layers of sand within these units is controlled by the surrounding low hydraulic conductivity.
- **Interface Aquifer:** The Basal Till is considered the Interface Aquifer. This till is found between the overlying aquitard and underlying shale bedrock. Groundwater flow within the Interface Aquifer is historically towards the east to southeast direction. The Interface Aquifer has been used as a water source throughout Lambton County.
- **Shale Aquitard:** The hydraulic conductivity of the shale of the Kettle Point Formation is low, with little fracturing.

Regional groundwater chemistry has been characterized historically through several studies. Generally, the regional groundwater chemistry was identified to have high concentrations of chloride and sodium (exceeding the Ontario Drinking Water Standards [ODWS]), with groundwater approaching brackish conditions near the St. Clair River. Additionally, iron, sulfate, and fluoride concentrations often exceeded the ODWS regionally. These conditions have been attributed to the Kettle Point Formation shale, which was deposited in a marine environment and has readily soluble salts in the shale matrix. Bitumen is also found within the Kettle Point Formation shale and been described as the source of detections of petroleum hydrocarbon constituents in groundwater samples from the Interface Aquifer.

1.3 Regulatory Setting

The Site is operated in accordance with 13 Environmental Compliance Approvals (ECA). Table 1.2 provides a list of the ECAs for the Site. Copies of the ECAs for the Site are provided in the 2019 Clean Harbors Lambton Facility Annual Landfill Report. The groundwater monitor program is regulated under ECA A031806 Condition 9(a)(i).

Table 1.2 Environmental Compliance Approvals

Approval Type	Approval Number	Operation/ Process
Waste Disposal Site	A031806	Landfill, TDU and LDR
Waste Disposal Site	A031831	Household Hazardous Waste
Waste Disposal Site	A031813	Liquid Waste Incinerator and Transfer Station and Financial Assurance
Industrial Sewage Works	4731-BNNT5Y	Surface Water and Process Water Treatment Unit
Waste/Air	6547-5G5MSP	Incinerator
Air	7384-AR6PV2	TDU
Air	8-1184-89-937	Laboratory
Air	5688-74BJFW	LDR facility
Air	8-1030-94-006	Incinerator
Air	9845-B6QR3D	SPL
Waste/Air	2005-8RMJL6	Leachate Pond Vents
Waste Management System	A8581	PCB
Waste Management System	A860228	Collection, Handling and Transportation

2. Groundwater Monitoring Program

The 2020 groundwater monitoring program was undertaken in accordance with the program defined in the document entitled “Final Draft – Groundwater and Landfill Performance Monitoring Programs” (RWDI, December 2015). There are three groundwater monitoring components, including:

- Groundwater Monitoring Program along the Perimeter of Facility Property
- Sub-Cell 3 Remedial Performance Monitoring Program

- Performance Monitoring Program for Engineered Landfill Systems

The groundwater monitoring network is shown on Figure 3. Groundwater monitoring well (well) completion details are attached in Table 1. The activities included in each of the groundwater monitoring components are described below.

2.1 Groundwater Monitoring Program along the Perimeter of the Facility

The groundwater monitoring program along the perimeter of the facility (perimeter monitoring program) was developed in 1986 and provides an assessment of groundwater flow and quality. The perimeter monitoring program is conducted semi-annually (spring and fall) and consists of hydraulic monitoring (water level) and groundwater sample collection. These activities are undertaken in accordance with standard operating procedures (SOPs). The perimeter groundwater monitoring wells are presented on Figures 4 and 5.

Water level measurements are collected to determine groundwater flow direction in each hydrostratigraphic unit, and to determine horizontal and vertical hydraulic gradients. Calculating vertical hydraulic gradients between hydrostratigraphic units aids in assessing the potential for vertical groundwater flow and possible contaminant migration. Water levels are either collected manually using a water level meter or measured continuously through dedicated pressure transducers and data loggers (transducer). The transducer water level data is downloaded quarterly. A manual water level measurement is collected when downloading transducer data in order to verify and calibrate the transducer data. Table 2 attached provides a description of the water level measurement methodology for each monitoring location.

Table 2.1 provides a summary of well locations included in the perimeter monitoring program.

Table 2.1 Monitoring Well Locations included in the Perimeter Monitoring Program

Hydrostratigraphic Unit	Well Network	Area of Site	Wells
Active Aquitard	• 26 shallow wells – 21 located on Site property – 5 located on neighbouring property	Located off the Facility Property	TW55-09S, TW56-11S, TW57-11S, TW58-11S, TW59-13S
		Northern Berm	TW39-99I, TW39-99S, TW46-99I, TW46-99S, TW61-13I, TW61-13S
		Downgradient of Northern Berm	OW32-90S, OW35-90S, TW21-94-II, TW22-94, TW32-94-IV, TW40-99S, TW53-03S
		Along Property Boundary	TW30-94, TW41-99S, TW42-99S, TW43-99S, TW45-99S, TW48-16S, TW62-13S
		Internal to Property	TW63-13S
Interface Aquifer	• 22 deep wells – 18 located on Site property – 4 located on neighbouring property	Located off the Facility Property	TW55-09D, TW56-11D, TW57-11D, TW59-13D
		Internal to Property	TW39-99D, TW46-99D, TW54-09D, TW61-13D
		Along Property Boundary (Compliance)	OW32-90D, OW35-05D, TW22-99D, TW30-99D, TW32-94-II, TW40-99D, TW41-99D, TW43-99D, TW45-99D, TW47-00D, TW48-00D, TW49-00D, TW53-03D, TW60-13D
Shale Aquitard	• 2 deep wells	On and Off-Site	TW32-94-I, TW42-99D

Groundwater is sampled using one of three sampling methodologies depending on the location. Wells screened in the Active Aquitard and the Shale Aquitard are sampled using the continuous volume (CV) sampling methodology. These wells are equipped with dedicated tubing and inertial pumps. Water level measurements and CV purging of Active Aquitard wells are conducted by Clean Harbors for five weeks prior to sampling activities. Wells screened in the Interface Aquifer are sampled using the low flow purging method. Table 2, attached, shows the sampling methodology used at each monitoring location. Groundwater samples are collected for the following parameters and at sampling frequencies, as shown in Table 2.2.

Table 2.2 Perimeter Groundwater Sampling Details

Aquifer	Parameter for Analysis	Sampling and Analysis Frequency	Sampling Methodology
Active Aquitard	General Indicators[1], Major[2] and Minor[3] Ions	Semi-annually	CV
	Metals[4]	Annually	
	Volatile organic compounds (VOCs)	Biennially (sampled odd years)	
Interface Aquifer	General Indicators, Major and Minor Ions	Semi-annually	Low Flow Purging
	Metals	Annually	
	VOCs	Annually	
Shale Aquitard	General Indicators, Major and Minor Ions	Biennially (sampled odd years)	CV
	Metals		
	VOCs		

Notes:
(1) General Indicators include: pH, Conductivity, Total Dissolved Solids (TDS)
(2) Major ions include: Alkalinity, Chloride, Sulfate, Calcium, Magnesium, Potassium, and Sodium
(3) Minor ions include: Ammonia (active aquitard only), Nitrite, Nitrate, Bromide, Cyanide, and Fluoride
(4) Metals include: Arsenic, Barium, Boron, Cadmium, Chromium, Iron, Lead, Nickel, Mercury, Zinc

2.2 Sub-Cell 3 Remedial Performance Monitoring Program

Sub-Cell 3 is located within Cell 18 in the northwest corner of the Site, as shown on Figure 6. In 1999 during a routine inspection of the excavation base of Sub-Cell 3, gas/water was found to be seeping from fractures in the base of the landfill excavation. The cause of the seeps was attributed to a number of factors, including elevated bedrock elevations, high hydrostratigraphic head in the Interface Aquifer, the depth of the excavation, and heterogeneity in the underlying soil. With the removal of clay soils for the cell excavation, the remaining thickness of clay soil at the base of the excavation was insufficient to counteract the hydrostratigraphic head pressures. The remedial measures put in place ensured the clay base of the landfill was not compromised and consisted of:

- Installing a hydraulic control layer (HCL) in Sub-Cell 3 to allow long-term control of hydraulic pressures. The HCL consists of a gravel blanket placed over the area surrounded by a gravel-filled perimeter trench.
- Placing a clay layer above and around the HCL to provide a barrier to leachate movement from the adjacent sub-cells. The clay liner is at a minimum 5 m thick.
- Installing extraction wells into the HCL to allow the long-term control of hydraulic pressure. Operation of the extraction wells maintain water levels in the HCL below the level in the Interface Aquifer and the leachate level in adjacent landfill cells containing waste. The purpose of this action is to create an inward pressure gradient while maintaining an upward pressure/flow from

the Interface Aquifer into the HCL. The intention is to reduce the potential for water/leachate to move downward through the fractures to the bedrock.

The Sub-Cell 3 monitoring program was developed to assess the performance of Sub-Cell 3 remedial measures, through hydraulic and quality monitoring. A summary of the Sub-Cell 3 monitoring network and program is summarized in Table 2.3. Hydraulic monitoring is completed to evaluate the head difference between the HCL and the Interface Aquifer. Groundwater samples are collected for specific parameters at a frequency consistent with the perimeter monitoring program.

Table 2.3 Sub-Cell 3 Groundwater Sampling Details

Unit	Well Network	Water Level Measurements		Groundwater Sampling	
		Methodology	Frequency	Methodology	Frequency
HCL	• 2 extraction wells (EW1a-01 and EW2a-01)	Transducers	Quarterly Download	Collected from Pump Discharge Line	Semi-annual
	• 4 monitoring wells (EW1b-13, EW1c-13, EW2b-13, EW2c-13)			CV	
Nearby Interface Aquifer	• 2 monitoring wells (PW1-N, PW2-S[R11])				

2.3 Performance Monitoring Program for Engineered Landfill Systems

The perimeter leachate collection system (LCS) will be progressively installed around landfill perimeter with the vertical expansion of the landfill. The LCS was designed to operate as a hydraulic trap, such that the operating level of the LCS is less than the landfill leachate level, the adjacent groundwater elevations, and the surface water ponds. The intention is the Active Aquitard water level is greater (higher) than the leachate level in the LCS system in order to create an inward gradient for groundwater towards the LCS. The LCS is intended to operate at a maximum level of 197 mAMSL in order to maintain this inward gradient.

The performance of the engineered landfill system is assessed by evaluating hydraulic gradients from the LCS to surrounding areas, to assess whether an inward gradient is being maintained by the LCS. The monitoring program to assess the performance of the engineered landfill systems (performance monitoring program) includes collecting water levels at LCS standpipes (located midway between the Perimeter Trench Sumps (PTS)) and nearby groundwater wells. Water levels are collected from the LCS standpipes with transducers that record the water level every twelve hours (downloaded quarterly). The PTS systems have high-head low-flow groundwater pumps connected to the Programmable Logic Controller (PLC) and leachate levels within the sumps are recorded on the PLC.

The inward gradient and water levels of the LCS were previously evaluated along two transects at the south portion of the landfill, where the LCS has been installed with the vertical expansion. The two transects were across the southwest landfill corner and the southern berm.

Transect across the Southwest Corner of the Landfill

Water level data from the LCS and perimeter monitoring program are compared to determine the status of the inward gradient to the LCS at the southwest corner of the landfill. Water levels are

compared between six perimeter wells (TW64-16-I through TW64-16IV, TW48-16S, and TW48-00D) and the LCS standpipe (LCSOW02-15), located on the southwest corner of Cell 19. In recent years, transducer data from LCS standpipes, including LCSOW02-15, were not available in 2020. Water level data from the LCS sumps, PTS-02 to PTS-03, were used for the transect comparison in 2020. Well and sump locations are shown on Figure 7.

Performance Monitoring along the Southern Berm

The LCS performance was previously assessed near the southern berm through hydraulic and groundwater quality monitoring. The southern berm was constructed in 2002 to induce groundwater mounding and promote an inward hydraulic gradient within the Active Aquitard towards Sub-Cell 19. The southern berm was removed in spring 2019 as part of remedial measures in response to a leachate seep and Provincial Officer's Order No. 2681-BCPKUJ. The southern berm was scheduled for removal in 2020 as part of the surface water management plan amendment. The monitoring wells in the southern berm (TW50-02A/B, TW51-02A/B, and TW52-02A/B) were removed as part of the remedial construction work. Therefore the performance monitoring associated with the Southern Berm was not completed in 2020 and will be removed from the monitoring program.

2.4 Quality Assurance/Quality Control Program

A Quality Assurance/Quality Control (QA/QC) program was performed for each monitoring event to ensure the reliability and the validity of the analytical results. The QA/QC program involved both field and laboratory measures to identify any form of sample contamination that might have occurred, or if any lack in precision of the analytical methods employed was evident. In addition, the QA/QC program addresses the potential source and degree of contamination or analytical imprecision.

The field QA/QC program consisted of the collection of field duplicate samples and the preparation of field blank samples. Three field blanks were collected per sampling event. Duplicate samples were collected from PW2-S(R11), TW32-04-II, and TW43-99S in spring 2020 and PW2-S(R11), TW56-11S, TW57-11D in fall 2020.

The laboratory QA/QC program consisted of the analysis of method blank samples, laboratory spike samples, and surrogate recovery samples. Analyses of these samples were conducted in conjunction with the analyses of each batch or run of investigative samples.

All analytical data received were validated by a review of the standard quality control criteria including blind duplicate sample analysis and blind field blank analysis. As well, the laboratory QA/QC data were reviewed. The complete analytical data assessment and validation report for the 2020 reporting period is included in Appendix A. Based on the assessment, the dataset is acceptable with the qualifications noted in Appendix A.

3. Groundwater Monitoring Program along the Perimeter of the Facility

The objective of the perimeter monitoring program is to assess the vertical and horizontal hydraulic gradients and groundwater quality on and near the Site boundary. On March 3, June 1 to 5, September 18 and December 15 to 18, 2020, GHD conducted quarterly transducer downloads

and/or semi-annual groundwater monitoring activities. The following sections detail the results of the water level data, groundwater quality, and compliance for each hydrostratigraphic unit monitored.

3.1 Perimeter Water Level Data

The following presents interpretations from the water level data collected during the reporting period for each hydrostratigraphic unit. Manual water levels collected by GHD and Clean Harbors are provided in Table 3.

3.1.1 Active Aquitard Water Levels

The upper portion of the Active Aquitard is fractured, and it allows surface water to recharge and influence the groundwater elevations. The seasonal fluctuations of the Active Aquitard are influenced by low topographic features on and off-Site, including proximity to surface water bodies and drainage ditches.

The Active Aquitard is also influenced by groundwater mounding induced by the northern berms. Groundwater mounding in the northern berm is an intentional design feature to induce an inward gradient towards the landfill. Mounded water levels were recorded in wells within and beneath the northern berm (TW39-99S, TW39-99I, TW46-99S, and TW46-99I) compared to water levels outside the northern berm. The observed groundwater mounding is consistent with historical water level observations. Water level monitoring data implies that mounding from the northern berm will induce an inward hydraulic gradient from the berm towards the landfill, therefore limiting lateral migration of potential groundwater impacts from the landfill.

The groundwater elevations of the Active Aquitard are continuously monitored through pressure transducers installed in eight groundwater monitoring wells. The groundwater elevations recorded by these pressure transducers are presented in Appendix B as figures B-1 through B-7 and B-25.

The eight Active Aquitard monitoring well hydrographs from transducer data are presented on Figure 8, along with hourly precipitation rates to demonstrate the influence of precipitation on seasonal fluctuations. Seasonal fluctuations in the groundwater elevations ranged from approximately 0.7 m to 4 m across the Active Aquitard in 2020, with higher groundwater elevations in the winter and/or spring, and lower groundwater elevations occurring in the summer and fall. Generally, lower seasonal variations were observed at wells located near surface water ponds, or within/near the perimeter berms. This pattern is interpreted to be a result of the perimeter berms and surface water ponds providing a relatively consistent groundwater recharge to the Active Aquitard throughout the year.

The interpreted groundwater contours for the Active Aquitard for the spring and fall monitoring events are presented as Figures 9 and 10, respectively. Groundwater contours were generated using data collected by Clean Harbors prior to CV purging. Active Aquitard monitoring wells located within the northern berm were not used in the generation of Active Aquitard contours, as the mounding at the locations results in an exaggerated influence on horizontal flow directions within this unit across the Site.

Groundwater contours of the Active Aquitard illustrate a potentiometric high in the western portion of the property in April and October. Groundwater flow direction in April and October is generally to the Southwest and Southeast. A localized potentiometric high caused by groundwater mounding

induced within the Active Aquitard by the northern berms is expected to induce groundwater gradients away from the Site on the outside of the berms and an inward gradient towards the landfill on the inside of the berms.

3.1.2 Interface Aquifer Water Levels

The interpreted groundwater contours for the Interface Aquifer for spring and fall monitoring events are presented as Figures 11 and 12, respectively. Interface Aquifer groundwater contours illustrate a potentiometric high in the northwest portion of the property, which is consistent with historical groundwater patterns.

Water levels at TW45-99D (located along the west side of the Site) were inconsistent with water levels within the Interface Aquifer. This is attributed to slow recharge and has been observed in previous reporting periods. Water levels from TW45-99D were excluded from the Interface Aquifer groundwater contours.

Hydrographs generated using transducer and manual water level data for the 2020 monitoring period are presented in Appendix B. Hydrographs of historical groundwater measurements are presented in Appendix C. Hydrographs of the Interface Aquifer demonstrates the potentiometric head continues to rise at wells located off-Site and along the northern property boundary, as presented in Appendix C as Figures C-7 through C-13.

3.1.3 Shale Aquitard Water Levels

The two wells screened in the Shale Aquitard are located on the northeast corner (TW32-94-I) and to the south of the property (TW42-99D). Groundwater flow directions cannot be determined within the Shale Aquitard as there are insufficient monitoring locations to determine flow direction.

3.1.4 Vertical Gradients

Vertical gradients between hydrostratigraphic units were assessed at nested wells. Vertical gradients indicate the direction of the vertical component of groundwater flow. Vertical gradients can indicate the potential for landfill impacts to migrate into underlying hydrostratigraphic units.

The following sections compare the vertical gradients between the Active Aquitard and the Interface Aquifer, and between the Interface Aquifer and the Shale Aquitard.

3.1.4.1 Active Aquitard and Interface Aquifer Vertical Gradient

Vertical hydraulic gradients between the Active Aquitard and Interface Aquifer for spring and fall monitoring events are presented on Figure 13.and in Table 3.1. Note that Active Aquitard wells were pre-purged by Clean Harbors prior to the June and December 2020 monitoring events. Vertical gradients were not calculated during the June and December 2020 monitoring events as the respective water levels may not be representative of static conditions, if groundwater did not recharge fully following pre-purging.

Table 3.1 Active Aquitard and Interface Aquifer Vertical Gradients

Nested Pair Well Locations		Vertical Gradient	
Active Aquitard	Interface Aquifer	Pre-Purge April	Pre-Purge October
Wells Located Off the Facility Property			
TW55-09S	TW55-09D	0.04	0.01
TW56-11S	TW56-11D	0.03	0.02
TW57-11S	TW57-11D	0.07	-0.01
TW58-11S	TW56-11D	0.02	0.01
TW59-13S	TW59-13D	0.09	0.02
Wells Installed in the North Berm			
TW39-99I	TW39-99D	-0.01	-0.02
TW39-99S	TW39-99D	0.08	0.08
TW46-99I	TW46-99D	0.10	0.09
TW46-99S	TW46-99D	0.32	0.23
TW61-13I	TW61-13D	-0.03	-0.03
TW61-13S	TW61-13D	0.04	0.04
Wells along Perimeter of Facility Property, Downgradient of North Berm			
OW32-90S	OW32-90D	0.01	0.02
OW35-90S	OW35-05D	0.06	-0.03
TW21-94-II	TW47-00D	0.01	-0.05
TW22-94	TW22-99D	-	-
TW22-94	TW60-13D	-	-
TW32-94-IV	TW32-94-II	0.06	-0.03
TW40-99S	TW40-99D	0.00	-0.09
TW53-03S	TW53-03D	0.07	0.03
Wells along Perimeter of Facility Property, Removed from North Berm			
TW30-94	TW30-99D	0.04	-0.06
TW41-99S	TW41-99D	0.04	0.01
TW42-99S	TW49-00D	0.05	0.01
TW43-99S	TW43-99D	-0.01	-0.05
TW45-99S	TW45-99D	1.02	1.00
TW48-16S	TW48-00D	0.04	0.03

Notes:
Positive vertical gradient value reflects a downward gradient.
Negative vertical gradient value reflects an upward gradient.
- Insufficient groundwater elevation data to calculate vertical gradient

The calculated vertical gradients are generally very low. Considering the low vertical gradients and the low hydraulic conductivity of the aquitard separating the Active Aquitard from the Interface Aquifer, movement of groundwater between these units is expected to be very slow.

Weak upward and downward gradients were observed across the Site during the monitoring period, however downward gradients were more prevalent. A stronger downward gradient at TW45-99S and TW45-99D was calculated based on the field measurements, however the gradient is suspected to be unrepresentative since TW45-99D is slow to recharge.

Slight upward gradients were observed between wells TW39-99I/D, TW61-13I/D, TW21-94-II/TW47-99D, TW40-99S/D, and TW43-99S/D. These wells are generally located near the north property boundary or northwest corner of Site, with the exception of wells TW43-99S/D. The

potentiometric head of the Interface Aquifer was identified to be highest in the northwest corner of the property which is driving the upward gradient.

The vertical gradients exhibit a seasonal trend, with a slightly lower upwards gradient, or inversely, slightly more downward gradient, in October compared with April for monitoring well nests located away from the perimeter berms. The seasonal fluctuations are the result of the lower seasonal groundwater elevations of the Active Aquitard in the summer and fall.

3.1.4.2 Interface Aquifer and Shale Aquitard Vertical Gradient

The vertical gradients between the Interface Aquifer and the Shale Aquitard were assessed for nested pair wells TW32-94-II/TW32-94-I and TW49-00D/TW42-99D. During the April and October pre-purge monitoring events, the vertical gradients were calculated at 0.02 and 0.03 (downwards gradient) at TW32-94-II/TW32-94-I and -0.38 and -0.31 (upwards gradient) at TW49-00D/ TW42-99D. The gradients are presented on Figure 14.

3.2 Perimeter Groundwater Quality

The following sections discuss the groundwater quality results from the perimeter monitoring program. The long-term goal of the perimeter monitoring program is to monitor and identify potential landfill-related groundwater impacts migrating off Site. This was evaluated with the following:

- An initial review of analytical data for completeness and accuracy, including a review of laboratory QA/QC samples and protocols.
- Statistically assessing analytical data in comparison to historical data, with assistance from:
  - The comparison to the historical range
  - Shewhart's upper confidence limit (UCL) statistical analysis
  - Linear regression statistical analysis
- Identifying increasing trends in the data using concentration versus time plots.
- Comparing the analytical data to the ODWS and Provincial Water Quality Objectives (PWQO)
- Piper plots were prepared to identify the geochemical characteristics of groundwater within the Active Aquitard and Interface Aquifer

Historically, eight leachate indicator parameters were selected to evaluate the effects of the landfill on surrounding water quality, including: chloride, sodium, sulfate, potassium, fluoride, barium, bromide, and boron. These leachate indicator parameters were used to aid in determining potential leachate impacts to groundwater. The selection of specific leachate indicator parameters may be refined for future reporting periods. For consistency, the same leachate indicator parameters were selected for review of the 2020 analytical data. The available leachate quality data is discussed below and it is recommended the leachate indicator parameters are re-evaluated using samples collected from the leachate collection system in 2021.

Groundwater quality data collected from the Active Aquitard and Interface Aquifer are presented in Tables 4 through 11, showing the historical range and exceedances of ODWS and PWQO. Statistical analysis using UCLs and linear regression (trend analysis) is displayed for leachate

indicator parameters in Tables 13 and 14, respectively. Concentration versus time plots for leachate indicator parameters at all monitoring locations are presented in Appendix D. Electronic copies of all laboratory data reports for the monitoring period are included in Appendix E. Piper plots for the Active Aquitard and Interface Aquifer are provided in Appendix F.

Baseline Water Quality

The following table shows groundwater analytical results from Jagger Hims Limited (1996), which was collected from wells that were installed in an undisturbed area of the Facility when sampled. The analytical results show an increase in chloride and sodium concentrations with depth, and a decrease in sulfate concentrations with depth. The relatively high concentrations of sodium and chloride with depth and within the Interface Aquifer and Shale Aquitard are attributed to naturally occurring readily soluble salts in the shale matrix of the Kettle Point Formation. The concentrations of other leachate indicator parameters remain relatively consistent in different hydrostratigraphic units.

Table 3.2 Average Concentration of Leachate Indicator Parameters at Wells prior to Landfill Disturbance (Baseline)

Leachate Indicator Parameter	Average Concentration (mg/L)			
	Active Aquitard	Inactive Aquitard	Interface Aquifer	Shale Aquitard
Chloride	16	84	260.2	12,925
Sodium	58.9	127.8	254.1	8,163
Sulfate	389	53	3.7	4.8
Potassium	3.5	4.2	2.35	17.68
Fluoride	0.9	1.22	1.16	0.645
Barium	0.047	0.61	0.2	4.0
Bromide	<0.5	<0.5	<0.5	<5
Boron	0.022	19.5	1.42	5.19

Notes:
<0.5 = Not detected at the associated reporting limit

Leachate Quality

The following table shows the concentrations of leachate indicator parameters in leachate (RWDI, 2013). Samples were collected in 2012 from wells installed within the limit of waste. This work was completed in support of the Environmental Assessment (EA) for vertical expansion. Concentrations of chloride, sodium, sulfate, potassium, fluoride, and bromide are elevated in comparison to baseline concentrations shown in Table 3.2, above.

Samples from the leachate collection system (LCS) were not collected by Clean Harbors in 2020 due to abnormal operation of the LCS. Samples collected from the LCS would not have been considered representative in 2019 or 2020 due to the abnormal operation of the LCS. The sample results from 2018 were included for comparison purposes.

Table 3.3 shows the concentrations of leachate indicator parameters from previous sampling events, including the sample collected during the 2018 reporting period. The leachate indicator parameters from the LCS in 2018 show elevated concentrations compared to the pre-1986 landfill area concentrations, with the exception of barium. Sulfate, fluoride, and bromide were not analyzed as part of the sample collection.

Table 3.3 Concentrations of Leachate Indicator Parameters in Leachate Sources

Leachate Indicator Parameter	Average Concentration (mg/L)				
	Pre-1986 Landfill Area	Cell 16 Landfill Area (2012)	Cell 17 Landfill Area (2012)	Cell 18 Landfill Area (2012)	Cell 19 Landfill Area (2018)
Chloride	11,497	38,710	27,150	33,700	14,447
Sodium	8,290	17,275	22,875	28,540	12,033
Sulfate	779	5,508	6,433	10,708	-
Potassium	252	4,867	6,398	6,206	3,730
Fluoride	17.9	9.0	10.1	31.1	-
Barium	0.14	0.4	<0.5	2.3	0.17
Bromide	73.2	462	587	1,243	-
Boron	0.39	11.3	16.8	31	40.2

To properly assess the potential changes to leachate conditions over time, the leachate quality from the LCS, and the seasonal fluctuations, the collection and submission of leachate samples during the spring and fall is recommended. GHD recommends collecting a composite leachate sample from the LCS, starting in spring 2021. Samples are recommended to be analyzed for general indicators, major and minor ions semi-annually, total metals annually, and VOCs biennially (sampled in odd years). The recommend sampling and analysis plan for leachate samples from Cell 19 is based on the parameters and frequency of the Active Aquitard sampling and analysis plan and will provide insight into the evolution of leachate quality within the active landfill cell.

3.2.1 Active Aquitard Groundwater Quality

3.2.1.1 Inorganic Chemistry

Inorganic chemistry samples are analyzed for general indicators, major and minor ions, and metals. Inorganic results, with respect to the ODWS and PWQO, are described in the following sections.

Comparison to ODWS

Active Aquitard wells with concentrations reported exceeding the ODWS in 2020 are shown in Table 3.4.

Table 3.4 Active Aquitard Wells with ODWS Exceedances

Monitoring Location		Exceeding ODWS									
		TDS (AO)		Alkalinity (OG)		Chloride (AO)		Sulfate (AO)		Sodium (AO)	
Location	Well ID	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
ODWS (mg/L)		500		30-500		250		500		20/200	
Located off the Facility Property	TW55-09S	x	x							x	x
	TW56-11S	x	x						x	x	x
	TW57-11S	x	x						x	x	x
	TW58-11S	x	x			x	x	x	x	x	x
	TW59-13S	x	x							x	x
Northern Berm	TW39-99I	x	x	x	x					x	x
	TW39-99S	x	x							x	x
	TW46-99I	x	x							x	x
	TW46-99S	x	x					x	x	x	x

Table 3.4 Active Aquitard Wells with ODWS Exceedances

Monitoring Location		Exceeding ODWS									
		TDS (AO)		Alkalinity (OG)		Chloride (AO)		Sulfate (AO)		Sodium (AO)	
Location	Well ID	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
	TW61-13I	x	x							x	x
	TW61-13S	x	x							x	x
Downgradient of Northern Berm	OW32-90S	x	x							x	x
	OW35-90S	x	x					x	x	x	x
	TW21-94-II	x	x								
	TW22-94	x	x					x	x	x	x
	TW32-94-IV	x	x							x	x
	TW40-99S	x	x							x	x
	TW53-03S	x	x								x
Along Property Boundary (Removed from Northern Berm)	TW30-94	x								x	
	TW41-99S	x	x							x	x
	TW42-99S	x	x					x	x	x	x
	TW43-99S		x								x
	TW45-99S	x	x							x	x
	TW62-13S	x	x							x	x
	TW48-16S	x	x							x	x
Internal to Property	TW63-13S	x	x			x	x			x	x

Notes:

(1) Aesthetic objectives (AO) were developed based for parameters affecting the aesthetic quality of drinking water sources. They are not based on risks to human health.

(2) Operational guidelines (OG) were developed based for parameters that may cause operational issues in water distribution infrastructure. They are not based on risks to human health.

(3) Maximum allowable concentration (MAC) guidelines were developed based on risk to human health

x Identifies exceedances for the applicable well, parameter and sampling event

x Exceeding associated standard and the historical range

Samples from Active Aquitard monitoring locations had exceedances of the ODWS for TDS, alkalinity, chloride, sulfate, and sodium. It should be noted the ODWS for these parameters are aesthetic objectives (AO) or operational guidelines (OG) and are not based on risk to human health. AOs and OGs were developed for parameters affecting the aesthetic or operational quality of drinking water sources (such as appearance, taste, or hardness). Of the parameters with exceedances, chloride, sodium, and sulfate are considered leachate indicator parameters. The majority of ODWS exceedances were within or below historical ranges.

The exceedances above the ODWS for TDS are fairly consistent across the well network, including exceedances at locations off the Facility property. TDS was detected within or below the historical range, with the exception of monitoring locations TW61-13I, TW35-90S, TW21-94-II, TW40-99S, TW42-99S, and TW48-16S. TDS has historically been elevated across the well network. The concentrations are likely attributed to natural conditions related to the local geology. In the absence of other elevated indicator parameters, these TDS concentrations and are not likely the result of landfill impacts.

There are two ODWS AOs for sodium, 20 mg/L and 200 mg/L, with the most commonly used AO being 200 mg/L. The lower AO (20 mg/L) was developed for people on sodium restricted diets and thus is inappropriate for comparison purposes in this case. All of the exceedances for sodium in the Active Aquitard were in exceedance of the lower standard (20 mg/L) but were detected at

concentrations less than the upper standard (200 mg/L). Exceedances of the lower standard are considered to be insignificant as concentrations of sodium in baseline groundwater samples (Table 3.2) also exceeded the lower ODWS standard of 20 mg/L.

Monitoring locations in the Active Aquitard also had exceedances of sulfate above the ODWS. In 2015, an investigation was conducted at TW42-99S due to the detection of atypical sulfate concentrations. Sulfate was detected at comparable concentrations in 2020 to historical results (1,770 and 1,810 mg/L in the spring and fall 2020, respectively). The sulfate UCL at TW42-99S was calculated to be 923 mg/L in 2020, which is lower than the sulfate concentrations detected in 2020. The linear regression statistical analysis identified no trend in sulfate concentrations at TW42-99S in 2020. In 2020, statistically significant increasing trends in sulfate concentrations were observed at Active Aquitard wells TW22-94, OW35-90S, TW40-99S, TW41-99S, and TW61-13I. Other leachate indicator parameters at TW22-94, OW35-90S, TW40-99S, and TW41-99Sshow decreasing or no trends, as observed in the concentration versus time plots (Appendix D). Well TW61-13I also showed an increasing trend for sodium, although concentrations remain low. Historical sulfate concentrations (noted in brackets) are lower at TW22-94 (282 – 692 mg/L), OW35-90S (152 – 628 mg/L), TW40-99S (126 – 348 mg/L), TW41-99S (238 – 603 mg/L), and TW61-13I (189 – 294 mg/L) compared to TW42-99S (162 – 1980 mg/L), although sulfate concentrations are still elevated compared to baseline samples (as shown in Table 3.2). The 2015 investigation at TW42-99S identified previous studies (Abbott, 1987) that acknowledged the presence of elevated sulfate concentrations as common in Lambton County groundwater. The studies concluded sulfate is resultant from the dissolution of sulfate minerals and oxidation of sulfur in the clay till. In the absence of elevated concentrations of other leachate indicator parameters (such as alkalinity, chloride, bromide), it is interpreted the sulfate detections are not related to the landfill.

Comparison to PWQO

PWQO exceedances were noted for boron, chromium, and nickel in the Active Aquitard. The PWQO criteria for these parameters are lower than the respective ODWS criteria (with the exception of iron), as the PWQOs were developed for the protection of freshwater aquatic life. The PWQOs are being applied to groundwater chemistry because shallow groundwater can discharge to surface water ditches locally.

Of the parameters exceeding the PWQO, boron is considered a leachate indicator parameter. Wells across the monitoring network had boron exceedances for PWQO, which is consistent with previous results. Concentrations of boron were within historical ranges.

Chromium was detected above the PWQO at OW35-90S during the reporting period. As noted above, OW35-90S also showed an increasing trend for sulfate. It should be noted that the reporting limit used in 2020 was higher than the PWQO standard of 0.001 mg/L, which resulted in fewer chromium PWQO exceedances. A raised reporting limit was also used in 2019. In 2018, the reporting limit for chromium was lower, which resulted in multiple exceedances of the PWQO. The difference in the chromium reporting limit between 2018 and 2019/2020 is suspected to be the source of difference in number of PWQO exceedances.

Nickel concentrations exceeded the PWQO at one well, TW63-13S, in spring 2020. The nickel concentration from spring 2020 was within the historical range. Leachate indicator concentrations at TW63-13S were low and had decreasing or no trends.

Monitoring Locations Exceeding the Historical Range

In the Active Aquitard, locations with laboratory detections of parameters exceeding their historical ranges, but below the respective ODWS and PWQO standards (if applicable) are summarized in Table 3.5. Most locations showed only slight exceedances of the historical range.

Table 3.5 Active Aquitard Locations Exceeding the Historical Range

Monitoring Location		Parameters Exceeding Historical Range
Located off the Facility Property	TW55-09S	Potassium
	TW56-11S	Alkalinity
	TW59-13S	Conductivity, Alkalinity
Northern Berm	TW39-99I	Conductivity
	TW39-99S	Conductivity
	TW46-99I	Conductivity, Alkalinity
	TW61-13I	Conductivity, TDS, Sulfate, Calcium, Magnesium, Sodium
	TW61-13S	Conductivity, Alkalinity
Downgradient of Northern Berm	OW32-90S	Conductivity, Calcium, Nickel
	OW35-90S	Sulfate, Calcium, Magnesium
	TW21-94-II	Conductivity, TDS,
	TW22-94	Conductivity, Calcium
	TW40-99S	Conductivity, TDS, Alkalinity, Magnesium, Calcium, Potassium, Sodium
	TW53-03S	Conductivity
Along Property Boundary (Removed from Northern Berm)	TW30-94	Conductivity
	TW41-99S	Conductivity, Bromide
	TW42-99S	Conductivity
	TW43-99S	Chloride
	TW45-99S	Magnesium
	TW62-13S	Chloride
	TW48-16S	Conductivity, Sulfate
Internal to Property	TW63-13S	Conductivity

Monitoring Locations with Increasing Trends

Statistical analysis was performed on leachate indicator parameter concentrations to determine if detections exhibited statistically significant trends. The majority of wells showed no trend or decreasing trends for leachate indicator parameters. Concentration versus time plots and statistical UCL and linear regression are summarized in Appendix D and Tables 13 and 14, respectively. Increasing trends were observed at the following locations:

Table 3.6 Active Aquitard Locations with Increasing Trends

Monitoring Location	Well ID	Parameter with Increasing Trend	Notes
Located off the Facility Property	TW59-13S	Chloride	• Spring and fall concentrations below ODWS and within historical range
Northern Berm	TW61-13I	Sulfate	• Spring and fall concentrations below ODWS but exceed the historical range
		Sodium	• Spring and fall concentrations above lower ODWS (20 mg/L) and exceed historical range

Table 3.6 Active Aquitard Locations with Increasing Trends

Monitoring Location	Well ID	Parameter with Increasing Trend	Notes
Downgradient of Northern Berm	OW35-90S	Sulfate	• Spring and fall concentrations exceed ODWS. Spring concentration exceeds the historical range.
	TW22-94	Sulfate	• Spring and fall concentrations exceed ODWS but are within historical range.
	TW40-99S	Sulfate	• Spring and fall concentrations below ODWS and within historical range
Along Property Boundary	TW41-99S	Sulfate	• Spring and fall concentrations below ODWS and within historical range
	TW62-13S	Chloride	• Spring and fall concentrations below ODWS. Spring concentration exceeds historical range

Active Aquitard Geochemical Fingerprint

To corroborate interpretations of groundwater quality within the Active Aquitard, Piper plots were prepared. A Piper plot presents the major ions as percentages and is used to determine patterns in the geochemical character of water samples. Cations and anions are plotted in two triangles at the base of the plot. The compositions from the base triangles are then projected up to the central diamond. This central diamond therefore presents the data from all of the major ions in one plot. On a Piper plot, samples with similar geochemical character (similar sources) will plot relatively close to one another. Because the major ions are used, a Piper plot is useful for detecting differences in the geochemical character between water samples. A Piper plot for wells in the Active Aquitard are provided in Appendix F.

Generally, the Piper plot shows similar geochemical patterns between all wells in the Active Aquitard. This supports the interpretation that leachate-impacts are generally not observed within the Active Aquitard. Active Aquitard geochemistry shows low proportions of sodium and chloride, and high concentrations of calcium and sulfate. Well TW42-99S is plotted with higher proportions of sulfate, which is consistent with the high sulfate concentrations detected at this location.

Samples from the LCS for select leachate indicator parameters were not collected by Clean Harbors in 2020 due to abnormal operation of the LCS. Samples collected from the LCS were not considered representative in 2020. Leachate data will be plotted with the Active Aquitard groundwater data for future reports to compare leachate and Active Aquitard geochemistry.

3.2.1.2 Organic Chemistry

Biennial organic chemistry samples are analyzed for VOCs. VOC samples were collected in spring 2019. There were no VOC samples collected in 2020.

3.2.2 Interface Aquifer Groundwater Quality

3.2.2.1 Inorganic Chemistry

Inorganic chemistry samples are analyzed for general indicators, major and minor ions, and metals. Inorganic results, with respect to the ODWS, are described in the following sections. Interface Aquifer groundwater quality is not compared to the PWQO, as it is located approximately 40 mbgs and it is unlikely groundwater from the Interface Aquifer discharges to surface water.

Comparison to ODWS

Interface Aquifer wells exceeding the ODWS are shown in Table 3.7.

Table 3.7 Interface Aquifer Wells with ODWS Exceedances

Monitoring Location		Exceeding ODWS									
		TDS (AO)		Alkalinity (OG)		Chloride (AO)		Sodium (AO)		Iron (AO)	Barium (MAC)
Location	Well ID	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Spring
ODWS (mg/L)		500		30-500		250		20/200		0.3	1.0
Located off the Facility Property	TW55-09D	x	x			x	x	x	x		
	TW56-11D	x	x			x	x	x	x	x	
	TW57-11D	x	x			x	x	x	x	x	
	TW59-13D		x					x	x	x	
Along Property Boundary	OW32-90D	x	x			x	x	x	x	x	
	OW35-05D	x	x			x	x	x	x	x	
	TW22-99D	x	x	x	x	x	x	x	x		
	TW30-99D	x	x					x	x	x	
	TW32-94-II	x	x			x	x	x	x		
	TW40-99D	x	x			x	x	x	x	x	
	TW41-99D	x	x					x	x		
	TW43-99D	x	x					x	x	x	
	TW45-99D	x	x	x	x	x	x	x	x	x	
	TW47-00D	x	x	x	x	x	x	x	x	x	x
	TW48-00D	x	x			x	x	x	x		
	TW49-00D							x	x		
	TW53-03D	x				x		x	x	x	
	TW60-13D	x	x	x	x	x	x	x	x		
Internal to Property	TW39-99D	x	x					x	x	x	
	TW46-99D	x	x					x	x	x	
	TW54-09D		x					x	x		
	TW61-13D	x	x					x	x		

Notes:

(1) Aesthetic objectives (AO) were developed based for parameters affecting the aesthetic quality of drinking water sources. They are not based on risks to human health.
(2) Operational guidelines (OG) were developed based for parameters that may cause operational issues in water distribution infrastructure. They are not based on risks to human health.
(3) Maximum allowable concentrations (MAC) were developed based on effects to human health.
(4) Interim maximum allowable concentrations (IMAC) were developed based on effects to human health.
x Identifies exceedances for the applicable well, parameter and sampling event
x Exceeding associated standard and the historical range

Interface Aquifer samples had ODWS exceedances for TDS, alkalinity, barium, chloride, iron, and sodium. It should be noted the ODWS for these parameters were developed based on AO or OG, with the exception of barium which has a standard based on risks to human health. Of these exceedances, chloride, sodium, and barium are considered leachate indicator parameters.

TDS, sodium and chloride were detected above the ODWS consistently across the Site. As shown in Table 3.2, sodium and chloride were detected at high concentrations (above ODWS) in baseline samples collected prior to landfilling disturbance, and were detected at higher concentrations with depth. This was attributed to naturally occurring soluble salts within the Kettle Point Formation shale. Sodium was detected above the ODWS at all Interface Aquifer monitoring locations, except for at

TW48-00D. Sodium and chloride were detected within historical ranges, except for chloride at TW57-11D (fall, chloride only) and TW45-99D. No statistically significant increasing trends were identified at TW57-11D or TW45-99D.

TDS has historically been detected in exceedance of the ODWS across the Site. TDS was detected within historical ranges in 2020. Detections of TDS are likely attributed to natural conditions, based on a comparison to baseline groundwater quality.

Barium was detected at concentrations above the ODWS at TW47-00D but within the historical range. Barium showed a decreasing trend at TW47-00D and no statistically significant trends were identified in the other leachate indicator parameter concentrations at TW47-00D. Elevated barium has historically been identified in groundwater samples collected from wells instrumented in the Kettle Point Shale formations. The borehole log for TW47-00D indicates a very thin basal till and that the majority of the screen is instrumented in the Kettle Point Shale. The elevated barium is likely caused by the background barium within the Kettle Point Shale.

Iron was detected above the ODWS at monitoring locations located on and off-Site. As described in Section 1.2.4, iron has been regionally detected above the ODWS. The detection of iron on and off-Site indicates the elevated iron concentrations may be the result of regional groundwater quality. Concentrations were above the historical range at TW56-11D, TW59-13D, TW30-99D, OW32-90D, OW35-05D, TW45-99D, and TW39-99D. Since iron is not a leachate indicator parameter, statistical analysis and concentration versus time plots were not developed. Other leachate indicator parameters at these locations were not found to be significantly increasing, with the exception of an increasing trend for chloride at OW35-05D. It is expected that statistically significant increasing trends or elevated concentrations of other leachate indicator parameters would be apparent if iron was resultant from landfill impacts. Continued monitoring of at these locations will provide additional insight into long-term trends in groundwater quality.

Monitoring Locations Exceeding the Historical Range

Wells TW55-09D and TW61-13D had detections of boron slightly exceeding the historical range. Concentrations of boron at these wells were above the applicable PWQO but below the applicable ODWS. Other parameters at TW61-13D show low concentrations, except for ODWS exceedances for TDS and sodium.

Nickel concentrations exceeded the historical range at well TW46-99D in spring 2020. The nickel concentration was below the applicable PWQO. No trends in leachate indicator parameter concentrations are observed at TW46-99D.

Monitoring Locations with Increasing Trends

Statistical analysis was performed on leachate indicator parameter concentrations to determine if detections exhibited statistically significant trends. The majority of wells showed no trend or decreasing trends for leachate indicator parameters. Concentration versus time plots and statistical UCL and linear regression are summarized in Appendix D and Tables 13 and 14, respectively. Increasing trends were observed at the following locations:

Table 3.8 Interface Aquifer Locations with Increasing Trends

Monitoring Location	Leachate Indicator Parameter with Increasing Trend	Notes
TW55-09D	Chloride	- Spring and fall concentrations above ODWS but within historical range
TW54-09D	Chloride	- Spring and fall concentrations below ODWS and within historical range
TW61-13D	Sulfate	- Spring and fall concentrations below ODWS but exceed historical range
OW35-05D	Chloride	- Spring and fall concentrations above ODWS. Fall concentration exceeds historical range
TW43-99D	Chloride	- Spring and fall concentrations below ODWS and within historical range

Interface Aquifer Geochemical Fingerprint

Piper plots were prepared in order to corroborate interpretations of groundwater quality within the Interface Aquifer. Section 3.2.1 provides more information on the background and purpose of Piper plots.

Generally, the Piper plot shows similar geochemical patterns between all wells in the Interface Aquifer. This supports the interpretation that leachate-impacts are generally not observed within the Interface Aquifer. Interface Aquifer geochemistry shows low proportions of sulfate and calcium, with high proportions of sodium and chloride.

Samples from the LCS for select leachate indicator parameters were not collected by Clean Harbors in 2020 due to abnormal operation of the LCS. Samples collected from the LCS were not considered representative in 2020. Leachate data will be plotted with the Interface Aquifer groundwater data for future reports to compare leachate and Interface Aquifer geochemistry.

3.2.2.2 Organic Chemistry

VOC samples are collected annually from the Interface Aquifer. Table 3.9 shows the organic compounds detected in Interface Aquifer.

Table 3.9 Interface Aquifer Wells with VOC Detections

Monitoring Location	Well ID	VOCs Detected		
Location		Benzene	Chloroform	Bromoform
Located off the Facility Property	TW57-11D	x(1)		
	TW59-13D	x(1)		
Internal to Property	TW46-99D		x	x
	TW54-09D	x		
	TW61-13D	x		
Perimeter of the Facility	TW43-99D	x		
	TW45-99D	x(1)		
	TW60-13D	x		

Notes:
(1) Benzene detection exceeded ODWS of 1 µg/L
x Concentrations identified above laboratory analytical reporting limit

Table 3.9 Interface Aquifer Wells with VOC Detections

Monitoring Location	Well ID	VOCs Detected		
Location		Benzene	Chloroform	Bromoform

x Exceeding associated standard and the historical range

Samples from the Interface Aquifer have historically had detections of VOCs, including detections of benzene above the ODWS. VOCs from naturally-occurring petroleum hydrocarbons (benzene, toluene, ethylbenzene, and xylenes) are found regionally due to bitumen with the Kettle Point Formation shale. In 2020, benzene was detected in the Interface Aquifer both on and off-Site. The benzene detections are not interpreted to be landfill related.

Chloroform and bromoform were detected at TW46-99D. These parameters were detected above the historical range. No trends are observed within leachate indicator parameters at TW46-99D and accordingly, the chloroform and bromoform detections at TW46-99D in 2020 are not interpreted to be landfill-related., Further monitoring results will help to indicate whether these detections are anomalous.

Well TW22-99D previously had detectable concentrations of trichloroethylene (TCE), cis-1,2-dichloroethene, and MEK in recent reporting years. Organics were not sampled at well TW22-99D during the reporting period. The previous detections were not attributed to the landfill. Leachate indicator parameters show no trends at TW22-99D.

3.2.3 Shale Aquitard

There are two wells screened with the Shale Aquitard, TW32-91-I and TW42-99D. The Shale Aquitard wells are sampled biennially, with the latest sampling occurring in 2017. In 2019, Shale Aquitard wells were not sampled due to a scheduling error. Wells TW32-91-I and TW42-99D were intended to be sampled in 2020, although they were inadvertently missed. Sampling of shale aquitard wells will resume on the regular biennial schedule in 2021.

3.3 Compliance

MECP Guideline B-7, entitled *Incorporation of the Reasonable Use Concept into the MOEE Groundwater Management Activities*, regulates the allowable effects, which a landfill site can have on groundwater in the surrounding environment (MOEE, 1994). The Reasonable Use Concept (RUC) maximum concentration of a particular contaminant that is acceptable in the groundwater beneath the adjacent property (to the Site) is calculated in accordance with the following relationship as outlined in related Guideline B-7-1 (*Determination of Contaminant Limits and Attenuation Zones)*:

$$MABC = Cb + x(Cr - Cb)$$

Where:

MABC = Maximum Acceptable Boundary Concentration acceptable in groundwater on adjacent property (the term Cm, maximum acceptable concentration, is used in Guideline B-7-1)

Cb = background concentration of a particular groundwater contaminant before it has been affected by human activity

Cr = maximum allowable concentration in groundwater as per Ontario's water management guideline deemed appropriate for reasonable use at the site in question; this is the ODWS of the particular contaminant

X = 0.25 for health related parameters, 0.5 for non-health related and other parameters

Allowable concentrations for groundwater leaving a site determined through the MABC calculation are site-specific. Guideline B-7 also states that if background water quality is higher than ODWS guidelines where the water may be used for consumption, the landowner or user is responsible to ensure water quality is not impacted beyond what is already present.

MABC values have not been determined for OG parameters (alkalinity, hardness, and pH), as well as temperature, as the ODWS limits apply more specifically to water treatment facilities and not groundwater sampled from wells. Applicable MABC values have been included in Tables 15 through 17 for wells to which these criteria apply.

As previously mentioned because of their upgradient position and the historic analytical results, Active Aquitard wells TW55-09S, TW56-11S, TW57-11S, and TW59-13S and Interface Aquifer wells TW55-09D, TW56-11D, TW57-11D, and TW59-13D are considered representative of background water quality for the groundwater in the vicinity of the Facility. The MABC were revised in 2020, updating the mean background concentrations for the Active Aquitard and Interface Aquifer groundwater parameters using monitoring data from 2016 to 2020. The MABC for all AO, MAC, and Interim Maximum Acceptable Concentrations (IMAC) parameters should be updated every 5 years to account for natural fluctuations in the background groundwater conditions. It is recommended that the MABC be recalculated for the 2025 Annual Report.

3.3.1 Reasonable Use Criteria Exceedances

The calculated RUC values were compared to the laboratory analytical groundwater results from wells located along the property boundary for the spring and fall samplings. Results are shown on Tables 15 through 17.

3.3.1.1 Active Aquitard RUC Exceedances

RUC exceedances identified in the Active Aquitard wells are presented in Table 3.10. Fourteen Active Aquitard wells were compared to the RUC standards.

RUC exceedances for TDS are fairly consistent across the well network, as are TDS ODWS exceedances on and off the property. TDS has historically been detected across the well network due to the natural background groundwater quality. These detections are likely attributed to characteristics of the local geology and are not likely resultant of landfill impacts. RUC exceedances for TDS are not shown in Table 3.10.

Table 3.10 Active Aquitard RUC Exceedances and Indicator Parameters with Increasing Trends

Wells		RUC Exceedances				Statistical Significant Increasing Trend Parameters
		Sulfate		Fluoride		
Location	Well ID	Spring	Fall	Spring	Fall	
RUC (mg/L)		471		0.75		-

Table 3.10 Active Aquitard RUC Exceedances and Indicator Parameters with Increasing Trends

Wells		RUC Exceedances				Statistical Significant Increasing Trend Parameters
		Sulfate		Fluoride		
Location	Well ID	Spring	Fall	Spring	Fall	
Downgradient of Northern Berm	OW35-90S	x	x			-
	TW22-94	x	x	x		Sulfate
	TW40-99S			x		Sulfate
Along Property Boundary	TW30-94			x		-
	TW42-99S	x	x			-
	TW48-16S			x		-

Notes:

x Identifies exceedances for the applicable well, parameter and sampling event

TDS has been excluded from the RUC as it has been identified to occur naturally above the ODWS standard

Based on the water quality observed, the RUC was exceeded for sulfate and fluoride during the reporting period. Exceedances for sulfate and fluoride are not interpreted to be landfill-related as statistically significant increasing trends of multiple leachate indicator parameters would be present if the source of the impacts was the landfill.

Note that a RUC exceedance and a statistically significant trend was observed for sulfate at well TW22-94. This is consistent with previous reporting periods. Sulfate concentrations in 2020 were within the historical range. The RUC exceedance for sulfate at TW22-94 is not interpreted to be landfill-related.

3.3.1.2 Interface Aquifer RUC Exceedances

RUC exceedances identified in the Interface Aquifer wells are presented in Table 3.11. Fourteen Interface Aquifer wells were compared to the RUC standards.

The mean background groundwater concentrations of off-Site Interface Aquifer wells identified elevated concentrations of TDS, chloride, iron, sodium and benzene above the OWDS. RUC standards were not calculated for these parameters. The elevated background concentrations occur from naturally occurring minerals within the Kettle Point Formation shale underlying the Interface Aquifer. These parameters have been excluded from the RUC summary of exceedance Table 3.11.

Table 3.11 Interface Aquifer RUC Exceedances

Monitoring Location		Exceeding RUC				Statistical Significant Increasing Trend Parameters
		Fluoride		Barium	Boron	
Location	Well ID	Spring	Fall	Spring	Spring	
RUC (mg/L)		1.04		0.35	2.68	
Along property boundary	OW32-90D	x				-
	TW22-99D			x	x	-
	TW30-99D	x		x		-
	TW40-99D	x				-
	TW41-99D	x				-
	TW45-99D				x	-
	TW47-00D			x	x	-
	TW48-00D	x				-
	TW49-00D	x	x			-
	TW53-03D	x				-
	TW60-13D			x	x	-

Notes:

x Identifies exceedances for the applicable well, parameter and sampling event

Exceedances of benzene, chloride and sodium have been excluded as the background concentration exceeds the ODWS

In 2020, there were multiple RUC exceedances for fluoride, which were consistent with results from 2019. Regional concentrations of fluoride often exceed the ODWS due to soluble salts in the Kettle Point Formation shale. RUC exceedances for fluoride in 2020 are not interpreted to be landfill-related as there were no statistically significant increasing trends for leachate indicator parameters.

Based on the water quality observed, RUC exceedances for barium and boron are not interpreted to be landfill-related as statistically significant increasing trends of multiple leachate indicator parameters would be present if the source of the impacts was the landfill.

4. Sub-Cell 3 Remedial Performance Monitoring Program

The Sub-Cell 3 monitoring program was developed to assess the performance of remedial measures in Sub-Cell 3. Sub-Cell 3 remedial measures consist of north and south Hydraulic Control Layers (HCL). The monitoring program conducted in Sub-Cell 3 includes collecting water levels and groundwater samples at two HCL extraction wells (EW1a-01 and EW2a-01) and six monitoring wells, either screened in the HCL (EW1b-13, EW1c-13, EW2b-13, EW2c-13) or the Interface Aquifer (PW1-N, and PW2-S[R11]). Extraction well, EW1a-01, and monitoring wells, EW1b-13, and EW1c-13, are located in the northern the HCL. Extraction well, EW2a-01m and monitoring wells, EW2b-13 and EW2c-13, are located to the southern HCL which includes a hydraulic control drain.

The purpose of hydraulic monitoring in Sub-Cell 3 is to confirm an appropriate head difference between the HCL and Interface Aquifer is maintained by the HCL extraction wells. Discharge from the HCL extraction wells is treated as surface water at the Site and is sampled semi-annually.

4.1 Sub-Cell 3 Water Level Data

Individual hydrographs are presented in Appendix B, including the four HCL monitoring wells (Figures B-18 through B-21), and the two Interface Aquifer monitoring wells PW1-N and PW2-S(R11) (B-9 and B-10). A hydrograph of the transducer data from the six Sub-Cell 3 monitoring wells is presented as Figure 15. Hydrographs were not created for HCL extraction wells EW1a-01 and EW2a-01 during the reporting period as transducer data was not available. Manual water levels collected for the HCL extraction wells, EW1a-01 and EW2a-01, are presented on Figure 15.

The hydrographs for the Interface Aquifer wells, PW1-N and PW2-S[R11], showed consistent groundwater elevations, ranging from 198.3 to 199.1 and 198.0 to 199.1 mAMSL, respectively. Groundwater elevations at PW1-N and PW2-S[R11] were consistent with elevations from 2019.

The hydrographs from the four HCL monitoring wells (EW1b-13, EW1c-13, EW2b-13, EW2c-13) showed a gradual increase in groundwater elevations from December 2019 until mid January 2020. As discussed in the 2019 Annual Monitoring Report, the groundwater elevations at HCL wells increased throughout 2019, from the operating level at approximately 188 mAMSL in December 2018 to approximately 196 or 200 mAMSL in January 2020. During this time, it is suspected that one or both of the extraction well pumps were not functioning properly. In response to the rising water levels within the HCL, Clean Harbors performed an inspection on the extraction well pumps and performed maintenance, as required. By mid-January 2020, both pumps were operating, and water levels within the HCL decreased to approximately 188 mAMSL.

Based on the hydrographs in Appendix B and Figure 15, it is suspected that the extraction well pumps ceased operating shortly after the maintenance work in early 2020. Groundwater elevations within the monitoring wells are observed to rebound to approximately 195.5 to199 mAMSL from January to early May 2020. Further maintenance was performed by Clean Harbors in May 2020, at which time both extraction well pumps began to function properly and the groundwater elevations in the Sub-Cell 3 decreased to approximately 188 mAMSL. Groundwater elevations within the HCL were generally maintained at approximately 188 mAMSL until mid November 2020.

In late 2020, it is suspected that the extraction well pumps stopped operating again. Groundwater elevations at wells EW1b-13 and EW1c-13 increased from approximately 188 mAMSL to 197 mAMSL over a 17 hour period, and remained elevated for the remainder of the reporting period. Groundwater elevations at EW2b-13 and EW2c-13 also increased to approximately 193 mAMSL during this time, although elevations were brought down in mid-December 2020. The increase in groundwater elevations at monitoring wells within the HCL in late 2020 were generally correlated to large rainfall events. The Sub-Cell 3 Group Hydrograph and Site Hourly Rainfall for the middle of November through December is presented on Figure 16. It is recommended the functionality of the Sub-Cell 3 be evaluated based on this observation and the lack of consistent operation from extraction well pumps in 2020,

Vertical gradients were calculated using the groundwater elevations from HCL wells (EW1b-13, EW1c-13, EW2b-13 and EW2c-13) and Interface Aquifer well, PW1-N. The average vertical gradients calculated for the northern HCL/Interface Aquifer (EW1b-13 and EW1c-13) and southern HCL/Interface Aquifer (EW2b-13 and EW2c-13) are presented on Figures 17 and 18, respectively. Minimum and maximum vertical gradients and groundwater elevations are presented on Table 4.1.

Table 4.1 Summary of Vertical Gradients and Groundwater Elevations

Interface Aquifer Well	Vertical Gradient		Groundwater Elevation (mAMSL)	
	Minimum	Maximum	Minimum	Maximum
Wells within the HCL of Sub-Cell 3				
EW1a-01	-0.56(1)	0.10(1)-	188.49(1)	200.54(1)
EW1b-13	-0.67	0.21	188.03	202.34
EW1c-13	-0.66	0.22	187.76	202.49
EW2a-01	-0.57(1)	-0.01(1)	188.21(1)	198.69(1)
EW2b-01	-0.60	0.07	187.85	200.08
EW2c-13	-0.65	0.08	187.61	200.19
Wells within the Interface Aquifer Adjacent to Sub-Cell 3				
PW1-N	N/A	N/A	198.36	199.14
PW2-S(R11)	N/A	N/A	198.06(2)	199.14(2)

Notes:

Negative vertical gradient value reflects an upward gradient.
Positive vertical gradient values reflect a downward gradient.

(1) Transducer data was not available for EW1a-01 and EW2a-01 and the minimum and maximum groundwater elevations were based on the six manual water level events.
(2) PW2-S(R11) transducer data only available to March 3, 2020.

Groundwater extraction from HCL extraction well EW1a-01 maintained a head pressure that was lower than Interface Aquifer water levels and an upward vertical gradient throughout most of 2020 (as measured at EW1b-13, EW1c-13, PW1-N, and PW2-S[R11]). until November 30th 2020 through to December 15th, 2020 (the end of available transducer data for this reporting period). The increase in the HCL water level elevation in late 2020 from the inconsistent pump operation and rainfall event, resulted in a downwards vertical gradient from November 30 to December 8 and December 13 through December 15 2020.

Groundwater extraction from hydraulic control drain extraction well EW2a-01 did not maintained a head pressure that was lower than Interface Aquifer throughout 2020 (as measured at EW2b-13, EW2c-13, and PW1-N). An upward vertical gradient from the Interface Aquifer to the hydraulic control drain was maintained at extraction well EW2a-01 from January 17 through April 22 and May 13 to December 15, 2020 (the end of available transducer data for this reporting period).

Based on these observations, an upward vertical gradient from the Interface Aquifer to the HCL was not maintained during 2020. Mean vertical gradients are presented for the HCL and Hydraulic Control Drain on Figures 17 and 18, respectively.

With the approval of the surface water management amendments, work in the Sub-Cell 3 area commenced in the summer of 2020 and will continue through 2021. The proposed changes include elevating the current surface of Cell 18, Sub-Cell 1, 2, and 3 by 2 to 4 metres. The increase in elevation will promote better surface water drainage. The elevation of the surface contours will require the various monitoring and extraction wells to be adjusted to reflect the addition of the additional clay soils. In 2021, the area will be raised and re-contoured and the Sub-Cell 3 surface components assessed and re-designed to reflect the long-term operating requirements and reduce maintenance issues identified. As part of the assessment, groundwater elevation trigger levels and response actions should be developed to help ensure that the Sub-Cell 3 groundwater extraction system performs as intended throughout the year. To ensure the performance and longevity of the

Sub-Cell 3 groundwater extraction system, it is recommended an operational and maintenance procedure and an inspection checklist be developed.

4.2 Sub-Cell 3 Groundwater Quality

Groundwater quality from Sub-Cell 3 is assessed with respect to the ODWS and the PWQO, as groundwater extracted from the HCL extraction wells discharges to surface water. Analytical results for the Sub-Cell 3 monitoring program are presented in Table 12.

Groundwater quality from the HCL and the Sub-Cell 3 Interface Aquifer wells (PW1-N, and PW2-S[R11]) had detections of TDS, iron, chloride, and sodium above the ODWS. Groundwater concentrations from the HCL and the Sub-Cell 3 Interface Aquifer wells were identified above the PWQO for boron and iron. These results are consistent with historical groundwater quality. TDS, chloride and sodium concentrations are generally elevated in Active Aquitard and Interface Aquifer off-Site wells. Additionally, elevated boron and iron concentrations are observed in off-Site Interface Aquifer wells. The Sub-Cell 3 remedial system is designed to create an upward vertical gradient from the Interface Aquifer to the HCL and the groundwater quality is likely reflective of contributions to groundwater quality from both the Active Aquitard and Interface Aquifer.

The groundwater quality at Sub-Cell 3 Interface Aquifer wells, PW1-N and PW2-S(R11), was consistent with historical results during the reporting period. Concentrations were within or below the historical range. Statistically significant increasing trends were detected at PW1-N (sulfate) and PW2-S(R11) (sulfate and potassium). Sulfate and potassium concentrations remained low, with concentrations below the ODWS and within the historical range. Other leachate indicator parameters show no or decreasing trends at PW1-N and PW2-S(R11).

The groundwater quality at HCL wells and the Sub-Cell 3 Interface Aquifer wells was consistent between spring and fall monitoring events. Note that since July 2019, the water level was approximately the same between the southern HCL monitoring wells (EW2b-13 and EW2c-13) and the Interface Aquifer, and an upward gradient was not maintained throughout all of 2020. Based on the groundwater quality data, the increasing water levels within the HCL in 2019 and part of 2020 did not impact groundwater quality within the Interface Aquifer or the HCL.

Statistically significant trends of leachate indicator parameters at HCL wells and Sub-Cell 3 Interface Aquifer wells are shown in Table 4.2, below.

Table 4.2 HCL Leachate Indicator Parameter Trends

Well	Chloride	Sulfate	Potassium	Sodium	Bromide	Fluoride	Barium	Boron
EW1a-01	No Trend	No Trend	**Decreasing**	No Trend	No Trend	No Trend	No Trend	No Trend
EW1b-13	No Trend	**Decreasing**	No Trend	**Decreasing**	No Trend	No Trend	No Trend	No Trend
EW1c-13	No Trend	No Trend	**Decreasing**	**Decreasing**	No Trend	No Trend	No Trend	No Trend
EW2a-01	No Trend	No Trend	**Decreasing**	**Decreasing**	**Increasing**	No Trend	No Trend	No Trend
EW2b-13	No Trend	**Decreasing**	No Trend	**Decreasing**	No Trend	No Trend	**Decreasing**	No Trend
EW2c-13	No Trend	No Trend	No Trend	**Decreasing**	No Trend	No Trend	No Trend	No Trend

Leachate from the surrounding cells does not appear to be infiltrating the HCL. In 2020, leachate indicator parameters generally showed decreasing trends for sulfate, potassium, sodium, and barium, as summarized in Table 4.2.

One increasing trend for bromide was noted at HCL extraction well EW2a-01. Decreasing or no trends were observed for other leachate indicator parameters at well EW2a-01. Although an increasing trend was observed for bromide, the bromide concentrations (1.09 mg/L and 1.04 mg/L in spring and fall 2020) remained at the lower end of the historical range (0.66 to 3.38 mg/L). No bromide trends were observed at its corresponding monitoring wells, EW2b-13 and EW2c-13. Trends in leachate indicator parameters at EW2a-01 should be further evaluated in the next reporting period.

4.3 Compliance Summary

Groundwater elevations for HCL monitoring wells approached or exceeded groundwater elevations within the Interface Aquifer due to issues maintaining pump operation during several occasions in 2020. The water levels and hydraulic gradients measured in the HCL in 2020 indicate that the remedial system is not operating as intended to maintain an upward gradient at all times.

The rapid increase in water levels at HCL wells EW1b-13 and EW1c-13 at the end of November 2020 coinciding with strong rainfall events suggest that surface water may be infiltrating into the HCL of Sub-Cell 3. Grading activities commenced in the summer of 2020 and it is possible that a seal on a well became compromised as a result of grading activities. Alternatively, the rapid increases in water levels could be the result rapid groundwater recharge due to both extraction well pumps failing to operate.

Transducer data from Sub-Cell 3 extraction well EW1a-01 and EW2a-01 could not be downloaded in 2020 as the transducers direct read cables are inoperable and the transducers are currently inaccessible due to the extraction pumps. The manual groundwater elevations calculated for the extraction wells EW1a-01 and EW2a-01 are similar to that of the respective HCL monitoring wells EW1b-13, EW1c-13, EW2b-13, and EW2c-13 and as such the calculated vertical gradients for Sub-Cell 3 are appropriately represented.

The groundwater quality results from HCL wells and Sub-Cell 3 Interface Aquifer wells were relatively consistent with historical results and did not show changes in water quality throughout the year. Trends in concentrations at EW2a-01 should be further evaluated during the next reporting period.

5. Performance of Engineered Landfill System

The performance of the engineered landfill system is evaluated by assessing the inward gradient and water levels of the LCS compared to the surrounding areas. The performance monitoring programs were developed to assess the effectiveness of the LCS at maintaining inward hydraulic gradients and preventing leachate migration. Performance was previously evaluated in two areas: the southwest corner of the landfill, and the southern berm.

The southern berm was removed in spring 2019 as part of remedial measures in response to a leachate seep and Provincial Officer's Order No. 2681-BCPKUJ. The southern berm was originally scheduled for removal in 2020 as part of the surface water management plan amendment, however, removal occurred earlier due to the leachate seep. The monitoring wells in the southern berm (TW50-02A/B, TW51-02A/B, and TW52-02A/B) were removed as part of the remedial construction

work. As the southern berm and these wells have been removed, it is not possible to evaluate the performance of the engineered landfill system around the southern berm.

The evaluation of the engineered landfill system is limited to the transect across the southwest corner of the landfill in 2020. As the LCS is expanded with the construction of new landfill cells, additional transects can be added to evaluate the engineered landfill system in future reporting periods.

Transducer leachate elevations data from LCS standpipes was limited in 2019 and 2020. The 2018 leachate data indicated that transducers at LCSOW01-15, LCSOW03-15, and LCSOW04-15 were no longer submerged in leachate within the standpipe, and the transducer direct read cables no longer transmitted transducer data. The standpipe for LCSOW04-15 was subsequently removed during remedial work along the south property boundary in spring 2019. As the LCS levels are monitored by the LCS pumping system, the standpipe leachate levels are not required to evaluate an inward gradient. It is recommended Clean Harbors investigate the condition of the LCS standpipes in the spring of 2021 and assess potential causes for the failure of transducer direct read cables. Rehabilitation and maintenance of the LCS standpipes, and/or replacement of direct read cables is recommended, depending on the findings of the investigation.

The transducer water level data from the LCS standpipes is critical for assessment of the performance of the engineered landfill system when the LCS is operating in automatic mode since it allows comparison of the pumping system and the point between pumps to be assessed. The performance of the engineered landfill system was assessed differently for 2019 and 2020 monitoring data, as further described in the following section.

5.1 Transect across the Southwest Corner of the Landfill

The hydraulic gradient between the LCS and the southwest property boundary is assessed by comparing water levels between the LCS and perimeter wells. A horizontal transect was used in previous reporting periods to illustrate the hydraulic gradient along the southwest side of the LCS. The transect typically consisted of one LCS standpipe (LCSOW02-15), five perimeter wells instrumented in the Active Aquitard, Transition Zone, or Inactive Aquitard(TW64-16-I through TW64-16IV, and TW48-16S), and one perimeter well instrumented in the Interface Aquifer (TW48-00D). The well network and transect previously used to assess the performance of the engineered landfill system is shown on Figure 7.

As described above, transducer data from LCS standpipes, including LCSOW02-15, was not available in 2019 or 2020. Therefore, the hydraulic gradient could not be assessed using the same transect as in previous years. Leachate elevation data from the LCS sumps PTS-02 to PTS-03 were utilized in replacement of LCSOW02-15 for the transect. The LCS sumps have high-head low-flow groundwater pumps connected to the PLC, which record leachate levels at the sump locations. Previous reporting periods showed consistent leachate levels between the LCS standpipes and the LCS sumps, and as such, the LCS sump data was considered to be suitable to be used in this evaluation of inward gradient.

Hydrographs for the six perimeter wells within the transect are presented in Appendix B as Figures B-6, B-14 and B-22 through B-25. Hydrographs for the LCS sumps, PTS-01 to PTS-05, are

presented in Appendix B, Figures B-26 to B-30. The individual hydrographs are presented as a group with a transect cross-section on Figure 19.

Throughout early 2020, leachate elevations at PTS-02 and PTS-03 fluctuated above 197 mAMSL, with water levels up to 201 mAMSL. In March 2020, leachate elevations dropped in PTS-02 and PTS-03 from 200.7 mAMSL to less than 197 mAMSL. Leachate elevations stayed below 197 mAMSL for the remainder of 2020, which is consistent with the design of the LCS.

During brief periods in early 2020, leachate levels within the LCS sumps PTS-02 and PTS-03 (located north and south of the LCS standpipe LCSOW02-15, respectively) were above groundwater elevations at shallow well TW64-16-IV, located near the toe of slope. Leachate elevations at PTS-02 and PTS-03 were also higher than groundwater elevations for Active Aquitard well TW48-16S, located near the west property boundary. Clean Harbors worked to re-establish the LCS to normal operations in early 2020. The elevation in the LCS was lowered to the design criteria by May 2020 and it remained in compliance for the remainder of the reporting period.

Therefore, based on the leachate and groundwater elevations along the southwestern LCS transect, the hydraulic gradient was inward for the majority of 2020. The wells located at the landfill toe (TW-64-16-I to IV) are not sampled as part of the monitoring program. In 2020, the groundwater quality at TW48-16S was consistent with historical results, with low concentrations of leachate indicator parameters. Leachate indicator parameters at TW48-16S showed no trends and sample results were consistent between spring and fall 2020. Based on this, there is no evidence of leachate impacts migrating to the western property boundary.

5.2 Compliance Summary

Water levels collected as part of the performance monitoring program indicate that an inward gradient towards the LCS was not maintained during three brief periods in early 2020. Along the southwestern side of the landfill, leachate elevations at LCS sumps PTS-02 and PTS-03 were higher or similar to Active Aquitard groundwater elevations for wells TW64-16-IV and TW48-16S during these brief periods. Leachate levels in the LCS started to decrease in early March and target elevations of 197 mAMSL were obtained by early May 2020. After the LCS returned to normal operations, an inward gradient was maintained throughout the remainder of 2020. The groundwater quality at Active Aquifer wells appeared to be unaffected by the temporarily high leachate elevations within the LCS in early 2020.

In light of upgrades to the surface water management system in 2020, the groundwater monitoring program and LCS performance assessment will need to be updated. GHD understands that water levels in the surface water management ponds will be operated such that an inward gradient from the ponds to the landfill is maintained.

As the surface water management ponds were installed in late 2020, Clean Harbors is planning to install water level gauges to measure water levels within the surface water management ponds in 2021, connect the gauges to the LCS monitoring system, as well as program in the appropriate warnings and triggers for the pond level/LCS level difference.

6. Conclusions

Based on the 2020 groundwater monitoring and sampling events completed, the following conclusions are presented:

Perimeter Monitoring Program

- Groundwater is mounded in the Active Aquitard within and beneath the northern berm. This groundwater mounding induces an inward hydraulic gradient from the berm to the landfill footprint. Groundwater along the outside of the northern berm remains stable compared to historical measurements.
- Groundwater contours of the Interface Aquifer illustrate a potentiometric high in the northwest portion of the property consistent with historical groundwater patterns.
- Samples from the Active Aquitard and Interface Aquifer had exceedances of the ODWS for TDS, alkalinity, chloride, sulfate, and/or sodium. Interface Aquifer wells also had exceedances for iron, barium, and benzene. These exceedances are likely attributed to characteristics of the local geology and are not likely resultant of landfill impacts. These exceedances are consistent with historical monitoring results.
- Active Aquitard samples exceeded the PWQO for boron, chromium, and nickel. Concentrations were generally consistent with historical results.
- Active Aquitard samples exceeded the RUC for sulfate and fluoride. Interface Aquifer samples exceeded the RUC for fluoride, barium, and boron. These exceedances are consistent with historical monitoring results.
- Statistical analysis was performed on indicator parameters for all wells in the Active Aquitard and Interface Aquifer to determine if detections exhibited statistically significant trends. The majority of monitoring locations showed no trend or decreasing trends for indicator parameters. The majority of monitoring locations with increasing trends had concentrations below the ODWS and within historical ranges. It is anticipated that elevated concentrations and/or increasing trends of multiple indicator parameters would be evident if groundwater quality was impacted from the landfill. It is unlikely increasing trends are the result of landfill impacts.

Sub-Cell 3 Remedial Performance Monitoring Program

- Upward gradients from the Interface Aquifer to the HCL within Sub-Cell 3 were not maintained throughout all of 2020. During certain times in 2020, water levels within the HCL increased due to operational issues with the system. Accordingly, Sub-Cell 3 groundwater extraction system was not operating as intended in portions of 2020. The water levels decreased after Clean Harbors performed maintenance work on the Sub-Cell 3 groundwater extraction system.
- Groundwater quality within the HCL and the Interface Aquifer was consistent with previous years and did not show leachate impact. The increasing water levels within the HCL did not have an impact on groundwater quality.
- Leachate from the surrounding landfill cells does not appear to be infiltrating the HCL.

Performance of Engineered Landfill System

- Groundwater and Leachate elevations indicated that an inward gradient towards the LCS was not maintained during three brief periods in early 2020 due to operational issues with the LCS. Clean Harbors re-established normal operations with the LCS in March 2020. An inward gradient was maintained through the rest of 2020.
- Groundwater quality within the Active Aquifer appeared to be unaffected by the high water levels within the LCS in early 2020.

7. Recommendations

Based on the 2020 groundwater monitoring and sampling events completed on Site, the following conclusions are presented:

Perimeter Monitoring Program

- Rationalize the perimeter monitoring program in 2021 to ensure that the Site's environmental performance is properly monitored and reported
- Redevelop TW45-99D to assess if the screen and sandpack can be rehabilitated in 2021

Sub-Cell 3 Remedial Performance Monitoring Program

- Perform an investigation on the Sub-Cell 3 groundwater extraction system to assess the functionality of the HCL extraction wells and re-design/install upgrade surface components consistent with new surface grades.
- Replace transducer direct read cables for EW1a-01 and EW2b-01 transducers.
- Establish groundwater elevation trigger levels and response actions to help assess the performance of the Sub-Cell 3 groundwater extraction system as monitoring data is collected throughout the year.
- Develop an operational and maintenance procedure and an inspection checklist to be completed in tandem with groundwater monitoring events.
- Re-design the Sub-Cell 3 components to allow the placement of 2 to 4 metres of clay fill in the area during 2021.

Performance of Engineered Landfill System

- Investigate the condition of the LCS standpipes and assess potential causes for the failure of transducer direct read cables. Rehabilitation and maintenance of the LCS standpipes, and/or replacement of direct read cables is recommended, depending on the findings of the investigation.
- Rationalize the groundwater, surface water and LCS monitoring program to take into account modifications to the surface water management system and removal of the South Berm.
- Installation of level indicator in surface water pond, connection to the LCS monitoring system and program pond/LCS triggers and warnings.

8. References

R.R.O. 1990, Reg. 347: General – Waste Management. September 30, 2017

O. Reg. 169/03: Ontario Drinking Water Quality Standards. July 1, 2017

MOEE. Water Management: Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy. July 1994

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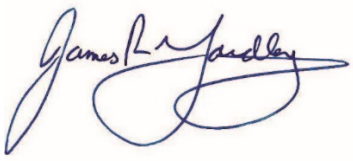
RWDI Air Inc. Geology and Hydrogeology Existing Conditions Final Report – Lambton Landfill Expansion Environmental Assessment. October 2014

RWDI Air Inc. Final Draft – Groundwater and Landfill Performance Monitoring Programs. December 9, 2017

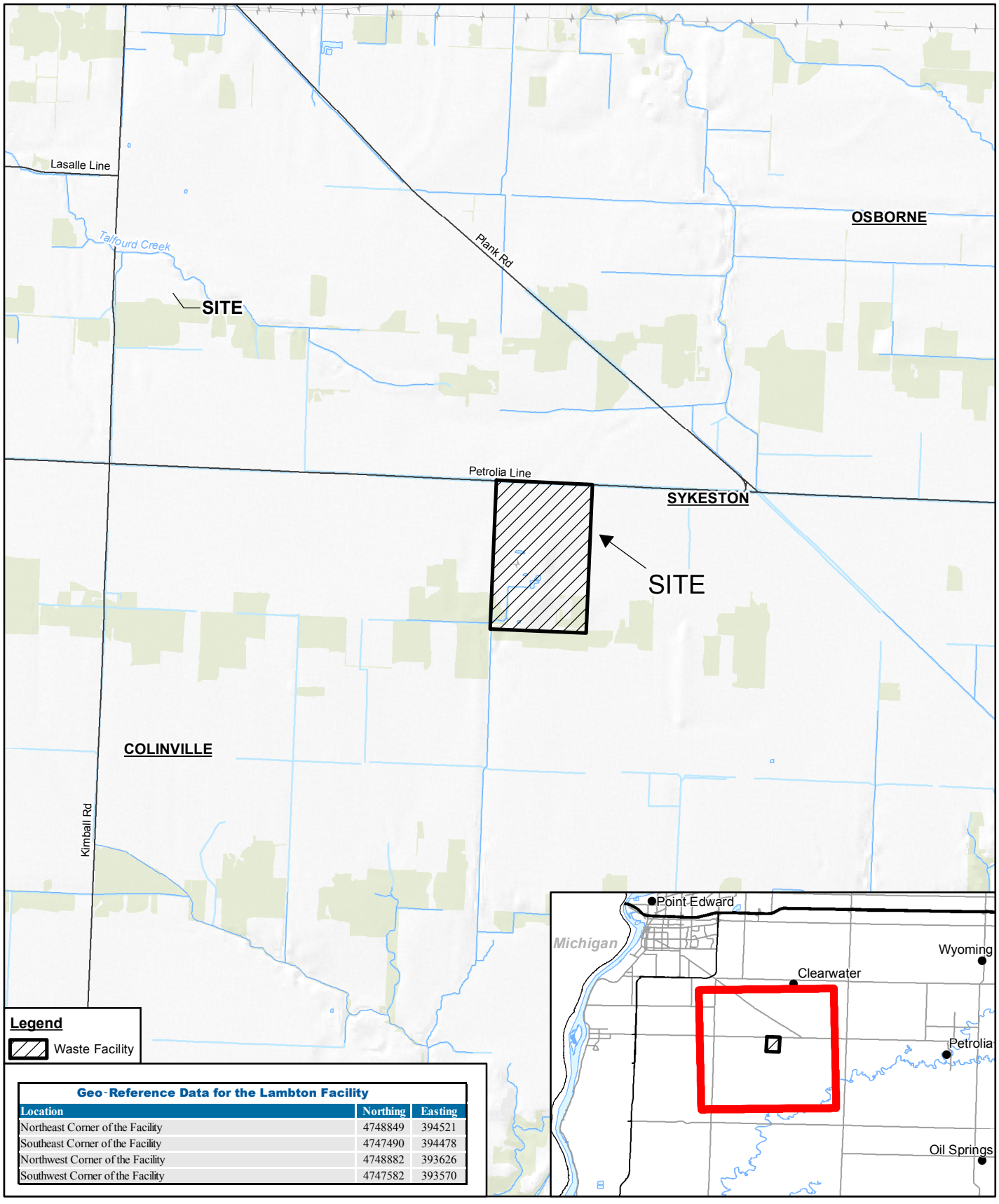
All of Which is Respectfully Submitted,

GHD

Ben Kempel, P. Geo



James R. Yardley, P. Eng.



Geo-Reference Data for the Lambton Facility

Location	Northing	Easting
Northeast Corner of the Facility	4748849	394521
Southeast Corner of the Facility	4747490	394478
Northwest Corner of the Facility	4748882	393626
Southwest Corner of the Facility	4747582	393570

Source: MNRF NRVIS, 2015. Produced by GHD under licence from Ontario Ministry of Natural Resources and Forestry, © Queen's Printer 2018;

0 500 1,000 1,500
Meters

Coordinate System:
NAD 1983 UTM Zone 17N

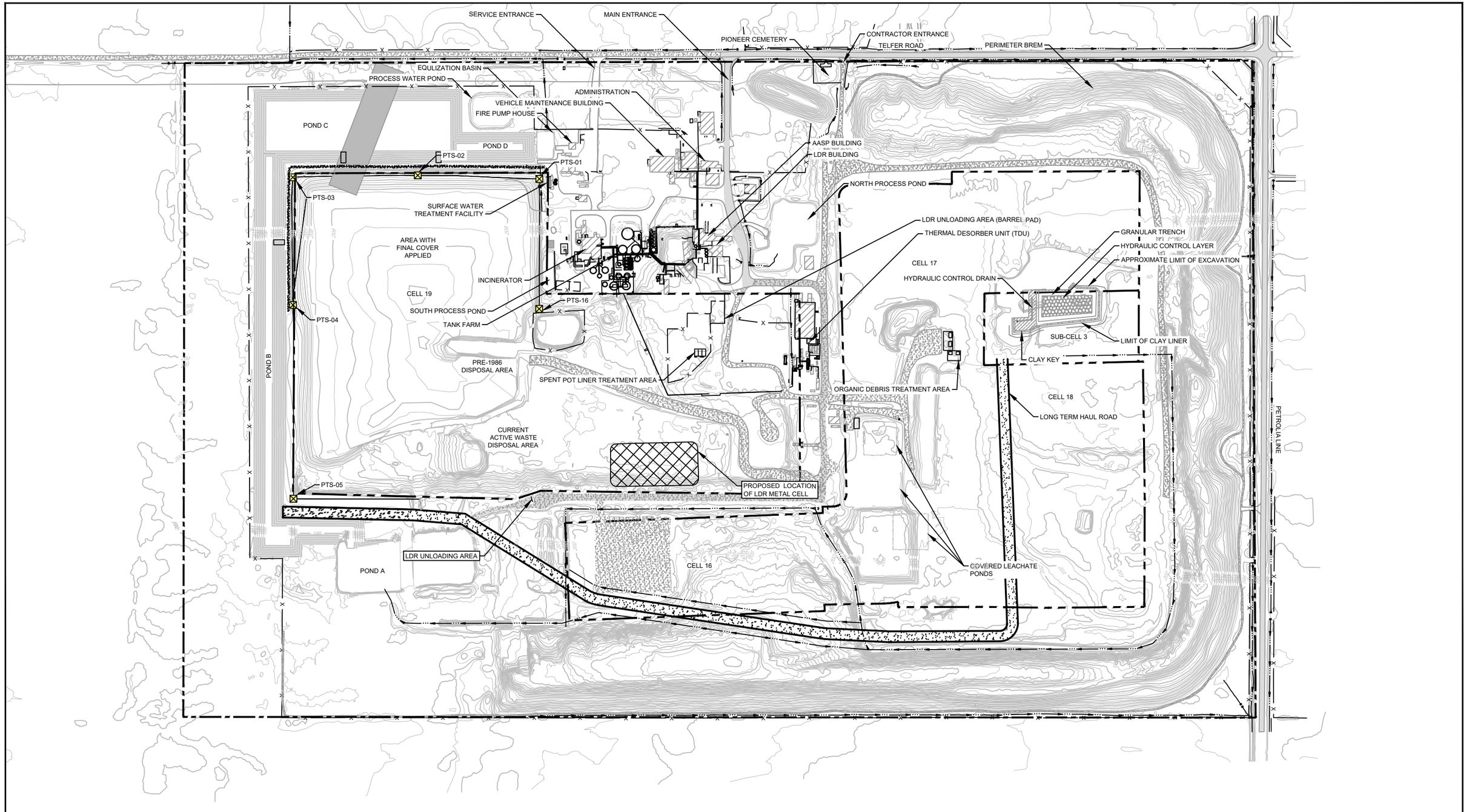
CLEAN HARBORS CANADA INC.
LAMBTON COUNTY, ONTARIO
2020 ANNUAL GROUNDWATER
MONITORING REPORT

044985-40
Feb 12, 2021

SITE LOCATION MAP

FIGURE 1

GIS File: Q:\GIS\PROJECTS\44000s\44985\Layouts\035\044985-40(048)GIS-WA001.mxd



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 50 100 150m

N

LEGEND:

- 208.0 EXISTING GROUND CONTOUR
- PTS-01 PERIMETER TRENCH SUMP
- PROPERTY BOUNDARY
- LIMIT OF WASTE
- DRAINAGE SWALE
- x FENCELINE
- PAVED ROADWAY
- GRAVEL ROADWAY
- BUILDING / STRUCTURE
- CLEAN INTERNAL HAUL ROAD
- TRANSECT CELL 19-1

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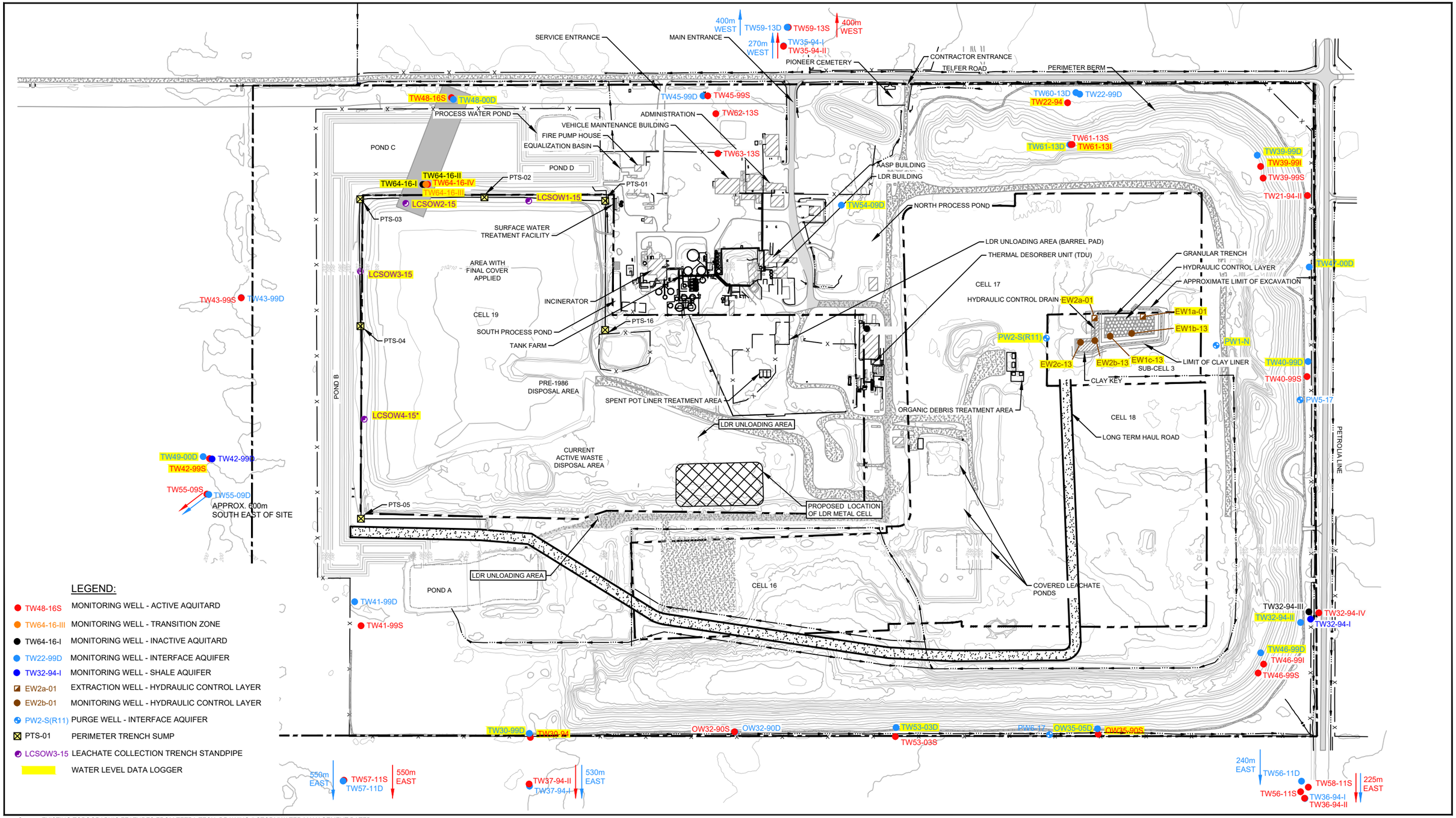
LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

SITE PLAN

44985-43
Feb 24, 2021

FIGURE 2

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA001.dwg



LEGEND:

TW48-16S	MONITORING WELL - ACTIVE AQUITARD
TW64-16-III	MONITORING WELL - TRANSITION ZONE
TW64-16-I	MONITORING WELL - INACTIVE AQUITARD
TW22-99D	MONITORING WELL - INTERFACE AQUIFER
TW32-94-I	MONITORING WELL - SHALE AQUIFER
EW2a-01	EXTRACTION WELL - HYDRAULIC CONTROL LAYER
EW2b-01	MONITORING WELL - HYDRAULIC CONTROL LAYER
PW2-S(R11)	PURGE WELL - INTERFACE AQUIFER
PTS-01	PERIMETER TRENCH SUMP
LCSOW3-15	LEACHATE COLLECTION TRENCH STANDPIPE
	WATER LEVEL DATA LOGGER

Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 50 100 150m

LEGEND:

208.0 EXISTING GROUND CONTOUR	PAVED ROADWAY
PROPERTY BOUNDARY	GRAVEL ROADWAY
LIMIT OF WASTE	BUILDING / STRUCTURE
DRAINAGE SWALE	CLEAN INTERNAL HAUL ROAD
x FENCELINE	TRANSECT CELL 19-1

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CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

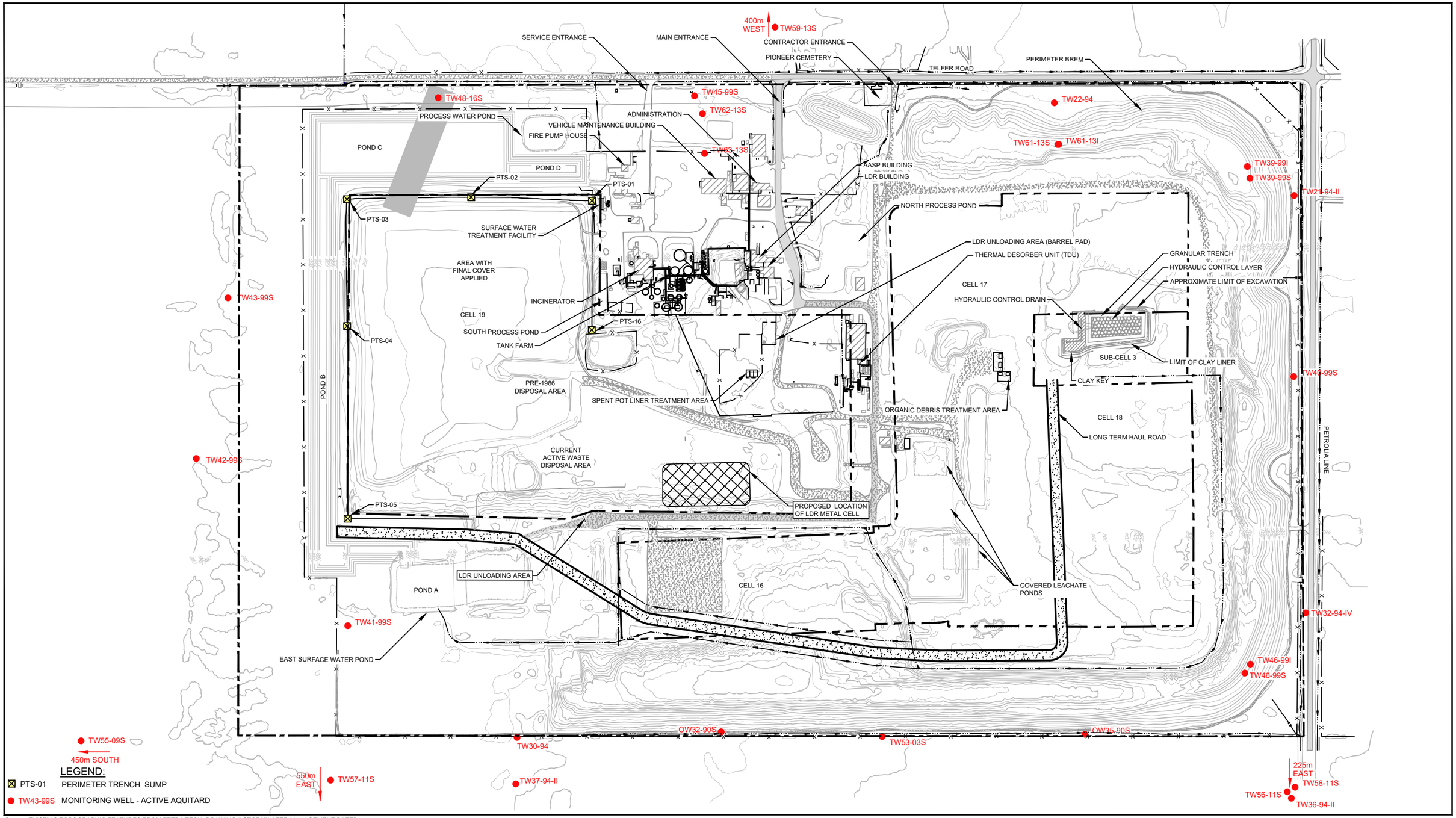
44985-48

Feb 24, 2021

MONITORING WELL NETWORK

FIGURE 3

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA002.dwg



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 50 100 150m

LEGEND:

- 208.0 EXISTING GROUND CONTOUR
- PROPERTY BOUNDARY
- LIMIT OF WASTE
- DRAINAGE SWALE
- x FENCELINE
- PAVED ROADWAY
- GRAVEL ROADWAY
- BUILDING / STRUCTURE
- CLEAN INTERNAL HAUL ROAD
- TRANSECT CELL 19-1

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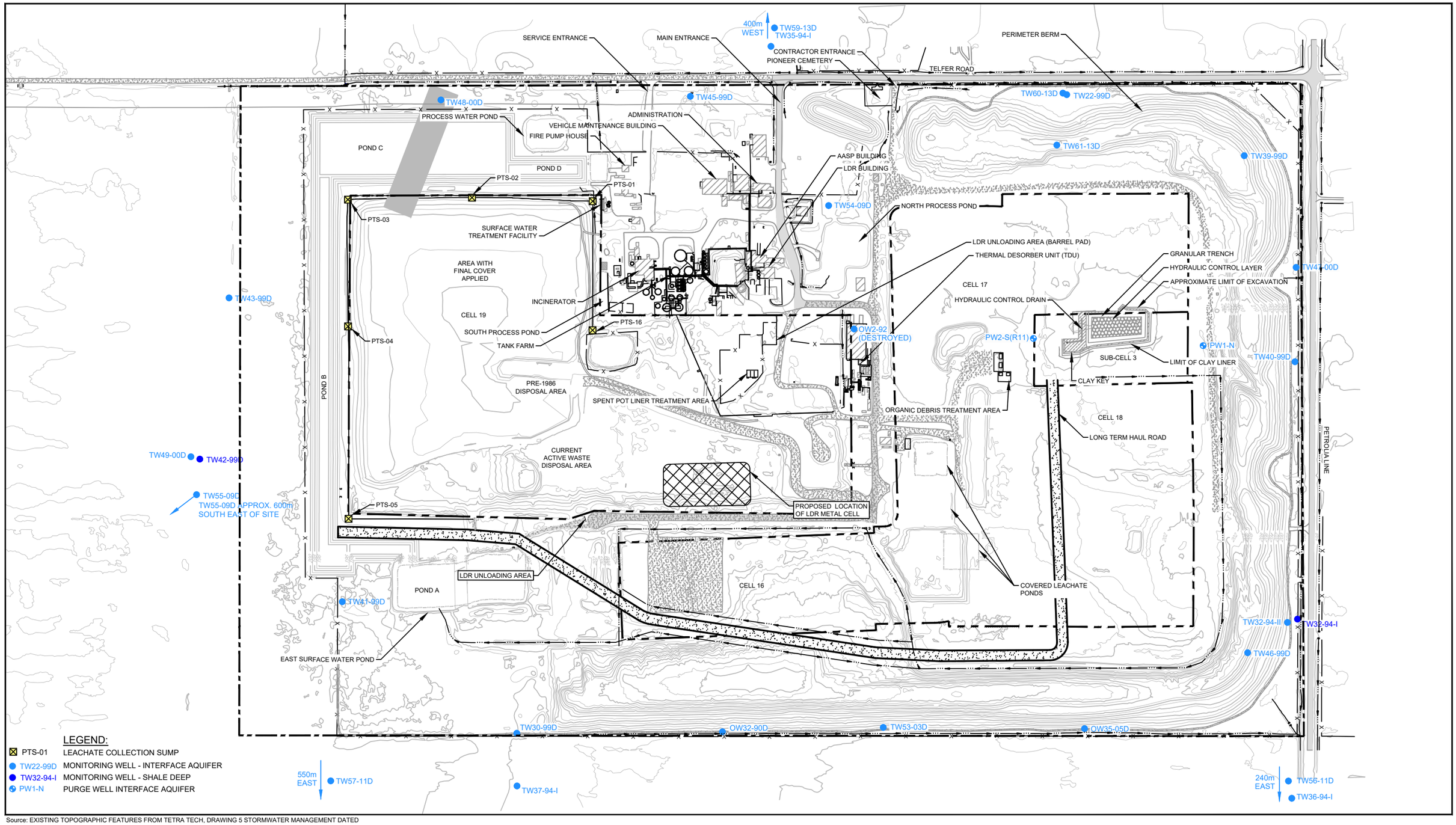
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

44985-48

Feb 24, 2021

PERIMETER ACTIVE AQUITARD MONITORING WELL NETWORK FIGURE 4

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA003.dwg



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

PERIMETER INTERFACE AQUIFER AND KETTLE POINT SHALE MONITORING WELL NETWORK

44985-48

Feb 24, 2021

FIGURE 5

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA004.dwg

TRACTOR ENTRANCE
R CEMETERY
PERIMETER BERM
TELFER ROAD
AASP BUILDING
LDR BUILDING
NORTH PROCESS POND
LDR UNLOADING AREA (BARREL PAD)
THERMAL DESORBER UNIT (TDU)
CELL 17
GRANULAR TRENCH
HYDRAULIC CONTROL LAYER
APPROXIMATE LIMIT OF EXCAVATION
HYDRAULIC CONTROL DRAIN
EW2a-01
EW1a-01
EW1b-13
PW2-S(R11)
PW1-N
EW2c-13
EW2b-13
EW1c-13
LIMIT OF CLAY LINER
SUB-CELL 3
CLAY KEY
ORGANIC DEBRIS TREATMENT AREA
CELL 18
LONG TERM HAUL ROAD
PETROLIA LINE
PROPOSED LOCATION OF LDR METAL CELL
COVERED LEACHATE PONDS

LEGEND:

EW2a-01	EXTRACTION WELL - HYDRAULIC CONTROL LAYER
EW1b-01	MONITORING WELL - HYDRAULIC CONTROL LAYER
PW2-S(R11)	PURGE WELL - INTERFACE AQUIFER

LEGEND:

208.0	EXISTING GROUND CONTOUR
	PROPERTY BOUNDARY
	LIMIT OF WASTE
	DRAINAGE SWALE
x	FENCELINE
	PAVED ROADWAY
	GRAVEL ROADWAY
	BUILDING / STRUCTURE
	CLEAN INTERNAL HAUL ROAD

Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 30 60 90m

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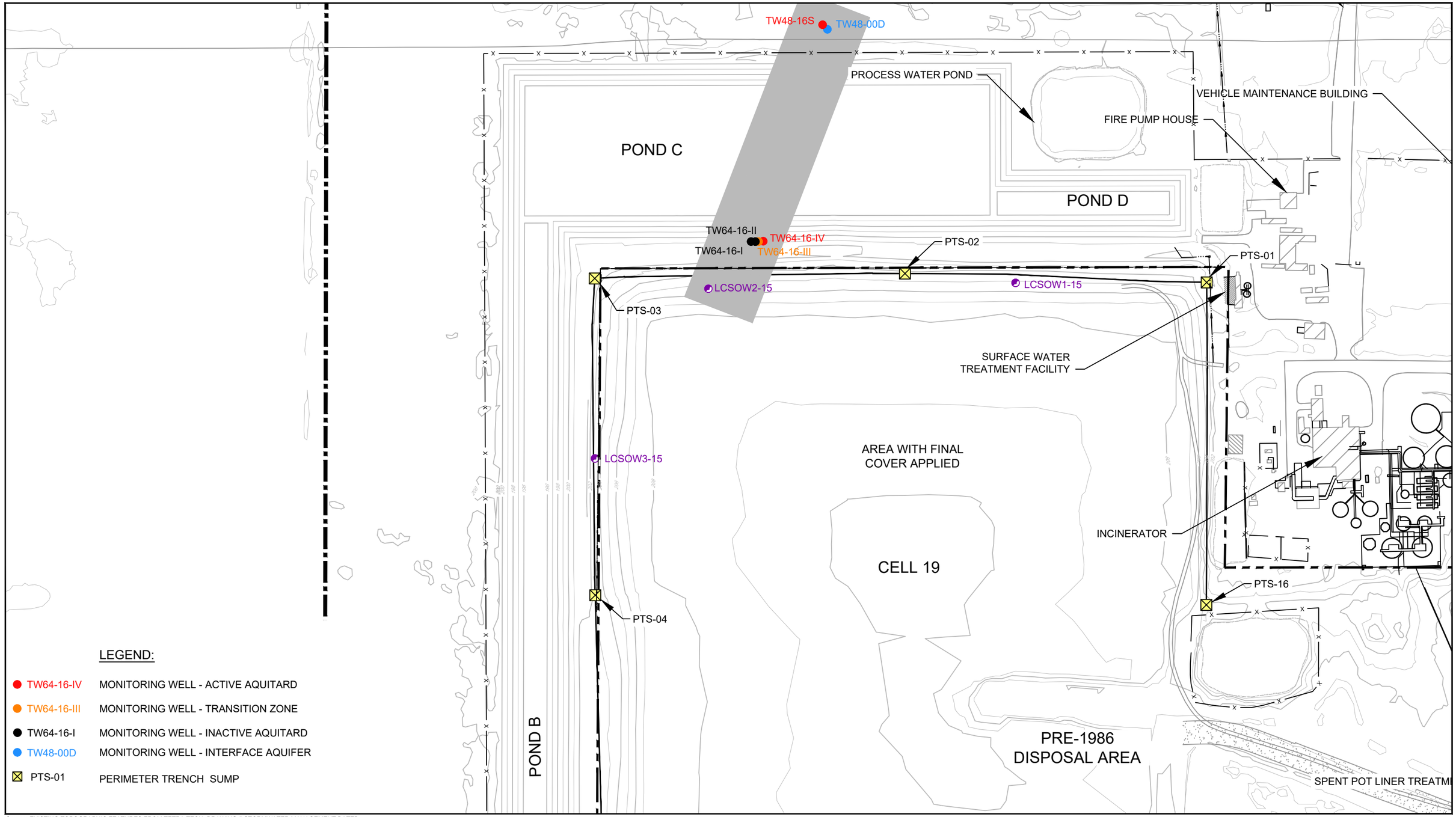
LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

44985-48
Feb 24, 2021

SUB-CELL 3 MONITORING WELL NETWORK

FIGURE 6

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA005.dwg



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 20 40 60m

LEGEND:

208.0 EXISTING GROUND CONTOUR

PROPERTY BOUNDARY

LIMIT OF WASTE

DRAINAGE SWALE

FENCELINE

PAVED ROADWAY

GRAVEL ROADWAY

BUILDING / STRUCTURE

CLEAN INTERNAL HAUL ROAD

TRANSECT CELL 19-1

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CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

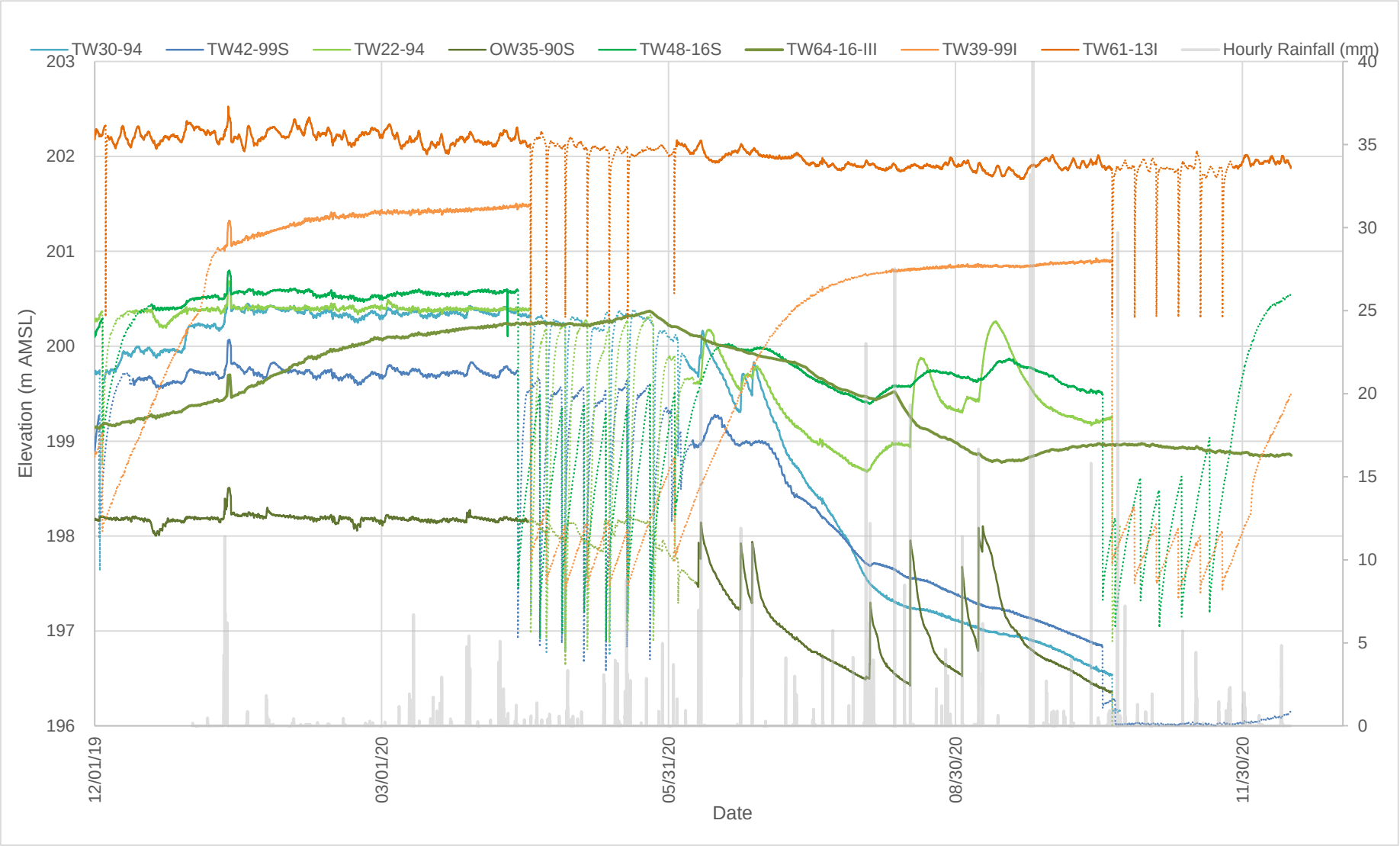
PERFORMANCE MONITORING OF ENGINEERED LANDFILL SYSTEMS MONITORING WELL NETWORK

44985-48

Feb 24, 2021

FIGURE 7

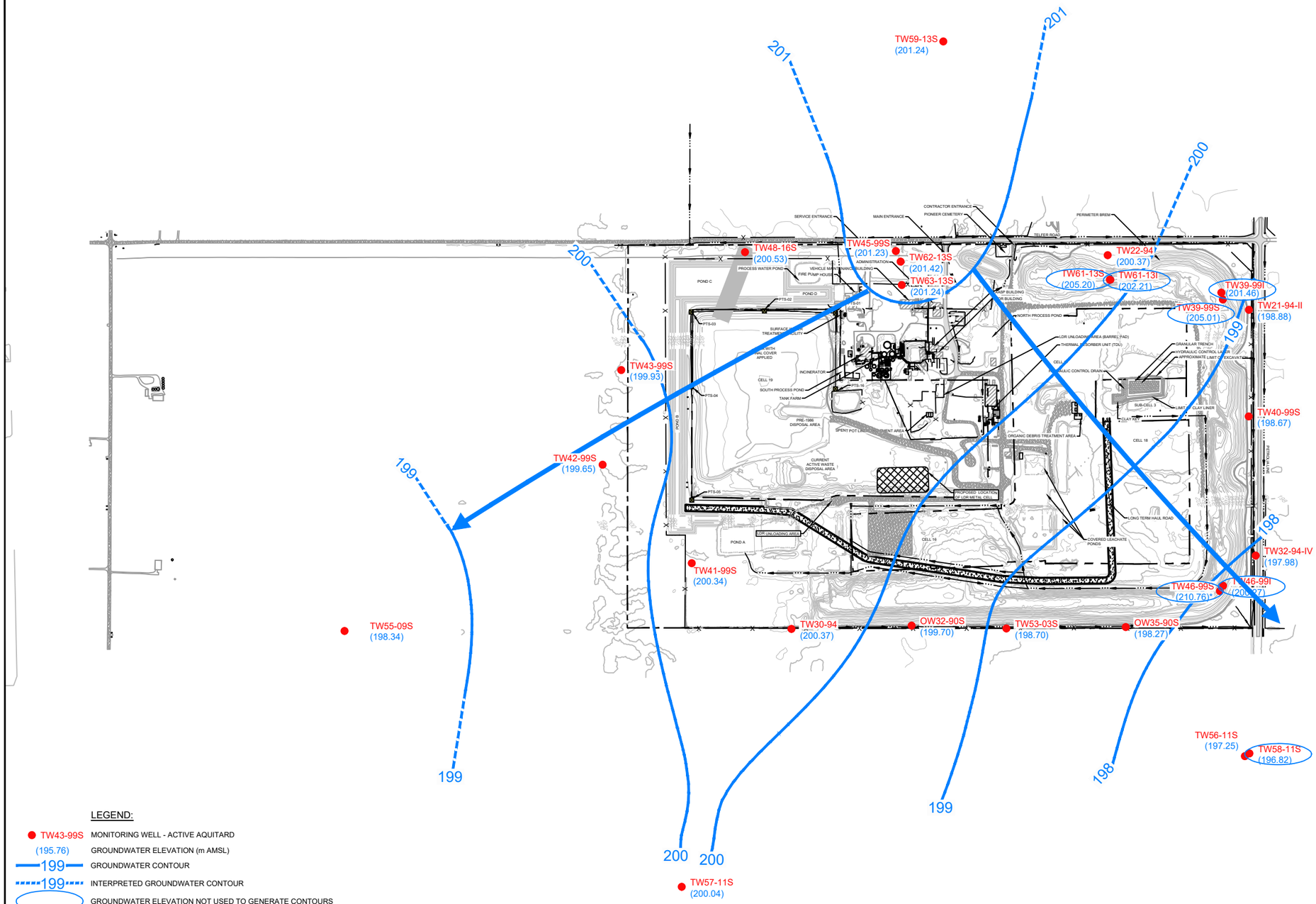
CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA006.dwg



Notes: Dotted lines represent pre-purging and recovery periods

Figure 8

ACTIVE AQUITARD SEASONAL GROUNDWATER FLUCTUATION HYDROGRAPH
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 100 200 300m

LEGEND:

- EXISTING GROUND CONTOUR
- PROPERTY BOUNDARY
- LIMIT OF WASTE
- DRAINAGE SWALE
- FENCELINE
- PAVED ROADWAY
- GRAVEL ROADWAY
- BUILDING / STRUCTURE
- CLEAN INTERNAL HAUL ROAD
- TRANSECT CELL 19-1

LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

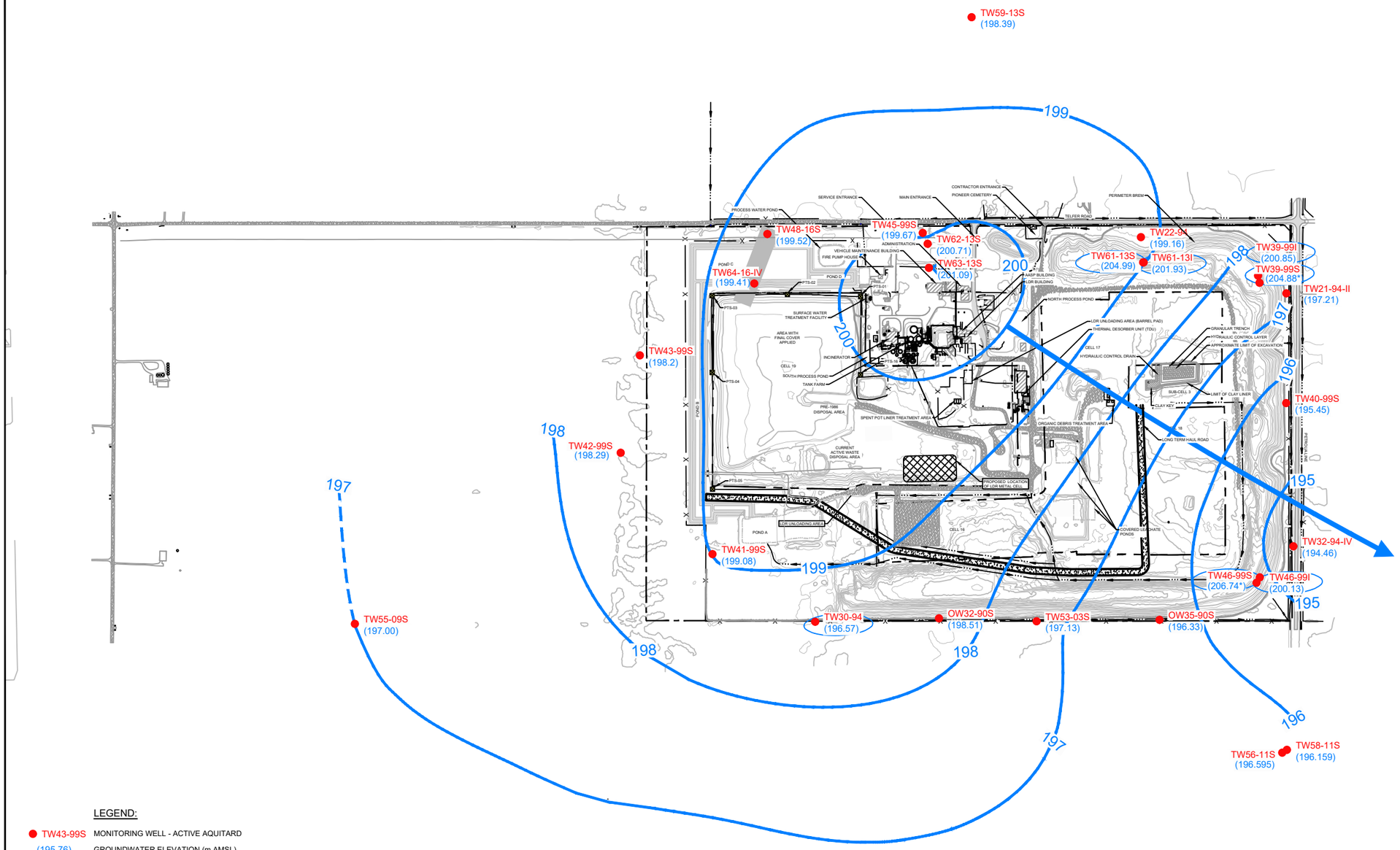
GROUNDWATER ELEVATIONS ACTIVE AQUITARD APRIL 2020

44985-43

Feb 24, 2021

FIGURE 9

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA007.dwg



LEGEND:

- TW43-99S — MONITORING WELL - ACTIVE AQUITARD
- (195.76) — GROUNDWATER ELEVATION (m AMSL)
- 199 — GROUNDWATER CONTOUR
- 199 — INTERPRETED GROUNDWATER CONTOUR
- GROUNDWATER ELEVATION NOT USED TO GENERATE CONTOURS

Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 100 200 300m

LEGEND:

- EXISTING GROUND CONTOUR
- PROPERTY BOUNDARY
- LIMIT OF WASTE
- DRAINAGE SWALE
- FENCELINE
- PAVED ROADWAY
- GRAVEL ROADWAY
- BUILDING / STRUCTURE
- CLEAN INTERNAL HAUL ROAD
- TRANSECT CELL 19-1

LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

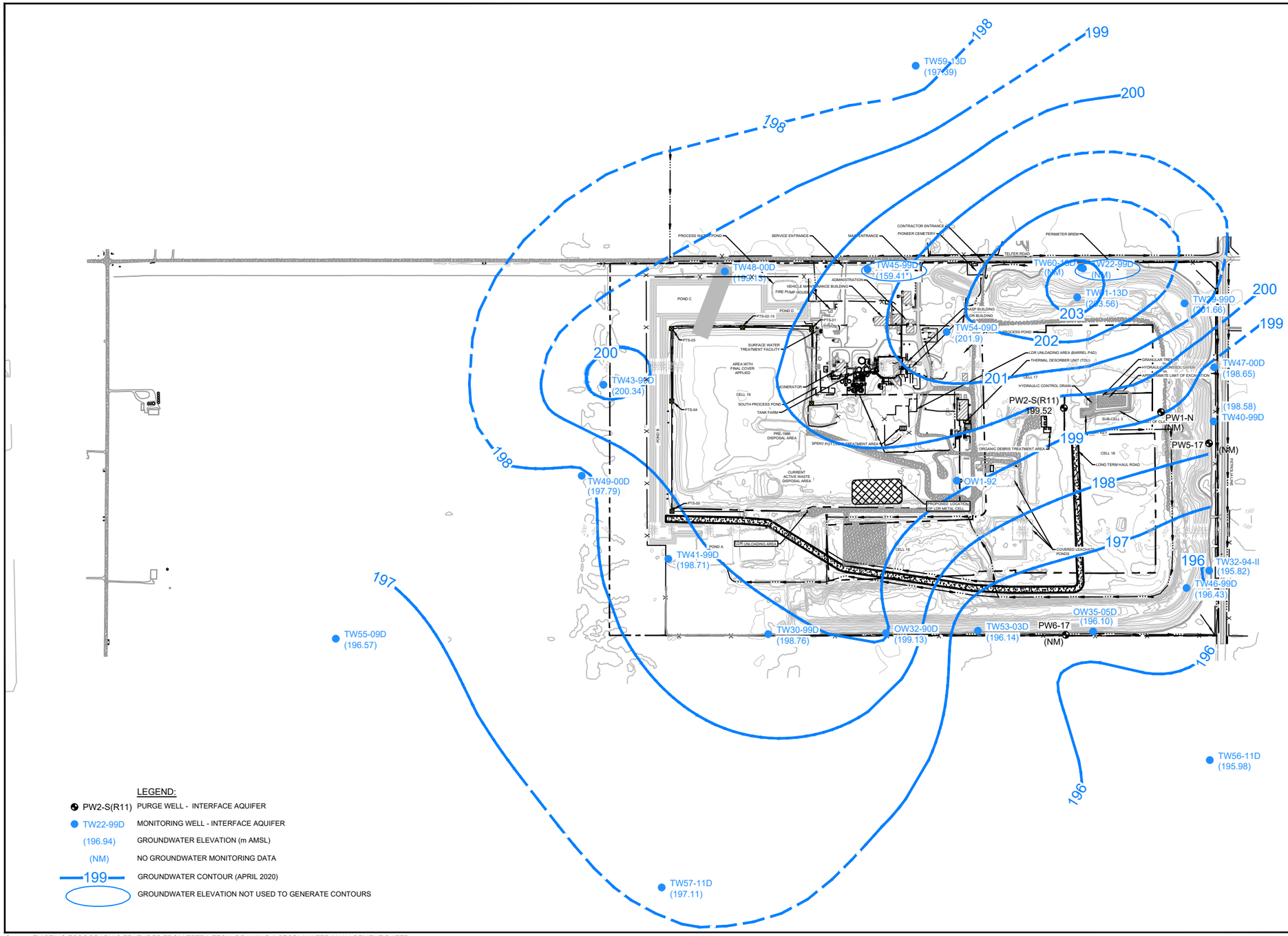
GROUNDWATER ELEVATIONS ACTIVE AQUITARD OCTOBER 2020

44985-43

Feb 24, 2021

FIGURE 10

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA008.dwg



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 100 200 300m

LEGEND:

- EXISTING GROUND CONTOUR
- PROPERTY BOUNDARY
- LIMIT OF WASTE
- DRAINAGE SWALE
- FENCELINE
- PAVED ROADWAY
- GRAVEL ROADWAY
- BUILDING / STRUCTURE
- CLEAN INTERNAL HAUL ROAD
- TRANSECT CELL 19-1

LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

GROUNDWATER ELEVATION INTERFACE AQUIFER APRIL 2020

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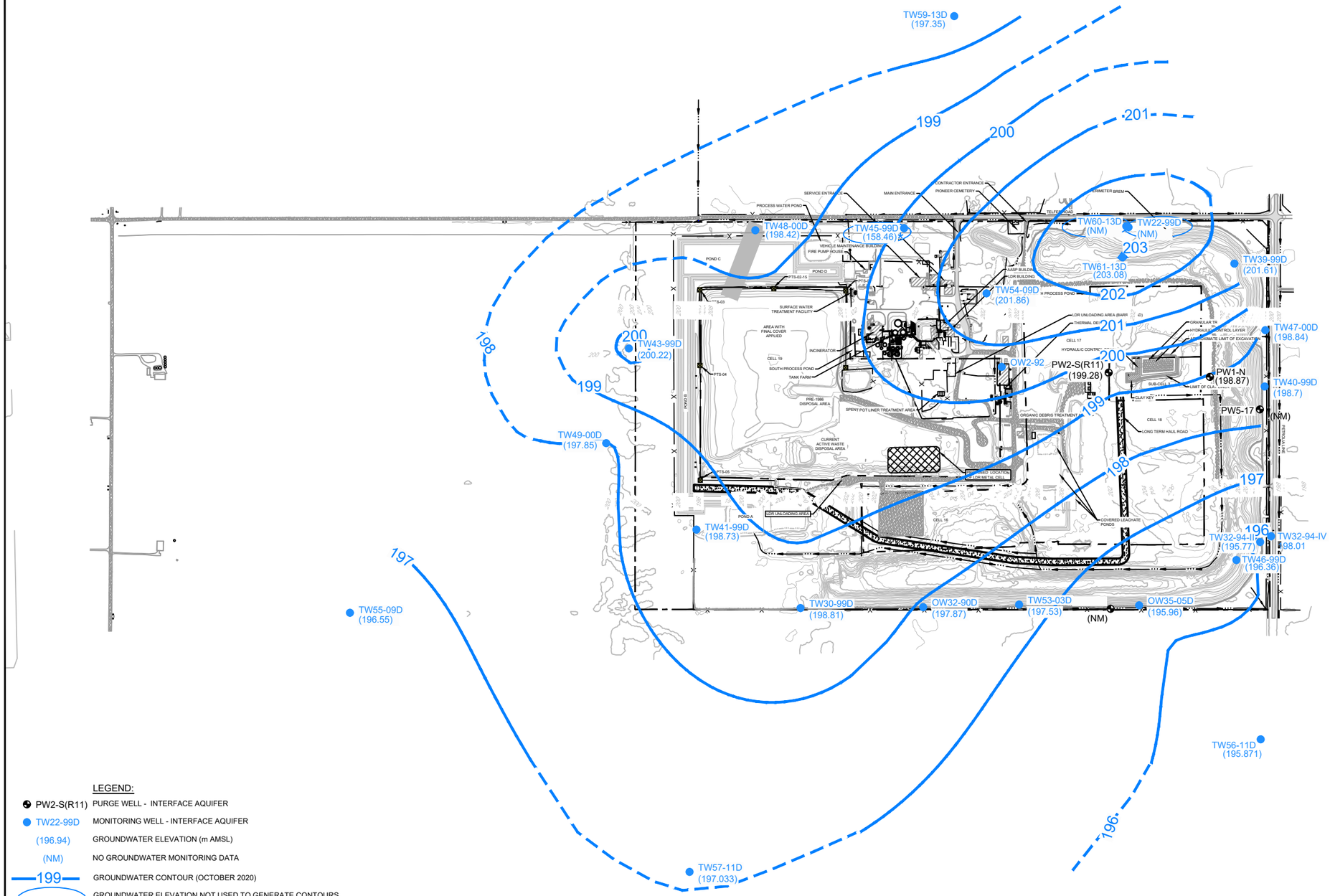
Feb 24, 2021

FIGURE 11

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA009.dwg



LEGEND:

PW2-S(R11)	PURGE WELL - INTERFACE AQUIFER
TW22-99D	MONITORING WELL - INTERFACE AQUIFER
(196.94)	GROUNDWATER ELEVATION (m AMSL)
(NM)	NO GROUNDWATER MONITORING DATA
199	GROUNDWATER CONTOUR (OCTOBER 2020)
	GROUNDWATER ELEVATION NOT USED TO GENERATE CONTOURS

Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 100 200 300m

LEGEND:

EXISTING GROUND CONTOUR	PAVED ROADWAY
PROPERTY BOUNDARY	GRAVEL ROADWAY
LIMIT OF WASTE	BUILDING / STRUCTURE
DRAINAGE SWALE	CLEAN INTERNAL HAUL ROAD
FENCELINE	TRANSECT CELL 19-1

LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

GROUNDWATER ELEVATION INTERFACE AQUIFER OCTOBER 2020

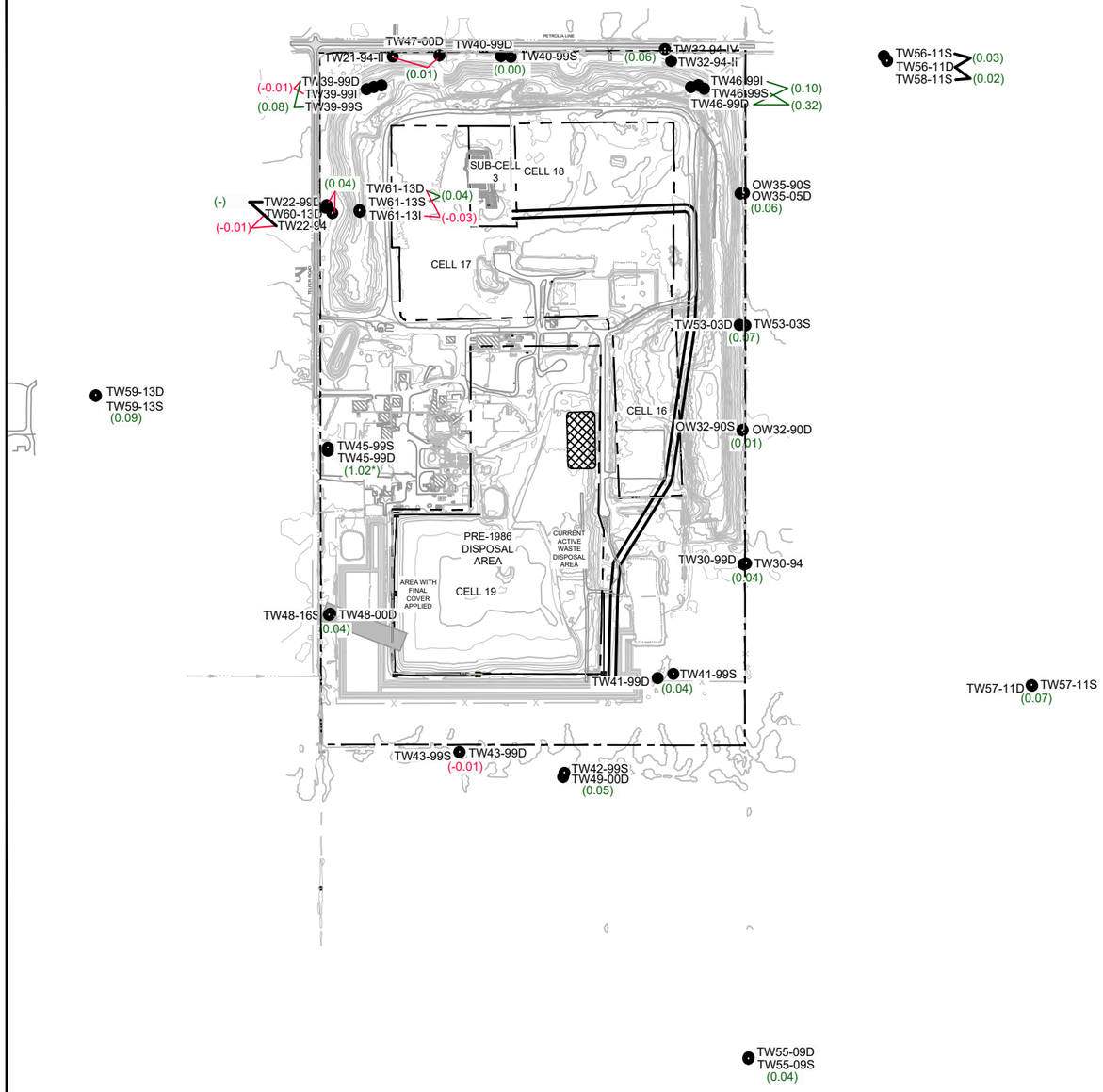
44985-43

Feb 24, 2021

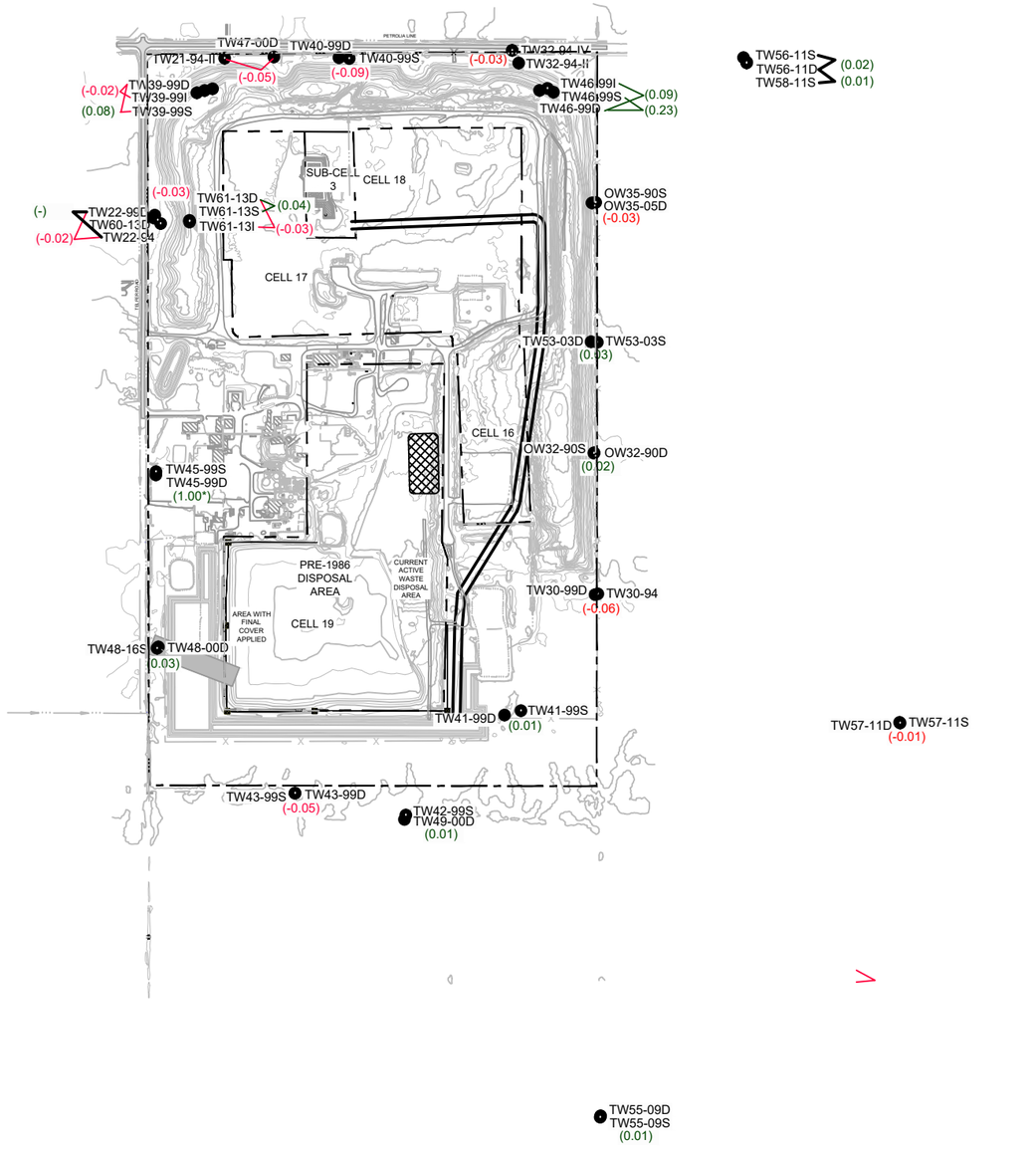
FIGURE 12

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA010.dwg

SPRING 2020 (APRIL 10, 2020)



FALL 2020 (OCTOBER 4, 2020)



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 6 12 18m

LEGEND

- TW45-99S MONITORING WELL LOCATION
- (0.03) DOWNWARD HYDRAULIC GRADIENT
- (0.00) NO VERTICAL GRADIENT
- (-0.08) UPWARD HYDRAULIC GRADIENT
- (-) NOT CALCULATED
- * INACCURATE VERTICAL GRADIENT DUE TO SLOW DISCHARGE FOR TW45-99D

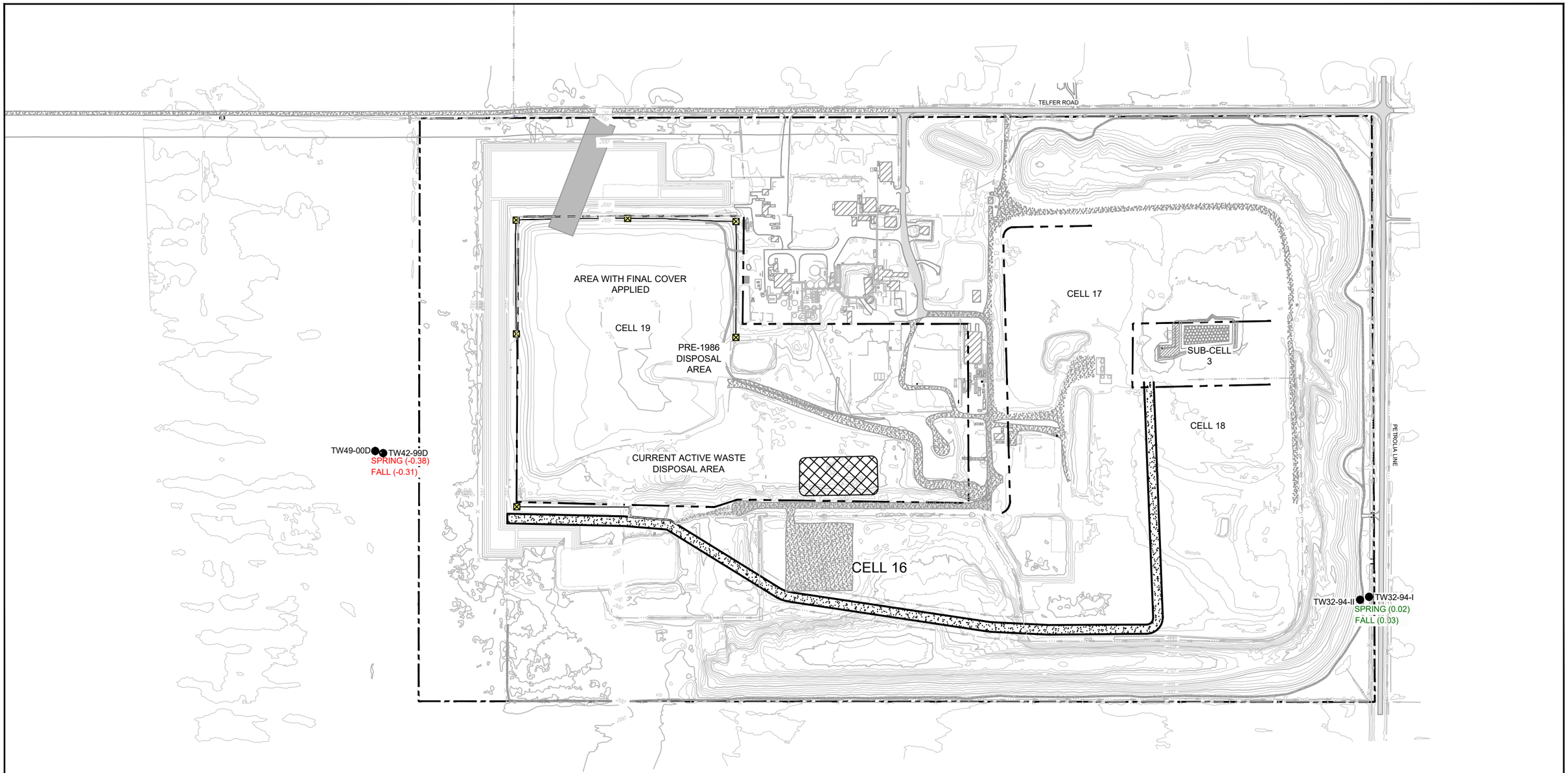
LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

DISTRIBUTION OF VERTICAL GRADIENTS BETWEEN ACTIVE AQUITARD AND INTERFACE AQUIFER

44985-43
Feb 24, 2021

FIGURE 13

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA012.dwg



Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

0 60 120 180m

LEGEND

● TW42-99D	MONITORING WELL LOCATION
(0.44)	DOWNWARD HYDRAULIC GRADIENT
(-0.11)	UPWARD HYDRAULIC GRADIENT

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LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

DISTRIBUTION OF VERTICAL GRADIENTS BETWEEN INTERFACE AQUIFER AND KETTLE POINT FORMATION

44985-43

Feb 24, 2021

FIGURE 14

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA013.dwg

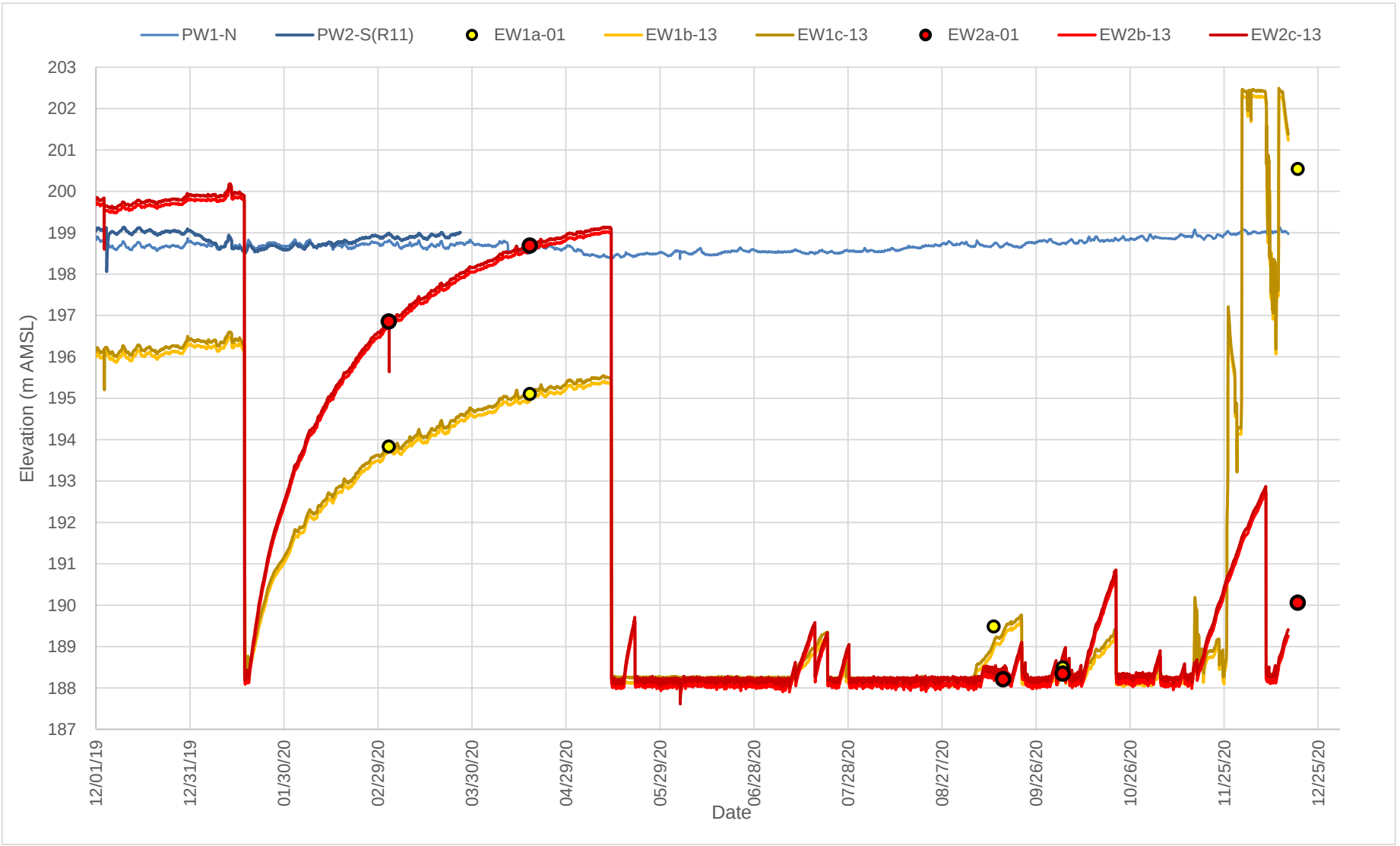


Figure 15
SUB-CELL 3 GROUP HYDROGRAPH
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

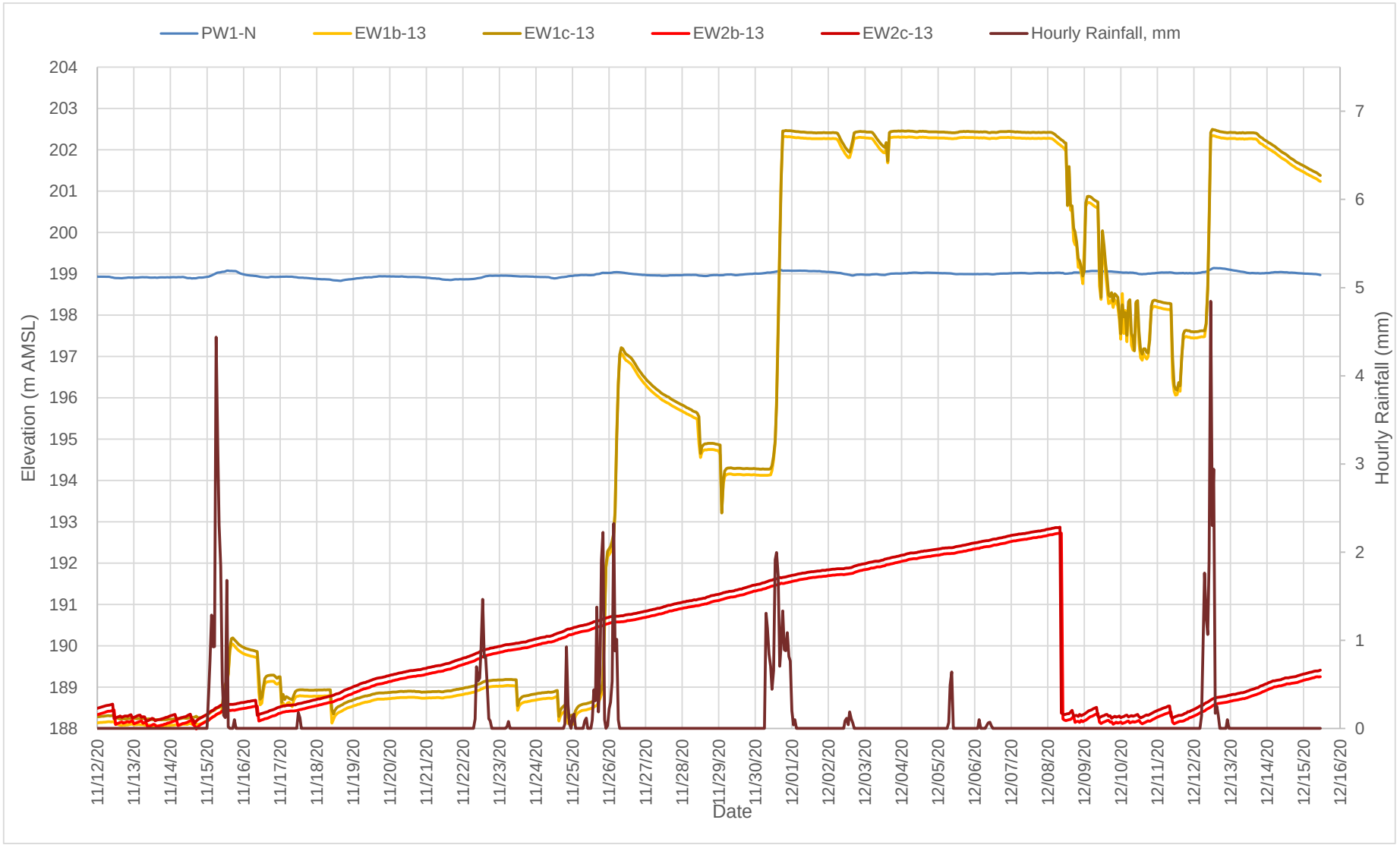


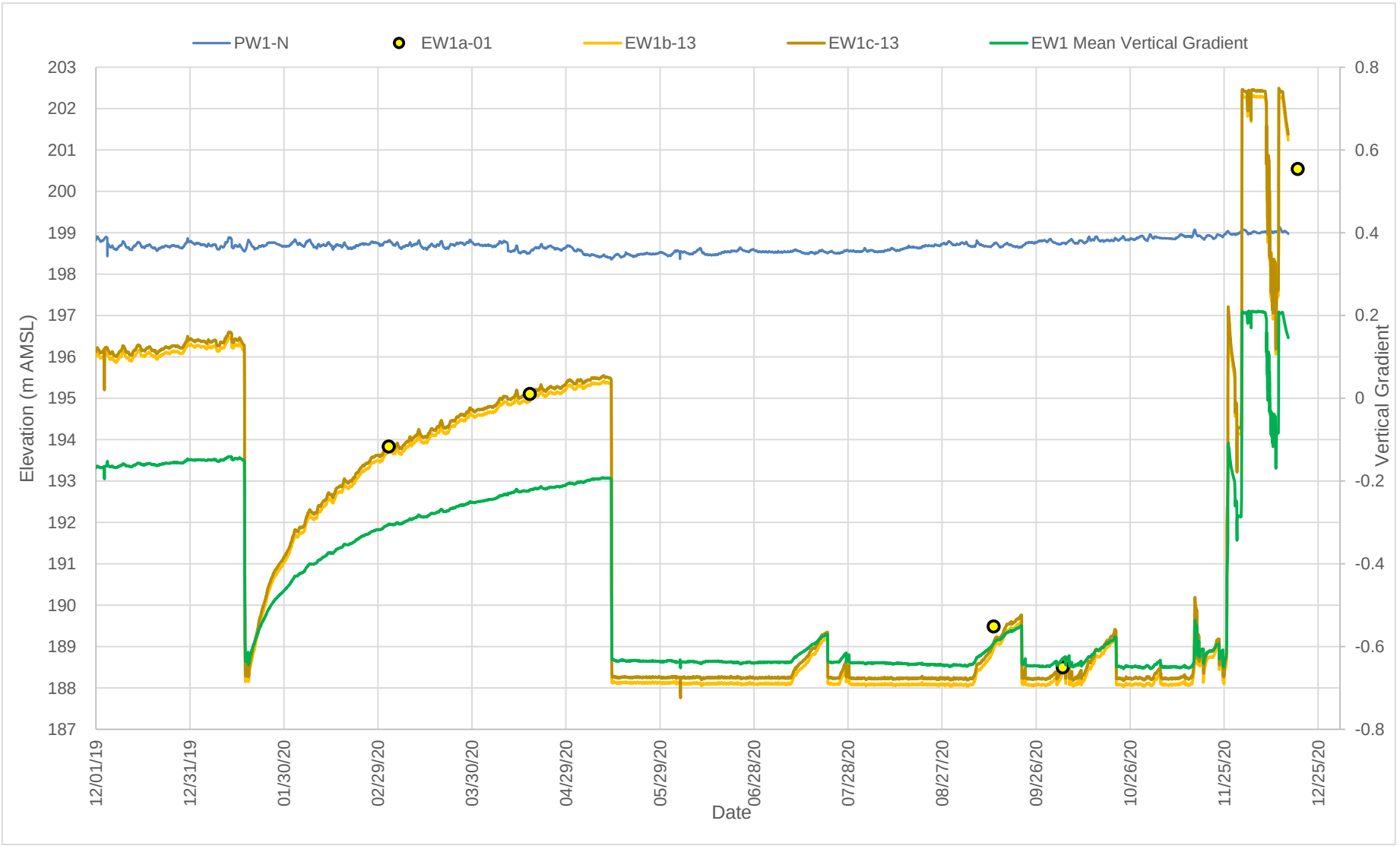
Figure 16

SUB-CELL 3 GROUP HYDROGRAPH-NOVEMBER/DECEMBER 2020

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

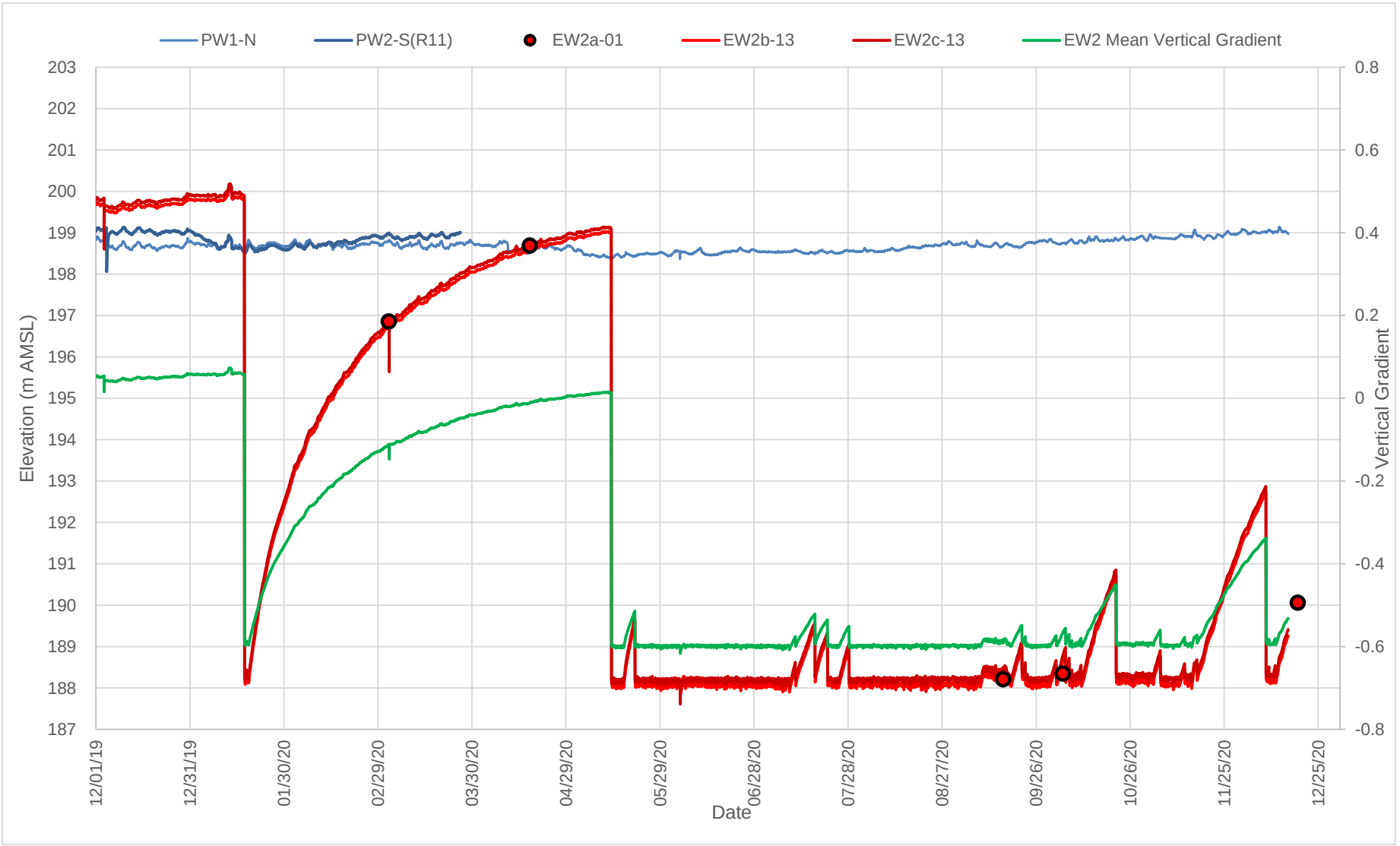
Lambton Facility



Notes: Mean vertical gradient calculated from hydraulic control layer wells EW1b-13, EW1c-13, and Interface Aquifer Well PW1

Figure 17

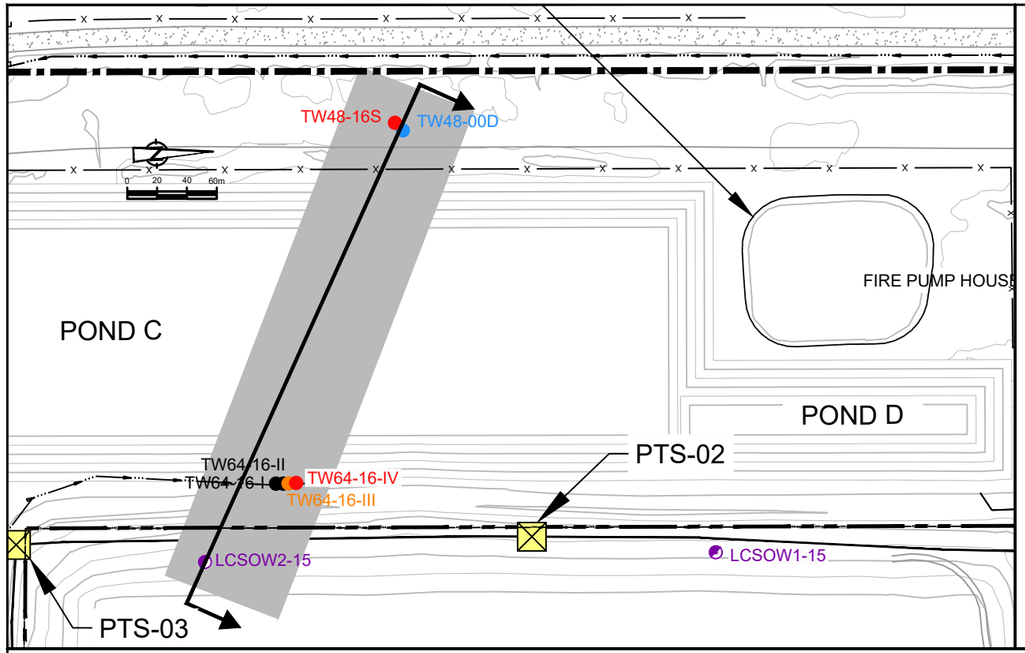
HYDRAULIC CONTROL LAYER MEAN VERTICAL GRADIENT
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



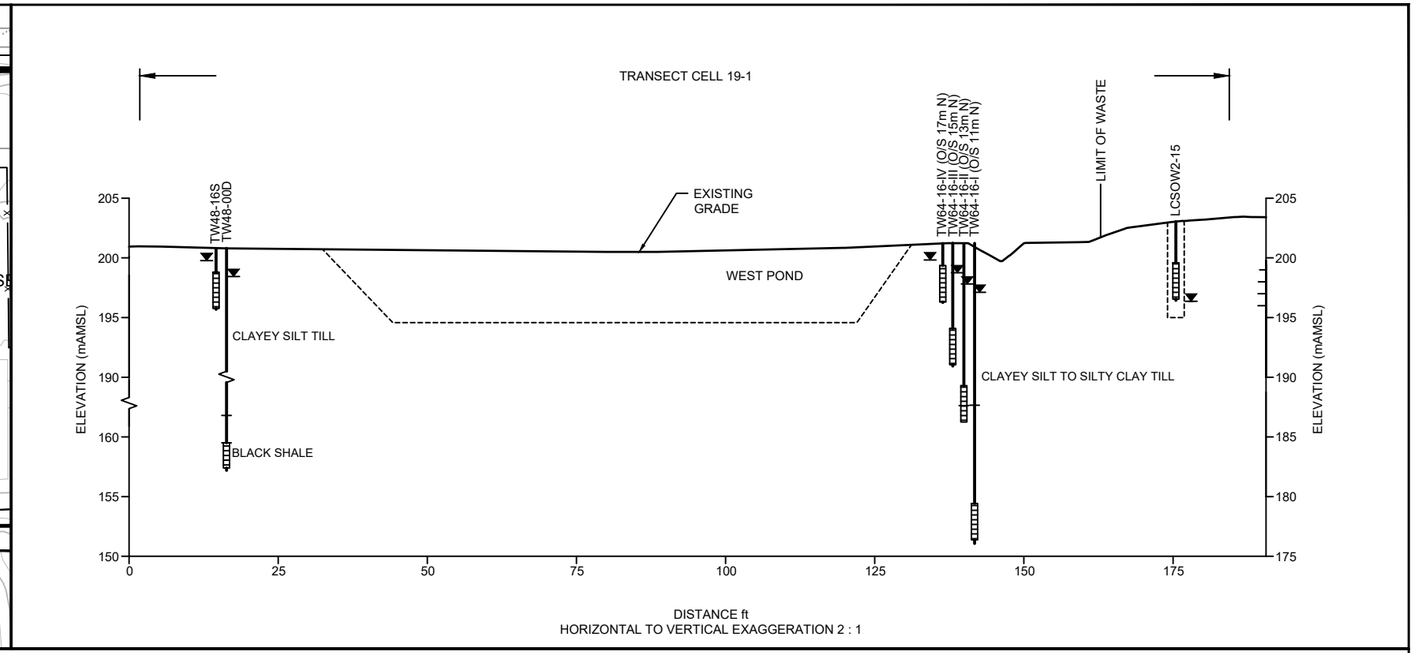
Notes: Mean vertical gradient calculated from hydraulic control drain wells EW2b-13, EW2c-13, and Interface Aquifer Well PW1

Figure 18

HYDRAULIC CONTROL DRAIN MEAN VERTICAL GRADIENT
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



PLAN VIEW

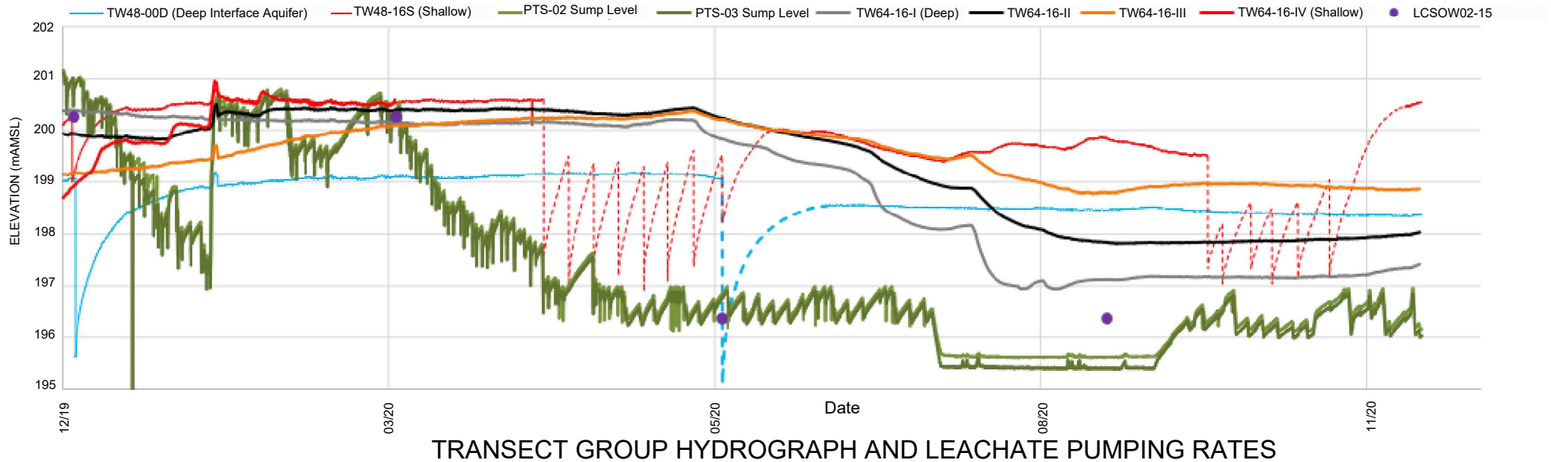


CROSS SECTION

LEGEND:

PTS-01	PERIMETER TRENCH SUMP
TW48-00D	MONITORING WELL - INTERFACE AQUIFER
TW64-16-I / II	MONITORING WELL - INACTIVE AQUITARD
TW64-16-III	MONITORING WELL - TRANSITION ZONE
TW64-16-IV	MONITORING WELL - ACTIVE AQUITARD
LCSOW3-15	LEACHATE COLLECTION TRENCH

NOTES:
1. GROUNDWATER/LEACHATE ELEVATION FROM SEPTEMBER, 2020
2. DOTTED LINES ON TW48-16S AND TW48-00D REPRESENT PRE-PURGE AND RECOVERY PERIOD FOR GROUNDWATER ELEVATIONS.



TRANSECT GROUP HYDROGRAPH AND LEACHATE PUMPING RATES

Source: EXISTING TOPOGRAPHIC FEATURES FROM TETRA TECH, DRAWING 5 STORMWATER MANAGEMENT DATED FEBRUARY 23, 2015. EXISTING TOPOGRAPHIC SURVEY COMPLETED IN 2012

LAMBTON FACILITY
CLEAN HARBORS CANADA INC.
2020 ANNUAL GROUNDWATER MONITORING REPORT

PERFORMANCE OF ENGINEERED LANDFILL SYSTEM TRANSECT

44985-43

Feb 24, 2021

FIGURE 19

CAD File: P:\drawings\44000s\44985\44985-REPORTS\44985-40(048)\44985-40(048)GN\44985-40(048)GN-WA011.dwg

Table 1

Well Completion Details
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Well ID	Easting	Northing	Survey Date	Ground Elevation (m AMSL)	Reference Elevation (m AMSL)	Hydraulic Conductivity (K m/s)	Top of Screen Elevation	Bottom of Screen Elevation
Active Aquitard								
OW32-90S	394484.28	4748064.15	13-Dec-90	200.25	201.28	-	198.72	194.12
OW35-90S	394507.41	4748570.04	13-Dec-90	198.42	199.26	-	196.90	192.30
TW21-94-II	393769.34	4748890.36	05-Apr-94	199.30	200.08	-	197.85	194.88
TW22-94	393627.30	4748561.65	06-Oct-94	200.51	201.31	-	198.73	195.76
TW30-94	394481.04	4747779.85	29-Jun-94	200.51	201.35	6.80E-05	197.15	195.63
TW32-94-IV	394350.52	4748883.71	26-Jul-94	198.04	198.80	-	195.61	192.64
TW39-99I	393726.35	4748826.82	24-Feb-99	211.89	212.65	1.00E-10	199.52	196.78
TW39-99S	393742.71	4748829.70	25-Feb-99	211.84	212.58	3.20E-10	203.10	200.36
TW40-99S	394021.18	4748880.00	03-Feb-99	198.77	199.49	1.20E-09	196.97	194.22
TW41-99S	394316.59	4747550.26	03-Oct-99	200.34	201.01	4.10E-10	198.46	195.72
TW42-99S	394075.87	4747348.61	10-Nov-14	199.76	200.64	1.00E-10	198.08	195.33
TW43-99S	393853.94	4747401.36	16-Mar-99	200.03	200.73	2.20E-10	198.07	195.33
TW45-99S	393598.22	4748061.38	03-Dec-99	201.38	202.25	7.10E-09	199.09	196.36
TW46-99I	394418.85	4748804.01	08-Sep-99	211.95	212.84	8.40E-07	196.76	194.02
TW46-99S	394430.91	4748795.86	08-Sep-99	212.04	212.85	7.70E-10	201.45	198.71
TW48-16S	393586.74	4747704.73	12-Jan-16	200.71	201.56	-	198.81	195.76
TW53-03S	394499.68	4748287.76	19-Aug-03	198.94	199.74	1.20E-09	198.24	195.15
TW55-09S	394444.74	4746723.41	01-Dec-09	198.57	199.36	1.42E-08	195.83	192.79
TW56-11S	394823.27	4748839.80	11-Dec-11	197.53	198.54	2.60E-10	195.27	191.31
TW57-11S	395080.12	4747496.72	11-Dec-11	200.29	201.20	2.60E-08	198.21	195.16
TW58-11S	394817.26	4748850.82	11-Dec-11	197.83	198.81	4.80E-10	195.57	192.52
TW59-13S	393107.46	4748192.76	20-Mar-13	201.36	202.04	5.90E-08	198.61	195.56
TW61-13I	393685.64	4748564.37	10-Jul-13	209.69	210.67	1.50E-08	199.94	196.89
TW61-13S	393685.57	4748565.70	10-Jul-13	209.72	210.63	5.70E-10	203.93	200.88
TW62-13S	393623.54	4748071.66	13-Dec-13	201.47	202.39	-	199.03	195.99
TW63-13S	393678.97	4748072.29	13-Dec-13	201.54	202.36	-	199.03	195.98
TW64-16-IV	393706.07	4747666.93	11-Jan-16	201.21	202.12	-	199.31	196.26
Transition Zone								
TW64-16-III	393706.15	4747664.34	11-Jan-16	201.23	202.24	-	193.99	190.94
Inactive Aquitard								
TW64-16-I	393706.00	4747660.15	07-Jan-16	201.22	202.21	-	179.43	176.38
TW64-16-II	393706.11	4747662.56	08-Jan-16	201.19	202.08	-	189.3	186.25

Note:

- No calculated hydraulic conductivity

Table 1

Well Completion Details
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Well ID	Easting	Northing	Survey Date	Ground Elevation (m AMSL)	Reference Elevation (m AMSL)	Hydraulic Conductivity (K m/s)	Top of Screen Elevation	Bottom of Screen Elevation
Interface Aquifer								
OW32-90D	394484.50	4748065.00	13-Dec-90	200.25	201.46	8.00E-10	158.42	156.92
OW35-05D	394499.70	4748569.40	01-Mar-05	198.58	199.63	1.40E-06	158.08	155.08
PW1-N	393972.85	4748755.29	-Mar-00[(a)]/21-Jul-1	201.00[(a)]	202.82[(b)]	-	162.00	158.89
PW2-S(R11)	393953.61	4748519.39	-Dec-11[(a)]/21-Jul-1	202.53[(a)]	203.52[(b)]	5.00E-06	--	--
TW22-99D	393616.00	4748579.00	18-Feb-99	200.65	201.38	3.20E-07	160.24	158.89
TW30-99D	394475.41	4747778.55	03-Apr-99	200.62	201.35	6.80E-05	158.18	157.26
TW32-94-II	394362.90	4748857.70	07-Dec-94	198.09	198.65	2.00E-08	157.00	155.48
TW39-99D	393710.60	4748822.80	23-Feb-99	211.92	212.63	4.70E-08	161.75	160.42
TW40-99D	394000.30	4748882.30	03-Feb-99	198.78	199.51	7.80E-07	158.70	157.40
TW41-99D	394282.82	4747542.67	03-Sep-99	200.42	201.18	7.20E-05	157.43	156.07
TW43-99D	393853.56	4747401.44	16-Mar-99	200.21	200.99	3.20E-06	160.43	157.69
TW45-99D	393597.90	4748054.80	03-Dec-99	201.45	202.39	3.70E-09	159.35	153.73
TW46-99D	394402.90	4748800.60	08-Sep-99	212.02	212.80	7.10E-09	155.94	154.64
TW47-00D	393868.90	4748889.00	22-Jun-00	199.59	200.43	3.90E-10	162.41	159.54
TW48-00D	393589.40	4747707.29	18-Jan-16	200.68	201.40	3.20E-07	160.27	157.40
TW49-00D	394072.73	4747339.78	10-Nov-14	199.87	200.77	8.10E-10	159.99	157.12
TW53-03D	394487.10	4748289.20	18-Aug-03	198.96	199.86	7.20E-06	159.25	156.00
TW54-09D	393757.50	4748241.40	01-Dec-09	202.42	203.34	1.01E-08	160.35	158.83
TW55-09D	394445.49	4746726.11	01-Dec-09	198.66	199.47	8.64E-08	153.34	151.82
TW56-11D	394823.57	4748841.11	11-Dec-11	197.51	198.54	1.20E-05	155.62	154.10
TW57-11D	395081.21	4747495.47	11-Dec-11	200.38	201.27	1.30E-06	158.02	156.49
TW59-13D	393107.43	4748191.18	20-Mar-13	201.35	202.10	1.11E-03	155.23	153.71
TW60-13D	393613.59	4748573.73	10-Jul-13	200.55	201.55	8.30E-06	160.01	158.49
TW61-13D	393685.69	4748562.38	10-Jul-13	209.68	210.56	2.80E-10	160.17	158.66
PW5-17	--	--	03-Nov-17	198.72	199.67	-	160.24	157.20
PW6-17	--	--	03-Nov-17	198.83	199.73	-	157.69	154.64
Shale Aquitard								
TW32-94-I	-	-	-	-	-	-	152.93	151.41
TW42-99D	394076.47	4747352.06	10-Nov-14	199.78	200.62	2.20E-09	157.99	155.25
Sub-Cell 3 Wells								
EW1a-01	393928.93	4748654.82	11-Dec-11	201.53	203.45	-	--	--
EW1b-13	393951.62	4748638.32	10-Jul-13	201.57	203.13	-	--	--
EW1c-13	393954.34	4748608.23	10-Jul-13	201.54	203.22	-	--	--
EW2a-01	393928.31	4748587.69	11-Dec-11	201.27	202.77	-	--	--
EW2b-13	393959.52	4748586.67	10-Jul-13	201.57	203.20	-	--	--
EW2c-13	393961.22	4748566.69	10-Jul-13	201.57	203.23	-	--	--
Leachate Collection Trench								
LCSOW1-15	393734.76	4747806.59	18-Dec-15	204.52	205.61	-	199.95	196.9
LCSOW2-15	393731.36	4747635.38	18-Dec-15	204.16	205.37	-	199.59	196.54
LCSOW3-15	393823.46	4747568.54	19-Dec-15	202.99	204.02	-	199.48	196.44
LCSOW4-15	394029.44	4747565.88	19-Dec-15	201.52	202.57	-	199.49	196.44

Note:

* Decommissioned
- No calculated hydraulic conductivity
-- No data available

Table 2

Monitoring Methodology for Perimeter Monitoring Wells at Lambton Property
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Monitor	Water Level Measurement		Groundwater Sample Collection	
	Semi-Annual Manual Measurement	Quarterly Manual and Continuous (Pressure Transducer)	Continuous Volume	Low Flow
Active Aquitard				
OW32-90S	√		√	
OW35-90S		√	√	
TW21-94-II	√		√	
TW22-94		√	√	
TW30-94		√	√	
TW32-94-IV	√		√	
TW39-99I		√	√	
TW39-99S	√		√	
TW40-99S	√		√	
TW41-99S	√		√	
TW42-99S		√	√	
TW43-99S	√		√	
TW45-99S	√		√	
TW46-99I	√		√	
TW46-99S	√		√	
TW48-16S		√	√	
TW53-03S	√		√	
TW55-09S	√		√	
TW56-11S	√		√	
TW57-11S	√		√	
TW58-11S	√		√	
TW59-13S	√		√	
TW61-13I		√	√	
TW61-13S	√		√	
TW62-13S	√		√	
TW63-13S	√		√	
TW64-16-IV	√	√		
Transition Zone				
TW64-16-III	√	√		
Inactive Aquitard				
TW32-94-III	√			
TW64-16-I	√	√		
TW64-16-II	√	√		
Interface Aquifer				
OW32-90D	√			√
OW35-05D		√		√
PW1-N		√		√
PW2-S(R11)		√		√
TW22-99D	√			√
TW30-99D		√		√
TW32-94-II		√		√
TW39-99D		√		√
TW40-99D		√		√
TW41-99D	√			√
TW43-99D	√			√
TW45-99D	√			√
TW46-99D		√		√

Table 2

Monitoring Methodology for Perimeter Monitoring Wells at Lambton Property
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Monitor	Water Level Measurement		Groundwater Sample Collection	
	Semi-Annual Manual Measurement	Quarterly Manual and Continuous (Pressure Transducer)	Continuous Volume	Low Flow
TW47-00D		√		√
Interface Aquifer (Continued)				
TW48-00D		√		√
TW49-00D		√		√
TW53-03D		√		√
TW54-09D		√		√
TW55-09D		√		√
TW56-11D	√			√
TW57-11D	√			√
TW59-13D	√			√
TW60-13D	√			√
TW61-13D		√		√
Shale Aquitard				
TW32-94-I				
TW42-99D				
Deep Hydraulic Control Layer Wells (Sub-Cell 3)				
EW1a-01		√		√
EW1b-13		√		√
EW1c-13		√		√
EW2a-01		√		√
EW2b-13		√		√
EW2c-13		√		√
Leachate Collection Trench				
LCSOW1-15		√		
LCSOW2-15		√		
LCSOW3-15[(3)]		√		
LCSOW4-15[(3)]		√		

Notes:
Manual water level measurements collected semi-annually with the exception of deep shale monitoring wells monitored bi-annually.

Continuous water level measurements collected hourly. Dataloggers downloaded quarterly.

(1) No results in 2019 – Location destroyed

(2) Removed due to construction of Surface Water Management Pond

(3) Removed in 2020

Table 3

Groundwater Elevations
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Well ID	Date Measured	Reference Elevation (m AMSL)	Water Level Depth (m BTOR)	Water Level Elevation (m AMSL)
Active Aquitard Monitoring Wells				
OW32-90S	17-Apr-20	201.28	1.58	199.70
OW32-90S	3-Jun-20	201.28	1.91	199.37
OW32-90S	19-Oct-20	201.28	2.77	198.51
OW32-90S	17-Dec-20	201.28	1.52	199.76
OW35-90S	3-Mar-20	199.26	1.04	198.22
OW35-90S	17-Apr-20	199.26	0.99	198.27
OW35-90S	3-Jun-20	199.26	1.49	197.77
OW35-90S	18-Sep-20	199.26	2.17	197.09
OW35-90S	19-Oct-20	199.26	2.93	196.33
OW35-90S	17-Dec-20	199.26	1.03	198.23
TW21-94-II	17-Apr-20	200.08	1.20	198.88
TW21-94-II	2-Jun-20	200.08	2.01	198.07
TW21-94-II	19-Oct-20	200.08	2.87	197.21
TW21-94-II	16-Dec-20	200.08	1.36	198.72
TW22-94	3-Mar-20	201.31	0.87	200.44
TW22-94	17-Apr-20	201.31	0.94	200.37
TW22-94	2-Jun-20	201.31	1.46	199.85
TW22-94	18-Sep-20	201.31	1.46	199.85
TW22-94	19-Oct-20	201.31	2.15	199.16
TW22-94	16-Dec-20	201.31	0.90	200.41
TW30-94	3-Mar-20	201.35	1.03	200.32
TW30-94	17-Apr-20	201.35	0.98	200.37
TW30-94	3-Jun-20	201.35	1.35	200.00
TW30-94	18-Sep-20	201.35	4.48	196.87
TW30-94	19-Oct-20	201.35	4.78	196.57
TW30-94	17-Dec-20	201.35	5.42	195.93
TW32-94-IV	17-Apr-20	198.80	0.82	197.98
TW32-94-IV	2-Jun-20	198.80	3.11	195.69
TW32-94-IV	19-Oct-20	198.80	4.34	194.46
TW32-94-IV	16-Dec-20	198.80	1.34	197.46
TW39-99I	3-Mar-20	212.65	11.27	201.38
TW39-99I	17-Apr-20	212.65	11.19	201.46
TW39-99I	2-Jun-20	212.65	13.86	198.79
TW39-99I	18-Sep-20	212.65	11.82	200.83
TW39-99I	19-Oct-20	212.65	11.80	200.85
TW39-99I	16-Dec-20	212.65	13.14	199.51
TW39-99S	17-Apr-20	212.58	7.57	205.01
TW39-99S	2-Jun-20	212.58	10.83	201.75
TW39-99S	19-Oct-20	212.58	7.70	204.88
TW39-99S	16-Dec-20	212.58	10.70	201.88
TW40-99S	17-Apr-20	199.49	0.82	198.67
TW40-99S	2-Jun-20	199.49	2.76	196.73
TW40-99S	19-Oct-20	199.49	4.04	195.45
TW40-99S	16-Dec-20	199.49	1.90	197.59
TW41-99S	13-Apr-20	201.01	0.67	200.34
TW41-99S	3-Jun-20	201.01	0.81	200.20
TW41-99S	16-Oct-20	201.01	1.93	199.08
TW41-99S	17-Dec-20	201.01	0.73	200.28
TW42-99S	3-Mar-20	200.64	0.96	199.68
TW42-99S	13-Apr-20	200.64	0.99	199.65
TW42-99S	1-Jun-20	200.64	1.51	199.13
TW42-99S	18-Sep-20	200.64	3.60	197.04
TW42-99S	16-Oct-20	200.64	2.35	198.29
TW42-99S	15-Dec-20	200.64	4.70	195.94
TW43-99S	13-Apr-20	200.73	0.80	199.93
TW43-99S	1-Jun-20	200.73	1.25	199.48
TW43-99S	16-Oct-20	200.73	2.53	198.20
TW43-99S	15-Dec-20	200.73	1.07	199.66
TW45-99S	13-Apr-20	202.25	1.02	201.23
TW45-99S	3-Jun-20	202.25	1.67	200.58
TW45-99S	16-Oct-20	202.25	2.58	199.67
TW45-99S	16-Dec-20	202.25	1.04	201.21

Notes:
m BTOR Metres below top of riser
m AMSL Metres above mean sea-level
Active Aquitard June and November water levels may not be representative of static water level due to pre-purging

Table 3

Groundwater Elevations
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Well ID	Date Measured	Reference Elevation (m AMSL)	Water Level Depth (m BTOR)	Water Level Elevation (m AMSL)
Active Aquitard Monitoring Wells				
TW46-99I	17-Apr-20	212.84	12.57	200.27
TW46-99I	2-Jun-20	212.84	12.74	200.10
TW46-99I	19-Oct-20	212.84	12.71	200.13
TW46-99I	16-Dec-20	212.84	12.55	200.29
TW46-99S	17-Apr-20	212.85	2.09	210.76
TW46-99S	2-Jun-20	212.85	11.53	201.32
TW46-99S	19-Oct-20	212.85	6.11	206.74
TW46-99S	17-Dec-20	212.85	12.23	200.62
TW48-16S	3-Mar-20	201.56	1.11	200.45
TW48-16S	13-Apr-20	201.56	1.03	200.53
TW48-16S	2-Jun-20	201.56	2.08	199.48
TW48-16S	18-Sep-20	201.56	1.79	199.77
TW48-16S	16-Oct-20	201.56	2.04	199.52
TW48-16S	15-Dec-20	201.56	1.13	200.43
TW53-03S	17-Apr-20	199.74	1.04	198.70
TW53-03S	3-Jun-20	199.74	1.86	197.88
TW53-03S	16-Oct-20	199.74	2.61	197.13
TW53-03S	17-Dec-20	199.74	1.07	198.67
TW55-09S	13-Apr-20	199.36	1.02	198.34
TW55-09S	1-Jun-20	199.36	3.10	196.26
TW55-09S	16-Oct-20	199.36	2.36	197.00
TW55-09S	15-Dec-20	199.36	2.88	196.48
TW56-11S	13-Apr-20	198.54	1.29	197.25
TW56-11S	1-Jun-20	198.54	2.05	196.49
TW56-11S	16-Oct-20	198.54	1.94	196.60
TW56-11S	15-Dec-20	198.54	1.60	196.94
TW57-11S	13-Apr-20	201.20	1.16	200.04
TW57-11S	1-Jun-20	201.20	1.52	199.68
TW57-11S	16-Oct-20	201.20	4.72	196.48
TW57-11S	15-Dec-20	201.20	3.70	197.50
TW58-11S	13-Apr-20	198.81	1.99	196.82
TW58-11S	1-Jun-20	198.81	3.41	195.40
TW58-11S	16-Oct-20	198.81	2.65	196.16
TW58-11S	15-Dec-20	198.81	4.12	194.69
TW59-13S	13-Apr-20	202.04	0.80	201.24
TW59-13S	3-Jun-20	202.04	1.40	200.64
TW59-13S	16-Oct-20	202.04	3.65	198.39
TW59-13S	15-Dec-20	202.04	1.22	200.82
TW61-13I	3-Mar-20	210.67	8.37	202.30
TW61-13I	17-Apr-20	210.67	8.46	202.21
TW61-13I	2-Jun-20	210.67	8.62	202.05
TW61-13I	18-Sep-20	210.67	8.85	201.82
TW61-13I	14-Oct-20	210.67	8.74	201.93
TW61-13I	16-Dec-20	210.67	8.85	201.82

Notes:
m BTOR Metres below top of riser
m AMSL Metres above mean sea-level
Active Aquitard June and November water levels may not be representative of static water level due to pre-purging

Table 3

Groundwater Elevations
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Well ID	Date Measured	Reference Elevation (m AMSL)	Water Level Depth (m BTOR)	Water Level Elevation (m AMSL)
Active Aquitard Monitoring Wells				
TW61-13S	17-Apr-20	210.63	5.43	205.20
TW61-13S	2-Jun-20	210.63	6.82	203.81
TW61-13S	19-Oct-20	210.63	5.64	204.99
TW61-13S	16-Dec-20	210.63	7.00	203.63
TW62-13S	13-Apr-20	202.39	0.97	201.42
TW62-13S	3-Jun-20	202.39	1.44	200.95
TW62-13S	16-Oct-20	202.39	1.68	200.71
TW62-13S	16-Dec-20	202.39	1.03	201.36
TW63-13S	13-Apr-20	202.36	1.12	201.24
TW63-13S	3-Jun-20	202.36	1.08	201.28
TW63-13S	16-Oct-20	202.36	1.27	201.09
TW63-13S	16-Dec-20	202.36	0.96	201.40
Interface Aquifer Monitoring Wells				
OW32-90D	10-Apr-20	201.46	2.33	199.13
OW32-90D	3-Jun-20	201.46	NULL	NULL
OW32-90D	4-Oct-20	201.46	3.59	197.87
OW32-90D	17-Dec-20	201.46	2.44	199.02
OW35-05D	3-Mar-20	199.63	3.57	196.06
OW35-05D	10-Apr-20	199.63	3.53	196.10
OW35-05D	3-Jun-20	199.63	3.87	195.76
OW35-05D	18-Sep-20	199.63	3.68	195.95
OW35-05D	4-Oct-20	199.63	3.67	195.96
OW35-05D	17-Dec-20	199.63	3.53	196.10
PW1-N	3-Mar-20	202.82	NULL	NULL
PW1-N	4-Jun-20	202.82	NULL	NULL
PW1-N	18-Sep-20	202.82	3.95	198.87
PW1-N	4-Oct-20	202.82	3.95	198.87
PW1-N	18-Dec-20	202.82	3.92	198.90
PW2-S(R11)	3-Mar-20	203.52	4.51	199.01
PW2-S(R11)	10-Apr-20	203.52	4.00	199.52
PW2-S(R11)	4-Jun-20	203.52	4.56	198.96
PW2-S(R11)	18-Sep-20	203.52	4.36	199.16
PW2-S(R11)	4-Oct-20	203.52	4.24	199.28
PW2-S(R11)	18-Dec-20	203.52	4.27	199.25
TW22-99D	2-Jun-20	201.38	2.22	199.16
TW22-99D	16-Dec-20	201.38	NULL	NULL
TW30-99D	3-Mar-20	201.35	2.47	198.88
TW30-99D	10-Apr-20	201.35	2.59	198.76
TW30-99D	3-Jun-20	201.35	2.49	198.86
TW30-99D	18-Sep-20	201.35	2.66	198.69
TW30-99D	4-Oct-20	201.35	2.54	198.81
TW30-99D	17-Dec-20	201.35	2.55	198.80
TW32-94-II	3-Mar-20	198.65	2.76	195.89
TW32-94-II	10-Apr-20	198.65	2.83	195.82
TW32-94-II	2-Jun-20	198.65	2.87	195.78
TW32-94-II	18-Sep-20	198.65	2.94	195.71
TW32-94-II	4-Oct-20	198.65	2.88	195.77
TW32-94-II	16-Dec-20	198.65	2.85	195.80
TW39-99D	3-Mar-20	212.63	10.97	201.66
TW39-99D	10-Apr-20	212.63	10.97	201.66
TW39-99D	2-Jun-20	212.63	11.01	201.62
TW39-99D	18-Sep-20	212.63	11.07	201.56
TW39-99D	4-Oct-20	212.63	11.02	201.61
TW39-99D	16-Dec-20	212.63	11.02	201.61
TW40-99D	3-Mar-20	199.51	0.89	198.62
TW40-99D	10-Apr-20	199.51	0.93	198.58
TW40-99D	2-Jun-20	199.51	0.98	198.53
TW40-99D	18-Sep-20	199.51	0.89	198.62
TW40-99D	4-Oct-20	199.51	0.81	198.70
TW40-99D	16-Dec-20	199.51	0.79	198.72
TW41-99D	10-Apr-20	201.18	2.47	198.71
TW41-99D	3-Jun-20	201.18	2.40	198.78
TW41-99D	4-Oct-20	201.18	2.45	198.73
TW41-99D	17-Dec-20	201.18	2.44	198.74

Notes:
m BTOR Metres below top of riser
m AMSL Metres above mean sea-level
Active Aquitard June and November water levels may not be representative of static water level due to pre-purging

Table 3

Groundwater Elevations
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Clean Harbors Canada Inc.
Lambton Facility

Well ID	Date Measured	Reference Elevation (m AMSL)	Water Level Depth (m BTOR)	Water Level Elevation (m AMSL)
Interface Aquifer Monitoring Wells				
TW43-99D	10-Apr-20	200.99	0.65	200.34
TW43-99D	1-Jun-20	200.99	0.71	200.28
TW43-99D	4-Oct-20	200.99	0.77	200.22
TW43-99D	15-Dec-20	200.99	0.77	200.22
TW45-99D	10-Apr-20	202.39	42.98	159.41
TW45-99D	3-Jun-20	202.39	42.47	159.92
TW45-99D	4-Oct-20	202.39	43.93	158.46
TW45-99D	16-Dec-20	202.39	43.55	158.84
TW46-99D	3-Mar-20	212.80	16.36	196.44
TW46-99D	10-Apr-20	212.80	16.37	196.43
TW46-99D	2-Jun-20	212.80	16.48	196.32
TW46-99D	18-Sep-20	212.80	16.49	196.31
TW46-99D	4-Oct-20	212.80	16.44	196.36
TW46-99D	17-Dec-20	212.80	16.43	196.37
TW47-00D	3-Mar-20	200.43	1.66	198.77
TW47-00D	10-Apr-20	200.43	1.78	198.65
TW47-00D	2-Jun-20	200.43	1.73	198.70
TW47-00D	18-Sep-20	200.43	1.70	198.73
TW47-00D	4-Oct-20	200.43	1.59	198.84
TW47-00D	16-Dec-20	200.43	1.59	198.84
TW48-00D	3-Mar-20	201.40	2.39	199.01
TW48-00D	10-Apr-20	201.40	2.27	199.13
TW48-00D	2-Jun-20	201.40	2.34	199.06
TW48-00D	18-Sep-20	201.40	3.00	198.40
TW48-00D	4-Oct-20	201.40	2.98	198.42
TW48-00D	15-Dec-20	201.40	3.12	198.28
TW49-00D	3-Mar-20	200.77	3.25	197.52
TW49-00D	10-Apr-20	200.77	2.98	197.79
TW49-00D	1-Jun-20	200.77	2.88	197.89
TW49-00D	18-Sep-20	200.77	3.07	197.70
TW49-00D	4-Oct-20	200.77	2.92	197.85
TW49-00D	15-Dec-20	200.77	2.74	198.03
TW53-03D	3-Mar-20	199.86	3.70	196.16
TW53-03D	10-Apr-20	199.86	3.72	196.14
TW53-03D	3-Jun-20	199.86	4.04	195.82
TW53-03D	18-Sep-20	199.86	3.88	195.98
TW53-03D	4-Oct-20	199.86	2.33	197.53
TW53-03D	17-Dec-20	199.86	3.74	196.12
TW54-09D	3-Mar-20	203.34	1.34	202.00
TW54-09D	10-Apr-20	203.34	1.44	201.90
TW54-09D	3-Jun-20	203.34	1.42	201.92
TW54-09D	18-Sep-20	203.34	1.48	201.86
TW54-09D	4-Oct-20	203.34	1.48	201.86
TW54-09D	16-Dec-20	203.34	1.45	201.89
TW55-09D	10-Apr-20	199.47	2.90	196.57
TW55-09D	1-Jun-20	199.47	2.96	196.51
TW55-09D	4-Oct-20	199.47	2.92	196.55
TW55-09D	15-Dec-20	199.47	2.91	196.56
TW56-11D	10-Apr-20	198.54	2.56	195.98
TW56-11D	1-Jun-20	198.54	2.68	195.86
TW56-11D	4-Oct-20	198.54	2.67	195.87
TW56-11D	15-Dec-20	198.54	2.64	195.90
TW57-11D	10-Apr-20	201.27	4.16	197.11
TW57-11D	1-Jun-20	201.27	4.27	197.00
TW57-11D	4-Oct-20	201.27	4.24	197.03
TW57-11D	15-Dec-20	201.27	4.28	196.99
TW59-13D	3-Mar-20	202.10	4.66	197.44
TW59-13D	10-Apr-20	202.10	4.72	197.38
TW59-13D	3-Jun-20	202.10	4.71	197.39
TW59-13D	4-Oct-20	202.10	4.75	197.35
TW59-13D	15-Dec-20	202.10	4.84	197.26
TW60-13D	2-Jun-20	201.55	2.43	199.12
TW61-13D	3-Mar-20	210.56	7.34	203.22
TW61-13D	10-Apr-20	210.56	7.00	203.56
TW61-13D	2-Jun-20	210.56	7.10	203.46
TW61-13D	18-Sep-20	210.56	7.37	203.19
TW61-13D	4-Oct-20	210.56	7.48	203.08
TW61-13D	16-Dec-20	210.56	7.48	203.08

Notes:

m BTOR	Metres below top of riser
m AMSL	Metres above mean sea-level

Table 3

Groundwater Elevations
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Well ID	Date Measured	Reference Elevation (m AMSL)	Water Level Depth (m BTOR)	Water Level Elevation (m AMSL)
Deep Shale Monitoring Wells				
TW32-94-I	10-Apr-20	198.81	3.06	195.75
TW32-94-I	4-Oct-20	198.81	3.15	195.66
TW42-99D	10-Apr-20	200.623	2.16	198.46
TW42-99D	4-Oct-20	200.623	2.22	198.40
Sub-Cell 3 Hydraulic Control Layer/Hydraulic Control Drain Monitoring Wells				
EW1A-01	3-Mar-2020	203.45	9.62	193.83
EW1A-01	17-Apr-2020	203.45	8.35	195.1
EW1A-01	4-Jun-2020	203.45	NULL	NULL
EW1A-01	12-Sep-2020	203.45	13.97	189.48
EW1A-01	4-Oct-2020	203.45	14.96	188.49
EW1A-01	18-Dec-2020	203.45	2.91	200.54
EW1B-13	3-Mar-2020	203.13	9.24	193.89
EW1B-13	17-Apr-2020	203.13	8	195.13
EW1B-13	4-Jun-2020	203.13	15.5	187.63
EW1B-13	13-Sep-2020	203.13	13.57	189.56
EW1B-13	18-Dec-2020	203.13	2.65	200.48
EW1C-13	3-Mar-2020	203.22	9.31	193.91
EW1C-13	17-Apr-2020	203.22	8.04	195.18
EW1C-13	4-Jun-2020	203.22	14.96	188.26
EW1C-13	14-Sep-2020	203.22	13.64	189.58
EW1C-13	18-Dec-2020	203.22	2.7	200.52
EW2A-01	3-Mar-2020	202.77	5.91	196.86
EW2A-01	17-Apr-2020	202.77	4.08	198.69
EW2A-01	4-Jun-2020	202.77	NULL	NULL
EW2A-01	15-Sep-2020	202.77	14.56	188.21
EW2A-01	4-Oct-2020	202.77	14.42	188.35
EW2A-01	18-Dec-2020	202.77	12.71	190.06
EW2B-13	3-Mar-2020	203.2	6.34	196.86
EW2B-13	17-Apr-2020	203.2	4.55	198.65
EW2B-13	4-Jun-2020	203.2	15.2	188
EW2B-13	16-Sep-2020	203.2	14.97	188.23
EW2B-13	18-Dec-2020	203.2	13.21	189.99
EW2C-13	3-Mar-2020	203.23	6.37	196.86
EW2C-13	17-Apr-2020	203.23	4.56	198.67
EW2C-13	4-Jun-2020	203.23	15.14	188.09
EW2C-13	17-Sep-2020	203.23	14.98	188.25
EW2C-13	18-Dec-2020	203.23	13.57	189.66
Leachate Collection Trench				
LCSOW1-15	3-Mar-2020	205.61	5.36	200.25
LCSOW1-15	4-Jun-2020	205.61	8.7	196.91
LCSOW1-15	18-Sep-2020	205.61	8.3	197.31
LCSOW2-15	3-Mar-2020	205.37	5.12	200.25
LCSOW2-15	4-Jun-2020	205.37	9	196.37
LCSOW2-15	18-Sep-2020	205.37	0	205.37
LCSOW3-15	3-Mar-2020	204.02	3.61	200.41
LCSOW3-15	4-Jun-2020	204.02	7.4	196.62
LCSOW3-15	18-Sep-2020	204.02	7.4	196.62
Transect Active Aquitard, Transition Zone, and Inactive Aquitard Monitoring Wells				
TW64-16-I	3-Mar-2020	202.21	2.05	200.16
TW64-16-I	10-Apr-2020	202.21	2.05	200.16
TW64-16-I	2-Jun-2020	202.21	2.36	199.85
TW64-16-I	18-Sep-2020	202.21	5.09	197.12
TW64-16-I	4-Oct-2020	202.21	5.04	197.17
TW64-16-II	3-Mar-2020	202.08	1.71	200.37
TW64-16-II	10-Apr-2020	202.08	1.71	200.37
TW64-16-II	2-Jun-2020	202.08	1.87	200.21
TW64-16-II	18-Sep-2020	202.08	4.27	197.81
TW64-16-II	4-Oct-2020	202.08	4.25	197.83
TW64-16-III	3-Mar-2020	202.24	2.18	200.06
TW64-16-III	10-Apr-2020	202.24	2.05	200.19
TW64-16-III	2-Jun-2020	202.24	2.06	200.18
TW64-16-III	18-Sep-2020	202.24	3.48	198.76
TW64-16-III	4-Oct-2020	202.24	3.32	198.92
TW64-16-IV	3-Mar-2020	202.12	1.51	200.61
TW64-16-IV	10-Apr-2020	202.12	1.53	200.59
TW64-16-IV	2-Jun-2020	202.12	1.94	200.18
TW64-16-IV	18-Sep-2020	202.12	2.29	199.83
TW64-16-IV	4-Oct-2020	202.12	2.71	199.41

Notes:

m BTOR	Metres below top of riser
m AMSL	Metres above mean sea-level

Table 4

Groundwater Chemisty - Shallow Wells Located Off the Facility Property (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW55-09S	TW55-09S	TW55-09S	TW56-11S	TW56-11S	TW56-11S	TW56-11S	TW57-11S	TW57-11S	TW57-11S	TW58-11S	TW58-11S	TW58-11S	TW59-13S	TW59-13S	TW59-13S
Sample ID						55S	55S		56S	56S	566S		57S	57S		58S	58S		59S	59S
Sample Date:					05/26/2010 - 12/02/2019	6/1/2020	12/15/2020	06/13/2012 - 12/02/2019	6/1/2020	12/15/2020	12/15/2020	06/12/2012 - 12/04/2019	6/1/2020	12/15/2020	06/13/2012 - 12/02/2019	6/1/2020	12/15/2020	05/21/2013 - 12/02/2019	6/3/2020	12/15/2020
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**	**Historical Range**			**Historical Range**			**Duplicate**	**Historical Range**			**Historical Range**			**Historical Range**		
Field Parameters																				
Conductivity, field	uS/cm	-	-	-	1240 - 1640	970[c]	1390	1570 - 2510	1240[c]	1410[c]	1410[c]	1520 - 2160	1480[c]	2210[c]	2160 - 3320	3150	3050	764 - 1410	999	900
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	6.73 - 7.78	7.72	7.13	6.53 - 7.52	7.63[c]	7.24	7.24	6.7 - 7.52	7.66[c]	6.89	6.49 - 7.48	7.65[c]	6.86	6.76 - 7.57	7.87[c]	7.24
Temperature, field	Deg C	AO	15	-	9.45 - 12.3	18[ac]	8.7[c]	10.03 - 12.35	14.2[c]	5.93[c]	5.93[c]	9.77 - 11.8	14.2[c]	3.99[c]	10.01 - 11.8	13.7[c]	2.95[c]	10.07 - 11.57	16.9[ac]	6.6[c]
General Indicators																				
Conductivity, electrical	uS/cm	-	-	-	1020 - 1440	1420	1390	1340 - 2400	1880	1740	1740	1290 - 2240	1970	1730	2510 - 3470	3620[c]	3280	755 - 994	1160[c]	981
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.71 - 8.29	7.44[c]	7.73	7.65 - 8.13	7.65	7.68	7.67	7.58 - 8.06	7.23[c]	7.74	7.64 - 8.03	7.46[c]	7.61[c]	7.82 - 8.22	7.8[c]	7.79[c]
Total dissolved solids (TDS)	mg/L	AO	500	-	752 - 1080	838[a]	970[a]	1290 - 2050	1160[ac]	1190[ac]	1190[ac]	838 - 1790	1130[a]	1180[a]	2080 - 3250	2760[a]	2900[a]	506 - 631	552[a]	558[a]
Minor Ions - Anions																				
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	272 - 335	300	314	317 - 398	407[c]	402[c]	404[c]	459 - 550	488	496	463 - 544	475	493	358 - 409	414[c]	429[c]
Chloride	mg/L	AO	250	-	13.4 - 16.8	14.4	16.2	34.5 - 67.3	33[c]	42.7	42.1	19.1 - 31	22.2	23.1	267 - 355	294[a]	264[ac]	11 - 17.7	17.3	17.6
Sulfate	mg/L	AO	500	-	408 - 521	359[c]	468	564 - 1100	497[c]	577[a]	570[a]	267 - 912	487	517[a]	935 - 1240	1060[a]	1170[a]	103 - 164	113	111
Major Ions - Cations																				
Calcium (dissolved)	mg/L	-	-	-	119 - 170	124	135	189 - 336	189	173[c]	168[c]	130 - 319	178	156	261 - 385	290	311	84.7 - 104	96.1	90.9
Magnesium (dissolved)	mg/L	-	-	-	56.5 - 87	59.5	69.7	81.9 - 161	87	86.4	84.4	76.1 - 174	104	98.1	208 - 280	231	243	45.1 - 57	55.4	52.7
Potassium (dissolved)	mg/L	-	-	-	2.48 - 3	2.52	3.08[c]	2.54 - 4	2.4[c]	2.99	2.94	2.64 - 5	3.21	3.79	4 - 7	4.6	6.3	2 - 3	2	2.52
Sodium (dissolved)	mg/L	AO	20/200	-	41 - 59	52[a]	53.8[a]	63.5 - 90	58.6[ac]	63.2[ac]	62.6[ac]	39 - 69	47.3[a]	54.5[a]	105 - 138	110[a]	116[a]	21.6 - 52	29.5[a]	30.2[a]
Major Ions - Nutrients																				
Ammonia-N	mg/L	-	-	-	ND(0.02) - 0.16	ND (0.02)	ND (0.02)	0.02 - 0.32	ND (0.02)	ND (0.02)	ND (0.02)	0.02 - 1.02	ND (0.02)	ND (0.02)	ND(0.02) - 0.38	ND (0.02)	0.02	0.02 - 12	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	MAC	10.0	-	ND(0.1) - 0.54	ND (0.25) J	ND (0.25)	ND(0.1) - ND(1)	ND (0.5) J	ND (0.5)	ND (0.5)	0.1 - ND(0.5)	ND (0.5) J	ND (0.5)	0.1 - ND(1)	ND (1) J	ND (1)	ND(0.1) - 1.26	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.1) - ND(0.25)	ND (0.25) J	ND (0.25)	ND(0.1) - ND(1)	ND (0.5) J	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.5)	ND(0.1) - ND(1)	ND (1) J	ND (1)	ND(0.1) - 1.5	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous																				
Bromide	mg/L	-	-	-	ND(0.25)	ND (0.25)	ND (0.25)	ND(0.25) - ND(1)	ND (0.5)	ND (0.5)	ND (0.5)	ND(0.25) - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.25) - ND(1)	ND (1)	ND (1)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.01)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	-	ND(0.002) - ND(0.01)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	ND(0.25) - 1	0.62	0.48	ND(0.5) - ND(1)	0.62	ND (0.07)[c]	ND (0.07)[c]	ND(0.5) - 1.48	0.94	ND (0.07)[c]	0.55 - 1.06	0.88	ND (0.13)[c]	ND(0.25) - 1.13	0.76	ND (0.05)[c]
Metals																				
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.01)	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.001)	-	-	ND(0.001) - ND(0.003)	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.002)	-	ND(0.001) - ND(0.003)	ND (0.002)	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.018 - 0.05	0.02	-	0.01 - 0.04	0.012	-	-	0.02 - 0.031	0.026	-	0.01 - 0.05	0.01	-	0.033 - 0.08	0.038	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	0.17 - 0.42	0.231[b]	-	0.251 - 0.43	0.203[bc]	-	-	0.13 - 0.25	0.186	-	0.2 - 0.32	0.27[b]	-	0.1 - 0.15	0.126 J+	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	ND(0.001) - ND(0.005)	ND (0.002)[b]	-	0.001 - ND(0.003)	ND (0.002)[b]	-	-	ND(0.001) - ND(0.005)	ND (0.002)[b]	-	ND(0.001) - ND(0.005)	ND (0.002)[b]	-	ND(0.001) - ND(0.005)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.01) - ND(0.03)	ND (0.01) J	-	ND(0.01) - ND(0.03)	0.021 J	-	-	ND(0.01) - 0.759	0.015 J	-	ND(0.01) - ND(0.03)	ND (0.01) J	-	ND(0.01) - ND(0.03)	ND (0.01) J	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	-	0.001 - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.003) - 0.006	ND (0.003) J	-	0.003 - 0.015	ND (0.003) J	-	-	ND(0.003) - 0.005	ND (0.003) J	-	0.004 - 0.014	ND (0.003) J[c]	-	ND(0.003) - ND(0.005)	ND (0.004) J	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.005) - 0.02	ND (0.005) J	-	ND(0.005) - 0.04	ND (0.005) J	-	-	ND(0.005) - 0.02	ND (0.005) J	-	ND(0.005) - 0.02	ND (0.005) J	-	ND(0.005) - 0.01	ND (0.005) J	-

Notes:

[a] Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b] Indicates value exceeds Policy and Guidelines - Provincial Water Quality The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c] Analytical result outside of the historical concentration range for the parameter.
ND Not detected at the associated reporting limit.
J Estimated concentration.
4.90 Detected result exceeds associated standard.
OG Operational Guideline
AO Aesthetic Objective
MAC Maximum Acceptable Concentration
IMAC Interim Maximum Acceptable Concentration
- Not applicable or not analysed.

Table 5

Groundwater Chemistry - Shallow Wells Installed in the North Berm (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW39-99I	TW39-99I	TW39-99I	TW39-99S	TW39-99S	TW39-99S	TW46-99I	TW46-99I	TW46-99I	TW46-99S
Sample ID						39I	39I		39S	39S		46I	46I	
Sample Date:					06/09/1999 - 12/03/2019	6/2/2020	12/16/2020	06/09/1999 - 12/03/2019	6/2/2020	12/16/2020	11/03/1999 - 12/03/2019	6/2/2020	12/16/2020	11/03/1999 - 12/03/2019
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**	**Historical Range**			**Historical Range**			**Historical Range**			**Historical Range**
Field Parameters														
Conductivity, field	uS/cm	-	-	-	1020 - 2040	1270	1700	997 - 4160	1080	1400	713 - 1700	1300	1450	1030 - 2070
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	6.49 - 8.37	7.61	6.98	6.57 - 8.15	7.6	7.04	6.79 - 7.88	7.5	6.72[c]	6.75 - 7.65
Temperature, field	Deg C	AO	15	-	7.3 - 16.2	14.3	6.2[c]	6.19 - 15	14.6	4.68[c]	10.5 - 15.6	12.6	4.99[c]	10 - 16.4
General Indicators														
Conductivity, electrical	uS/cm	-	-	-	1100 - 1700	1710[c]	1550	1030 - 1500	1520[c]	1340	1060 - 1560	1740[c]	1540	1310 - 2400
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.5 - 8.33	7.66	7.77	7.5 - 8.24	7.7	7.75	7.3 - 8.2	7.6	7.88	7.3 - 8.21
Total dissolved solids (TDS)	mg/L	AO	500	-	848 - 1340	898[a]	992[a]	748 - 1420	752[a]	814[a]	772 - 1130	988[a]	1050[a]	917 - 1980
Minor Ions - Anions														
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	410 - 598	504[a]	587[a]	357 - 487	424	467	332 - 417	383	424[c]	270 - 375
Chloride	mg/L	AO	250	-	16.9 - 28.8	17.6	19.9	17.5 - 24	22	23.7	28.6 - 44.6	40.7	43.7	23 - 100
Sulfate	mg/L	AO	500	-	287 - 389	312	310	256 - 477	273	283	213 - 447	414	422	356 - 956
Major Ions - Cations														
Calcium (dissolved)	mg/L	-	-	-	82 - 123	94.2	101	89.2 - 128	109	102	121 - 173	152	144	78 - 243
Magnesium (dissolved)	mg/L	-	-	-	27 - 124	103	109	62 - 90	80.8	79.6	66.4 - 97	85.7	85.8	33 - 110
Potassium (dissolved)	mg/L	-	-	-	1 - 2.2	1.35	1.67	1 - 3	1.07	1.35	1 - 3	1.83	2.06	5 - 19
Sodium (dissolved)	mg/L	AO	20/200	-	20 - 94	65.9[a]	72.2[a]	49.6 - 88	58.4[a]	59.4[a]	37.6 - 57	49.7[a]	50.7[a]	78.5 - 320
Major Ions - Nutrients														
Ammonia-N	mg/L	-	-	-	0.02 - 1.35	ND (0.02)	ND (0.02)	0.02 - 0.09	ND (0.02)	ND (0.02)	0.02 - 0.35	ND (0.02)	ND (0.02)	0.02 - 0.36
Nitrate (as N)	mg/L	MAC	10.0	-	0.074 - ND(1)	0.6	ND (0.25)	ND(0.1) - ND(1)	ND (0.25)	ND (0.25)	ND(0.01) - 0.26	ND (0.5)[c]	ND (0.25)	ND(0.1) - 0.88
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.25)	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.25)	ND (0.5)[c]	ND (0.25)	ND(0.01) - 0.5
Major Ions - Miscellaneous														
Bromide	mg/L	-	-	-	0.18 - ND(3.5)	ND (0.5)	ND (0.25)	0.22 - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.05) - 0.37	ND (0.5)[c]	ND (0.25)	0.12 - 1.3
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)	-
Fluoride	mg/L	MAC	1.5	-	ND(0.25) - 1.5	0.69	ND (0.05)[c]	ND(0.25) - 1.3	0.74	ND (0.05)[c]	ND(0.25) - 1.2	ND (0.07)[c]	ND (0.05)[c]	ND(0.05) - 1.5
Metals														
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	0.001 - ND(0.01)	ND (0.003)	-	ND(0.001) - ND(0.003)	ND (0.003)	-	0.001 - ND(0.003)	ND (0.001)	-	0.001 - ND(0.01)
Barium (dissolved)	mg/L	MAC	1.0	-	0.032 - 0.07	0.042	-	0.027 - 0.05	0.032	-	0.026 - 0.08	0.034	-	0.015 - 0.068
Boron (dissolved)	mg/L	IMAC	5.0	0.2	0.04 - 0.197	0.177 J+	-	0.19 - 0.387	0.28[b]	-	0.087 - 0.16	0.135	-	0.81 - 31
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - 0.004	ND (0.0001)	-	ND(0.0001) - ND(0.003)	ND (0.0001)	-	ND(0.0001) - ND(0.003)	ND (0.0001)	-	ND(0.0001) - ND(0.003)
Chromium (dissolved)	mg/L	MAC	0.05	0.001	0.001 - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	ND(0.0003) - ND(0.01)	ND (0.002)[b]	-	ND(0.0003) - ND(0.01)
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.005) - 1.52	0.012 J	-	ND(0.005) - ND(0.05)	ND (0.01) J	-	ND(0.005) - ND(0.05)	ND (0.01) J	-	ND(0.005) - ND(0.05)
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.0001) - ND(0.002)	ND (0.0005)	-	ND(0.0001) - ND(0.002)	ND (0.0005)	-	ND(0.0001) - 0.002	ND (0.0005)	-	ND(0.0005) - ND(0.002)
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001) - 0.0003	ND (0.0001)	-	ND(0.0001) - 0.0008	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.003) - 0.012
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.005) - 0.084	ND (0.005) J	-	0.004 - 0.04	ND (0.005) J	-	0.003 - 0.04	ND (0.005) J	-	ND(0.003) - 0.04

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 5

Groundwater Chemistry - Shallow Wells Installed in the North Berm (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		TW46-99S	TW46-99S	TW61-13I	TW61-13I	TW61-13I	TW61-13S	TW61-13S	TW61-13S
Sample ID		46S	46S		61I	61I		61S	61S
Sample Date:		6/2/2020	12/17/2020	11/05/2013 - 12/04/2019	6/2/2020	12/16/2020	11/07/2013 - 12/03/2019	6/2/2020	12/16/2020
				Historical Range			Historical Range		
Parameters	**Units**								
Field Parameters									
Conductivity, field	uS/cm	1770	1900	980 - 1260	1030	1180	1000 - 1320	1010	1160
pH, field	s.u.	7.59	6.73[c]	6.58 - 7.71	7.59	7.31	6.48 - 7.56	7.57[c]	7.66[c]
Temperature, field	Deg C	13.4	6.01[c]	9.95 - 13.95	12.2	9.37[c]	10.01 - 12.92	12.3	8.54[c]
General Indicators									
Conductivity, electrical	uS/cm	2190	1980	899 - 1100	1430[c]	1310[c]	1010 - 1370	1500[c]	1300
pH, lab	s.u.	7.62	7.74	7.63 - 8.27	7.7	7.76	7.64 - 8.25	7.66	7.73
Total dissolved solids (TDS)	mg/L	1450[a]	1500[a]	620 - 762	806[ac]	906[ac]	738 - 890	770[a]	806[a]
Minor Ions - Anions									
Alkalinity, total (as CaCO3)	mg/L	323	346	309 - 372	327	360	368 - 469	449	470[c]
Chloride	mg/L	37.5	44.6	20.5 - 24.8	19.6[c]	20.1[c]	18.8 - 22.6	20.7	21.9
Sulfate	mg/L	737[a]	788[a]	189 - 294	332[c]	379[c]	242 - 313	239[c]	247
Major Ions - Cations									
Calcium (dissolved)	mg/L	206	196	98.8 - 128	132[c]	135[c]	108 - 140	118	117
Magnesium (dissolved)	mg/L	86.6	86.4	47.5 - 63	64.7[c]	66.3[c]	55.8 - 74	62.3	62.5
Potassium (dissolved)	mg/L	6.44	6.67	0.62 - 1.26	0.94	1.21	1.78 - 3	2.26	2.58
Sodium (dissolved)	mg/L	102[a]	101[a]	23 - 32.6	34.9[ac]	33.7[ac]	55.5 - 71	66.6[a]	66.2[a]
Major Ions - Nutrients									
Ammonia-N	mg/L	ND (0.02)	ND (0.02)	ND(0.02) - 0.1	ND (0.02)	ND (0.02)	0.02 - 0.08	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	0.11 - 0.89	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous									
Bromide	mg/L	ND (0.5)	ND (0.5)	ND(0.25)	ND (0.25)	ND (0.25)	ND(0.25) - 0.71	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	ND (0.07)	ND (0.07)	ND(0.25) - 0.48	ND (0.05)[c]	ND (0.05)[c]	ND(0.25) - 0.99	0.72	ND (0.05)[c]
Metals									
Arsenic (dissolved)	mg/L	ND (0.002)	-	ND(0.001) - ND(0.003)	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.005)[c]	-
Barium (dissolved)	mg/L	0.015	-	0.047 - 0.07	0.068	-	0.036 - 0.08	0.036	-
Boron (dissolved)	mg/L	2.78[b]	-	0.08 - 0.44	0.157 J+	-	0.267 - 0.4	0.341[b]	-
Cadmium (dissolved)	mg/L	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND (0.002)[b]	-	ND(0.001) - 0.003	ND (0.002)[b]	-	ND(0.001) - 0.004	ND (0.002)[b]	-
Iron (dissolved)	mg/L	ND (0.01) J	-	ND(0.01) - ND(0.03)	ND (0.01) J	-	ND(0.01) - ND(0.03)	0.053 J[c]	-
Lead (dissolved)	mg/L	ND (0.0005)	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-	ND(0.003) - 0.006	ND (0.003) J	-
Zinc (dissolved)	mg/L	0.006 J	-	ND(0.005) - 0.03	ND (0.005) J	-	ND(0.005) - 0.01	ND (0.005) J	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Stan
	Guidelines, Ontario Ministry of the Environment, as re
[b]	Indicates value exceeds Policy and Guidelines - Provi
	The Ontario Ministry of the Environment and Energy,
[c]	Analytical result outside of the historical concentration
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 6

Groundwater Chemistry - Shallow Wells along Perimeter of Facility Property, Downgradient of North Berm (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					OW32-90S	OW32-90S	OW32-90S	OW35-90S	OW35-90S	OW35-90S	TW21-94-II	TW21-94-II	TW21-94-II	TW22-94	TW22-94	TW22-94
Sample ID						32S	32S		35S	35S		21II	21II		22	22
Sample Date:					06/19/1991 - 12/02/2019	6/3/2020	12/17/2020	06/20/1991 - 12/02/2019	6/3/2020	12/17/2020	08/22/1994 - 12/03/2019	6/2/2020	12/16/2020	08/13/1994 - 12/03/2019	6/2/2020	12/16/2020
					Historical Range			Historical Range			Historical Range			Historical Range		
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**												
Field Parameters																
Conductivity, field	uS/cm	-	-	-	802 - 2180	1320	1210	1000 - 5940	1520	1370	810 - 1670	1160	1130	1140 - 2390	1800	1750
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	7.04 - 7.86	7.9[c]	7.07	6.93 - 8.03	7.94	7.06	6.44 - 8.06	7.82	6.69	6.61 - 8.09	7.83	7
Temperature, field	Deg C	AO	15	-	8.9 - 16	21.5[ac]	7.59[c]	10.09 - 15.8	18.9[ac]	4.15[c]	10.39 - 15.6	19.8[ac]	7.13[c]	10.5 - 18.4	18.6[ac]	6.23[c]
General Indicators																
Conductivity, electrical	uS/cm	-	-	-	889 - 1430	1660[c]	1300	804 - 1500	1940[c]	1460	742 - 1400	1530[c]	1240	1029 - 1850	2190[c]	1970[c]
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.2 - 8.18	7.77	7.8	7.5 - 8.33	7.77	7.66	7.49 - 8.22	7.66	7.71	7.48 - 8.2	7.67	7.77
Total dissolved solids (TDS)	mg/L	AO	500	-	578 - 1100	1000[a]	848[a]	631 - 1160	1230[ac]	1060[a]	400 - 900	902[ac]	814[a]	692 - 1520	1310[a]	1430[a]
Minor Ions - Anions																
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	200 - 360	354	286	200 - 349	320	270	210 - 495	421	426	340 - 487	443	471
Chloride	mg/L	AO	250	-	8.3 - 45.1	8.73	13.4	7 - 36.6	8.1	9.77	4.1 - 16	4.63	6.77	30 - 74.3	58.5	69.9
Sulfate	mg/L	AO	500	-	235 - 495	456	454	152 - 628	668[ac]	590[a]	85 - 422	329	299	282 - 692	605[a]	633[a]
Major Ions - Cations																
Calcium (dissolved)	mg/L	-	-	-	110 - 191	196[c]	140	21.7 - 204	210[c]	174	71.6 - 191	178	156	102 - 178	180[c]	171
Magnesium (dissolved)	mg/L	-	-	-	38.3 - 71	67.4	52.6	8 - 85.9	87.4[c]	77.6	36 - 68	57.3	50.6	73.3 - 121	113	118
Potassium (dissolved)	mg/L	-	-	-	1.49 - 6	1.69	2.03	0.8 - 5.4	3.01	3.65	0.51 - 3.2	0.96	0.98	1.63 - 4.4	1.79	2.49
Sodium (dissolved)	mg/L	AO	20/200	-	20.2 - 69.1	21.7[a]	22.4[a]	28.7 - 306	32.8[a]	37.7[a]	15.7 - 46	19.5	19	58.7 - 109	79.6[a]	85[a]
Major Ions - Nutrients																
Ammonia-N	mg/L	-	-	-	0.02 - 0.26	ND (0.02)	ND (0.02)	0.02 - 0.52	ND (0.02)	ND (0.02)	0.02 - 0.24	ND (0.02)	ND (0.02)	0.02 - 0.14	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	MAC	10.0	-	ND(0.03) - 2.63	ND (0.25)	ND (0.25)	ND(0.03) - 1.02	ND (0.5)	ND (0.25)	ND(0.086) - ND(5)	ND (0.25)	ND (0.25)	ND(0.01) - ND(2)	ND (0.5)	ND (0.5)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.25)	ND(0.01) - ND(0.5)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.5)
Major Ions - Miscellaneous																
Bromide	mg/L	-	-	-	ND(0.05) - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.02) - ND(0.5)	ND (0.5)	ND (0.25)	ND(0.02) - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.05) - ND(3.5)	ND (0.5)	ND (0.5)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.02)	ND (0.002)	-	0.002 - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	ND(0.25) - ND(1)	0.28	ND (0.05)[c]	ND(0.25) - 1	0.48	ND (0.05)[c]	0.22 - 1	0.18[c]	ND (0.05)[c]	ND(0.25) - 1.3	0.76	ND (0.07)[c]
Metals																
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.06)	ND (0.001)	-	ND(0.001) - ND(0.06)	ND (0.001)	-	ND(0.001) - ND(0.06)	ND (0.001)	-	ND(0.001) - ND(0.06)	ND (0.001)	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.02 - 0.06	0.031	-	0.02 - 0.29	0.036	-	0.04 - 0.073	0.045	-	ND(0.002) - 0.058	0.021	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	0.183 - 3.71	0.168[c]	-	0.083 - 2.46	0.226[b]	-	ND(0.03) - 0.309	0.11 J+	-	ND(0.03) - 0.295	0.169	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - ND(0.005)	ND (0.0001)	-	0.0001 - ND(0.005)	ND (0.0001)	-	ND(0.0001) - ND(0.005)	ND (0.0001)	-	ND(0.0001) - ND(0.005)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	0.001 - ND(0.01)	ND (0.002)[b]	-	0.001 - ND(0.01)	0.008[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.005) - 0.05	0.01 J	-	ND(0.005) - 1.83	0.113 J	-	ND(0.005) - 0.062	ND (0.01) J	-	ND(0.005) - 0.46	ND (0.01) J	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.0005) - ND(0.05)	ND (0.0005)	-	ND(0.0005) - ND(0.05)	ND (0.0005)	-	ND(0.0005) - ND(0.025)	ND (0.0005)	-	ND(0.0005) - ND(0.025)	ND (0.0005)	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001) - 0.00018	ND (0.0001)	-	ND(0.0001) - 0.00016	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.001) - 0.01	0.016 J[c]	-	ND(0.003) - ND(0.01)	ND (0.003) J	-	0.001 - ND(0.01)	ND (0.008) J	-	ND(0.001) - ND(0.01)	ND (0.005) J	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.003) - 0.05	ND (0.005) J	-	0.005 - 0.09	ND (0.005) J	-	ND(0.005) - 0.045	ND (0.005) J	-	ND(0.003) - 0.097	ND (0.005) J	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 6

Groundwater Chemistry - Shallow Wells along Perimeter of Facility Property, Downgradient of North Berm (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		**TW32-94-IV**	**TW32-94-IV**	**TW32-94-IV**	**TW40-99S**	**TW40-99S**	**TW40-99S**	**TW53-03S**	**TW53-03S**	**TW53-03S**
Sample ID			**32IV**	**32IV**		**40S**	**40S**		**53S**	**53S**
Sample Date:		**08/05/1994 - 12/03/2019 Historical Range**	**6/2/2020**	**12/16/2020**	**06/08/1999 - 12/03/2019 Historical Range**	**6/2/2020**	**12/16/2020**	**10/28/2003 - 12/02/2019 Historical Range**	**6/3/2020**	**12/17/2020**
Parameters	**Units**									
Field Parameters										
Conductivity, field	uS/cm	869 - 9850	900	1330	813 - 9490	1120	1420	912 - 1420	1300	1340
pH, field	s.u.	6.77 - 8.2	7.6	7.71	6.71 - 8.12	7.76	7.08	6.87 - 7.58	**7.9[c]**	**6.69[c]**
Temperature, field	Deg C	8.9 - 15.9	13.7	**5.09[c]**	9.8 - 17.5	12.6	**7.22[c]**	10.5 - 16.9	**19.1[ac]**	**8.24[c]**
General Indicators										
Conductivity, electrical	uS/cm	684 - 1600	1130	1310	780 - 1300	**1520[c]**	**1450[c]**	860 - 1550	**1620[c]**	1450
pH, lab	s.u.	7.63 - 8.39	7.73	7.77	7.6 - 8.27	7.75	7.82	7.7 - 8.21	**7.66[c]**	7.81
Total dissolved solids (TDS)	mg/L	514 - 1200	**570[a]**	**716[a]**	533 - 955	**828[a]**	**960[ac]**	ND(5) - 1110	**944[a]**	**1050[a]**
Minor Ions - Anions										
Alkalinity, total (as CaCO3)	mg/L	260 - 428	378	424	334 - 422	384	**480[c]**	299 - 449	367	384
Chloride	mg/L	12.2 - 260	14.3	26.4	17 - 26	18.8	23.8	4.1 - 13	4.65	8.67
Sulfate	mg/L	ND(1) - 564	150	301	126 - 348	319	347	173 - 516	429	461
Major Ions - Cations										
Calcium (dissolved)	mg/L	15 - 195	83.4	124	77.7 - 119	113	**121[c]**	100 - 258	192	163
Magnesium (dissolved)	mg/L	7 - 88.5	42.8	80.8	52.5 - 78.5	**80.9[c]**	**91.4[c]**	40 - 85	68.9	63.1
Potassium (dissolved)	mg/L	0.54 - 4	1.25	3.58	1.64 - 3	1.78	**3.23[c]**	0.95 - 3	1.01	1.79
Sodium (dissolved)	mg/L	30.1 - 256	**32.4[a]**	**75.7[a]**	40 - 54.9	**47.2[a]**	**61.1[ac]**	17.1 - 90	19.4	**27.1[a]**
Major Ions - Nutrients										
Ammonia-N	mg/L	0.02 - 0.4	ND (0.02)	ND (0.02)	0.02 - 0.16	ND (0.02)	0.03	0.02 - 0.28	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	ND(0.01) - ND(2)	ND (0.25)	ND (0.25)	0.072 - 3.23	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.5)	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous										
Bromide	mg/L	ND(0.02) - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.05) - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.05) - ND(1.8)	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	ND(0.25) - 1.35	0.37	**ND (0.05)[c]**	ND(0.25) - 1.4	0.82	0.52	ND(0.25) - 0.97	0.32	**ND (0.05)[c]**
Metals										
Arsenic (dissolved)	mg/L	ND(0.001) - ND(0.06)	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.001)	-
Barium (dissolved)	mg/L	0.01 - 0.19	0.019	-	0.028 - 0.06	0.028	-	0.026 - 0.068	0.033	-
Boron (dissolved)	mg/L	0.071 - 1.8	0.112	-	0.15 - 0.24	0.161	-	0.09 - 0.19	0.133	-
Cadmium (dissolved)	mg/L	ND(0.0001) - ND(0.005)	ND (0.0001)	-	ND(0.0001) - 0.005	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	0.001 - ND(0.01)	**ND (0.002)[b]**	-	0.001 - ND(0.01)	**ND (0.002)[b]**	-	0.001 - ND(0.01)	**ND (0.002)[b]**	-
Iron (dissolved)	mg/L	ND(0.005) - 0.682	0.022 J	-	ND(0.005) - ND(0.05)	0.01 J	-	ND(0.01) - ND(0.05)	0.011 J	-
Lead (dissolved)	mg/L	ND(0.0005) - ND(0.025)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-
Mercury (dissolved)	mg/L	ND(0.0001) - 0.0005	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND(0.001) - 0.02	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND(0.005) - 0.055	0.011 J	-	ND(0.003) - 0.067	ND (0.005) J	-	ND(0.005) - 0.02	ND (0.005) J	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water S Guidelines, Ontario Ministry of the Environment, a
[b]	Indicates value exceeds Policy and Guidelines - Pr The Ontario Ministry of the Environment and Ener
[c]	Analytical result outside of the historical concentra
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 7

Groundwater Chemistry - Shallow Wells along Perimeter of Facility Property, Removed from North Berm (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW30-94	TW30-94	TW41-99S	TW41-99S	TW41-99S	TW42-99S	TW42-99S	TW42-99S	TW43-99S	TW43-99S	TW43-99S	TW43-99S
Sample ID						30		41S	41S		42S	42S		43S	98	43S
Sample Date:					06/07/1999 - 12/02/2019	6/3/2020	06/07/1999 - 12/02/2019	6/3/2020	12/17/2020	06/07/1999 - 12/02/2019	6/1/2020	12/15/2020	06/07/1999 - 12/02/2019	6/1/2020	6/1/2020	12/15/2020
Parameters	Units	ODWS Source	ODWS a	PWQO b	Historical Range		Historical Range			Historical Range			Historical Range		Duplicate	
Field Parameters																
Conductivity, field	uS/cm	-	-	-	658 - 960	900	1080 - 1790	1610	1520	1610 - 3450	2940	3020	571 - 1263	819	819	935
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	7.01 - 7.81	**7.87[c]**	6.6 - 7.81	**7.84[c]**	6.81	6.51 - 7.34	**7.56[c]**	6.9	6.8 - 7.98	**6.56[c]**	**6.56[c]**	7.2
Temperature, field	Deg C	AO	15	-	10.3 - 14.1	**18.5[ac]**	9.9 - 16.8	**15.5[a]**	**6.61[c]**	10.11 - 16.3	**15.4[a]**	**7.52[c]**	9.53 - 19.7	13.9	13.9	**9.29[c]**
General Indicators																
Conductivity, electrical	uS/cm	-	-	-	645 - 1010	**1050[c]**	1220 - 1720	**2000[c]**	1600	724 - 3400	**3670[c]**	3170	597 - 1350	752	762	868
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.14 - 8.4	7.84	7.4 - 8.14	7.61	7.82	7.4 - 8.25	7.44	7.59	7.4 - 8.29	7.4	7.72	7.72
Total dissolved solids (TDS)	mg/L	AO	500	-	420 - 630	**504[a]**	793 - 1250	**1200[a]**	**1080[a]**	471 - 2970	**2900[a]**	**2970[a]**	350 - 995	362	364	**526[a]**
Minor Ions - Anions																
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	349 - 468	387	386 - 608	456	468	183 - 429	358	403	259 - 363	278	268	311
Chloride	mg/L	AO	250	-	4 - 6.16	4.24	7 - 60	55.5	40.2	3 - 57	40.1	24.7	7.28 - 16	**7.04[c]**	**6.98[c]**	**21.3[c]**
Sulfate	mg/L	AO	500	-	90 - 160	112	238 - 603	459	419	162 - 1980	**1770[a]**	**1810[a]**	55.6 - 455	**50.7[c]**	**51.4[c]**	146
Major Ions - Cations																
Calcium (dissolved)	mg/L	-	-	-	74 - 106	81.4	151 - 236	225	181	68 - 509	388	402	0.001 - 172	87.1	88.1	96.1
Magnesium (dissolved)	mg/L	-	-	-	48 - 62.1	52.6	46 - 100	79.2	70.2	24 - 229	182	209	22 - 77.6	25.6	25.6	32.5
Potassium (dissolved)	mg/L	-	-	-	1 - 4	1.77	1 - 4	1.52	2.02	1 - 8	3.34	5.8	1 - 3.4	1.49	1.46	2.03
Sodium (dissolved)	mg/L	AO	20/200	-	27 - 49	**31.2[a]**	41 - 65	**48.8[a]**	**45.4[a]**	37 - 105	**69.8[a]**	**88.1[a]**	21 - 56	**18.3[c]**	**18.2[c]**	**27.9[a]**
Major Ions - Nutrients																
Ammonia-N	mg/L	-	-	-	0.02 - 0.49	ND (0.02)	ND(0.02) - 0.18	ND (0.02)	ND (0.02)	ND(0.02) - 0.47	ND (0.02)	0.03	0.02 - 0.37	ND (0.02)	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	MAC	10.0	-	0.093 - 1.28	ND (0.25)	0.069 - 0.26	**ND (0.5)[c]**	ND (0.25)	0.045 - ND(2.5)	ND (1) J	ND (1)	0.1 - ND(0.25)	ND (0.1) J	ND (0.1) J	ND (0.25)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.01) - ND(0.25)	ND (0.25)	ND(0.01) - ND(0.25)	**ND (0.5)[c]**	ND (0.25)	ND(0.01) - ND(2.5)	ND (1) J	ND (1)	ND(0.01) - ND(0.25)	ND (0.1) J	ND (0.1) J	ND (0.25)
Major Ions - Miscellaneous																
Bromide	mg/L	-	-	-	ND(0.05) - ND(0.5)	ND (0.25)	ND(0.05) - 2.23	**2.3[c]**	1.56	ND(0.05) - ND(2.5)	ND (1)	ND (1)	ND(0.05) - 36.5	ND (0.1)	ND (0.1)	ND (0.25)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.02)	ND (0.002)	ND(0.002) - ND(0.05)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	ND(0.25) - 1.74	1.09	ND(0.25) - 1.3	0.47	**ND (0.05)[c]**	0.41 - ND(2.5)	**ND (0.13)[c]**	**ND (0.13)[c]**	ND(0.1) - 1.1	0.24	0.2	**ND (0.05)[c]**
Metals																
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.003)	ND (0.002)	ND(0.001) - ND(0.003)	**ND (0.006)[bc]**	-	0.001 - ND(0.01)	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.001)	ND (0.001)	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.028 - 0.058	0.03	0.018 - 0.05	0.031	-	0.014 - ND(0.1)	0.015	-	0.02 - 0.063	0.036	0.034	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	ND(0.03) - 0.18	0.109 J+	0.06 - 0.342	0.142 J+	-	0.12 - 0.3	0.159	-	0.05 - 0.358	0.06	0.054	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - 0.005	ND (0.0001)	ND(0.0001) - ND(0.003)	ND (0.0001)	-	ND(0.0001) - ND(0.003)	ND (0.0001)	-	ND(0.0001) - 0.004	ND (0.0001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	0.001 - ND(0.01)	**ND (0.002)[b]**	0.001 - ND(0.01)	**ND (0.002)[b]**	-	0.001 - ND(0.01)	**ND (0.002)[b]**	-	0.001 - ND(0.01)	**ND (0.002)[b]**	**ND (0.002)[b]**	-
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.005) - 0.304	ND (0.01) J	ND(0.005) - 0.058	ND (0.01) J	-	ND(0.005) - ND(0.3)	ND (0.01) J	-	ND(0.005) - 0.07	0.013	ND (0.01) J	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.0005) - ND(0.01)	ND (0.0005)	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.001) - ND(0.05)	**ND (0.0005)[c]**	-	ND(0.001) - ND(0.05)	**ND (0.0005)[c]**	**ND (0.0005)[c]**	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001)	ND (0.0001)	ND(0.0001)	ND (0.0001)	-	ND(0.0001) - 0.00044	ND (0.0001)	-	ND(0.0001) - 0.0013	ND (0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.001) - ND(0.01)	ND (0.003) J	ND(0.001) - ND(0.01)	ND (0.003) J	-	0.004 - ND(0.05)	**ND (0.003) J[c]**	-	ND(0.001) - ND(0.01)	ND (0.009) J	ND (0.003) J	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.003) - 0.039	ND (0.005) J	ND(0.003) - 0.061	ND (0.005) J	-	ND(0.005) - ND(0.1)	ND (0.005) J	-	ND(0.005) - 0.039	ND (0.005)	ND (0.005) J	-

Notes:

[a] Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b] Indicates value exceeds Policy and Guidelines - Provincial Water Quality The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c] Analytical result outside of the historical concentration range for the parameter.
ND Not detected at the associated reporting limit.
J Estimated concentration.
4.90 Detected result exceeds associated standard.
OG Operational Guideline
AO Aesthetic Objective
MAC Maximum Acceptable Concentration
IMAC Interim Maximum Acceptable Concentration
- Not applicable or not analysed.

Table 7

Groundwater Chemistry - Shallow Wells along Perimeter of Facility Property, Removed from North Berm (Active Aquitard)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		**TW45-99S**	**TW45-99S**	**TW45-99S**	**TW48-16S**	**TW48-16S**	**TW48-16S**	**TW62-13S**	**TW62-13S**	**TW62-13S**
Sample ID			**45S**	**45S**		**48S**	**48S**		**62S**	**62S**
Sample Date:		**06/09/1999 - 12/04/2019 Historical Range**	**6/3/2020**	**12/16/2020**	**05/06/2016 - 12/03/2019 Historical Range**	**6/2/2020**	**12/15/2020**	**11/12/2013 - 12/02/2019 Historical Range**	**6/3/2020**	**12/16/2020**
Parameters	**Units**									
Field Parameters										
Conductivity, field	uS/cm	687 - 2220	840	1140	861 - 1550	920	1050	830 - 1907	1000	970
pH, field	s.u.	6.49 - 7.92	7.77	7.1	6.68 - 7.9	7.92[c]	7.32	7.02 - 7.92	7.82	7.31
Temperature, field	Deg C	10.09 - 18.1	16.9[a]	9.91[c]	9.8 - 11	20.9[ac]	7.66[c]	10.67 - 12.1	14.8[c]	9.49[c]
General Indicators										
Conductivity, electrical	uS/cm	618 - 1400	1320	1240	872 - 1170	1330[c]	1100	794 - 1100	1180[c]	1000
pH, lab	s.u.	7.58 - 8.26	7.68	7.74	7.67 - 8.13	7.76	7.77	7.55 - 8.26	7.86	7.78
Total dissolved solids (TDS)	mg/L	430 - 830	694[a]	782[a]	592 - 696	656[a]	698[ac]	570 - 690	596[a]	628[a]
Minor Ions - Anions										
Alkalinity, total (as CaCO3)	mg/L	260 - 542	390	416	370 - 420	396	413	281 - 355	298	322
Chloride	mg/L	10.9 - 240	57.8	70.5	19 - 23.7	18.9[c]	21	25 - 37	38.6[c]	36.2
Sulfate	mg/L	2.5 - 190	138	178	167 - 206	210[c]	190	177 - 226	181	180
Major Ions - Cations										
Calcium (dissolved)	mg/L	13 - 144	131	123	89.4 - 119	102	95.6	79.6 - 118	94.9	87.6
Magnesium (dissolved)	mg/L	4.5 - 51	48.1	51.3[c]	50 - 64	60.2	56.4	34.4 - 48	40.6	37.5
Potassium (dissolved)	mg/L	1 - 3	1.76	2.83	1.8 - 3	2.08	2.54	1.95 - 4	1.89[c]	2.33
Sodium (dissolved)	mg/L	27.5 - 260	35.7[a]	43.9[a]	32.9 - 50	44[a]	46.2[a]	48.3 - 66	54.8[a]	50[a]
Major Ions - Nutrients										
Ammonia-N	mg/L	0.02 - 0.26	ND (0.02)	ND (0.02)	ND(0.02) - ND(0.05)	ND (0.02)	ND (0.02)	0.02 - 0.4	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	0.066 - 0.33	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - 0.26	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous										
Bromide	mg/L	ND(0.05) - 0.6	ND (0.25)	ND (0.25)	ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	ND(0.25) - 1.3	0.42	ND (0.05)[c]	ND(0.25) - 1.2	0.84	ND (0.05)[c]	ND(0.25) - 0.93	0.7	ND (0.05)[c]
Metals										
Arsenic (dissolved)	mg/L	0.001 - ND(0.01)	ND (0.007)[b]	-	ND(0.001) - ND(0.003)	ND (0.005)[c]	-	ND(0.001) - ND(0.01)	ND (0.01)[b]	-
Barium (dissolved)	mg/L	0.05 - 0.14	0.087	-	0.028 - 0.038	0.031	-	0.035 - 0.09	0.042	-
Boron (dissolved)	mg/L	0.05 - 0.206	ND (0.079)	-	0.2 - 0.3	0.249[b]	-	0.12 - 0.18	0.152 J+	-
Cadmium (dissolved)	mg/L	ND(0.0001) - 0.003	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.003)	ND (0.002)[b]	-	ND(0.001) - ND(0.005)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	ND(0.005) - 2.52	ND (0.01) J	-	ND(0.01) - 0.047	ND (0.01) J	-	ND(0.01) - ND(0.03)	ND (0.01) J	-
Lead (dissolved)	mg/L	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	ND(0.0001) - 0.0012	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.005) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND(0.003) - 0.037	ND (0.005) J	-	ND(0.005) - ND(0.01)	ND (0.005) J	-	ND(0.005) - 0.02	ND (0.005) J	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water S Guidelines, Ontario Ministry of the Environment, a
[b]	Indicates value exceeds Policy and Guidelines - P The Ontario Ministry of the Environment and Ener
[c]	Analytical result outside of the historical concentra
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 8

Groundwater Chemistry - Shallow Wells Internal to Facility Property
Influenced by Waste Handling/Disposal (Active Aquitard)
2019 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc

Sample Location:					TW63-13S	TW63-13S	TW63-13S
Sample ID						63S	63S
Sample Date:					11/12/2013 - 12/02/2019	6/3/2020	12/16/2020
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**	**Historical Range**		
Field Parameters							
Conductivity, field	uS/cm	-	-	-	2230 - 3610	2250	2400
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	6.52 - 7.52	**7.83[c]**	7.07
Temperature, field	Deg C	AO	15	-	9.38 - 12.3	**17.9[ac]**	**8[c]**
General Indicators							
Conductivity, electrical	uS/cm	-	-	-	1930 - 2840	**2850[c]**	2360
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.58 - 8.1	7.66	7.78
Total dissolved solids (TDS)	mg/L	AO	500	-	1250 - 2250	**1480[a]**	**1630[a]**
Minor Ions - Anions							
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	384 - 442	412	432
Chloride	mg/L	AO	250	-	533 - 668	**536[a]**	**500[ac]**
Sulfate	mg/L	AO	500	-	56.8 - 80	61	66.8
Major Ions - Cations							
Calcium (dissolved)	mg/L	-	-	-	146 - 236	185	167
Magnesium (dissolved)	mg/L	-	-	-	67.2 - 106	81.2	75.4
Potassium (dissolved)	mg/L	-	-	-	2.9 - 5	3.1	3.23
Sodium (dissolved)	mg/L	AO	20/200	-	138 - 196	**168[a]**	**154[a]**
Major Ions - Nutrients							
Ammonia-N	mg/L	-	-	-	ND(0.02) - 0.11	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	MAC	10.0	-	ND(0.1) - ND(1)	ND (1)	ND (1)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.1) - ND(1)	ND (1)	ND (1)
Major Ions - Miscellaneous							
Bromide	mg/L	-	-	-	ND(0.5) - 2.54	ND (1)	ND (1)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	0.37 - ND(1)	**ND (0.13)[c]**	**ND (0.13)[c]**
Metals							
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.01)	**ND (0.008)[b]**	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.112 - 0.19	0.141	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	0.2 - 0.38	**0.256[b]**	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	0.0001 - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	ND(0.001) - ND(0.005)	**ND (0.002)[b]**	-
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.01) - ND(0.03)	0.015 J	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.001) - ND(0.002)	**ND (0.0005)[c]**	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	0.077 - 0.092	**0.081 J[b]**	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	0.005 - 0.02	ND (0.005) J	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelines. The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 9

Groundwater Chemistry - Deep Wells Located Off the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW55-09D	TW55-09D	TW55-09D	TW56-11D	TW56-11D	TW56-11D	TW57-11D	TW57-11D	TW57-11D	TW57-11D	TW59-13D	TW59-13D	TW59-13D
Sample ID						55D	55D		56D	56D		57D	57D	577D		59D	59D
Sample Date:					05/26/2010 - 12/02/2019	6/1/2020	12/15/2020	06/13/2012 - 12/02/2019	6/1/2020	12/15/2020	06/12/2012 - 12/04/2019	6/1/2020	12/15/2020	12/15/2020	05/16/2013 - 12/02/2019	6/3/2020	12/15/2020
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**	**Historical Range**			**Historical Range**			**Historical Range**			**Duplicate**	**Historical Range**		
Field Parameters																	
Conductivity, field	uS/cm	-	-	-	1830 - 2210	2290[c]	1910	1510 - 1940	1780	1980[c]	1680 - 3890	2640	2590	2590	931 - 9550	1020	900[c]
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	6.93 - 8.97	8.6[ab]	7.53	7.59 - 9.56	8.93[ab]	7.67	7.2 - 8.76	8.27	7.33	7.33	7.25 - 9.22	9.47[abc]	7.77
Temperature, field	Deg C	AO	15	-	9.99 - 11.8	16.1[ac]	9.58[c]	9.99 - 13.3	16[ac]	8.91[c]	7.8 - 12.29	14[c]	8.75	8.75	9.54 - 12.13	15.6[ac]	9.06[c]
General Indicators																	
Conductivity, electrical	uS/cm	-	-	-	1480 - 1940	2220[c]	1930	1160 - 1770	1840[c]	1610	1360 - 2310	2220	2040	2000	684 - 983	1070[c]	925
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.83 - 8.53	7.88	7.82[c]	7.86 - 8.42	7.89	7.8[c]	7.83 - 8.44	7.89	7.76[c]	7.78[c]	7.78 - 8.37	8.1	7.75[c]
Total dissolved solids (TDS)	mg/L	AO	500	-	854 - 1220	980[a]	1010[a]	580 - 1150	804[a]	824[a]	690 - 1500	1000[a]	1000[a]	1010[a]	410 - 610	458	504[a]
Minor Ions - Anions																	
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	260 - 310	279	298	300 - 357	319	345	289 - 432	338	385	382	227 - 293	253	271
Chloride	mg/L	AO	250	-	344 - 451	445[a]	434[a]	277 - 334	308[a]	307[a]	299 - 455	411[a]	416[a]	410[a]	110 - 136	136	134
Sulfate	mg/L	AO	500	-	ND(0.5) - 27	ND (1)	ND (1)	ND(0.5) - 7	ND (1)	ND (0.5)	ND(0.5) - 4	ND (1)	ND (1)	ND (1)	ND(0.2) - 15	ND (0.5)	ND (0.5)
Major Ions - Cations																	
Calcium (dissolved)	mg/L	-	-	-	14 - 22	20.2	20.2	17.8 - 31	21.7	23.2	15 - 24	17.2	18.5	18.6	14.1 - 18	15.2	14.4
Magnesium (dissolved)	mg/L	-	-	-	6 - 8	7.07	6.87	6.95 - 11	8.19	8.78	6 - 9	6.27	7.55	7.36	4.68 - 6	4.93	4.85
Potassium (dissolved)	mg/L	-	-	-	2 - 4	3.73	3.34	1 - 3	2.5	2.51	1 - 3	1.96	2.2	2.15	1 - 3	1.79	1.82
Sodium (dissolved)	mg/L	AO	20/200	-	294 - 385	345[a]	330[a]	247 - 366	279[a]	273[a]	291 - 474	321[a]	378[a]	376[a]	148 - 192	158[a]	158[a]
Major Ions - Nutrients																	
Nitrate (as N)	mg/L	MAC	10.0	-	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.5)	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.25)	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.5)	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.25)	ND(0.1) - ND(0.5)	ND (0.5) J	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous																	
Bromide	mg/L	-	-	-	ND(0.25) - 2.96	ND (0.5)	ND (0.5)	ND(0.25) - 1.73	ND (0.5)	ND (0.25)	ND(0.25) - 4.11	ND (0.5)	ND (0.5)	ND (0.5)	ND(0.25) - 0.77	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.01)	ND (0.002)	-	ND(0.002) - 0.006	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	ND(0.5) - 1.88	1.41	ND (0.07)[c]	ND(0.25) - 1.48	1.02	0.87	ND(0.5) - 1.69	1.2	ND (0.07)[c]	ND (0.07)[c]	ND(0.25) - 1.65	1.32	0.93
Metals																	
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.01)	ND (0.001)	-	0.001 - ND(0.01)	ND (0.009)[b]	-	ND(0.001) - ND(0.01)	ND (0.001)	-	-	0.001 - ND(0.01)	ND (0.007)[b]	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.14 - 0.29	0.238	-	0.105 - 0.25	0.135	-	0.083 - 0.14	0.087	-	-	0.091 - 0.18	0.109	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	1.3 - 1.9	1.95[bc]	-	1.85 - 2.5	2.42[b]	-	1.6 - 2.4	1.96[b]	-	-	1.09 - 1.4	1.33[b]	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	ND(0.001) - 0.007	ND (0.002)[b]	-	ND(0.001) - 0.004	ND (0.002)[b]	-	ND(0.001) - 0.037	ND (0.002)[b]	-	-	ND(0.001) - 0.003	ND (0.002)[b]	-
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.01) - 0.47	0.295 J	-	ND(0.03) - 1.1	1.21 J[abc]	-	0.23 - 7.5	2.11 J[ab]	-	-	ND(0.03) - 0.405	0.453 J[abc]	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.003) - 0.006	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-	ND(0.003) - 0.013	ND (0.003) J	-	-	ND(0.003) - ND(0.005)	ND (0.003) J	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.005) - 0.04	ND (0.005) J	-	ND(0.005) - 0.04	ND (0.005) J	-	ND(0.005) - 0.02	ND (0.005) J	-	-	ND(0.005) - 0.03	ND (0.005) J	-

Table 9

Groundwater Chemistry - Deep Wells Located Off the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW55-09D	TW55-09D	TW55-09D	TW56-11D	TW56-11D	TW56-11D	TW57-11D	TW57-11D	TW57-11D	TW57-11D	TW59-13D	TW59-13D	TW59-13D
Sample ID						55D	55D		56D	56D		57D	57D	577D		59D	59D
Sample Date:					05/26/2010 - 12/02/2019	6/1/2020	12/15/2020	06/13/2012 - 12/02/2019	6/1/2020	12/15/2020	06/12/2012 - 12/04/2019	6/1/2020	12/15/2020	12/15/2020	05/16/2013 - 12/02/2019	6/3/2020	12/15/2020
		ODWS	ODWS	PWQO	Historical Range			Historical Range			Historical Range			Duplicate	Historical Range		
Parameters	**Units**	**Source**	**a**	**b**													
Volatile Organic Compounds																	
1,1,1,2-Tetrachloroethane	ug/L	-	-	20	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	-	-	10	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	-	ND(0.3) - ND(1.2)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	70	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	-	-	800	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
1,1-Dichloroethane	ug/L	-	-	200	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	-	ND(0.3) - ND(1.2)	ND (0.3)	-
1,1-Dichloroethene	ug/L	MAC	14	40	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	-	ND(0.3) - ND(1.2)	ND (0.2)[c]	-
1,2,4-Trichlorobenzene	ug/L	-	-	0.5	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	-	ND(0.3) - ND(1.2)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	-	-	5	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	MAC	200	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,2-Dichloroethane	ug/L	IMAC	5	100	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
1,2-Dichloropropane	ug/L	-	-	0.7	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	-	-	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,3-Dichloropropene	ug/L	-	-	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	-	ND(0.3) - ND(1.2)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	MAC	5	4	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	-	-	400	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	-	ND(1) - ND(4)	ND (1)	-
2-Hexanone	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	-	ND(1) - ND(4)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	-	ND(1) - ND(4)	ND (1)	-
Acetone	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	-	ND(1) - ND(4)	ND (1)	-
Benzene	ug/L	MAC	1	100	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - 0.6	ND (0.2)	-	2.1 - 8.1	4.5[a]	-	-	ND(0.5) - 3.6	3.3[a]	-
Bromodichloromethane	ug/L	-	-	200	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Bromoform	ug/L	-	-	60	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	-	-	0.9	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Carbon tetrachloride	ug/L	MAC	2	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Chlorobenzene	ug/L	MAC	80	15	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Chloroethane	ug/L	-	-	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	-	-	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	-	-	700	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-	-	ND(0.2) - ND(1.6)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	-	-	200	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	-	-	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Dibromochloromethane	ug/L	-	-	40	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	-	-	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Ethylbenzene	ug/L	MAC	140	8	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Hexane	ug/L	-	-	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
m&p-Xylenes	ug/L	-	-	2	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	AO	15	200	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Methylene chloride	ug/L	MAC	50	100	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	-	ND(0.3) - ND(4)	ND (0.3)	-
o-Xylene	ug/L	-	-	40	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Styrene	ug/L	-	-	4	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Tetrachloroethene	ug/L	MAC	10	50	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Toluene	ug/L	MAC	60	0.8	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - 1	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	-	-	200	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	-	-	7	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	-	ND(0.2) - ND(1.2)	ND (0.3)	-
Trichloroethene	ug/L	MAC	5	20	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	-	-	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-	-	ND(0.4) - ND(1.6)	ND (0.4)	-
Vinyl chloride	ug/L	MAC	1	600	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	-	ND(0.17) - ND(0.68)	ND (0.17)	-
Xylenes (total)	ug/L	MAC	90	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	-	ND(0.2) - ND(1)	ND (0.2)	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelines. The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 10

Groundwater Chemistry - Deep Wells Internal to the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW39-99D	TW39-99D	TW39-99D	TW46-99D	TW46-99D	TW46-99D	TW54-09D	TW54-09D	TW54-09D	TW61-13D	TW61-13D	TW61-13D
Sample ID						39D	39D		46D	46D					61D	61D
Sample ID:						GW-44985-060220-DD	4985-121620-DD-39D		GW-44985-060220-DD	4985-121720-DD-46D		GW-44985-060320-DD	4985-121620-DD-54D		GW-44985-060220-DD	4985-121620-DD-61D
Sample Date:					06/09/1999 - 12/03/2019	6/2/2020	12/16/2020	11/03/1999 - 12/03/2019	6/2/2020	12/17/2020	11/03/2009 - 12/02/2019	6/3/2020	12/16/2020	11/07/2013 - 12/03/2019	6/2/2020	12/16/2020
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**	**Historical Range**			**Historical Range**			**Historical Range**			**Historical Range**		
Field Parameters																
Conductivity, field	uS/cm	-	-	-	1240 - 1860	1370	1260	901 - 1630	1220	1230	910 - 1660	940	920	1010 - 1350	1240	1010
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	6.85 - 8.44	8.17	6.99	7.11 - 8.56	8.01	7.09[c]	7.38 - 9.09	9.3[abc]	7.74	6.6 - 8.11	7.19	7.32
Temperature, field	Deg C	AO	15	-	9.69 - 19.9	13.5	8.72[c]	8.52 - 16.5	16.9[ac]	6.93[c]	10.44 - 14.02	15.3[ac]	9.57[c]	8.12 - 15.52	15	5.01[c]
General Indicators																
Conductivity, electrical	uS/cm	-	-	-	1030 - 2400	1490	1290	985 - 1400	1480[c]	1290	753 - 1010	1130[c]	1000	812 - 1320	1270	1140
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.64 - 8.54	7.72	7.57[c]	7.68 - 8.71	7.79	7.7	7.78 - 8.64	8.03	7.78	7.6 - 8.53	7.87	7.73
Total dissolved solids (TDS)	mg/L	AO	500	-	662 - 1230	640[ac]	658[ac]	290 - 845	648[a]	654[a]	458 - 620	492	518[a]	490 - 858	586[a]	600[a]
Minor Ions - Anions																
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	283 - 421	310	314	290 - 356	319	333	238 - 289	254	280	206 - 313	240	265
Chloride	mg/L	AO	250	-	232 - 528	227[c]	221[c]	153 - 292	211	210	116 - 154	150	153	128 - 225	146	147
Sulfate	mg/L	AO	500	-	0.49 - 10	ND (0.5)	ND (0.5)	0.47 - 11	ND (0.5)	ND (0.5)	ND(0.2) - 12	ND (0.5)	ND (0.5)	12 - 67	79.4[c]	86.6[c]
Major Ions - Cations																
Calcium (dissolved)	mg/L	-	-	-	18 - 36.1	22.3	20.9	13.3 - 23	15.9	16.3	14.4 - 18	17	15.3	17 - 27	29.3[c]	30.6[c]
Magnesium (dissolved)	mg/L	-	-	-	6.12 - 18.3	6.51	6.03[c]	4.61 - 7.1	5.01	5.14	4.77 - 7	5.49	5.24	5 - 8.69	12[c]	12.6[c]
Potassium (dissolved)	mg/L	-	-	-	1 - 2.1	1.62	1.65	1 - 4	1.87	2.09	1.24 - 3	1.72	1.97	1 - 2	1.65	2.03[c]
Sodium (dissolved)	mg/L	AO	20/200	-	220 - 415	230[a]	220[a]	201 - 290	235[a]	249[a]	150 - 196	175[a]	174[a]	162 - 275	175[a]	171[a]
Major Ions - Nutrients																
Ammonia-N	mg/L	-	-	-	-	-	-	0.15 - 0.37	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	MAC	10.0	-	0.015 - ND(1)	ND (0.25)	ND (0.25)	ND(0.021) - ND(0.5)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.01) - ND(0.5)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.5)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous																
Bromide	mg/L	-	-	-	ND(0.25) - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.25) - 2.61	ND (0.25)	ND (0.25)	ND(0.25) - 1.1	ND (0.25)	ND (0.25)	ND(0.25) - 1.68	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.01)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	ND(0.25) - 2	1.36	0.95	ND(0.25) - 1.8	1.2	0.75	ND(0.25) - 1.77	1.26	0.9	ND(0.25) - 1.69	1.2	0.73
Metals																
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.01)	ND (0.005)	-	0.001 - ND(0.003)	ND (0.006)[bc]	-	ND(0.001) - ND(0.1)	ND (0.007)[b]	-	0.003 - 0.004	ND (0.005)[c]	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.1 - 0.312	0.126	-	0.08 - 0.2	0.099	-	0.106 - 0.3	0.124	-	0.045 - 0.13	0.051	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	1.67 - 2.4	1.77[b]	-	1.46 - 2.09	1.86[b]	-	1.4 - 1.7	1.92[bc]	-	1.4 - 1.6	1.63[bc]	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - 0.003	ND (0.0001)	-	ND(0.0001) - 0.003	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	0.0003 - ND(0.01)	ND (0.002)[b]	-	0.001 - 0.004	ND (0.002)[b]	-	ND(0.001) - ND(0.003)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	AO	0.30	0.3	0.008 - 0.302	0.412 J[abc]	-	0.018 - 0.755	0.49 J[ab]	-	ND(0.03) - 0.23	0.128 J	-	ND(0.01) - 0.1	0.028 J	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001) - 0.00048	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.001) - 0.01	0.024 J[c]	-	ND(0.003) - ND(0.005)	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	0.005 - 0.096	ND (0.005) J	-	ND(0.003) - 0.19	ND (0.005) J	-	ND(0.005) - 0.04	ND (0.005) J	-	ND(0.005) - 0.02	ND (0.005) J	-
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	ug/L	-	-	20	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	-	-	10	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.2) - ND(1.2)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	70	ND(0.1) - ND(0.6)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	-	-	800	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
1,1-Dichloroethane	ug/L	-	-	200	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.1) - ND(1.2)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-

Table 10

Groundwater Chemistry - Deep Wells Internal to the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					TW39-99D	TW39-99D	TW39-99D	TW46-99D	TW46-99D	TW46-99D	TW54-09D	TW54-09D	TW54-09D	TW61-13D	TW61-13D	TW61-13D
Sample ID						39D	39D		46D	46D		54D	54D		61D	61D
Sample ID:					GW-44985-060220-DD	4985-121620-DD-39D		GW-44985-060220-DD	4985-121720-DD-46D		GW-44985-060320-DD	4985-121620-DD-54D		GW-44985-060220-DD	4985-121620-DD-61D	
Sample Date:					06/09/1999 - 12/03/2019	6/2/2020	12/16/2020	11/03/1999 - 12/03/2019	6/2/2020	12/17/2020	11/03/2009 - 12/02/2019	6/3/2020	12/16/2020	11/07/2013 - 12/03/2019	6/2/2020	12/16/2020
Parameters	**Units**	**ODWS Source**	**ODWS a**	**PWQO b**	**Historical Range**			**Historical Range**			**Historical Range**			**Historical Range**		
1,1-Dichloroethene	ug/L	MAC	14	40	ND(0.1) - ND(1.2)	ND (0.2)	-	ND(0.1) - ND(1.2)	ND (0.2)	-	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	ND(0.3) - ND(0.5)	ND (0.2)[c]	-
1,2,4-Trichlorobenzene	ug/L	-	-	0.5	ND(0.3) - ND(1.2)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	-	-	5	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	MAC	200	2.5	ND(0.002) - ND(2)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,2-Dichloroethane	ug/L	IMAC	5	100	ND(0.002) - ND(2)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
1,2-Dichloropropane	ug/L	-	-	0.7	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	-	-	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,3-Dichloropropene	ug/L	-	-	-	ND(0.3) - ND(1.2)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	MAC	5	4	ND(0.002) - ND(2)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	-	-	400	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
2-Hexanone	ug/L	-	-	-	ND(1) - ND(4)	ND (1)	-	ND(1) - ND(4)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	-	-	-	ND(1) - ND(5)	ND (1)	-	ND(0.1) - ND(4)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
Acetone	ug/L	-	-	-	ND(1) - ND(10)	ND (1)	-	ND(0.1) - ND(4)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
Benzene	ug/L	MAC	1	100	ND(0.001) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - 0.7	0.36	-	ND(0.2) - 5.6	0.25	-
Bromodichloromethane	ug/L	-	-	200	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Bromoform	ug/L	-	-	60	ND(0.1) - 0.4	ND (0.1)	-	ND(0.1) - 0.4	3.2[c]	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	-	-	0.9	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Carbon tetrachloride	ug/L	MAC	2	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Chlorobenzene	ug/L	MAC	80	15	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-
Chloroethane	ug/L	-	-	-	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	-	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-	0.1 - ND(0.8)	0.25	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	-	-	700	ND(0.2) - ND(1.6)	ND (0.4)	-	ND(0.2) - ND(1.6)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	-	-	200	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	-	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Dibromochloromethane	ug/L	-	-	40	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	-	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Ethylbenzene	ug/L	MAC	140	8	ND(0.001) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Hexane	ug/L	-	-	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
m&p-Xylenes	ug/L	-	-	2	ND(0.1) - ND(10)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	AO	15	200	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Methylene chloride	ug/L	MAC	50	100	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.3) - ND(5)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-
o-Xylene	ug/L	-	-	40	ND(0.1) - ND(10)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Styrene	ug/L	-	-	4	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Tetrachloroethene	ug/L	MAC	10	50	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Toluene	ug/L	MAC	60	0.8	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - 1.2	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - 0.8	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	-	-	200	ND(0.1) - ND(0.9)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	-	-	7	ND(0.2) - ND(1.2)	ND (0.3)	-	ND(0.2) - ND(10)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-
Trichloroethene	ug/L	MAC	5	20	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	-	-	-	ND(0.2) - ND(1.6)	ND (0.4)	-	ND(0.1) - ND(1.6)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-
Vinyl chloride	ug/L	MAC	1	600	ND(0.17) - ND(0.68)	ND (0.17)	-	ND(0.1) - ND(0.68)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-
Xylenes (total)	ug/L	MAC	90	-	ND(0.01) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-

Notes:

[a] Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b] Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelines. The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c] Analytical result outside of the historical concentration range for the parameter.
ND Not detected at the associated reporting limit.
J Estimated concentration.
4.90 Detected result exceeds associated standard.
OG Operational Guideline
AO Aesthetic Objective
MAC Maximum Acceptable Concentration
IMAC Interim Maximum Acceptable Concentration
- Not applicable or not analysed.

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					OW32-90D	OW32-90D	OW32-90D	OW35-05D	OW35-05D	OW35-05D	TW22-99D	TW22-99D	TW22-99D
Sample ID						32D	32D		35D	35D		22D	22D
Sample Date:					06/19/1991 - 12/02/2019	6/3/2020	12/17/2020	05/31/2005 - 12/02/2019	6/3/2020	12/17/2020	06/21/1994 - 12/04/2019	6/2/2020	12/16/2020
Parameters	Units	ODWS Source	ODWS a	PWQO b	Historical Range			Historical Range			Historical Range		
Field Parameters													
Conductivity, field	uS/cm	-	-	-	1040 - 1930	1440	1390	954 - 1760	1590	1720	3110 - 5400	4670	5100
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	7.22 - 8.66	8.99[abc]	6.96[c]	7.45 - 9.07	8.81[ab]	7.47	6.44 - 8.81	7.96	7.29
Temperature, field	Deg C	AO	15	-	6.5 - 17.1	17.9[ac]	8.09	9.37 - 14.9	15.9[ac]	7.69[c]	8.61 - 16.5	17.9[ac]	8.7
General Indicators													
Conductivity, electrical	uS/cm	-	-	-	647 - 1580	1660[c]	1460	1070 - 1520	1690[c]	1670[c]	1100 - 5410	5530[c]	4960
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.61 - 8.4	7.87	7.71	7.6 - 8.43	8.04	7.9	7.49 - 8.48	7.96	8
Total dissolved solids (TDS)	mg/L	AO	500	-	462 - 949	702[a]	730[a]	658 - 897	686[a]	810[a]	2300 - 3220	2450[a]	2590[a]
Minor Ions - Anions													
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	188 - 263	236	256	234 - 334	253	296	320 - 766	680[a]	746[a]
Chloride	mg/L	AO	250	-	42.4 - 400	297[a]	302[a]	234 - 327	299[a]	346[ac]	932 - 1690	1180[a]	1220[a]
Sulfate	mg/L	AO	500	-	ND(0.5) - 95.2	ND (0.5)	ND (0.5)	ND(0.5) - 11	ND (0.5)	ND (0.5)	ND(0.1) - 22	ND (5)	ND (5)
Major Ions - Cations													
Calcium (dissolved)	mg/L	-	-	-	19.1 - 66	21.5	20	17 - 28	21.3	21.4	21 - 67	34.8	32.6
Magnesium (dissolved)	mg/L	-	-	-	6 - 22	7.39	7.21	6 - 9	7.68	7.64	8 - 19.2	14.1	13.7
Potassium (dissolved)	mg/L	-	-	-	1.5 - 5.2	2.76	2.59	1.29 - 2.4	2.01	2.38	2 - 4	3.5	3.6
Sodium (dissolved)	mg/L	AO	20/200	-	62 - 280	252[a]	243[a]	207 - 310	242[a]	297[a]	250 - 1250	985[a]	953[a]
Major Ions - Nutrients													
Ammonia-N	mg/L	-	-	-	-	-	-	0.28 - 0.3	-	-	0.44 - 0.57	0.21 J[c]	-
Nitrate (as N)	mg/L	MAC	10.0	-	ND(0.002) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	0.016 - ND(2.5)	ND (2.5)	ND (2.5)
Nitrite (as N)	mg/L	MAC	1.0	-	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(2.5)	ND (2.5)[a]	ND (2.5)[a]
Major Ions - Miscellaneous													
Bromide	mg/L	-	-	-	0.16 - 3.7	ND (0.25)	ND (0.25)	0.15 - 2.11	ND (0.25)	ND (0.25)	0.2 - 8	ND (2.5)	ND (2.5)
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	MAC	1.5	-	ND(0.25) - 1.6	1.22	0.88	ND(0.25) - 1.55	1.04	0.65	ND(0.05) - 3.2	ND (0.33)	ND (0.33)
Metals													
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.06)	ND (0.008)[b]	-	0.001 - ND(0.01)	ND (0.002)	-	0.001 - ND(0.01)	ND (0.01)[b]	-
Barium (dissolved)	mg/L	MAC	1.0	-	0.072 - 0.23	0.07[c]	-	0.11 - 0.22	0.145	-	0.29 - 0.597	0.435	-
Boron (dissolved)	mg/L	IMAC	5.0	0.2	0.97 - 2.1	1.61[b]	-	1.37 - 1.9	1.69[b]	-	3.09 - 5.6	4.94[b]	-
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - 0.005	ND (0.0001)	-	ND(0.0001) - ND(0.001)	0.0001	-	ND(0.0001) - ND(0.003)	ND (0.0001)	-
Chromium (dissolved)	mg/L	MAC	0.05	0.001	0.001 - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - 0.007	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.005) - 1.02	3.66 J[abc]	-	ND(0.03) - 0.67	0.671 J[abc]	-	ND(0.005) - 2.66	0.043 J	-
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.0005) - ND(0.05)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.0005) - ND(0.01)	ND (0.0005)	-
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	0.0001 - 0.0013	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001) - 0.0007	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	0.025	0.003 - ND(0.05)	ND (0.003) J	-	ND(0.001) - ND(0.005)	ND (0.003) J	-	ND(0.001) - ND(0.05)	ND (0.003) J	-
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.003) - 0.04	ND (0.005) J	-	ND(0.005) - 0.06	ND (0.005) J	-	ND(0.003) - 0.11	ND (0.005) J	-

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Clean Harbors Canada Inc. - Lambton Facility

Sample Location:					OW32-90D	OW32-90D	OW32-90D	OW35-05D	OW35-05D	OW35-05D	TW22-99D	TW22-99D	TW22-99D
Sample ID						32D	32D		35D	35D		22D	22D
Sample Date:					06/19/1991 - 12/02/2019	6/3/2020	12/17/2020	05/31/2005 - 12/02/2019	6/3/2020	12/17/2020	06/21/1994 - 12/04/2019	6/2/2020	12/16/2020
		ODWS	ODWS	PWQO	Historical Range			Historical Range			Historical Range		
Parameters	**Units**	**Source**	**a**	**b**									
Volatile Organic Compounds													
1,1,1,2-Tetrachloroethane	ug/L	-	-	20	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	-	-
1,1,1-Trichloroethane	ug/L	-	-	10	ND(0.2) - ND(0.4)	ND (0.3)	-	ND(0.2) - ND(0.4)	ND (0.3)	-	ND(0.2) - ND(0.4)	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	70	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	-	-
1,1,2-Trichloroethane	ug/L	-	-	800	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	-	-
1,1-Dichloroethane	ug/L	-	-	200	ND(0.1) - ND(0.7)	ND (0.3)	-	ND(0.1) - ND(0.4)	ND (0.3)	-	ND(0.1) - ND(0.7)	-	-
1,1-Dichloroethene	ug/L	MAC	14	40	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	-	-
1,2,4-Trichlorobenzene	ug/L	-	-	0.5	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	-	-	5	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	-	-
1,2-Dichlorobenzene	ug/L	MAC	200	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	-	-
1,2-Dichloroethane	ug/L	IMAC	5	100	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	-	-
1,2-Dichloropropane	ug/L	-	-	0.7	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	-	-
1,3-Dichlorobenzene	ug/L	-	-	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	-	-
1,3-Dichloropropene	ug/L	-	-	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	-	-
1,4-Dichlorobenzene	ug/L	MAC	5	4	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	-	-	400	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(10)	-	-
2-Hexanone	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	-	-	-	ND(0.1) - ND(1)	ND (1)	-	ND(0.1) - ND(1)	ND (1)	-	ND(0.1) - ND(10)	-	-
Acetone	ug/L	-	-	-	ND(0.1) - ND(1)	ND (1)	-	ND(0.1) - ND(1)	ND (1)	-	ND(0.1) - ND(30)	-	-
Benzene	ug/L	MAC	1	100	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - 3.8	-	-
Bromodichloromethane	ug/L	-	-	200	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	-	-
Bromoform	ug/L	-	-	60	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - 1.4	ND (0.1)	-	ND(0.1) - ND(0.4)	-	-
Bromomethane (Methyl bromide)	ug/L	-	-	0.9	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	-	-
Carbon tetrachloride	ug/L	MAC	2	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	-	-
Chlorobenzene	ug/L	MAC	80	15	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	-	-
Chloroethane	ug/L	-	-	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	-	-
Chloroform (Trichloromethane)	ug/L	-	-	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	-	-
Chloromethane (Methyl chloride)	ug/L	-	-	700	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(1)	-	-
cis-1,2-Dichloroethene	ug/L	-	-	200	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.2) - 2.6	-	-
cis-1,3-Dichloropropene	ug/L	-	-	-	ND(0.1) - ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.2)	-	-
Dibromochloromethane	ug/L	-	-	40	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	-	-
Dichlorodifluoromethane (CFC-12)	ug/L	-	-	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	-	-
Ethylbenzene	ug/L	MAC	140	8	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	-	-
Hexane	ug/L	-	-	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	-	-
m&p-Xylenes	ug/L	-	-	2	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	-	-
Methyl tert butyl ether (MTBE)	ug/L	AO	15	200	ND(0.1) - ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.2)	ND (0.2)	-	ND(0.1) - ND(2)	-	-
Methylene chloride	ug/L	MAC	50	100	ND(0.3) - ND(5)	ND (0.3)	-	ND(0.3) - ND(5)	ND (0.3)	-	ND(0.3) - ND(5)	-	-
o-Xylene	ug/L	-	-	40	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	-	-
Styrene	ug/L	-	-	4	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	-	-
Tetrachloroethene	ug/L	MAC	10	50	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.1) - 0.3	-	-
Toluene	ug/L	MAC	60	0.8	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - 0.77	-	-
trans-1,2-Dichloroethene	ug/L	-	-	200	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - 0.5	-	-
trans-1,3-Dichloropropene	ug/L	-	-	7	ND(0.2) - ND(10)	ND (0.3)	-	ND(0.2) - ND(10)	ND (0.3)	-	ND(0.2) - ND(10)	-	-
Trichloroethene	ug/L	MAC	5	20	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.3) - 4.9	-	-
Trichlorofluoromethane (CFC-11)	ug/L	-	-	-	ND(0.1) - ND(0.5)	ND (0.4)	-	ND(0.1) - ND(0.5)	ND (0.4)	-	ND(0.1) - ND(0.5)	-	-
Vinyl chloride	ug/L	MAC	1	600	ND(0.1) - ND(0.2)	ND (0.17)	-	ND(0.1) - ND(0.2)	ND (0.17)	-	ND(0.1) - ND(0.2)	-	-
Xylenes (total)	ug/L	MAC	90	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	-	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelines. The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		TW30-99D	TW30-99D	TW30-99D	TW32-94-II	TW32-94-II	TW32-94-II	TW32-94-II	TW40-99D	TW40-99D	TW40-99D
Sample ID			30D	30D		32II	98	32II		40D	40D
Sample Date:		06/07/1999 - 12/02/2019	6/3/2020	12/17/2020	08/05/1994 - 12/03/2019	6/2/2020	6/2/2020	12/16/2020	06/08/1999 - 12/03/2019	6/2/2020	12/16/2020
		Historical Range			Historical Range		Duplicate		Historical Range		
Parameters	**Units**										
Field Parameters											
Conductivity, field	uS/cm	1030 - 1630	1190	1150	938 - 4800	8100[c]	8100[c]	5050[c]	1060 - 2010	1550	1800
pH, field	s.u.	7.04 - 9.05	8.62[ab]	7.22	7.53 - 9.11	9.69[abc]	9.69[abc]	8.82[ab]	7.24 - 9.42	8.9[ab]	7.47
Temperature, field	Deg C	9.28 - 14.2	15[c]	8.51[c]	9.99 - 17.9	17.4[a]	17.4[a]	8.79[c]	6.1 - 18.4	13.5	8.81
General Indicators											
Conductivity, electrical	uS/cm	968 - 1600	1450	1290	1190 - 6790	2600	2230	2860	1180 - 3340	1680	1720
pH, lab	s.u.	7.73 - 8.57	8.04	7.85	7.6 - 8.52	8.27	8.12	8.19	7.71 - 8.37	7.96	7.56[c]
Total dissolved solids (TDS)	mg/L	588 - 1010	620[a]	612[a]	309 - 4410	1580[a]	1210[a]	1500[a]	690 - 2170	688[ac]	828[a]
Minor Ions - Anions											
Alkalinity, total (as CaCO3)	mg/L	225 - 312	237	257	234 - 384	257	258	279	224 - 327	230	270
Chloride	mg/L	208 - 365	246	249	24 - 1940	562[a]	447[a]	763[a]	247 - 819	310[a]	390[a]
Sulfate	mg/L	ND(0.5) - 11	ND (0.5)	ND (0.5)	1 - 380	ND (2)	ND (1)	ND (2)	ND(0.5) - 6	ND (0.5)	ND (1)
Major Ions - Cations											
Calcium (dissolved)	mg/L	18 - 32	21.2	20.9	11.6 - 120	15	15.1	11.8	25.3 - 78	27.8	33.7
Magnesium (dissolved)	mg/L	6.89 - 14	7.95	7.57	6 - 81	11.1	11.1	15.4	9 - 28	10.5	12.2
Potassium (dissolved)	mg/L	ND(1) - 3	2.52	2.59	1 - 5	2.89	2.77	3.41	1.9 - 4	2.59	2.8
Sodium (dissolved)	mg/L	182 - 320	213[a]	207[a]	75 - 1380	369[a]	369[a]	526[a]	222 - 572	239[a]	288[a]
Major Ions - Nutrients											
Ammonia-N	mg/L	0.32 - 0.4	-	-	-	-	-	-	0.18 - 0.2	-	-
Nitrate (as N)	mg/L	0.018 - ND(0.5)	ND (0.25)	ND (0.25)	ND(0.01) - ND(5)	ND (1)	ND (0.5) J	ND (1)	ND(0.021) - ND(1)	ND (0.25)	ND (0.5)
Nitrite (as N)	mg/L	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(1)	ND (1)	ND (0.5) J	ND (1)	ND(0.01) - ND(0.5)	ND (0.25)	ND (0.5)
Major Ions - Miscellaneous											
Bromide	mg/L	0.15 - 1.81	ND (0.25)	ND (0.25)	ND(0.05) - 4.31	ND (1)	ND (0.5)	ND (1)	ND(0.05) - 3.99	ND (0.25)	ND (0.5)
Cyanide (free)	mg/L	ND(0.002) - ND(0.05)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	ND (0.002)	-	ND(0.002) - ND(0.05)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	ND(0.25) - 1.62	1.15	0.78	ND(0.5) - 1.7	ND (0.13) J[c]	1.1 J	ND (0.13)[c]	ND(0.25) - 1.41	1.1	ND (0.07)[c]
Metals											
Arsenic (dissolved)	mg/L	ND(0.001) - ND(0.003)	ND (0.004)[c]	-	ND(0.001) - ND(0.06)	ND (0.001)	ND (0.001)	-	0.001 - ND(0.01)	ND (0.004)	-
Barium (dissolved)	mg/L	0.29 - 0.46	0.352	-	0.013 - 1	0.253	0.243	-	0.186 - 0.37	0.214	-
Boron (dissolved)	mg/L	1.32 - 2	1.71[b]	-	0.27 - 3.83	2.45[b]	2.52[b]	-	1.4 - 2.4	1.74[b]	-
Cadmium (dissolved)	mg/L	ND(0.0001) - ND(0.003)	ND (0.0001)	-	ND(0.0001) - ND(0.005)	ND (0.0001)	ND (0.0001)	-	ND(0.0001) - 0.005	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	0.001 - ND(0.01)	ND (0.002)[b]	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	ND(0.01) - 0.304	0.352 J[abc]	-	ND(0.005) - ND(0.3)	0.043 J	0.04 J	-	ND(0.013) - 1.92	1.08 J[ab]	-
Lead (dissolved)	mg/L	ND(0.0005) - 0.003	ND (0.0005)	-	ND(0.0005) - ND(0.025)	ND (0.0005)	ND (0.0005)	-	ND(0.0005) - 0.002	ND (0.0005)	-
Mercury (dissolved)	mg/L	ND(0.0001)	ND (0.0001)	-	ND(0.0001) - 0.0003	ND (0.0001)	ND (0.0001)	-	0.0001	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.001) - ND(0.05)	ND (0.003) J	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND(0.003) - 0.09	ND (0.005) J	-	ND(0.003) - ND(0.1)	ND (0.005) J	ND (0.005) J	-	ND(0.005) - 0.516	ND (0.005) J	-

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		**TW30-99D**	**TW30-99D**	**TW30-99D**	**TW32-94-II**	**TW32-94-II**	**TW32-94-II**	**TW32-94-II**	**TW40-99D**	**TW40-99D**	**TW40-99D**
Sample ID			**30D**	**30D**		**32II**	**98**	**32II**		**40D**	**40D**
Sample Date:		**06/07/1999 - 12/02/2019**	**6/3/2020**	**12/17/2020**	**08/05/1994 - 12/03/2019**	**6/2/2020**	**6/2/2020**	**12/16/2020**	**06/08/1999 - 12/03/2019**	**6/2/2020**	**12/16/2020**
		Historical Range			**Historical Range**		**Duplicate**		**Historical Range**		
Parameters	**Units**										
Volatile Organic Compounds											
1,1,1,2-Tetrachloroethane	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND(0.2) - ND(0.4)	ND (0.3)	-	ND(0.2) - ND(0.4)	ND (0.3)	ND (0.3)	-	ND(0.01) - ND(10)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.6)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND(0.1) - ND(0.7)	ND (0.3)	-	ND(0.1) - ND(0.7)	ND (0.3)	ND (0.3)	-	ND(0.01) - ND(10)	ND (0.3)	-
1,1-Dichloroethene	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-
1,2,4-Trichlorobenzene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	ND (0.1)	-	ND(0.002) - ND(2)	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.002) - ND(2)	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	ND (0.1)	-	ND(0.002) - ND(2)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	ND (1)	-	ND(1) - ND(5)	ND (1)	-
2-Hexanone	ug/L	ND(1)	ND (1)	-	ND(1)	ND (1)	ND (1)	-	ND(1)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(0.1) - ND(1)	ND (1)	-	ND(0.1) - ND(1)	ND (1)	ND (1)	-	ND(1) - ND(5)	ND (1)	-
Acetone	ug/L	ND(0.1) - ND(1)	ND (1)	-	ND(0.1) - ND(1)	ND (1)	ND (1)	-	ND(1) - ND(10)	ND (1)	-
Benzene	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.001) - ND(1)	ND (0.2)	-
Bromodichloromethane	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	-
Bromoform	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - 0.5	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.2) - ND(0.7)	ND (0.2)	-
Carbon tetrachloride	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-
Chlorobenzene	ug/L	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-
Chloroethane	ug/L	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	ND(0.01) - ND(10)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND(0.2) - 0.7	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.2) - 2.1	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND(0.1) - ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.2)	ND (0.2)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
Dibromochloromethane	ug/L	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Ethylbenzene	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	ND (0.1)	-	ND(0.001) - ND(1)	ND (0.1)	-
Hexane	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
m&p-Xylenes	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(10)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND(0.1) - ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.2)	ND (0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Methylene chloride	ug/L	ND(0.3) - ND(5)	ND (0.3)	-	ND(0.3) - ND(5)	ND (0.3)	ND (0.3)	-	ND(0.01) - ND(10)	ND (0.3)	-
o-Xylene	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(10)	ND (0.1)	-
Styrene	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Tetrachloroethene	ug/L	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.1) - ND(0.3)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.3)	ND (0.2)	-
Toluene	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - 2.1	ND (0.2)	ND (0.2)	-	ND(0.01) - ND(10)	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	ND (0.2)	-	ND(0.1) - ND(0.9)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND(0.2) - ND(10)	ND (0.3)	-	ND(0.2) - ND(10)	ND (0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-
Trichloroethene	ug/L	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	ND (0.2)	-	ND(0.01) - ND(10)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND(0.1) - ND(0.5)	ND (0.4)	-	ND(0.1) - ND(0.5)	ND (0.4)	ND (0.4)	-	ND(0.2) - ND(0.5)	ND (0.4)	-
Vinyl chloride	ug/L	ND(0.1) - ND(0.2)	ND (0.17)	-	ND(0.1) - ND(0.2)	ND (0.17)	ND (0.17)	-	ND(0.17) - ND(0.5)	ND (0.17)	-
Xylenes (total)	ug/L	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	ND (0.2)	-	ND(0.01) - ND(1.5)	ND (0.2)	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelir The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		TW41-99D	TW41-99D	TW41-99D	TW43-99D	TW43-99D	TW43-99D	TW45-99D	TW45-99D	TW45-99D
Sample ID			41D	41D		43D	43D		45D	45D
Sample Date:		06/07/1999 - 12/02/2019 Historical Range	6/3/2020	12/17/2020	06/07/1999 - 12/02/2019 Historical Range	6/1/2020	12/15/2020	06/09/1999 - 12/04/2019 Historical Range	6/3/2020	12/17/2020
Parameters	**Units**									
Field Parameters										
Conductivity, field	uS/cm	919 - 1560	1110	1060	922 - 1580	1610[c]	1190	1120 - 5750	5780[c]	5570
pH, field	s.u.	7.36 - 8.77	8.45	7.37	7.02 - 9.28	8.37	7.57	6.81 - 8.74	9.3[abc]	7.32
Temperature, field	Deg C	8.1 - 16.8	15.5[a]	8.57	9.45 - 12.2	13.4[c]	9.68	7.7 - 18.1	17.1[a]	8.8
General Indicators										
Conductivity, electrical	uS/cm	917 - 1400	1350	1200	952 - 1310	1430[c]	1260	770 - 4690	4430	2960
pH, lab	s.u.	7.68 - 8.6	8.04	7.59[c]	7.7 - 8.49	7.74	7.8	7.8 - 8.58	8.01	8.22
Total dissolved solids (TDS)	mg/L	540 - 895	580[a]	624[a]	580 - 833	618[a]	628[a]	500 - 2940	1870[a]	1680[a]
Minor Ions - Anions										
Alkalinity, total (as CaCO3)	mg/L	258 - 358	273	297	237 - 294	253	276	264 - 1030	937[a]	916[a]
Chloride	mg/L	45.8 - 278	200	200	204 - 367	235	237	13 - 1080	680[a]	433[a]
Sulfate	mg/L	ND(0.5) - 11	ND (0.5)	ND (0.5)	0.14 - ND(5)	ND (0.5)	ND (0.5)	0.63 - 120	ND (5)	ND (2)
Major Ions - Cations										
Calcium (dissolved)	mg/L	12 - 19.7	16.1	14.7	19 - 33	24	24.7	4 - 75	7.5	10.1
Magnesium (dissolved)	mg/L	4.55 - 7.2	5.56	5.18	7 - 11	8.91	9.09	1 - 34	4.2	4.69
Potassium (dissolved)	mg/L	1 - 3.3	1.76	1.91	1 - 3	1.83	1.88	1 - 3	2.6	2.1
Sodium (dissolved)	mg/L	181 - 320	216[a]	207[a]	189 - 259	206[a]	201[a]	42 - 1030	853[a]	644[a]
Major Ions - Nutrients										
Ammonia-N	mg/L	0.26	-	-	0.2 - 0.24	-	-	0.22	-	-
Nitrate (as N)	mg/L	ND(0.01) - 0.3	ND (0.25)	ND (0.25)	0.016 - ND(1)	ND (0.25) J	ND (0.25)	0.023 - ND(2.5)	ND (2.5)	ND (1)
Nitrite (as N)	mg/L	ND(0.01) - ND(0.25)	ND (0.25)	ND (0.25)	ND(0.01) - ND(0.25)	ND (0.25) J	ND (0.25)	ND(0.01) - ND(2.5)	ND (2.5)[a]	ND (1)
Major Ions - Miscellaneous										
Bromide	mg/L	ND(0.25) - 1.8	ND (0.25)	ND (0.25)	0.11 - ND(3.5)	ND (0.25)	ND (0.25)	ND(0.1) - 3.08	ND (2.5)	ND (1)
Cyanide (free)	mg/L	ND(0.002) - ND(0.05)	ND (0.002)	-	ND(0.002) - ND(0.05)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	ND(0.25) - 1.55	1.12	0.74	0.18 - 1.6	1.03	0.62	0.3 - ND(2.5)	ND (0.33)	ND (0.13)[c]
Metals										
Arsenic (dissolved)	mg/L	ND(0.001) - ND(0.003)	ND (0.006)[bc]	-	ND(0.001) - ND(0.01)	ND (0.001)	-	0.001 - ND(0.1)	ND (0.025)[ab]	-
Barium (dissolved)	mg/L	0.074 - 0.93	0.089	-	0.139 - 0.3	0.18	-	0.069 - 0.32	0.304	-
Boron (dissolved)	mg/L	1.5 - 2.1	1.91[b]	-	1 - 1.7	1.37[b]	-	0.9 - 3.8	3.5[b]	-
Cadmium (dissolved)	mg/L	ND(0.0001) - 0.006	ND (0.0001)	-	ND(0.0001) - ND(0.003)	ND (0.0001)	-	ND(0.0001) - 0.006	ND (0.0001)	-
Chromium (dissolved)	mg/L	0.001 - ND(0.01)	ND (0.002)[b]	-	0.001 - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	ND(0.02) - 4.9	0.066 J	-	ND(0.01) - 0.591	0.515[ab]	-	ND(0.005) - 4.56	4.65 J[abc]	-
Lead (dissolved)	mg/L	ND(0.0005) - 0.0073	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-
Mercury (dissolved)	mg/L	ND(0.0001) - 0.00035	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001) - 0.0007	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.008) J	-	ND(0.001) - ND(0.01)	ND (0.003)	-	ND(0.001) - ND(0.01)	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND(0.005) - 0.53	ND (0.005) J	-	0.004 - 0.06	ND (0.005)	-	ND(0.003) - 0.036	ND (0.005) J	-

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		**TW41-99D**	**TW41-99D**	**TW41-99D**	**TW43-99D**	**TW43-99D**	**TW43-99D**	**TW45-99D**	**TW45-99D**	**TW45-99D**
Sample ID			**41D**	**41D**		**43D**	**43D**		**45D**	**45D**
Sample Date:		**06/07/1999 - 12/02/2019 Historical Range**	**6/3/2020**	**12/17/2020**	**06/07/1999 - 12/02/2019 Historical Range**	**6/1/2020**	**12/15/2020**	**06/09/1999 - 12/04/2019 Historical Range**	**6/3/2020**	**12/17/2020**
Parameters	**Units**									
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND(0.1) - ND(0.8)	ND (0.3)	-	ND(0.1) - ND(0.4)	ND (0.3)	-	ND(0.2) - ND(1.2)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND(0.1) - ND(0.8)	ND (0.3)	-	ND(0.1) - ND(0.7)	ND (0.3)	-	ND(0.1) - ND(1.2)	ND (0.3)	-
1,1-Dichloroethene	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(1.2)	ND (0.2)	-
1,2,4-Trichlorobenzene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-
2-Hexanone	ug/L	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1) - ND(4)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-	ND(0.1) - ND(4)	ND (1)	-
Acetone	ug/L	ND(1) - ND(10)	ND (1)	-	ND(1) - ND(10)	ND (1)	-	ND(0.1) - ND(4)	ND (1)	-
Benzene	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - 0.7	0.28	-	ND(0.2) - 1.6	**1.9**[ac]	-
Bromodichloromethane	ug/L	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Bromoform	ug/L	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
Carbon tetrachloride	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Chlorobenzene	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Chloroethane	ug/L	ND(0.2) - ND(2)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - 8.8	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND(0.2) - ND(2)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - 6	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
Dibromochloromethane	ug/L	ND(0.1) - ND(0.6)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Ethylbenzene	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Hexane	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
m&p-Xylenes	ug/L	ND(0.1) - ND(2)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
Methylene chloride	ug/L	ND(0.3) - ND(8)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(5)	ND (0.3)	-
o-Xylene	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Styrene	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Tetrachloroethene	ug/L	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
Toluene	ug/L	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND(0.2) - ND(0.4)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(10)	ND (0.3)	-
Trichloroethene	ug/L	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(0.5)	ND (0.4)	-	ND(0.1) - ND(1.6)	ND (0.4)	-
Vinyl chloride	ug/L	ND(0.17) - ND(0.4)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.1) - ND(0.68)	ND (0.17)	-
Xylenes (total)	ug/L	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelir The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		TW47-00D	TW47-00D	TW47-00D	TW48-00D	TW48-00D	TW48-00D	TW49-00D	TW49-00D	TW49-00D
Sample ID		47D	47D	47D		48D	48D		49D	49D
Sample Date:		11/13/2000 - 12/03/2019 Historical Range	6/2/2020	12/16/2020	06/11/2001 - 12/04/2019 Historical Range	6/2/2020	12/15/2020	06/11/2001 - 12/02/2019 Historical Range	6/1/2020	12/15/2020
Parameters	**Units**									
Field Parameters										
Conductivity, field	uS/cm	1200 - 11900	9120	11100	1660 - 2410	1740	1730	469 - 1160	930	802
pH, field	s.u.	6.94 - 8.88	9.04[abc]	7.34	7.38 - 9.38	8.97[ab]	7.81	7.13 - 8.75	8.22	7.48
Temperature, field	Deg C	9.7 - 14.1	15.9[ac]	8.55[c]	8.52 - 14.4	16.8[ac]	9	10.14 - 15	14.8	9.8[c]
General Indicators										
Conductivity, electrical	uS/cm	1100 - 12200	10700	9690	1350 - 2670	2000	1800	586 - 2010	875	762
pH, lab	s.u.	7.75 - 8.52	7.97	8.01	7.8 - 8.54	8.04	7.9	7.78 - 8.57	7.89	7.72[c]
Total dissolved solids (TDS)	mg/L	680 - 7930	3960[a]	4180[a]	796 - 1600	878[a]	908[a]	360 - 551	382	398
Minor Ions - Anions										
Alkalinity, total (as CaCO3)	mg/L	270 - 1360	1030[a]	1140[a]	254 - 494	324	345	206 - 268	233	251
Chloride	mg/L	240 - 3150	2600[a]	2690[a]	305 - 610	361[a]	370[a]	83 - 99	91.6	94.3
Sulfate	mg/L	0.44 - ND(5)	ND (10)[c]	ND (10)[c]	ND(0.5) - 12	ND (1)	ND (1)	ND(0.2) - 43.4	ND (0.5)	ND (0.2)
Major Ions - Cations										
Calcium (dissolved)	mg/L	17 - 104	43	81	12 - 34.9	26.6	25.5	9 - 28.9	18.7	16.6
Magnesium (dissolved)	mg/L	ND(0.1) - 47	20	38	7 - 14.8	9.61	9.35	3.7 - 7.6	5.43	4.94
Potassium (dissolved)	mg/L	1.3 - 10	5	10	1.9 - 4	2.8	2.69	1 - 2	1.55	1.25
Sodium (dissolved)	mg/L	250 - 3040	1070[a]	2020[a]	260 - 510	313[a]	301[a]	123 - 166	133[a]	122[ac]
Major Ions - Nutrients										
Ammonia-N	mg/L	0.62 - 1.24	-	-	0.26	-	-	0.18	-	-
Nitrate (as N)	mg/L	0.011 - ND(2.5)	ND (5)[c]	ND (5)[c]	0.012 - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.01) - ND(0.25)	ND (0.25) J	ND (0.1)
Nitrite (as N)	mg/L	ND(0.01) - ND(2.5)	ND (5)[ac]	ND (5)[ac]	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.01) - ND(0.25)	ND (0.25) J	ND (0.1)
Major Ions - Miscellaneous										
Bromide	mg/L	0.09 - 4.77	ND (5)[c]	ND (5)[c]	0.17 - 3.2	ND (0.5)	ND (0.5)	0.08 - 0.8	ND (0.25)	ND (0.1)
Cyanide (free)	mg/L	ND(0.002) - ND(0.02)	ND (0.002)	-	0.002 - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.02)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	0.49 - ND(2.5)	ND (0.7)	ND (0.7)	ND(0.25) - 1.89	1.34	ND (0.07)[c]	ND(0.01) - 1.7	1.19	1.13
Metals										
Arsenic (dissolved)	mg/L	0.001 - ND(0.01)	ND (0.008)[b]	-	0.001 - ND(0.01)	ND (0.005)	-	0.001 - ND(0.01)	ND (0.007)[b]	-
Barium (dissolved)	mg/L	0.2 - 3.4	1.7[a]	-	0.16 - 0.63	0.222	-	0.06 - 0.8	0.097	-
Boron (dissolved)	mg/L	2 - 6	3.41[b]	-	0.3 - 3.5	2.41[b]	-	0.9 - 1.5	1.19[b]	-
Cadmium (dissolved)	mg/L	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	ND(0.019) - 6.79	2.94 J[ab]	-	0.014 - 0.543	0.514 J[ab]	-	ND(0.03) - 1.2	0.183	-
Lead (dissolved)	mg/L	ND(0.0005) - ND(0.01)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.0005) - ND(0.002)	ND (0.0005)	-
Mercury (dissolved)	mg/L	0.0001	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND(0.001) - ND(0.05)	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.001) - ND(0.01)	ND (0.008)	-
Zinc (dissolved)	mg/L	ND(0.001) - 0.2	ND (0.005) J	-	ND(0.005) - 0.042	ND (0.005) J	-	ND(0.005) - 0.08	ND (0.005)	-

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Sample Location:		**TW47-00D**	**TW47-00D**	**TW47-00D**	**TW48-00D**	**TW48-00D**	**TW48-00D**	**TW49-00D**	**TW49-00D**	**TW49-00D**
Sample ID			**47D**	**47D**		**48D**	**48D**		**49D**	**49D**
Sample Date:		**11/13/2000 - 12/03/2019**	**6/2/2020**	**12/16/2020**	**06/11/2001 - 12/04/2019**	**6/2/2020**	**12/15/2020**	**06/11/2001 - 12/02/2019**	**6/1/2020**	**12/15/2020**
		Historical Range			**Historical Range**			**Historical Range**		
Parameters	**Units**									
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.1) - ND(0.8)	ND (0.3)	-	ND(0.1) - ND(0.8)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND(0.1) - ND(0.6)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-	ND(0.2) - ND(0.8)	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.1) - ND(0.8)	ND (0.3)	-	ND(0.1) - ND(0.8)	ND (0.3)	-
1,1-Dichloroethene	ug/L	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-
1,2,4-Trichlorobenzene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND(0.002) - ND(2)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND(0.002) - ND(2)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND(0.002) - ND(2)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - 7.7	ND (1)	-	ND(1) - ND(5)	ND (1)	-
2-Hexanone	ug/L	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(5)	ND (1)	-
Acetone	ug/L	ND(1) - ND(10)	ND (1)	-	ND(1) - 85	ND (1)	-	ND(1) - 35	ND (1)	-
Benzene	ug/L	ND(0.001) - 6.3	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	0.2 - ND(1)	ND (0.2)	-
Bromodichloromethane	ug/L	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-
Bromoform	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-	ND(0.1) - ND(0.8)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND(0.2) - ND(0.7)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-
Carbon tetrachloride	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-
Chlorobenzene	ug/L	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Chloroethane	ug/L	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND(0.2) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(1)	ND (0.2)	-	0.1 - ND(1)	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(2)	ND (0.4)	-	ND(0.2) - ND(2)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
Dibromochloromethane	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.6)	ND (0.1)	-	ND(0.1) - ND(0.6)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-
Ethylbenzene	ug/L	ND(0.001) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
Hexane	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
m&p-Xylenes	ug/L	ND(0.1) - ND(10)	ND (0.2)	-	ND(0.1) - ND(2)	ND (0.2)	-	ND(0.1) - ND(2)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Methylene chloride	ug/L	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.3) - ND(8)	ND (0.3)	-	ND(0.3) - ND(8)	ND (0.3)	-
o-Xylene	ug/L	ND(0.1) - ND(10)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
Styrene	ug/L	ND(0.1) - 0.528	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	-
Tetrachloroethene	ug/L	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-
Toluene	ug/L	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.9)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-	ND(0.1) - ND(0.8)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.4)	ND (0.3)	-	ND(0.2) - ND(0.4)	ND (0.3)	-
Trichloroethene	ug/L	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.1) - ND(0.6)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND(0.2) - ND(0.5)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(1)	ND (0.4)	-
Vinyl chloride	ug/L	ND(0.17) - ND(0.5)	ND (0.17)	-	ND(0.17) - ND(0.4)	ND (0.17)	-	ND(0.17) - ND(0.4)	ND (0.17)	-
Xylenes (total)	ug/L	ND(0.01) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelir The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Sample Location:		TW53-03D	TW53-03D	TW53-03D	TW60-13D	TW60-13D	TW60-13D
Sample ID			53D	53D		60D	60D
Sample Date:		10/28/2003 - 12/02/2019	6/3/2020	12/17/2020	11/05/2013 - 12/03/2019	6/2/2020	12/16/2020
		Historical Range			Historical Range		
Parameters	**Units**						
Field Parameters							
Conductivity, field	uS/cm	1340 - 2150	2480[c]	726[c]	2930 - 4570	6070[c]	4600[c]
pH, field	s.u.	7.29 - 8.62	8.26	6.94[c]	7.14 - 8.35	8.19	7.45
Temperature, field	Deg C	9.54 - 16.2	16.6[ac]	7.59[c]	9.36 - 12.6	20.7[ac]	8.31[c]
General Indicators							
Conductivity, electrical	uS/cm	1300 - 4920	2010	676[c]	2840 - 4630	4750[c]	4500
pH, lab	s.u.	7.78 - 8.53	7.99	7.37[c]	7.92 - 8.44	8	7.97
Total dissolved solids (TDS)	mg/L	480 - 3200	898[a]	340[c]	1450 - 3010	2110[a]	2370[a]
Minor Ions - Anions							
Alkalinity, total (as CaCO3)	mg/L	250 - 607	273	172[c]	458 - 746	594[a]	692[a]
Chloride	mg/L	253 - 1210	385[a]	113[c]	696 - 1120	976[a]	1080[a]
Sulfate	mg/L	0.45 - 22	ND (1)	15	ND(1) - ND(5)	ND (5)	ND (5)
Major Ions - Cations							
Calcium (dissolved)	mg/L	19 - 65	27	27.1	21.1 - 39	28.2	28.9
Magnesium (dissolved)	mg/L	7 - 25	9.99	6.82[c]	8 - 14	11.4	12.7
Potassium (dissolved)	mg/L	1.74 - 4	2.37	2.1	1.76 - 4	3.1	3.3
Sodium (dissolved)	mg/L	242 - 853	299[a]	88.9[ac]	498 - 1010	836[a]	863[a]
Major Ions - Nutrients							
Ammonia-N	mg/L	0.34 - 0.42	-	-	-	-	-
Nitrate (as N)	mg/L	ND(0.05) - ND(1)	ND (0.5)	ND (0.1)	ND(0.1) - ND(2.5)	ND (2.5)	ND (2.5)
Nitrite (as N)	mg/L	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.1)	ND(0.1) - ND(2.5)	ND (2.5)[a]	ND (2.5)[a]
Major Ions - Miscellaneous							
Bromide	mg/L	0.19 - ND(3.5)	ND (0.5)	ND (0.1)[c]	ND(0.25) - ND(2.5)	ND (2.5)	ND (2.5)
Cyanide (free)	mg/L	ND(0.002) - ND(0.05)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	ND(0.25) - 1.54	1.16	0.74	0.58 - ND(2.5)	ND (0.33)[c]	ND (0.33)[c]
Metals							
Arsenic (dissolved)	mg/L	0.001 - ND(0.003)	ND (0.003)	-	ND(0.001) - ND(0.01)	ND (0.007)[b]	-
Barium (dissolved)	mg/L	0.15 - 1.03	0.205	-	0.196 - 0.49	0.37	-
Boron (dissolved)	mg/L	1.3 - 3.6	1.93[b]	-	3.09 - 5.6	4.37[b]	-
Cadmium (dissolved)	mg/L	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - ND(0.01)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	0.025 - 0.592	0.537 J[ab]	-	ND(0.01) - 1.6	0.136 J	-
Lead (dissolved)	mg/L	ND(0.0005) - ND(0.002)	ND (0.0005)	-	ND(0.001) - ND(0.01)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND(0.001) - ND(0.01)	ND (0.003) J	-	ND(0.003) - 0.05	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND(0.005) - 0.73	ND (0.005) J	-	ND(0.005) - ND(0.1)	ND (0.005) J	-

Table 11

Groundwater Chemistry - Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
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Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		**TW53-03D**	**TW53-03D**	**TW53-03D**	**TW60-13D**	**TW60-13D**	**TW60-13D**
Sample ID			**53D**	**53D**		**60D**	**60D**
Sample Date:		**10/28/2003 - 12/02/2019**	**6/3/2020**	**12/17/2020**	**11/05/2013 - 12/03/2019**	**6/2/2020**	**12/16/2020**
		Historical Range			**Historical Range**		
Parameters	**Units**						
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND(0.01) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND(0.1) - ND(0.6)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND(0.01) - ND(0.7)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-
1,1-Dichloroethene	ug/L	ND(0.1) - ND(0.6)	ND (0.2)	-	ND(0.3) - ND(0.5)	**ND (0.2)**[c]	-
1,2,4-Trichlorobenzene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND(0.002) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND(0.002) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND(0.002) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(10)	ND (1)	-
2-Hexanone	ug/L	ND(1)	ND (1)	-	ND(1)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(1) - ND(5)	ND (1)	-	ND(1) - ND(10)	ND (1)	-
Acetone	ug/L	ND(1) - ND(10)	ND (1)	-	ND(1) - ND(30)	ND (1)	-
Benzene	ug/L	ND(0.001) - 1.6	ND (0.2)	-	ND(0.2) - 7	0.4	-
Bromodichloromethane	ug/L	ND(0.1) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Bromoform	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND(0.2) - ND(0.7)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Carbon tetrachloride	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Chlorobenzene	ug/L	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-
Chloroethane	ug/L	ND(0.01) - ND(1)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND(0.2) - 0.7	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Dibromochloromethane	ug/L	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Ethylbenzene	ug/L	ND(0.001) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Hexane	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
m&p-Xylenes	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND(0.2)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	-
Methylene chloride	ug/L	ND(0.01) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-
o-Xylene	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Styrene	ug/L	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Tetrachloroethene	ug/L	ND(0.1) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Toluene	ug/L	ND(0.01) - ND(0.5)	ND (0.2)	-	ND(0.2) - 1.5	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND(0.1) - ND(0.9)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-
Trichloroethene	ug/L	ND(0.01) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND(0.2) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-
Vinyl chloride	ug/L	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-
Xylenes (total)	ug/L	ND(0.01) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	-

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality Guidelir The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 12

Groundwater Chemistry - Wells Located in Sub-Cell 3 and Cell 18
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Sample Location:					EW1a-01	EW1a-01	EW1a-01	EW1b-13	EW1b-13	EW1b-13	EW1c-13	EW1c-13	EW1c-13	EW2a-01
Sample ID						EW1A	EW1A		EW1B	EW1B		EW1C	EW1C	
Sample Date:					11/03/2004 - 12/04/2019	6/4/2020	12/18/2020	05/15/2014 - 12/04/2019	6/4/2020	12/18/2020	05/15/2014 - 12/03/2019	6/4/2020	12/18/2020	12/05/2001 - 12/03/2019
Parameters	Units	ODWS Source	ODWS a	PWQO b	Historical Range			Historical Range			Historical Range			Historical Range
Field Parameters														
Conductivity, field	uS/cm	-	-	-	1500 - 17100	1620	**794[c]**	1730 - 2060	**1600[c]**	**1620[c]**	1010 - 2060	1610	1580	461 - 1131
pH, field	s.u.	OG	6.5-8.5	6.5-8.5	7.03 - 8.76	8.07	7.27	7.14 - 8.67	**8.73[abc]**	7.14	6.74 - 8.6	8.46	7.09	6.99 - 9.03
Temperature, field	Deg C	AO	15	-	10.7 - 16.7	**17.8[ac]**	**10.49[c]**	9.91 - 15.4	**17[ac]**	11.58	10.4 - 14.7	**15.9[ac]**	12.03	3.8 - 21.8
General Indicators														
Conductivity, electrical	uS/cm	-	-	-	1350 - 2130	1990	**674[c]**	1350 - 1930	**1990[c]**	1750	1320 - 1900	**1960[c]**	1700	533 - 1200
pH, lab	s.u.	OG	6.5-8.5	6.5-8.5	7.56 - 8.42	7.9	**7.07[c]**	7.83 - 8.23	7.9	**7.65[c]**	7.81 - 8.22	7.88	**7.71[c]**	7.41 - 8.35
Total dissolved solids (TDS)	mg/L	AO	500	-	908 - 1380	**962[a]**	**406[c]**	900 - 1230	**938[a]**	**926[a]**	890 - 1180	**924[a]**	**888[ac]**	346 - 719
Minor Ions - Anions														
Alkalinity, total (as CaCO3)	mg/L	OG	30-500	-	257 - 347	267	**88[c]**	254 - 321	266	288	252 - 326	260	283	119 - 290
Chloride	mg/L	AO	250	-	292 - 402	**318[a]**	**62.4[c]**	302 - 356	**317[a]**	**308[a]**	281 - 348	**307[a]**	**303[a]**	62 - 220
Sulfate	mg/L	AO	500	-	67 - 179	116	142	116 - 147	118	116	116 - 165	119	**111[c]**	0.85 - 150
Major Ions - Cations														
Calcium (dissolved)	mg/L	-	-	-	52 - 129	84.2	**47.2[c]**	70.5 - 109	87	72.4	69.1 - 108	84.6	74.9	32.2 - 78
Magnesium (dissolved)	mg/L	-	-	-	26 - 78	46.4	**19.8[c]**	40.6 - 62	46.9	43.2	41 - 57	44.6	44	13 - 46
Potassium (dissolved)	mg/L	-	-	-	3.7 - 8	4.73	**2.01[c]**	4.08 - 6	4.69	4.4	3.98 - 6	4.42	4.47	2 - 8.1
Sodium (dissolved)	mg/L	AO	20/200	-	171 - 300	**179[a]**	**42.2[ac]**	157 - 211	**179[a]**	**163[a]**	156 - 202	**173[a]**	**163[a]**	61 - 114
Major Ions - Nutrients														
Ammonia-N	mg/L	-	-	-	0.37	-	-	-	-	-	-	-	-	0.51
Nitrate (as N)	mg/L	MAC	10.0	-	0.1 - ND(1)	ND (0.5)	**1.01[c]**	ND(0.1) - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.5)	ND (0.5)	ND (0.5)	0.056 - 1.2
Nitrite (as N)	mg/L	MAC	1.0	-	0.013 - ND(0.5)	ND (0.5)	ND (0.1)	ND(0.1) - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.01) - 0.11
Major Ions - Miscellaneous														
Bromide	mg/L	-	-	-	0.96 - 9.28	2.5	**ND (0.1)[c]**	0.8 - 2.98	2.6	**ND (0.5)[c]**	1.65 - 4.23	2.6	**ND (0.5)[c]**	0.66 - 3.38
Cyanide (free)	mg/L	-	-	0.005	ND(0.002) - ND(0.01)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	ND(0.002) - 0.01
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)	-
Fluoride	mg/L	MAC	1.5	-	ND(0.5) - 2	1.18	0.5	ND(0.5) - 1.51	1.01	**ND (0.07)[c]**	ND(0.5) - 1.54	1.11	**ND (0.07)[c]**	0.67 - 1.41
Metals														
Arsenic (dissolved)	mg/L	IMAC	0.01	0.005	ND(0.001) - ND(0.1)	ND (0.001)	-	ND(0.001) - ND(0.005)	ND (0.004)	-	0.002 - ND(0.005)	**ND (0.007)[bc]**	-	0.001 - ND(0.01)
Barium (dissolved)	mg/L	MAC	1.0	-	0.05 - 0.11	0.054	-	0.048 - 0.07	0.054	-	0.049 - 0.06	0.052	-	0.08 - 0.21
Boron (dissolved)	mg/L	IMAC	5.0	0.2	1 - 1.9	**1.34[b]**	-	1.15 - 1.4	**1.37[b]**	-	1.1 - 1.4	**1.36[b]**	-	0.83 - 1.3
Cadmium (dissolved)	mg/L	MAC	0.005	0.0002	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	0.0001	-	ND(0.0001) - ND(0.001)
Chromium (dissolved)	mg/L	MAC	0.05	0.001	ND(0.001) - 0.009	**ND (0.002)[b]**	-	ND(0.001) - ND(0.005)	**ND (0.002)[b]**	-	ND(0.001) - ND(0.005)	**0.002[b]**	-	ND(0.001) - ND(0.01)
Iron (dissolved)	mg/L	AO	0.30	0.3	ND(0.01) - 1.58	0.029 J	-	0.11 - 0.67	**0.566 J[ab]**	-	0.04 - 0.54	**0.71 J[abc]**	-	ND(0.01) - 0.16
Lead (dissolved)	mg/L	MAC	0.01	0.005	ND(0.001) - ND(0.002)	**ND (0.0005)[c]**	-	ND(0.001) - ND(0.002)	**ND (0.0005)[c]**	-	ND(0.001) - ND(0.002)	**ND (0.0005)[c]**	-	ND(0.001) - ND(0.002)
Mercury (dissolved)	mg/L	MAC	0.001	0.0002	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)
Nickel (dissolved)	mg/L	-	-	0.025	ND(0.003) - ND(0.005)	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.004) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-	ND(0.003) - ND(0.01)
Zinc (dissolved)	mg/L	AO	5.0	0.03	ND(0.005) - ND(0.05)	0.013 J	-	ND(0.005) - 0.01	ND (0.005) J	-	ND(0.005) - 0.013	ND (0.005) J	-	ND(0.005) - 0.04
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	ug/L	-	-	20	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)
1,1,1-Trichloroethane	ug/L	-	-	10	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)
1,1,2,2-Tetrachloroethane	ug/L	-	-	70	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)
1,1,2-Trichloroethane	ug/L	-	-	800	ND(0.2) - 1.3	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)
1,1-Dichloroethane	ug/L	-	-	200	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.7)

Table 12

Groundwater Chemistry - Wells Located in Sub-Cell 3 and Cell 18
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Sample Location:					EW1a-01	EW1a-01	EW1a-01	EW1b-13	EW1b-13	EW1b-13	EW1c-13	EW1c-13	EW1c-13	EW2a-01
Sample ID						EW1A	EW1A		EW1B	EW1B		EW1C	EW1C	
Sample Date:					11/03/2004 - 12/04/2019	6/4/2020	12/18/2020	05/15/2014 - 12/04/2019	6/4/2020	12/18/2020	05/15/2014 - 12/03/2019	6/4/2020	12/18/2020	12/05/2001 - 12/03/2019
Parameters	Units	ODWS Source	ODWS	PWQO	Historical Range			Historical Range			Historical Range			Historical Range
1,1-Dichloroethene	ug/L	MAC	14	40	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	ND(0.3) - ND(0.5)	ND (0.2)[c]	-	ND(0.3) - ND(0.5)
1,2,4-Trichlorobenzene	ug/L	-	-	0.5	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)
1,2-Dibromoethane (Ethylene dibrc	ug/L	-	-	5	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(1)
1,2-Dichlorobenzene	ug/L	MAC	200	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)
1,2-Dichloroethane	ug/L	IMAC	5	100	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2) - ND(0.5)
1,2-Dichloropropane	ug/L	-	-	0.7	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)
1,3-Dichlorobenzene	ug/L	-	-	2.5	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)
1,3-Dichloropropene	ug/L	-	-	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)
1,4-Dichlorobenzene	ug/L	MAC	5	4	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)
2-Butanone (Methyl ethyl ketone) (I	ug/L	-	-	400	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)
2-Hexanone	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)
4-Methyl-2-pentanone (Methyl isob	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)
Acetone	ug/L	-	-	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-	ND(1)
Benzene	ug/L	MAC	1	100	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)
Bromodichloromethane	ug/L	-	-	200	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)
Bromoform	ug/L	-	-	60	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)
Bromomethane (Methyl bromide)	ug/L	-	-	0.9	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)
Carbon tetrachloride	ug/L	MAC	2	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2) - ND(0.5)
Chlorobenzene	ug/L	MAC	80	15	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)
Chloroethane	ug/L	-	-	-	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2) - ND(1)
Chloroform (Trichloromethane)	ug/L	-	-	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)
Chloromethane (Methyl chloride)	ug/L	-	-	700	ND(0.2) - ND(1)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-	ND(0.2) - ND(1)
cis-1,2-Dichloroethene	ug/L	-	-	200	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)
cis-1,3-Dichloropropene	ug/L	-	-	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)
Dibromochloromethane	ug/L	-	-	40	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)
Dichlorodifluoromethane (CFC-12)	ug/L	-	-	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)
Ethylbenzene	ug/L	MAC	140	8	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)
Hexane	ug/L	-	-	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)
m&p-Xylenes	ug/L	-	-	2	ND(0.2) - ND(1)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(1)
Methyl tert butyl ether (MTBE)	ug/L	AO	15	200	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)
Methylene chloride	ug/L	MAC	50	100	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)
o-Xylene	ug/L	-	-	40	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.5)
Styrene	ug/L	-	-	4	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)
Tetrachloroethene	ug/L	MAC	10	50	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)
Toluene	ug/L	MAC	60	0.8	ND(0.2) - 0.88	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)
trans-1,2-Dichloroethene	ug/L	-	-	200	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)
trans-1,3-Dichloropropene	ug/L	-	-	7	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)
Trichloroethene	ug/L	MAC	5	20	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)
Trichlorofluoromethane (CFC-11)	ug/L	-	-	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)
Vinyl chloride	ug/L	MAC	1	600	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)
Xylenes (total)	ug/L	MAC	90	-	ND(0.2) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(1.5)

Notes:

[a]	Indicates value exceeds Ontario Drinking Water Standards. Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
[b]	Indicates value exceeds Policy and Guidelines - Provincial Water Quality The Ontario Ministry of the Environment and Energy, July 1994 (PWQO).
[c]	Analytical result outside of the historical concentration range for the parameter.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.

Table 12

Groundwater Chemistry - Wells Located in Sub-Cell 3 and Cell 18
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		EW2a-01	EW2a-01	EW2b-13	EW2b-13	EW2b-13	EW2c-13	EW2c-13	EW2c-13
Sample ID		EW2A	EW2A		EW2B	EW2B		EW2C	EW2C
Sample Date:		6/4/2020	12/18/2020	05/15/2014 - 12/03/2019 Historical Range	6/4/2020	12/18/2020	05/15/2014 - 12/03/2019 Historical Range	6/4/2020	12/18/2020
Parameters	**Units**								
Field Parameters									
Conductivity, field	uS/cm	790	833	460 - 1100	769	786	457 - 5760	751	784
pH, field	s.u.	9.25[abc]	7.38	7.44 - 9.08	8.91[ab]	7.38[c]	7.25 - 9.11	8.3	7.33
Temperature, field	Deg C	17.9[a]	5.75	9.96 - 16.4	15.4[a]	9.99	10.59 - 13.8	17[ac]	9.84[c]
General Indicators									
Conductivity, electrical	uS/cm	870	772	584 - 847	872[c]	761	565 - 859	843	760
pH, lab	s.u.	7.97	7.7	7.8 - 8.37	8.02	7.75[c]	7.73 - 8.28	8.01	7.63[c]
Total dissolved solids (TDS)	mg/L	386	392	366 - 521	372	378	354 - 540	350[c]	374
Minor Ions - Anions									
Alkalinity, total (as CaCO3)	mg/L	250	227	204 - 257	215	230	199 - 248	204	224
Chloride	mg/L	103	106	95 - 105	96.2	98.2	92 - 109	95.2	97.1
Sulfate	mg/L	1.5	1.56	2.1 - 52	2.42	2.1	0.51 - 72	0.6	11
Major Ions - Cations									
Calcium (dissolved)	mg/L	33.3	29.1[c]	31.7 - 51	34.4	31.3[c]	30.2 - 54	31.3	29.6[c]
Magnesium (dissolved)	mg/L	14.8	13.9	13.8 - 21	14.9	14.7	13.3 - 22	14	14.2
Potassium (dissolved)	mg/L	2.73	2.29	2.27 - 3	2.8	2.7	2.22 - 3	3.55[c]	2.31
Sodium (dissolved)	mg/L	94.4[a]	86.2[a]	87.2 - 106	92.8[a]	87.1[ac]	86.2 - 103	93.1[a]	84.5[ac]
Major Ions - Nutrients									
Ammonia-N	mg/L	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	ND (0.25)	ND (0.1)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.5)[c]	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.5)[c]
Nitrite (as N)	mg/L	ND (0.25)[c]	ND (0.1)	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.5)[c]	ND(0.1) - ND(0.25)	ND (0.25)	ND (0.5)[c]
Major Ions - Miscellaneous									
Bromide	mg/L	1.09	1.04	ND(0.25) - 1.18	1.15	ND (0.5)	ND(0.25) - 1.03	ND (0.25)	ND (0.5)
Cyanide (free)	mg/L	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-	ND(0.002) - ND(0.005)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	ND (0.002)	-	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	1.08	1.15	ND(0.25) - 1.36	1.08	ND (0.07)[c]	ND(0.25) - 1.45	1.07	ND (0.07)[c]
Metals									
Arsenic (dissolved)	mg/L	ND (0.001)	-	ND(0.001) - ND(0.003)	ND (0.006)[bc]	-	ND(0.001) - ND(0.003)	ND (0.006)[bc]	-
Barium (dissolved)	mg/L	0.123	-	0.12 - 0.14	0.127	-	0.11 - 0.141	0.115	-
Boron (dissolved)	mg/L	1.24[b]	-	1.1 - 1.3	1.32[bc]	-	1.1 - 1.26	1.35[bc]	-
Cadmium (dissolved)	mg/L	0.0002	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND (0.002)[b]	-	ND(0.001) - ND(0.005)	ND (0.002)[b]	-	ND(0.001) - ND(0.005)	ND (0.002)[b]	-
Iron (dissolved)	mg/L	0.032 J	-	ND(0.01) - 0.08	0.121 J[c]	-	ND(0.01) - 0.22	0.019 J	-
Lead (dissolved)	mg/L	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-	ND(0.001) - ND(0.002)	ND (0.0005)[c]	-
Mercury (dissolved)	mg/L	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-	ND(0.003) - ND(0.005)	ND (0.003) J	-
Zinc (dissolved)	mg/L	0.006 J	-	ND(0.005) - ND(0.01)	ND (0.005) J	-	ND(0.005) - 0.01	ND (0.005) J	-
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-	ND(0.3) - ND(0.4)	ND (0.3)	-

Table 12

Groundwater Chemistry - Wells Located in Sub-Cell 3 and Cell 18
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Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		**EW2a-01**	**EW2a-01**	**EW2b-13**	**EW2b-13**	**EW2b-13**	**EW2c-13**	**EW2c-13**	**EW2c-13**
Sample ID		**EW2A**	**EW2A**		**EW2B**	**EW2B**		**EW2C**	**EW2C**
Sample Date:		**6/4/2020**	**12/18/2020**	**05/15/2014 - 12/03/2019 Historical Range**	**6/4/2020**	**12/18/2020**	**05/15/2014 - 12/03/2019 Historical Range**	**6/4/2020**	**12/18/2020**
Parameters	**Units**								
1,1-Dichloroethene	ug/L	**ND (0.2)[c]**	-	ND(0.3) - ND(0.5)	**ND (0.2)[c]**	-	ND(0.3) - ND(0.5)	**ND (0.2)[c]**	-
1,2,4-Trichlorobenzene	ug/L	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibrc	ug/L	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND (0.3)	-	ND(0.3)	ND (0.3)	-	ND(0.3)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (I	ug/L	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
2-Hexanone	ug/L	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
4-Methyl-2-pentanone (Methyl isob	ug/L	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
Acetone	ug/L	ND (1)	-	ND(1)	ND (1)	-	ND(1)	ND (1)	-
Benzene	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Bromodichloromethane	ug/L	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Bromoform	ug/L	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Carbon tetrachloride	ug/L	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Chlorobenzene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-	ND(0.1) - ND(0.2)	ND (0.1)	-
Chloroethane	ug/L	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-	ND(0.2) - ND(0.4)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Dibromochloromethane	ug/L	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-	ND(0.1) - ND(0.3)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
Ethylbenzene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Hexane	ug/L	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
m&p-Xylenes	ug/L	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND (0.2)	-	ND(0.2)	ND (0.2)	-	ND(0.2)	ND (0.2)	-
Methylene chloride	ug/L	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-	ND(0.3) - ND(4)	ND (0.3)	-
o-Xylene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-	ND(0.1) - ND(0.4)	ND (0.1)	-
Styrene	ug/L	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-	ND(0.1) - ND(0.5)	ND (0.1)	-
Tetrachloroethene	ug/L	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Toluene	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-	ND(0.2) - ND(0.4)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-	ND(0.2) - ND(0.3)	ND (0.3)	-
Trichloroethene	ug/L	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-	ND(0.2) - ND(0.3)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-	ND(0.4) - ND(0.5)	ND (0.4)	-
Vinyl chloride	ug/L	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-	ND(0.17) - ND(0.2)	ND (0.17)	-
Xylenes (total)	ug/L	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-	ND(0.2) - ND(0.5)	ND (0.2)	-

Notes:

[a]	Indicates value exceeds Ontario Drink Guidelines, Ontario Ministry of the Env
[b]	Indicates value exceeds Policy and Gu The Ontario Ministry of the Environme
[c]	Analytical result outside of the historic
ND	Not detected at the associated reportir
J	Estimated concentration.
4.90	Detected result exceeds associated sta
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concent
-	Not applicable or not analysed.

Table 12

Groundwater Chemistry - Wells Located in Sub-Cell 3 and Cell 18
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		PW1-N	PW1-N	PW1-N	PW2-S(R11)	PW2-S(R11)	PW2-S(R11)	PW2-S(R11)	PW2-S(R11)
Sample ID			PW1	PW1		PW2	98	PW2	PW22
Sample Date:		11/14/2001 - 12/04/2019	6/4/2020	12/18/2020	06/16/2011 - 12/04/2019	6/4/2020	6/4/2020	12/18/2020	12/18/2020
		Historical Range			Historical Range		Duplicate		Duplicate
Parameters	**Units**								
Field Parameters									
Conductivity, field	uS/cm	1360 - 1980	1720	1650	910 - 2000	1640	1640	1630	1630
pH, field	s.u.	7.38 - 9.81	8.76[ab]	7.96	6.13 - 9.17	10.03[abc]	10.03[abc]	8.3	8.3
Temperature, field	Deg C	8.8 - 18.3	14.9	9.81	9.05 - 12.07	14.1[c]	14.1[c]	10.9	10.9
General Indicators									
Conductivity, electrical	uS/cm	1390 - 1920	2040[c]	1800	1240 - 2770	1960	1960	1730	1720
pH, lab	s.u.	7.97 - 8.54	8.23	8.16	7.97 - 8.72	8.15	8.21	8.24	8.21
Total dissolved solids (TDS)	mg/L	746 - 1250	896[a]	898[a]	700 - 1800	844[a]	834[a]	878[a]	904[a]
Minor Ions - Anions									
Alkalinity, total (as CaCO3)	mg/L	197 - 355	296	315	42 - 454	328	328	350	348
Chloride	mg/L	267 - 408	375[a]	368[a]	277 - 600	333[a]	331[a]	327[a]	330[a]
Sulfate	mg/L	1 - 49	4.7	5.7	ND(0.5) - 24	7.9	6.7	5.9	5.2
Major Ions - Cations									
Calcium (dissolved)	mg/L	10.8 - 159	10.6[c]	7.89[c]	12.6 - 33	9.74[c]	9.85[c]	8.3[c]	8.45[c]
Magnesium (dissolved)	mg/L	4.17 - 50	6.6	5.27	6 - 16	7.61	7.71	7.09	7.3
Potassium (dissolved)	mg/L	ND(1) - 45	2.43	2.18	1.83 - 23	2.85	2.87	2.61	2.51
Sodium (dissolved)	mg/L	92 - 391	344[a]	308[a]	250 - 579	326[a]	324[a]	293[a]	294[a]
Major Ions - Nutrients									
Ammonia-N	mg/L	ND(0.05) - 0.27	-	-	ND(0.05) - 0.39	-	-	-	-
Nitrate (as N)	mg/L	0.065 - ND(1)	ND (0.5)	ND (0.5)	ND(0.1) - ND(0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nitrite (as N)	mg/L	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.5)	ND(0.01) - ND(0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Major Ions - Miscellaneous									
Bromide	mg/L	0.2 - ND(3.5)	ND (0.5)	ND (0.5)	ND(0.25) - 2.37	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Cyanide (free)	mg/L	ND(0.002) - ND(0.02)	ND (0.002)	-	ND(0.002) - ND(0.01)	ND (0.002)	ND (0.002)	-	-
Cyanide, weak acid dissociable	mg/L	-	-	ND (0.002)	-	-	-	ND (0.002)	ND (0.002)
Fluoride	mg/L	0.39 - 14	1.01	ND (0.07)[c]	0.44 - 8.2	0.9	0.92	ND (0.07)[c]	ND (0.07)[c]
Metals									
Arsenic (dissolved)	mg/L	0.001 - ND(0.01)	ND (0.005)	-	0.001 - ND(0.01)	ND (0.001)	ND (0.008)[b]	-	-
Barium (dissolved)	mg/L	0.16 - 0.57	0.096[c]	-	0.128 - 0.41	0.136	0.137	-	-
Boron (dissolved)	mg/L	1.6 - 2.7	2.11[b]	-	1.97 - 3.6	2.9[b]	2.77[b]	-	-
Cadmium (dissolved)	mg/L	ND(0.0001) - ND(0.001)	ND (0.0001)	-	ND(0.0001) - ND(0.001)	ND (0.0001)	ND (0.0001)	-	-
Chromium (dissolved)	mg/L	0.001 - ND(0.01)	ND (0.002)[b]	-	ND(0.001) - 0.01	ND (0.002)[b]	ND (0.002)[b]	-	-
Iron (dissolved)	mg/L	0.013 - 0.527	ND (0.01) J[c]	-	ND(0.01) - 0.64	0.103 J	0.111 J	-	-
Lead (dissolved)	mg/L	ND(0.0005) - ND(0.01)	ND (0.0005)	-	ND(0.001) - ND(0.01)	ND (0.0005)[c]	ND (0.0005)[c]	-	-
Mercury (dissolved)	mg/L	ND(0.0001)	ND (0.0001)	-	ND(0.0001)	ND (0.0001)	ND (0.0001)	-	-
Nickel (dissolved)	mg/L	ND(0.001) - ND(0.05)	ND (0.003) J	-	ND(0.003) - ND(0.05)	ND (0.007) J	ND (0.003) J	-	-
Zinc (dissolved)	mg/L	ND(0.005) - ND(0.1)	ND (0.005) J	-	0.005 - ND(0.1)	ND (0.005) J	ND (0.005) J	-	-
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	ND (0.1)	-	-
1,1,1-Trichloroethane	ug/L	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	ND (0.3)	-	-
1,1,2,2-Tetrachloroethane	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
1,1,2-Trichloroethane	ug/L	ND(0.2) - ND(2)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	ND (0.2)	-	-
1,1-Dichloroethane	ug/L	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	ND (0.3)	-	-

Table 12

Groundwater Chemistry - Wells Located in Sub-Cell 3 and Cell 18
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Sample Location:		PW1-N	PW1-N	PW1-N	PW2-S(R11)	PW2-S(R11)	PW2-S(R11)	PW2-S(R11)	PW2-S(R11)
Sample ID			PW1	PW1		PW2	98	PW2	PW22
Sample Date:		11/14/2001 - 12/04/2019 Historical Range	6/4/2020	12/18/2020	06/16/2011 - 12/04/2019 Historical Range	6/4/2020	6/4/2020 Duplicate	12/18/2020	12/18/2020 Duplicate
Parameters	**Units**								
1,1-Dichloroethene	ug/L	ND(0.1) - ND(1.2)	ND (0.2)	-	ND(0.3) - ND(1.2)	**ND (0.2)**[c]	**ND (0.2)**[c]	-	-
1,2,4-Trichlorobenzene	ug/L	ND(0.1) - ND(1.2)	ND (0.3)	-	ND(0.1) - ND(1.2)	ND (0.3)	ND (0.3)	-	-
1,2-Dibromoethane (Ethylene dibrc	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
1,2-Dichlorobenzene	ug/L	ND(0.002) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
1,2-Dichloroethane	ug/L	ND(0.002) - ND(2)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	ND (0.2)	-	-
1,2-Dichloropropane	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
1,3-Dichlorobenzene	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
1,3-Dichloropropene	ug/L	ND(0.3) - ND(1.2)	ND (0.3)	-	ND(0.3) - ND(1.2)	ND (0.3)	ND (0.3)	-	-
1,4-Dichlorobenzene	ug/L	ND(0.002) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
2-Butanone (Methyl ethyl ketone) (I	ug/L	ND(1) - ND(50)	ND (1)	-	ND(1) - ND(50)	ND (1)	ND (1)	-	-
2-Hexanone	ug/L	ND(1) - ND(4)	ND (1)	-	ND(1) - ND(4)	ND (1)	ND (1)	-	-
4-Methyl-2-pentanone (Methyl isob	ug/L	ND(1) - ND(50)	ND (1)	-	ND(1) - ND(50)	ND (1)	ND (1)	-	-
Acetone	ug/L	ND(1) - ND(100)	ND (1)	-	ND(1) - ND(100)	ND (1)	ND (1)	-	-
Benzene	ug/L	ND(0.001) - 1.9	ND (0.2)	-	ND(0.2) - ND(1)	0.26	ND (0.2)	-	-
Bromodichloromethane	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
Bromoform	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
Bromomethane (Methyl bromide)	ug/L	ND(0.2) - ND(5)	ND (0.2)	-	ND(0.2) - ND(5)	ND (0.2)	ND (0.2)	-	-
Carbon tetrachloride	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
Chlorobenzene	ug/L	ND(0.1) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	ND (0.1)	-	-
Chloroethane	ug/L	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	ND (0.2)	-	-
Chloroform (Trichloromethane)	ug/L	ND(0.2) - 23.8	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
Chloromethane (Methyl chloride)	ug/L	ND(0.2) - ND(1.6)	ND (0.4)	-	ND(0.2) - ND(1.6)	ND (0.4)	ND (0.4)	-	-
cis-1,2-Dichloroethene	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
cis-1,3-Dichloropropene	ug/L	ND(0.2) - ND(2)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	ND (0.2)	-	-
Dibromochloromethane	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND(0.2) - ND(5)	ND (0.2)	-	ND(0.2) - ND(5)	ND (0.2)	ND (0.2)	-	-
Ethylbenzene	ug/L	ND(0.001) - ND(1)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	ND (0.1)	-	-
Hexane	ug/L	ND(0.2) - ND(5)	ND (0.2)	-	ND(0.2) - ND(5)	ND (0.2)	ND (0.2)	-	-
m&p-Xylenes	ug/L	ND(0.1) - ND(10)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
Methyl tert butyl ether (MTBE)	ug/L	ND(0.2) - ND(2)	ND (0.2)	-	ND(0.2) - ND(2)	ND (0.2)	ND (0.2)	-	-
Methylene chloride	ug/L	ND(0.01) - ND(10)	ND (0.3)	-	ND(0.3) - ND(5)	ND (0.3)	ND (0.3)	-	-
o-Xylene	ug/L	ND(0.1) - ND(10)	ND (0.1)	-	ND(0.1) - ND(1)	ND (0.1)	ND (0.1)	-	-
Styrene	ug/L	ND(0.1) - ND(2)	ND (0.1)	-	ND(0.1) - ND(2)	ND (0.1)	ND (0.1)	-	-
Tetrachloroethene	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
Toluene	ug/L	ND(0.01) - ND(10)	0.64	-	ND(0.2) - ND(2)	0.25	ND (0.2)	-	-
trans-1,2-Dichloroethene	ug/L	ND(0.1) - ND(1)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
trans-1,3-Dichloropropene	ug/L	ND(0.2) - ND(2)	ND (0.3)	-	ND(0.2) - ND(2)	ND (0.3)	ND (0.3)	-	-
Trichloroethene	ug/L	ND(0.01) - ND(10)	ND (0.2)	-	ND(0.2) - ND(1)	ND (0.2)	ND (0.2)	-	-
Trichlorofluoromethane (CFC-11)	ug/L	ND(0.2) - ND(2)	ND (0.4)	-	ND(0.4) - ND(2)	ND (0.4)	ND (0.4)	-	-
Vinyl chloride	ug/L	ND(0.17) - ND(2)	ND (0.17)	-	ND(0.17) - ND(2)	ND (0.17)	ND (0.17)	-	-
Xylenes (total)	ug/L	ND(0.01) - ND(1.5)	ND (0.2)	-	ND(0.2) - ND(1.5)	ND (0.2)	ND (0.2)	-	-

Notes:

[a]	Indicates value exceeds Ontario Drink Guidelines, Ontario Ministry of the Env
[b]	Indicates value exceeds Policy and Gu The Ontario Ministry of the Environme
[c]	Analytical result outside of the historic
ND	Not detected at the associated reportir
J	Estimated concentration.
4.90	Detected result exceeds associated sta
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concent
-	Not applicable or not analysed.

Table 13

Upper Confidence Limits Summary Table
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
EW1a-01	Chloride	mg/L	11/3/2004 - 5/13/2008	8	0%	306	364	323 / 331	327	329	18	382.1
	Sulfate	mg/L	11/3/2004 - 5/13/2008	8	0%	67	136	118 / 121	119.5	112	24	184.9
	Potassium (dissolved)	mg/L	11/3/2004 - 5/13/2008	8	0%	3.7	8	5 / 5	5.0	5.1	1.4	9.2
	Sodium (dissolved)	mg/L	11/3/2004 - 5/13/2008	8	0%	242	300	266 / 268	267	267	18	320.6
	Bromide	mg/L	11/3/2004 - 5/13/2008	8	13%	0.96	3.5 U	1.43 / 1.5	1.47	1.3	0.26	2.1
	Fluoride	mg/L	11/3/2004 - 5/13/2008	8	0%	1.44	2	1.5 / 1.59	1.5	1.6	0.19	2.2
	Barium (dissolved)	mg/L	6/7/2006 - 5/23/2013	8	13%	0.1 U	0.11	0.07 / 0.08	0.08	0.1	0.02	0.1
	Boron (dissolved)	mg/L	6/7/2006 - 5/23/2013	8	0%	1	1.9	1.5 / 1.5	1.5	1.5	0.25	2.2
EW1b-13	Chloride	mg/L	5/15/2014 - 11/21/2017	8	0%	302	345	324 / 331	328	325	15	370.0
	Sulfate	mg/L	5/15/2014 - 11/21/2017	8	0%	128	147	139 / 143	141.0	139	7	159.9
	Potassium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	4.77	6	5 / 5	5.0	5.2	0.5	6.7
	Sodium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	182	211	198 / 200	199	198	9	225.2
	Bromide	mg/L	5/15/2014 - 11/21/2017	8	0%	1.81	2.98	2.76 / 2.79	2.78	2.5	0.47	3.9
	Fluoride	mg/L	5/15/2014 - 11/21/2017	8	0%	0.74	1.51	1.4 / 1.45	1.4	1.2	0.32	2.2
	Barium (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	0.048	0.07	0.053	0.05	0.06	0.01	0.1
	Boron (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	1.15	1.4	1.3	1.3	1.3	0.09	1.5
EW1c-13	Chloride	mg/L	5/15/2014 - 11/21/2017	8	0%	281	329	311 / 318	315	311	16	360.4
	Sulfate	mg/L	5/15/2014 - 11/21/2017	8	0%	120	165	130 / 131	130.5	136	16	182.5
	Potassium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	4.74	6	5 / 5	5.0	5.1	0.4	6.2
	Sodium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	179	202	195 / 195	195	193	8	216.7
	Bromide	mg/L	5/15/2014 - 11/21/2017	8	0%	1.65	2.96	2.44 / 2.5	2.47	2.4	0.46	3.8
	Fluoride	mg/L	5/15/2014 - 11/21/2017	8	0%	0.72	1.54	1.34 / 1.41	1.4	1.2	0.33	2.2
	Barium (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	0.049	0.06	0.052	0.05	0.05	0.00	0.1
	Boron (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	1.1	1.4	1.33	1.3	1.3	0.12	1.6
EW2a-01	Chloride	mg/L	12/5/2001 - 6/1/2005	8	0%	129	220	150 / 160	155	158	31	250.8
	Sulfate	mg/L	12/5/2001 - 6/1/2005	8	0%	110	150	140 / 140	140.0	133	15	177.4
	Potassium (dissolved)	mg/L	12/5/2001 - 6/1/2005	8	0%	3.7	8.1	4.3 / 4.5	4.4	5.1	1.6	9.8
	Sodium (dissolved)	mg/L	12/5/2001 - 11/2/2005	8	0%	83	100	95 / 96	96	95	5	111.0
	Bromide	mg/L	5/13/2003 - 11/7/2006	8	13%	1.8 U	1.7	1.46 / 1.5	1.48	1.5	0.13	1.9
	Fluoride	mg/L	5/13/2003 - 11/7/2006	8	0%	0.9	1.38	1.13 / 1.2	1.2	1.2	0.16	1.6
	Barium (dissolved)	mg/L	5/13/2003 - 7/12/2011	8	0%	0.08	0.11	0.09 / 0.093	0.09	0.09	0.01	0.1
	Boron (dissolved)	mg/L	5/13/2003 - 7/12/2011	8	0%	0.83	1.15	1 / 1	1.0	1.0	0.10	1.3
EW2b-13	Chloride	mg/L	5/15/2014 - 11/21/2017	8	0%	95	104	100 / 101	101	101	3	109.6
	Sulfate	mg/L	5/15/2014 - 11/21/2017	8	0%	4.04	52	12 / 17	14.5	21	18	75.5
	Potassium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	2.63	3	3 / 3	3.0	2.9	0.2	3.4
	Sodium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	93.6	106	100 / 102	101	100	4	113.5
	Bromide	mg/L	5/15/2014 - 11/21/2017	8	0%	0.56	1.18	0.94 / 1.02	0.98	0.9	0.19	1.5
	Fluoride	mg/L	5/15/2014 - 11/21/2017	8	0%	0.81	1.36	1.25 / 1.26	1.3	1.2	0.19	1.7
	Barium (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	0.12	0.14	0.127	0.13	0.13	0.01	0.2
	Boron (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	1.1	1.32	1.25	1.3	1.2	0.10	1.5

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
EW2c-13	Chloride	mg/L	5/15/2014 - 11/21/2017	8	0%	92	109	99.8 / 101	100	100	5	115.5
	Sulfate	mg/L	5/15/2014 - 11/21/2017	8	0%	1.14	72	30 / 39	34.5	35	27	117.7
	Potassium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	2.42	3	3 / 3	3.0	2.9	0.3	3.6
	Sodium (dissolved)	mg/L	5/15/2014 - 11/21/2017	8	0%	93.5	103	100 / 102	101	99	4	110.2
	Bromide	mg/L	5/15/2014 - 11/21/2017	8	0%	0.68	1.03	0.9 / 0.98	0.94	0.9	0.13	1.3
	Fluoride	mg/L	5/15/2014 - 11/21/2017	8	0%	0.84	1.45	1.28 / 1.31	1.3	1.2	0.21	1.8
	Barium (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	0.11	0.141	0.12	0.12	0.13	0.01	0.2
	Boron (dissolved)	mg/L	5/15/2014 - 6/4/2020	7	0%	1.1	1.35	1.2	1.2	1.2	0.09	1.5
OW32-90D	Chloride	mg/L	6/19/1991 - 11/8/1994	8	0%	276	365	343 / 351	347	332	37	442.9
	Sulfate	mg/L	6/19/1991 - 11/8/1994	8	0%	3.19	10.6	5.58 / 6.13	5.9	6	2	13.0
	Potassium (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	2.4	5.2	3.4 / 3.5	3.5	3.6	0.8	6.0
	Sodium (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	228	274	257 / 257	257	256	13	296.3
	Bromide	mg/L	6/17/1996 - 11/14/2000	8	38%	0.35 U	0.7	0.3 / 0.34	0.32	0.4	0.17	1.0
	Fluoride	mg/L	6/17/1996 - 11/14/2000	8	0%	1.21	1.5	1.4 / 1.4	1.4	1.4	0.10	1.7
	Barium (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	0.094	0.177	0.144 / 0.165	0.15	0.15	0.03	0.2
	Boron (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	1.43	2.1	1.48 / 1.5	1.5	1.6	0.24	2.3
OW32-90S	Chloride	mg/L	6/19/1991 - 11/8/1994	8	0%	32.2	45.1	40.3 / 40.9	41	40	4	53.4
	Sulfate	mg/L	6/19/1991 - 11/8/1994	8	0%	271	395	368 / 370	369.0	353	43	482.0
	Potassium (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	3.3	4.487	3.6 / 3.7	3.7	3.8	0.4	5.0
	Sodium (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	42	68.2	54 / 56.7	55	55	8	79.1
	Bromide	mg/L	6/17/1996 - 11/14/2000	8	50%	0.35 U	0.9	0.35 U / 0.2	0.28	0.3	0.22	1.0
	Fluoride	mg/L	6/17/1996 - 6/26/2000	8	0%	0.26	0.9	0.6 / 0.8	0.7	0.6	0.24	1.4
	Barium (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	0.039	0.049	0.041 / 0.042	0.04	0.04	0.00	0.1
	Boron (dissolved)	mg/L	6/19/1991 - 11/8/1994	8	0%	1.4	3.71	3.13 / 3.19	3.2	2.9	0.69	5.0
OW35-05D	Chloride	mg/L	5/31/2005 - 10/22/2008	8	0%	244	261	246 / 246	246	248	6	264.4
	Sulfate	mg/L	5/31/2005 - 10/22/2008	8	13%	0.5 U	3	2 / 3	2.5	2.2	0.93	5.0
	Potassium (dissolved)	mg/L	5/31/2005 - 10/22/2008	8	0%	2	2.4	2 / 2	2.0	2.1	0.1	2.5
	Sodium (dissolved)	mg/L	5/31/2005 - 10/22/2008	8	0%	232	310	242 / 242	242	251	27	330.3
	Bromide	mg/L	5/31/2005 - 10/22/2008	8	0%	0.15	0.9	0.61 / 0.64	0.63	0.6	0.21	1.3
	Fluoride	mg/L	5/31/2005 - 10/22/2008	8	0%	1.11	1.5	1.34 / 1.36	1.4	1.3	0.12	1.7
	Barium (dissolved)	mg/L	5/31/2005 - 6/13/2011	8	0%	0.11	0.22	0.13 / 0.14	0.14	0.16	0.05	0.3
	Boron (dissolved)	mg/L	5/31/2005 - 6/13/2011	8	0%	1.4	1.9	1.6 / 1.63	1.6	1.6	0.15	2.1
OW35-90S	Chloride	mg/L	6/20/1991 - 6/13/1995	8	0%	18.5	36.6	21.9 / 22.1	22	23	6	40.3
	Sulfate	mg/L	6/20/1991 - 6/13/1995	8	0%	152	235	199 / 204	201.5	201	24	272.1
	Potassium (dissolved)	mg/L	6/20/1991 - 11/8/1994	8	0%	1.4	3.5	2.7 / 2.938	2.8	2.6	0.7	4.7
	Sodium (dissolved)	mg/L	6/20/1991 - 11/8/1994	8	0%	45.5	53.5	48.8 / 50.25	50	50	3	58.6
	Bromide	mg/L	6/18/1996 - 11/15/2000	8	88%	0.02 U	0.25	0.35 U / 0.35 U	ND (0.35)	0.1	0.11	0.4
	Fluoride	mg/L	6/18/1996 - 6/28/2000	8	0%	0.64	1	0.9 / 0.9	0.9	0.8	0.15	1.3
	Barium (dissolved)	mg/L	6/20/1991 - 11/8/1994	8	0%	0.033	0.109	0.042 / 0.044	0.04	0.05	0.02	0.1
	Boron (dissolved)	mg/L	6/20/1991 - 11/8/1994	8	0%	0.56	1.3	0.78 / 0.88	0.8	0.9	0.22	1.5

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
PW1-N	Chloride	mg/L	11/14/2001 - 6/1/2005	8	0%	340	388	360 / 364	362	362	16	409.9
	Sulfate	mg/L	11/14/2001 - 6/1/2005	8	75%	1 U	5 U	1 U / 1 U	ND (1)	1.1	0.16	1.6
	Potassium (dissolved)	mg/L	11/14/2001 - 6/1/2005	8	0%	1.9	2.7	2 / 2	2.0	2.1	0.3	2.9
	Sodium (dissolved)	mg/L	11/14/2001 - 6/1/2005	8	0%	300	350	313 / 320	317	316	17	366.3
	Bromide	mg/L	5/13/2003 - 11/8/2006	8	13%	0.6	3.5 U	0.71 / 0.85	0.78	0.8	0.18	1.3
	Fluoride	mg/L	5/13/2003 - 11/8/2006	8	0%	0.94	1.3	1.17 / 1.24	1.2	1.2	0.15	1.6
	Barium (dissolved)	mg/L	5/13/2003 - 5/17/2010	8	0%	0.25	0.34	0.26 / 0.27	0.27	0.28	0.03	0.4
	Boron (dissolved)	mg/L	5/13/2003 - 5/17/2010	8	0%	1.9	2.2	1.98 / 2.13	2.1	2.0	0.14	2.5
PW2-S(R11)	Chloride	mg/L	6/16/2011 - 11/5/2014	8	0%	277	600	327 / 411	369	404	119	761.9
	Sulfate	mg/L	6/16/2011 - 11/5/2014	8	63%	1 U	24	1 U / 3 U	ND (2)	6.8	8.95	33.6
	Potassium (dissolved)	mg/L	6/16/2011 - 11/5/2014	8	0%	2	23	2 / 2	2.0	4.8	7.4	26.9
	Sodium (dissolved)	mg/L	6/16/2011 - 11/5/2014	8	0%	341	579	398 / 419	409	426	80	665.5
	Bromide	mg/L	6/16/2011 - 11/5/2014	8	13%	0.25 U	2.37	0.83 / 1.06	0.95	1.0	0.60	2.8
	Fluoride	mg/L	6/16/2011 - 5/15/2014	8	0%	0.94	8.2	1.24 / 1.33	1.3	2.1	2.48	9.5
	Barium (dissolved)	mg/L	6/16/2011 - 5/6/2015	8	0%	0.17	0.41	0.22 / 0.23	0.23	0.24	0.09	0.5
	Boron (dissolved)	mg/L	6/16/2011 - 5/6/2015	8	0%	2.1	3.6	2.8 / 2.8	2.8	2.8	0.44	4.3
TW21-94-II	Chloride	mg/L	8/22/1994 - 11/13/2000	8	0%	8.5	16	8.7 / 9.1	9	10	3	18.1
	Sulfate	mg/L	8/22/1994 - 11/13/2000	8	0%	85	189	134 / 148	141.0	136	39	254.9
	Potassium (dissolved)	mg/L	8/22/1994 - 11/13/2000	8	25%	1 U	3.2	1.3 / 2	1.7	1.8	0.84	4.3
	Sodium (dissolved)	mg/L	8/22/1994 - 11/13/2000	8	0%	28	43	30.8 / 35.4	33	34	6	52.6
	Bromide	mg/L	8/22/1994 - 11/13/2000	8	100%	0.02 U	0.5 U	0.35 U / 0.35 U	ND (0.35)	0.2	0.07	0.4
	Fluoride	mg/L	8/22/1994 - 11/13/2000	8	0%	0.35	0.9	0.7 / 0.7	0.7	0.6	0.17	1.2
	Barium (dissolved)	mg/L	8/22/1994 - 5/18/2004	8	0%	0.051	0.073	0.058 / 0.058	0.06	0.06	0.01	0.1
	Boron (dissolved)	mg/L	8/22/1994 - 5/18/2004	8	13%	0.03 U	0.309	0.11 / 0.11	0.1	0.1	0.10	0.5
TW22-94	Chloride	mg/L	8/13/1994 - 11/13/2000	8	0%	30	66.4	46.4 / 49.3	48	49	13	88.0
	Sulfate	mg/L	8/13/1994 - 11/13/2000	8	0%	295	358	320 / 331	325.5	326	24	399.2
	Potassium (dissolved)	mg/L	8/13/1994 - 11/13/2000	8	0%	2	4.4	2 / 2.5	2.3	2.7	1.0	5.7
	Sodium (dissolved)	mg/L	8/13/1994 - 11/13/2000	8	0%	60.2	80	64.9 / 71.1	68	68	7	89.9
	Bromide	mg/L	8/13/1994 - 11/13/2000	8	88%	0.05 U	0.5 U	0.35 U / 0.35 U	ND (0.35)	0.1	0.03	0.2
	Fluoride	mg/L	8/13/1994 - 11/13/2000	8	0%	0.79	1.3	1 / 1	1.0	1.0	0.18	1.6
	Barium (dissolved)	mg/L	11/12/1997 - 5/18/2004	8	13%	0.002 U	0.058	0.024 / 0.041	0.03	0.0	0.02	0.1
	Boron (dissolved)	mg/L	11/12/1997 - 5/18/2004	8	13%	0.03 U	0.295	0.157 / 0.16	0.2	0.2	0.09	0.4
TW22-99D	Chloride	mg/L	6/9/1999 - 10/29/2002	8	0%	1010	1690	1100 / 1100	1100	1240	251	1992.1
	Sulfate	mg/L	6/9/1999 - 10/29/2002	8	63%	0.5 U	3.6	1 U / 1 U	ND (1)	1.3	1.19	4.9
	Potassium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	2	3.2	2.9 / 3	3.0	2.8	0.4	3.9
	Sodium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	820	1250	903 / 932	918	957	138	1371.2
	Bromide	mg/L	6/9/1999 - 10/29/2002	8	50%	0.2 U	4	1.45 / 3.5 U	2.48	1.6	1.44	5.9
	Fluoride	mg/L	6/9/1999 - 10/29/2002	8	13%	0.05 U	3.2	0.73 / 1.4	1.1	1.5	1.22	5.2
	Barium (dissolved)	mg/L	6/9/1999 - 6/7/2006	8	0%	0.35	0.597	0.39 / 0.4	0.40	0.42	0.08	0.7
	Boron (dissolved)	mg/L	6/9/1999 - 6/7/2006	8	0%	3.9	5.36	4.2 / 4.3	4.3	4.5	0.48	5.9

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TW30-94	Chloride	mg/L	6/7/1999 - 6/19/2002	8	0%	4.6	5.6	4.98 / 5	5	5	0	5.9
	Sulfate	mg/L	6/7/1999 - 6/19/2002	8	0%	105	151	109 / 110	109.5	115	15	160.1
	Potassium (dissolved)	mg/L	6/7/1999 - 6/19/2002	8	0%	1	3.829	2.1 / 2.3	2.2	2.2	0.9	4.9
	Sodium (dissolved)	mg/L	6/7/1999 - 6/19/2002	8	0%	31.2	49	34 / 35	35	37	6	53.4
	Bromide	mg/L	6/7/1999 - 6/19/2002	8	100%	0.2 U	0.5 U	0.2 U / 0.35 U	ND (0.275)	0.1	0.06	0.3
	Fluoride	mg/L	6/7/1999 - 6/19/2002	8	0%	1	1.74	1.2 / 1.2	1.2	1.2	0.22	1.9
	Barium (dissolved)	mg/L	6/7/1999 - 5/31/2005	8	0%	0.029	0.058	0.034 / 0.04	0.04	0.04	0.01	0.1
	Boron (dissolved)	mg/L	6/7/1999 - 5/31/2005	8	13%	0.03 U	0.172	0.16 / 0.162	0.2	0.1	0.04	0.3
TW30-99D	Chloride	mg/L	6/7/1999 - 10/30/2002	8	0%	236	365	308 / 310	309	314	41	437.8
	Sulfate	mg/L	6/7/1999 - 10/30/2002	8	38%	1 U	3.3	1.1 / 2.3	1.7	1.8	0.83	4.3
	Potassium (dissolved)	mg/L	6/7/1999 - 10/30/2002	8	13%	1 U	3	2.4 / 2.6	2.5	2.3	0.77	4.6
	Sodium (dissolved)	mg/L	6/7/1999 - 10/30/2002	8	0%	231	320	267 / 275	271	269	29	354.8
	Bromide	mg/L	6/7/1999 - 10/30/2002	8	38%	0.35 U	0.86	0.68 / 0.77	0.73	0.6	0.22	1.3
	Fluoride	mg/L	6/7/1999 - 10/30/2002	8	0%	1.2	1.6	1.4 / 1.4	1.4	1.4	0.17	1.9
	Barium (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.34	0.43	0.358 / 0.37	0.36	0.37	0.03	0.5
	Boron (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	1.6	1.99	1.63 / 1.7	1.7	1.7	0.13	2.1
TW32-94-I	Chloride	mg/L	8/5/1994 - 5/13/2014	8	0%	4690	7720	5973 / 6200	6087	6065	872	8680.1
	Sulfate	mg/L	8/5/1994 - 5/13/2014	8	25%	0.5 U	15	2.9 / 3.8	3.4	4.3	4.36	17.4
	Potassium (dissolved)	mg/L	8/5/1994 - 5/13/2014	8	0%	8	17	11.5 / 14.9	13.2	12.9	3.1	22.3
	Sodium (dissolved)	mg/L	8/5/1994 - 5/13/2014	8	0%	4120	5345	4790 / 4858	4824	4755	438	6068.7
	Bromide	mg/L	8/5/1994 - 5/13/2014	8	88%	0.02 U	50 U	1.75 U / 3 U	ND (2.375)	0.6	1.23	4.2
	Fluoride	mg/L	8/5/1994 - 5/13/2014	8	0%	0.55	9.5	0.67 / 0.67	0.7	1.8	3.13	11.1
	Barium (dissolved)	mg/L	8/5/1994 - 6/6/2017	8	0%	1.6	2.5	2.1 / 2.13	2.12	2.04	0.30	2.9
	Boron (dissolved)	mg/L	8/5/1994 - 6/6/2017	8	0%	7	10.02	7.3 / 7.9	7.6	7.9	1.02	10.9
TW32-94-II	Chloride	mg/L	8/5/1994 - 11/13/2000	8	0%	227	408	295 / 310	303	303	55	467.7
	Sulfate	mg/L	8/5/1994 - 11/13/2000	8	0%	1.8	7	3.2 / 3.5	3.4	4	2	8.3
	Potassium (dissolved)	mg/L	8/5/1994 - 11/13/2000	8	0%	1	4	3 / 3	3.0	2.8	1.0	5.9
	Sodium (dissolved)	mg/L	8/5/1994 - 11/13/2000	8	0%	243	307	271 / 279	275	276	20	337.0
	Bromide	mg/L	8/5/1994 - 11/13/2000	8	38%	0.35 U	1	0.3 / 0.7	0.50	0.6	0.28	1.4
	Fluoride	mg/L	8/5/1994 - 11/13/2000	8	0%	1.1	1.7	1.3 / 1.3	1.3	1.4	0.21	2.0
	Barium (dissolved)	mg/L	8/5/1994 - 5/18/2004	7	0%	0.13	0.19	0.142	0.14	0.15	0.02	0.22
	Boron (dissolved)	mg/L	8/5/1994 - 5/18/2004	7	0%	1.9	3.83	2.64	2.6	2.8	0.75	5.1
TW32-94-IV	Chloride	mg/L	8/5/1994 - 11/13/2000	8	0%	17.2	23.7	19 / 21.1	20	20	3	27.9
	Sulfate	mg/L	8/5/1994 - 11/13/2000	8	0%	196	564	388 / 392	390.0	394	102	700.9
	Potassium (dissolved)	mg/L	8/5/1994 - 11/13/2000	8	0%	1	4	2 / 2.6	2.3	2.4	1.1	5.6
	Sodium (dissolved)	mg/L	8/5/1994 - 11/13/2000	8	0%	68.2	98	76.6 / 77.9	77	78	9	106.1
	Bromide	mg/L	8/5/1994 - 11/13/2000	8	75%	0.02 U	0.5 U	0.35 U / 0.35 U	ND (0.35)	0.1	0.07	0.3
	Fluoride	mg/L	8/5/1994 - 11/13/2000	8	0%	0.85	1.2	1.02 / 1.1	1.1	1.1	0.12	1.4
	Barium (dissolved)	mg/L	11/12/1997 - 5/18/2004	8	0%	0.014	0.19	0.021 / 0.024	0.02	0.04	0.06	0.2
	Boron (dissolved)	mg/L	11/12/1997 - 5/18/2004	8	0%	0.13	1.8	0.281 / 0.29	0.3	0.5	0.54	2.1

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TW39-99D	Chloride	mg/L	6/9/1999 - 10/29/2002	8	0%	315	528	360 / 363	362	402	85	658.3
	Sulfate	mg/L	6/9/1999 - 10/29/2002	8	13%	1 U	5.9	1.7 / 1.7	1.7	2.8	1.91	8.6
	Potassium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	1	2.1	1.5 / 1.9	1.7	1.6	0.5	3.0
	Sodium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	289	397	325 / 330	328	330	32	425.1
	Bromide	mg/L	6/9/1999 - 10/29/2002	8	25%	0.35 U	3	0.69 / 0.73	0.71	1.1	0.89	3.8
	Fluoride	mg/L	6/9/1999 - 10/29/2002	8	0%	1.3	2	1.3 / 1.4	1.4	1.5	0.25	2.2
	Barium (dissolved)	mg/L	6/9/1999 - 6/1/2005	8	0%	0.18	0.312	0.22 / 0.24	0.23	0.23	0.04	0.3
	Boron (dissolved)	mg/L	6/9/1999 - 6/1/2005	8	0%	1.9	2.27	2 / 2	2.0	2.0	0.14	2.4
TW39-99I	Chloride	mg/L	6/9/1999 - 10/29/2002	8	0%	17	28.8	18 / 18.9	18	20	4	31.8
	Sulfate	mg/L	6/9/1999 - 10/29/2002	8	0%	315	389	328 / 330	329.0	336	24	407.7
	Potassium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	13%	1 U	2.2	1.4 / 1.4	1.4	1.5	0.41	2.7
	Sodium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	68.1	94	75.2 / 78.8	77	78	8	102.6
	Bromide	mg/L	6/9/1999 - 10/29/2002	8	50%	0.2 U	0.38	0.35 U / 0.23	0.29	0.3	0.06	0.4
	Fluoride	mg/L	6/9/1999 - 10/29/2002	8	0%	0.75	1.5	1 / 1	1.0	1.0	0.23	1.7
	Barium (dissolved)	mg/L	6/9/1999 - 6/1/2005	8	0%	0.042	0.066	0.048 / 0.05	0.05	0.05	0.01	0.1
	Boron (dissolved)	mg/L	6/9/1999 - 6/1/2005	8	0%	0.12	0.18	0.135 / 0.14	0.1	0.1	0.02	0.2
TW39-99S	Chloride	mg/L	6/9/1999 - 10/29/2002	8	0%	17.5	21.1	18 / 18.6	18	19	1	22.4
	Sulfate	mg/L	6/9/1999 - 10/29/2002	8	0%	298	477	317 / 320	318.5	338	58	511.2
	Potassium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	1.9	2.4	2 / 2	2.0	2.0	0.2	2.6
	Sodium (dissolved)	mg/L	6/9/1999 - 10/29/2002	8	0%	61	79.6	65 / 65.7	65	68	8	90.8
	Bromide	mg/L	6/9/1999 - 10/29/2002	8	38%	0.35 U	0.4	0.22 / 0.28	0.25	0.3	0.06	0.5
	Fluoride	mg/L	6/9/1999 - 10/29/2002	8	0%	0.6	1.3	0.8 / 0.9	0.9	0.9	0.21	1.5
	Barium (dissolved)	mg/L	6/9/1999 - 6/1/2005	8	0%	0.033	0.044	0.035 / 0.035	0.04	0.04	0.00	0.0
	Boron (dissolved)	mg/L	6/9/1999 - 6/1/2005	8	0%	0.211	0.289	0.23 / 0.24	0.2	0.2	0.03	0.3
TW40-99D	Chloride	mg/L	6/8/1999 - 10/29/2002	8	0%	247	480	298 / 300	299	322	72	537.9
	Sulfate	mg/L	6/8/1999 - 10/29/2002	8	0%	1.5	6	2.4 / 3.3	2.9	3	2	8.2
	Potassium (dissolved)	mg/L	6/8/1999 - 10/29/2002	8	0%	1.9	3	2.2 / 2.3	2.3	2.4	0.5	3.7
	Sodium (dissolved)	mg/L	6/8/1999 - 10/29/2002	8	0%	232	333	256 / 275	266	275	35	378.1
	Bromide	mg/L	6/8/1999 - 10/29/2002	8	38%	0.35 U	3.2	0.67 / 0.68	0.68	1.0	0.94	3.8
	Fluoride	mg/L	6/8/1999 - 10/29/2002	8	0%	0.99	1.4	1.2 / 1.2	1.2	1.2	0.15	1.7
	Barium (dissolved)	mg/L	6/8/1999 - 6/7/2006	8	0%	0.19	0.32	0.21 / 0.22	0.22	0.24	0.05	0.4
	Boron (dissolved)	mg/L	6/8/1999 - 6/7/2006	8	0%	1.62	2.2	1.7 / 1.8	1.8	1.8	0.19	2.4
TW40-99S	Chloride	mg/L	6/8/1999 - 10/29/2002	8	0%	17	26	18.6 / 19.3	19	20	3	28.6
	Sulfate	mg/L	6/8/1999 - 10/29/2002	8	0%	126	144	133 / 139	136.0	136	6	154.9
	Potassium (dissolved)	mg/L	6/8/1999 - 10/29/2002	8	0%	2	3	2.2 / 2.2	2.2	2.3	0.4	3.4
	Sodium (dissolved)	mg/L	6/8/1999 - 10/29/2002	8	0%	42.2	54.9	46.3 / 47.8	47	48	5	62.5
	Bromide	mg/L	6/8/1999 - 10/29/2002	8	88%	0.2 U	0.2	0.2 U / 0.35 U	ND (0.275)	0.2	0.00	0.2
	Fluoride	mg/L	6/8/1999 - 10/29/2002	8	0%	0.85	1.4	0.96 / 1	1.0	1.0	0.17	1.5
	Barium (dissolved)	mg/L	6/8/1999 - 6/7/2006	8	0%	0.03	0.056	0.036 / 0.045	0.04	0.04	0.01	0.1
	Boron (dissolved)	mg/L	6/8/1999 - 6/7/2006	8	0%	0.15	0.215	0.17 / 0.18	0.2	0.2	0.02	0.2

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
TW41-99D	Chloride	mg/L	6/7/1999 - 10/30/2002	8	0%	218	278	237 / 239	238	238	19	295.2
	Sulfate	mg/L	6/7/1999 - 10/30/2002	8	0%	1.6	6	3.3 / 4	3.7	4	2	8.2
	Potassium (dissolved)	mg/L	6/7/1999 - 10/30/2002	8	0%	1.3	3.3	1.8 / 2	1.9	2.0	0.6	3.8
	Sodium (dissolved)	mg/L	6/7/1999 - 10/30/2002	8	0%	208	262	254 / 256	255	247	18	301.1
	Bromide	mg/L	6/7/1999 - 10/30/2002	8	25%	0.35 U	1.8	0.6 / 0.61	0.61	0.8	0.51	2.3
	Fluoride	mg/L	6/7/1999 - 10/30/2002	8	0%	1.1	1.5	1.2 / 1.2	1.2	1.3	0.15	1.7
	Barium (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.077	0.93	0.27 / 0.33	0.30	0.38	0.29	1.3
	Boron (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	1.8	2.1	1.9 / 1.98	1.9	2.0	0.11	2.3
TW41-99S	Chloride	mg/L	6/7/1999 - 10/30/2002	8	0%	10.9	15.3	11.8 / 12	12	12	1	16.3
	Sulfate	mg/L	6/7/1999 - 10/30/2002	8	0%	419	603	495 / 501	498.0	504	52	658.9
	Potassium (dissolved)	mg/L	6/7/1999 - 10/30/2002	8	0%	2	4	3 / 3.5	3.3	3.2	0.6	5.1
	Sodium (dissolved)	mg/L	6/7/1999 - 10/30/2002	8	0%	46.1	58.9	49.3 / 49.9	50	51	4	64.1
	Bromide	mg/L	6/7/1999 - 10/30/2002	8	88%	0.2 U	0.25	0.2 U / 0.35 U	ND (0.275)	0.2	0.02	0.3
	Fluoride	mg/L	6/7/1999 - 10/30/2002	8	0%	0.72	1.3	1 / 1	1.0	1.0	0.20	1.6
	Barium (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.018	0.05	0.022 / 0.028	0.03	0.03	0.01	0.1
	Boron (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.16	0.342	0.21 / 0.21	0.2	0.2	0.06	0.4
TW42-99D	Chloride	mg/L	6/7/1999 - 11/9/2015	8	0%	2150	3730	2290 / 2560	2425	2565	522	4131.1
	Sulfate	mg/L	6/7/1999 - 11/9/2015	8	25%	1	6	2.6 / 3	2.8	3.1	1.65	8.0
	Potassium (dissolved)	mg/L	6/7/1999 - 11/9/2015	8	0%	3	8	6 / 6.6	6.3	6.1	1.7	11.2
	Sodium (dissolved)	mg/L	6/7/1999 - 11/9/2015	8	0%	1970	2620	2130 / 2170	2150	2186	210	2815.3
	Bromide	mg/L	6/7/1999 - 11/9/2015	8	50%	0.25 U	5.86	1.25 U / 3.5 U	ND (2.375)	1.6	1.82	7.0
	Fluoride	mg/L	6/7/1999 - 11/9/2015	8	0%	0.67	6.4	0.72 / 0.78	0.8	2.4	2.42	9.7
	Barium (dissolved)	mg/L	6/7/1999 - 6/5/2017	7	0%	0.86	1.3	0.99	0.99	1.03	0.16	1.5
	Boron (dissolved)	mg/L	6/7/1999 - 6/5/2017	7	0%	4.9	6.6	5.85	5.9	5.7	0.60	7.5
TW42-99S	Chloride	mg/L	6/7/1999 - 5/17/2004	8	0%	11.8	42	28 / 28.6	28	26	10	55.0
	Sulfate	mg/L	6/7/1999 - 5/17/2004	8	0%	162	750	367 / 408	387.5	390	178	922.8
	Potassium (dissolved)	mg/L	6/7/1999 - 5/17/2004	8	0%	1	4	3.1 / 3.1	3.1	2.9	0.8	5.4
	Sodium (dissolved)	mg/L	6/7/1999 - 5/17/2004	8	0%	37.1	49.9	41.6 / 43.1	42	43	4	56.3
	Bromide	mg/L	6/7/1999 - 5/17/2004	8	100%	0.2 U	0.35 U	0.2 U / 0.2 U	ND (0.2)	0.1	0.04	0.2
	Fluoride	mg/L	6/7/1999 - 5/17/2004	8	0%	0.56	1.1	0.74 / 0.77	0.8	0.8	0.17	1.3
	Barium (dissolved)	mg/L	6/7/1999 - 5/14/2007	8	0%	0.048	0.058	0.05 / 0.053	0.05	0.05	0.00	0.1
	Boron (dissolved)	mg/L	6/7/1999 - 5/14/2007	8	0%	0.12	0.2	0.17 / 0.18	0.18	0.2	0.03	0.2
TW43-99D	Chloride	mg/L	6/7/1999 - 10/28/2002	8	0%	229	300	241 / 245	243	251	22	318.4
	Sulfate	mg/L	6/7/1999 - 10/28/2002	8	63%	0.5 U	4.1	1 U / 1 U	ND (1)	1.3	1.44	5.6
	Potassium (dissolved)	mg/L	6/7/1999 - 10/28/2002	8	0%	1	2.6	1.7 / 1.9	1.8	1.8	0.6	3.6
	Sodium (dissolved)	mg/L	6/7/1999 - 10/28/2002	8	0%	197	250	223 / 226	225	224	15	268.6
	Bromide	mg/L	6/7/1999 - 10/28/2002	8	25%	0.35 U	2	0.62 / 0.82	0.72	0.9	0.53	2.5
	Fluoride	mg/L	6/7/1999 - 10/28/2002	8	0%	0.97	1.6	1.2 / 1.2	1.2	1.2	0.21	1.8
	Barium (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.193	0.28	0.22 / 0.23	0.23	0.23	0.03	0.3
	Boron (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	1.28	1.4	1.3 / 1.31	1.31	1.3	0.05	1.5

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
TW43-99S	Chloride	mg/L	6/7/1999 - 10/28/2002	8	0%	11.9	16	12.7 / 13	13	13	1	17.3
	Sulfate	mg/L	6/7/1999 - 10/28/2002	8	0%	336	455	400 / 406	403.0	397	39	513.2
	Potassium (dissolved)	mg/L	6/7/1999 - 10/28/2002	8	0%	2.7	3	2.8 / 2.9	2.9	2.9	0.1	3.3
	Sodium (dissolved)	mg/L	6/7/1999 - 10/28/2002	8	0%	33.5	56	38.4 / 39.7	39	42	9	67.9
	Bromide	mg/L	6/7/1999 - 10/28/2002	8	88%	0.2 U	36.5	0.2 U / 0.2 U	ND (0.2)	4.7	12.01	40.8
	Fluoride	mg/L	6/7/1999 - 10/28/2002	8	13%	0.1 U	1.1	0.64 / 0.8	0.7	0.7	0.28	1.5
	Barium (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.02	0.063	0.039 / 0.041	0.04	0.04	0.01	0.1
	Boron (dissolved)	mg/L	6/7/1999 - 6/6/2006	8	0%	0.14	0.358	0.19 / 0.2	0.20	0.2	0.07	0.4
TW45-99D	Chloride	mg/L	6/9/1999 - 10/28/2002	8	0%	205	397	229 / 240	235	267	69	474.7
	Sulfate	mg/L	6/9/1999 - 10/28/2002	8	0%	1.2	5.4	1.6 / 1.7	1.7	2	1	6.7
	Potassium (dissolved)	mg/L	6/9/1999 - 10/28/2002	8	0%	1	3	1.1 / 1.2	1.2	1.5	0.7	3.6
	Sodium (dissolved)	mg/L	6/9/1999 - 10/28/2002	8	0%	217	320	256 / 258	257	256	37	365.4
	Bromide	mg/L	6/9/1999 - 10/28/2002	8	25%	0.35 U	1.4	0.6 / 0.66	0.63	0.8	0.39	1.9
	Fluoride	mg/L	6/9/1999 - 10/28/2002	8	0%	1.2	1.5	1.4 / 1.4	1.4	1.4	0.11	1.7
	Barium (dissolved)	mg/L	6/9/1999 - 6/6/2006	8	0%	0.069	0.222	0.13 / 0.149	0.14	0.15	0.05	0.3
	Boron (dissolved)	mg/L	6/9/1999 - 6/6/2006	8	0%	1.7	2.61	1.9 / 2	1.95	2.0	0.31	2.9
TW45-99S	Chloride	mg/L	6/9/1999 - 10/28/2002	8	0%	10.9	16.2	12 / 13.6	13	13	2	18.8
	Sulfate	mg/L	6/9/1999 - 10/28/2002	8	0%	30.4	122	89.2 / 91.3	90.3	89	27	169.7
	Potassium (dissolved)	mg/L	6/9/1999 - 10/28/2002	8	0%	1	3	2 / 2.1	2.1	2.1	0.6	3.8
	Sodium (dissolved)	mg/L	6/9/1999 - 10/28/2002	8	0%	32.4	48.5	34.8 / 35.9	35	38	6	56.0
	Bromide	mg/L	6/9/1999 - 10/28/2002	8	88%	0.2 U	0.25	0.2 U / 0.35 U	ND (0.275)	0.2	0.02	0.3
	Fluoride	mg/L	6/9/1999 - 10/28/2002	8	0%	0.67	1.2	0.87 / 0.98	0.9	0.9	0.18	1.4
	Barium (dissolved)	mg/L	6/9/1999 - 6/6/2006	8	0%	0.057	0.095	0.07 / 0.074	0.07	0.07	0.01	0.1
	Boron (dissolved)	mg/L	6/9/1999 - 6/6/2006	8	0%	0.1	0.206	0.12 / 0.16	0.14	0.1	0.04	0.3
TW46-99D	Chloride	mg/L	11/3/1999 - 5/14/2003	8	0%	153	265	190 / 190	190	197	32	293.8
	Sulfate	mg/L	11/3/1999 - 5/14/2003	8	25%	1 U	4.7	1.2 / 1.6	1.4	2.0	1.28	5.9
	Potassium (dissolved)	mg/L	11/3/1999 - 5/14/2003	8	0%	1.3	3	1.8 / 1.9	1.9	1.9	0.5	3.4
	Sodium (dissolved)	mg/L	11/3/1999 - 5/14/2003	8	0%	220	251	230 / 237	234	234	11	265.1
	Bromide	mg/L	11/3/1999 - 5/14/2003	8	13%	0.35 U	1.6	0.63 / 0.64	0.64	0.8	0.39	2.0
	Fluoride	mg/L	11/3/1999 - 5/14/2003	8	0%	1.2	1.8	1.3 / 1.3	1.3	1.4	0.21	2.0
	Barium (dissolved)	mg/L	11/3/1999 - 5/31/2005	8	0%	0.091	0.189	0.11 / 0.119	0.11	0.12	0.03	0.2
	Boron (dissolved)	mg/L	11/3/1999 - 5/31/2005	8	0%	1.5	2.09	1.7 / 1.7	1.70	1.7	0.16	2.2
TW46-99I	Chloride	mg/L	11/3/1999 - 5/14/2003	8	0%	28.6	32.6	31 / 31.1	31	31	1	35.1
	Sulfate	mg/L	11/3/1999 - 5/14/2003	8	0%	213	330	288 / 289	288.5	280	34	383.7
	Potassium (dissolved)	mg/L	11/3/1999 - 5/14/2003	8	0%	1.4	3	2 / 2	2.0	2.1	0.4	3.4
	Sodium (dissolved)	mg/L	11/3/1999 - 5/14/2003	8	0%	37.6	41.6	40.6 / 41	41	40	1	44.6
	Bromide	mg/L	11/3/1999 - 5/14/2003	8	88%	0.2 U	0.27	0.2 U / 0.2 U	ND (0.2)	0.2	0.03	0.3
	Fluoride	mg/L	11/3/1999 - 5/14/2003	8	0%	0.49	1.2	0.67 / 0.75	0.7	0.7	0.22	1.4
	Barium (dissolved)	mg/L	11/3/1999 - 6/6/2006	8	0%	0.04	0.068	0.043 / 0.051	0.05	0.05	0.01	0.1
	Boron (dissolved)	mg/L	11/3/1999 - 6/6/2006	8	0%	0.087	0.13	0.103 / 0.114	0.11	0.1	0.02	0.2

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TW46-99S	Chloride	mg/L	11/3/1999 - 5/14/2003	8	0%	71	97.9	77.1 / 81	79	80	9	105.9
	Sulfate	mg/L	11/3/1999 - 5/14/2003	8	0%	675	949	860 / 863	861.5	846	77	1076.9
	Potassium (dissolved)	mg/L	11/3/1999 - 5/14/2003	8	0%	5	9	5.6 / 6.3	6.0	6.2	1.3	10.1
	Sodium (dissolved)	mg/L	11/3/1999 - 5/14/2003	8	0%	111	160	116 / 124	120	128	18	181.0
	Bromide	mg/L	11/3/1999 - 5/14/2003	8	13%	0.35 U	0.9	0.66 / 0.7	0.68	0.7	0.14	1.1
	Fluoride	mg/L	11/3/1999 - 5/14/2003	8	13%	0.05 U	1.5	0.75 / 0.8	0.8	0.8	0.39	2.0
	Barium (dissolved)	mg/L	11/3/1999 - 6/6/2006	8	0%	0.019	0.068	0.024 / 0.03	0.03	0.04	0.02	0.1
	Boron (dissolved)	mg/L	11/3/1999 - 5/31/2005	8	0%	0.81	31	1.04 / 7.5	4.27	8.2	10.45	39.6
TW47-00D	Chloride	mg/L	11/13/2000 - 5/19/2004	8	0%	240	347	273.5 / 276	275	277	35	383.4
	Sulfate	mg/L	11/13/2000 - 5/19/2004	8	38%	1 U	2.9	1.2 / 1.3	1.3	1.4	0.59	3.2
	Potassium (dissolved)	mg/L	11/13/2000 - 5/19/2004	8	0%	1.3	2.2	1.7 / 1.7	1.7	1.7	0.3	2.5
	Sodium (dissolved)	mg/L	11/13/2000 - 5/19/2004	8	0%	250	310	260 / 272	266	272	21	333.5
	Bromide	mg/L	11/13/2000 - 5/19/2004	8	0%	0.64	2.5	0.72 / 0.74	0.73	1.1	0.72	3.3
	Fluoride	mg/L	11/13/2000 - 5/19/2004	8	0%	1.1	1.5	1.3 / 1.3	1.3	1.3	0.14	1.7
	Barium (dissolved)	mg/L	6/13/2001 - 5/13/2008	8	0%	0.21	0.58	0.29 / 0.31	0.30	0.35	0.13	0.8
	Boron (dissolved)	mg/L	6/13/2001 - 5/13/2008	8	0%	2	2.65	2.3 / 2.3	2.30	2.3	0.26	3.1
TW48-00D	Chloride	mg/L	6/11/2001 - 11/1/2004	8	0%	433	610	510 / 510	510	526	60	707.8
	Sulfate	mg/L	6/11/2001 - 11/1/2004	8	13%	1 U	3	1.4 / 1.4	1.4	1.5	0.70	3.6
	Potassium (dissolved)	mg/L	6/11/2001 - 11/1/2004	8	0%	2.4	3.1	2.6 / 2.7	2.7	2.7	0.2	3.3
	Sodium (dissolved)	mg/L	6/11/2001 - 11/1/2004	8	0%	420	510	462 / 470	466	469	30	558.7
	Bromide	mg/L	6/11/2001 - 11/1/2004	8	0%	0.71	3.2	0.78 / 0.93	0.86	0.9	0.30	4.3
	Fluoride	mg/L	6/11/2001 - 11/1/2004	8	0%	1.2	1.6	1.3 / 1.4	1.4	1.4	0.18	1.9
	Barium (dissolved)	mg/L	6/11/2001 - 5/12/2008	8	0%	0.22	0.44	0.29 / 0.33	0.31	0.32	0.08	0.5
	Boron (dissolved)	mg/L	6/11/2001 - 5/12/2008	8	0%	2.7	2.9	2.7 / 2.79	2.75	2.8	0.09	3.0
TW48-16S	Chloride	mg/L	5/6/2016 - 12/3/2019	8	0%	19.0	23.7	20 / 20.2	20.1	20.6	1.6	25.2
	Sulfate	mg/L	5/6/2016 - 12/3/2019	8	0%	167.0	206.0	186 / 190	188	188	11.9	224
	Potassium (dissolved)	mg/L	5/6/2016 - 12/3/2019	8	0%	1.8	3.0	2.22 / 2.29	2.3	2.4	0.44	3.7
	Sodium (dissolved)	mg/L	5/6/2016 - 12/3/2019	8	0%	32.9	50.0	38.8 / 41.8	40.3	41.1	5.9	58.8
	Bromide	mg/L	5/6/2016 - 12/3/2019	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	0.25 U	0.25 U	0.0	0.25 U
	Fluoride	mg/L	5/6/2016 - 12/3/2019	8	25%	0.25 U	1.2	0.49 / 0.51	0.50	0.56	0.29	1.4
	Barium (dissolved)	mg/L	5/6/2016 - 6/11/2019	4	0%	0.03	0.04	0.03 / 0.032	0.031	0.032	0.004	0.04
	Boron (dissolved)	mg/L	5/6/2016 - 6/11/2019	4	0%	0.2	0.3	0.213 / 0.238	0.226	0.24	0.0	0.37
TW49-00D	Chloride	mg/L	6/11/2001 - 11/1/2004	8	0%	83	92	85.5 / 87.6	87	87	3	97.1
	Sulfate	mg/L	6/11/2001 - 11/1/2004	8	0%	1.2	43.4	1.7	1.7	3	2	51.3
	Potassium (dissolved)	mg/L	6/11/2001 - 11/1/2004	8	13%	1 U	2	1.3 / 1.5	1.4	1.5	0.34	2.5
	Sodium (dissolved)	mg/L	6/11/2001 - 11/1/2004	8	0%	130	166	140 / 140	140	141	12	175.7
	Bromide	mg/L	6/11/2001 - 11/1/2004	8	0%	0.45	0.63	0.58 / 0.6	0.59	0.6	0.06	0.7
	Fluoride	mg/L	6/11/2001 - 11/1/2004	8	0%	1.1	1.7	1.3 / 1.5	1.4	1.4	0.24	2.2
	Barium (dissolved)	mg/L	6/11/2001 - 5/13/2008	8	0%	0.065	0.48	0.08 / 0.13	0.11	0.18	0.16	0.7
	Boron (dissolved)	mg/L	6/11/2001 - 5/13/2008	8	0%	1.02	1.3	1.1 / 1.16	1.13	1.1	0.08	1.4

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
TW53-03D	Chloride	mg/L	10/28/2003 - 5/15/2007	8	0%	274	520	300 / 315	308	338	83	585
	Sulfate	mg/L	10/28/2003 - 5/15/2007	8	13%	0.45	5	1 / 2	1.5	1.7	1.38	5.9
	Potassium (dissolved)	mg/L	10/28/2003 - 5/15/2007	8	0%	2	2.7	2 / 2	2.0	2.2	0.3	2.9
	Sodium (dissolved)	mg/L	10/28/2003 - 5/15/2007	8	0%	254	410	270 / 273	272	293	51	447.3
	Bromide	mg/L	10/28/2003 - 5/15/2007	8	13%	0.19	3.4	0.81 / 0.84	0.83	1.1	0.97	4.0
	Fluoride	mg/L	10/28/2003 - 5/15/2007	8	0%	1	1.5	1.3 / 1.34	1.3	1.3	0.20	1.9
	Barium (dissolved)	mg/L	5/19/2004 - 8/19/2009	8	0%	0.15	0.6795	0.26 / 0.28	0.27	0.27	0.07	0.9
	Boron (dissolved)	mg/L	5/19/2004 - 8/19/2009	8	0%	1.35	3.6	1.7 / 1.9	1.80	1.8	0.27	4.1
TW53-03S	Chloride	mg/L	10/28/2003 - 5/15/2007	8	0%	11	13	12 / 12	12	12	1	13.9
	Sulfate	mg/L	10/28/2003 - 5/15/2007	8	0%	173	290	260 / 268	264.0	241	50	391.4
	Potassium (dissolved)	mg/L	10/28/2003 - 5/15/2007	8	0%	1	3	1.8 / 1.8	1.8	1.8	0.6	3.7
	Sodium (dissolved)	mg/L	10/28/2003 - 5/15/2007	8	0%	32	62	40 / 40	40	43	10	72.2
	Bromide	mg/L	10/28/2003 - 5/15/2007	8	63%	0.05 U	1.8 U	0.2 U / 0.12	0.16	0.1	0.12	0.5
	Fluoride	mg/L	10/28/2003 - 5/15/2007	8	0%	0.52	0.97	0.7 / 0.73	0.7	0.7	0.15	1.2
	Barium (dissolved)	mg/L	5/19/2004 - 6/15/2011	8	0%	0.03	0.068	0.04 / 0.051	0.05	0.05	0.01	0.1
	Boron (dissolved)	mg/L	5/19/2004 - 6/15/2011	8	0%	0.09	0.19	0.16 / 0.17	0.17	0.2	0.03	0.3
TW54-09D	Chloride	mg/L	11/3/2009 - 5/23/2013	8	0%	116	144	134 / 137	136	132	10	160.6
	Sulfate	mg/L	11/3/2009 - 5/23/2013	8	0%	1	12	3 / 3	3.0	4	3	14.3
	Potassium (dissolved)	mg/L	11/3/2009 - 5/23/2013	8	0%	2	3	2 / 2	2.0	2.1	0.4	3.2
	Sodium (dissolved)	mg/L	11/3/2009 - 5/23/2013	8	0%	161	196	173 / 175	174	174	11	205.7
	Bromide	mg/L	11/3/2009 - 5/23/2013	8	0%	0.44	1.1	0.63 / 0.7	0.67	0.7	0.25	1.5
	Fluoride	mg/L	11/3/2009 - 5/23/2013	8	0%	1.43	1.59	1.5 / 1.52	1.5	1.5	0.06	1.7
	Barium (dissolved)	mg/L	5/25/2010 - 6/5/2017	8	0%	0.11	0.3	0.16 / 0.18	0.17	0.18	0.07	0.4
	Boron (dissolved)	mg/L	5/25/2010 - 6/5/2017	8	0%	1.4	1.7	1.6 / 1.6	1.60	1.6	0.10	1.9
TW55-09D	Chloride	mg/L	5/26/2010 - 11/11/2013	8	0%	362	411	375 / 378	377	380	15	425.3
	Sulfate	mg/L	5/26/2010 - 11/11/2013	8	0%	6	27	12 / 13	12.5	14	7	35.8
	Potassium (dissolved)	mg/L	5/26/2010 - 11/11/2013	8	0%	3	4	3 / 4	3.5	3.5	0.5	5.1
	Sodium (dissolved)	mg/L	5/26/2010 - 11/11/2013	8	0%	316	382	348 / 371	360	357	23	424.3
	Bromide	mg/L	5/26/2010 - 11/11/2013	8	13%	0.25 U	2.96	0.93 / 0.95	0.94	1.2	0.77	3.5
	Fluoride	mg/L	5/26/2010 - 11/11/2013	8	0%	1.54	1.8	1.66 / 1.73	1.7	1.7	0.09	2.0
	Barium (dissolved)	mg/L	5/26/2010 - 6/5/2017	8	0%	0.14	0.29	0.213 / 0.22	0.22	0.22	0.04	0.4
	Boron (dissolved)	mg/L	5/26/2010 - 6/5/2017	8	0%	1.3	1.9	1.7 / 1.8	1.75	1.7	0.20	2.3
TW55-09S	Chloride	mg/L	5/26/2010 - 11/11/2013	8	0%	14	15	15 / 15	15	15	0	16.1
	Sulfate	mg/L	5/26/2010 - 11/11/2013	8	0%	451	521	494 / 495	494.5	492	22	557.3
	Potassium (dissolved)	mg/L	5/26/2010 - 11/11/2013	8	0%	3	3	3 / 3	3.0	3.0	0.0	3.0
	Sodium (dissolved)	mg/L	5/26/2010 - 11/11/2013	8	0%	41	56	48 / 49	49	47	5	63.2
	Bromide	mg/L	5/26/2010 - 11/11/2013	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	ND (0.25)	0.1	0.00	0.1
	Fluoride	mg/L	5/26/2010 - 11/11/2013	8	0%	0.73	0.98	0.78 / 0.81	0.8	0.8	0.09	1.1
	Barium (dissolved)	mg/L	5/26/2010 - 6/5/2017	8	0%	0.02	0.05	0.03 / 0.03	0.03	0.03	0.01	0.1
	Boron (dissolved)	mg/L	5/26/2010 - 6/5/2017	8	0%	0.17	0.42	0.27 / 0.28	0.28	0.3	0.07	0.5

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TW56-11D	Chloride	mg/L	6/13/2012 - 11/2/2015	8	0%	282	334	295 / 310	303	303	17	354.6
	Sulfate	mg/L	6/13/2012 - 11/2/2015	8	0%	1	7	3 / 4	3.5	4	2	9.6
	Potassium (dissolved)	mg/L	6/13/2012 - 11/2/2015	8	0%	1	3	3 / 3	3.0	2.5	0.8	4.8
	Sodium (dissolved)	mg/L	6/13/2012 - 11/2/2015	8	0%	297	366	325 / 328	327	323	22	390.4
	Bromide	mg/L	6/13/2012 - 11/2/2015	8	0%	0.38	1.73	0.55 / 0.93	0.74	0.8	0.46	2.2
	Fluoride	mg/L	6/13/2012 - 11/2/2015	8	0%	1.21	1.48	1.34 / 1.37	1.4	1.3	0.09	1.6
	Barium (dissolved)	mg/L	6/13/2012 - 6/11/2019	8	0%	0.105	0.245	0.13 / 0.133	0.13	0.16	0.05	0.3
	Boron (dissolved)	mg/L	6/13/2012 - 6/11/2019	8	0%	1.85	2.5	2.2 / 2.2	2.20	2.2	0.21	2.8
TW56-11S	Chloride	mg/L	6/13/2012 - 11/11/2015	8	0%	58	64	62 / 62	62	62	2	67.3
	Sulfate	mg/L	6/13/2012 - 11/11/2015	8	0%	882	1050	979 / 1010	994.5	976	57	1147.3
	Potassium (dissolved)	mg/L	6/13/2012 - 11/11/2015	8	0%	3	4	4 / 4	4.0	3.9	0.4	4.9
	Sodium (dissolved)	mg/L	6/13/2012 - 11/11/2015	8	0%	79	90	84 / 84	84	84	4	95.8
	Bromide	mg/L	6/13/2012 - 11/11/2015	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	ND (0.25)	0.1	0.00	0.1
	Fluoride	mg/L	6/13/2012 - 11/11/2015	8	0%	0.73	0.95	0.82 / 0.9	0.9	0.8	0.08	1.1
	Barium (dissolved)	mg/L	6/13/2012 - 6/11/2019	8	0%	0.01	0.04	0.013 / 0.013	0.01	0.02	0.01	0.1
	Boron (dissolved)	mg/L	6/13/2012 - 6/11/2019	8	0%	0.257	0.43	0.342 / 0.37	0.36	0.4	0.05	0.5
TW57-11D	Chloride	mg/L	6/12/2012 - 11/2/2015	8	0%	299	448	343 / 373	358	367	57	537.5
	Sulfate	mg/L	6/12/2012 - 11/2/2015	8	75%	1 U	4	1 U / 1 U	ND (1)	1.4	0.99	4.4
	Potassium (dissolved)	mg/L	6/12/2012 - 11/2/2015	8	0%	1	3	2 / 2	2.0	2.1	0.6	4.0
	Sodium (dissolved)	mg/L	6/12/2012 - 11/2/2015	8	0%	291	474	369 / 410	390	388	64	578.4
	Bromide	mg/L	6/12/2012 - 11/2/2015	8	0%	0.38	4.11	0.78 / 0.92	0.85	1.2	1.22	4.8
	Fluoride	mg/L	6/12/2012 - 11/2/2015	8	0%	1.22	1.69	1.36 / 1.45	1.4	1.4	0.15	1.9
	Barium (dissolved)	mg/L	6/12/2012 - 6/11/2019	8	0%	0.083	0.14	0.11 / 0.11	0.11	0.11	0.02	0.2
	Boron (dissolved)	mg/L	6/12/2012 - 6/11/2019	8	0%	1.6	2.4	1.95 / 2	1.98	2.0	0.28	2.8
TW57-11S	Chloride	mg/L	6/12/2012 - 11/9/2015	8	0%	23	31	26 / 29	28	28	3	36.1
	Sulfate	mg/L	6/12/2012 - 11/9/2015	8	0%	462	907	624 / 854	739.0	707	189	1273.7
	Potassium (dissolved)	mg/L	6/12/2012 - 11/9/2015	8	0%	4	5	5 / 5	5.0	4.6	0.5	6.2
	Sodium (dissolved)	mg/L	6/12/2012 - 11/9/2015	8	0%	39	68	52 / 62	57	55	11	88.5
	Bromide	mg/L	6/12/2012 - 11/9/2015	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	ND (0.25)	0.1	0.00	0.1
	Fluoride	mg/L	6/12/2012 - 11/9/2015	8	0%	0.91	1.48	1.23 / 1.29	1.3	1.2	0.21	1.8
	Barium (dissolved)	mg/L	6/12/2012 - 6/11/2019	8	0%	0.02	0.031	0.024 / 0.03	0.03	0.03	0.01	0.0
	Boron (dissolved)	mg/L	6/12/2012 - 6/11/2019	8	0%	0.13	0.25	0.16 / 0.16	0.16	0.2	0.04	0.3
TW58-11S	Chloride	mg/L	6/13/2012 - 11/11/2015	8	0%	278	350	305 / 314	310	315	23	384.8
	Sulfate	mg/L	6/13/2012 - 11/11/2015	8	0%	992	1160	1080 / 1110	1095.0	1092	55	1256.9
	Potassium (dissolved)	mg/L	6/13/2012 - 11/11/2015	8	0%	4	7	5 / 6	5.5	5.6	1.1	8.8
	Sodium (dissolved)	mg/L	6/13/2012 - 11/11/2015	8	0%	106	138	123 / 128	126	125	11	157.8
	Bromide	mg/L	6/13/2012 - 11/11/2015	8	63%	0.25 U	0.43	0.25 U / 0.5 U	ND (0.375)	0.3	0.06	0.5
	Fluoride	mg/L	6/13/2012 - 11/11/2015	8	0%	0.83	1.06	0.94 / 0.98	1.0	0.9	0.09	1.2
	Barium (dissolved)	mg/L	6/13/2012 - 6/11/2019	8	0%	0.01	0.05	0.012 / 0.02	0.02	0.02	0.01	0.1
	Boron (dissolved)	mg/L	6/13/2012 - 6/11/2019	8	0%	0.2	0.32	0.239 / 0.25	0.24	0.3	0.04	0.4

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TW59-13D	Chloride	mg/L	5/16/2013 - 11/7/2016	8	0%	110	129	120 / 122	121	120	6	137.0
	Sulfate	mg/L	5/16/2013 - 11/7/2016	8	13%	ND(1)	15	3 / 5	4.0	5.5	4.74	19.7
	Potassium (dissolved)	mg/L	5/16/2013 - 11/7/2016	8	0%	1	3	2 / 2	2.0	2.0	0.5	3.6
	Sodium (dissolved)	mg/L	5/16/2013 - 11/7/2016	8	0%	170	192	182 / 188	185	183	8	206.7
	Bromide	mg/L	5/16/2013 - 11/7/2016	8	0%	0.28	0.65	0.41 / 0.45	0.43	0.5	0.11	0.8
	Fluoride	mg/L	5/16/2013 - 11/7/2016	8	0%	1.13	1.65	1.48 / 1.49	1.5	1.5	0.15	1.9
	Barium (dissolved)	mg/L	5/16/2013 - 6/3/2020	8	0%	0.092	0.18	0.1 / 0.103	0.10	0.11	0.03	0.2
	Boron (dissolved)	mg/L	5/16/2013 - 6/3/2020	8	0%	1.12	1.4	1.21 / 1.3	1.26	1.3	0.11	1.6
TW59-13S	Chloride	mg/L	5/21/2013 - 11/7/2016	8	0%	11	13	11 / 11	11	12	1	14.9
	Sulfate	mg/L	5/21/2013 - 11/7/2016	8	0%	103	164	116 / 122	119.0	126	21	188.2
	Potassium (dissolved)	mg/L	5/21/2013 - 11/7/2016	8	0%	2	3	2 / 2	2.0	2.3	0.5	3.6
	Sodium (dissolved)	mg/L	5/21/2013 - 11/7/2016	8	0%	28	52	31 / 31	31	35	9	61.6
	Bromide	mg/L	5/21/2013 - 11/7/2016	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	ND (0.25)	0.1	0.00	0.1
	Fluoride	mg/L	5/21/2013 - 11/7/2016	8	0%	0.63	1.13	1.05 / 1.08	1.1	1.0	0.16	1.5
	Barium (dissolved)	mg/L	5/21/2013 - 6/3/2020	8	0%	0.033	0.08	0.038 / 0.04	0.04	0.05	0.02	0.1
	Boron (dissolved)	mg/L	5/21/2013 - 6/3/2020	8	0%	0.1	0.15	0.117 / 0.12	0.12	0.1	0.02	0.2
TW60-13D	Chloride	mg/L	11/5/2013 - 6/7/2017	8	0%	696	1120	979 / 988	984	961	122	1325.4
	Sulfate	mg/L	11/5/2013 - 6/7/2017	8	88%	1 U	4.9	1 U / 1 U	ND (1)	1.5	1.29	5.4
	Potassium (dissolved)	mg/L	11/5/2013 - 6/7/2017	8	0%	2.28	4	3 / 3	3.0	3.3	0.6	5.2
	Sodium (dissolved)	mg/L	11/5/2013 - 6/7/2017	8	0%	557	1010	954 / 957	956	909	146	1347.1
	Bromide	mg/L	11/5/2013 - 6/7/2017	8	50%	0.25 U	1.52	1 U / 0.54	0.77	0.7	0.54	2.3
	Fluoride	mg/L	11/5/2013 - 6/7/2017	8	13%	1 U	0.91	0.76 / 0.79	0.8	0.8	0.09	1.0
	Barium (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	0.196	0.49	0.36	0.36	0.33	0.10	0.6
	Boron (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	3.09	5.6	4.37	4.37	4.2	0.90	6.9
TW61-13D	Chloride	mg/L	11/7/2013 - 6/7/2017	8	0%	128	225	147 / 154	151	166	38	280.1
	Sulfate	mg/L	11/7/2013 - 6/7/2017	8	0%	12	67	24 / 30.7	27.4	30	18	83.0
	Potassium (dissolved)	mg/L	11/7/2013 - 6/7/2017	8	0%	1	2	1 / 1.34	1.2	1.4	0.5	2.9
	Sodium (dissolved)	mg/L	11/7/2013 - 6/7/2017	8	0%	170	275	196 / 211	204	214	35	319.7
	Bromide	mg/L	11/7/2013 - 6/7/2017	8	25%	0.25 U	0.64	0.43 / 0.49	0.46	0.4	0.14	0.8
	Fluoride	mg/L	11/7/2013 - 6/7/2017	8	0%	0.79	1.69	1.35 / 1.38	1.4	1.3	0.27	2.1
	Barium (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	0.045	0.13	0.05	0.05	0.06	0.03	0.2
	Boron (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	1.4	1.63	1.46	1.46	1.5	0.10	1.8
TW61-13I	Chloride	mg/L	11/5/2013 - 6/6/2017	8	0%	22	24	23 / 23	23	23	1	25.3
	Sulfate	mg/L	11/5/2013 - 6/6/2017	8	0%	189	212	190 / 195	192.5	196	8	220.0
	Potassium (dissolved)	mg/L	11/5/2013 - 6/6/2017	8	50%	1 U	1	1 U / 0.9	1.0	0.9	0.05	1.1
	Sodium (dissolved)	mg/L	11/5/2013 - 6/6/2017	8	0%	23	30	25.7 / 26	26	26	2	32.1
	Bromide	mg/L	11/5/2013 - 6/6/2017	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	ND (0.25)	0.1	0.00	0.1
	Fluoride	mg/L	11/5/2013 - 6/6/2017	8	13%	0.25 U	0.48	0.39 / 0.4	0.4	0.4	0.06	0.6
	Barium (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	0.047	0.07	0.06	0.06	0.06	0.01	0.1
	Boron (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	0.08	0.44	0.11	0.11	0.2	0.13	0.5

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Minimum	Maximum	Median	Median	Mean	Standard Deviation	UCL
TW61-13S	Chloride	mg/L	11/7/2013 - 6/6/2017	8	0%	20	21	20 / 20	20	20	0	21.5
	Sulfate	mg/L	11/7/2013 - 6/6/2017	8	0%	263	313	284 / 287	285.5	288	15	332.2
	Potassium (dissolved)	mg/L	11/7/2013 - 6/6/2017	8	0%	2.36	3	3 / 3	3.0	2.9	0.2	3.6
	Sodium (dissolved)	mg/L	11/7/2013 - 6/6/2017	8	0%	62.7	68	64 / 65	65	65	2	70.7
	Bromide	mg/L	11/7/2013 - 6/6/2017	8	13%	0.25 U	0.62	0.57 / 0.59	0.58	0.5	0.12	0.9
	Fluoride	mg/L	11/7/2013 - 6/6/2017	8	13%	0.25 U	0.99	0.86 / 0.88	0.9	0.8	0.23	1.5
	Barium (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	0.036	0.08	0.04	0.04	0.05	0.02	0.1
	Boron (dissolved)	mg/L	5/21/2014 - 6/2/2020	7	0%	0.267	0.4	0.34	0.34	0.3	0.04	0.5
TW62-13S	Chloride	mg/L	11/12/2013 - 6/6/2017	8	0%	25	34.8	26 / 27	27	28	4	38.8
	Sulfate	mg/L	11/12/2013 - 6/6/2017	8	0%	177	226	189 / 195	192.0	195	16	242.4
	Potassium (dissolved)	mg/L	11/12/2013 - 6/6/2017	8	0%	2	4	2.24 / 3	2.6	2.7	0.7	4.8
	Sodium (dissolved)	mg/L	11/12/2013 - 6/6/2017	8	0%	52	66	58 / 58	58	58	5	72.5
	Bromide	mg/L	11/12/2013 - 6/6/2017	8	100%	0.25 U	0.25 U	0.25 U / 0.25 U	ND (0.25)	0.1	0.00	0.1
	Fluoride	mg/L	11/12/2013 - 6/6/2017	8	13%	0.25 U	0.93	0.84 / 0.87	0.9	0.8	0.23	1.4
	Barium (dissolved)	mg/L	11/12/2013 - 6/3/2020	8	0%	0.035	0.09	0.04 / 0.042	0.04	0.05	0.02	0.1
	Boron (dissolved)	mg/L	11/12/2013 - 6/3/2020	8	0%	0.12	0.18	0.16 / 0.16	0.16	0.2	0.02	0.2
TW63-13S	Chloride	mg/L	11/12/2013 - 6/6/2017	8	0%	552	668	585 / 606	596	603	36	712.0
	Sulfate	mg/L	11/12/2013 - 6/6/2017	8	0%	64	80	69.6 / 74	71.8	72	6	89.6
	Potassium (dissolved)	mg/L	11/12/2013 - 6/6/2017	8	0%	3	5	4 / 4	4.0	4.1	0.7	6.1
	Sodium (dissolved)	mg/L	11/12/2013 - 6/6/2017	8	0%	166	196	181 / 183	182	183	11	216.0
	Bromide	mg/L	11/12/2013 - 6/6/2017	8	0%	0.94	2.54	1.71 / 1.84	1.78	1.8	0.58	3.5
	Fluoride	mg/L	11/12/2013 - 6/6/2017	8	13%	0.5 U	0.76	0.67 / 0.68	0.7	0.6	0.15	1.0
	Barium (dissolved)	mg/L	11/12/2013 - 6/3/2020	8	0%	0.112	0.19	0.14 / 0.141	0.14	0.15	0.03	0.2
	Boron (dissolved)	mg/L	11/12/2013 - 6/3/2020	8	0%	0.2	0.38	0.25 / 0.254	0.25	0.3	0.05	0.4

Table 14

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
EW1a-01	Chloride	mg/L	2017 - 2020	8	0%	-0.083	3902	0.134	No trend
	Sulfate	mg/L	2017 - 2020	8	0%	-0.004	292	0.588	No trend
	Potassium (dissolved)	mg/L	2017 - 2020	8	0%	-0.001	61	0.048	**Decreasing**
	Sodium (dissolved)	mg/L	2017 - 2020	8	0%	-0.056	2582	0.070	No trend
	Bromide	mg/L	2017 - 2020	8	13%	-5E-04	25	0.363	No trend
	Fluoride	mg/L	2017 - 2020	8	13%	-3E-04	15	0.208	No trend
	Barium (dissolved)	mg/L	2016 - 2020	4	0%	-3E-07	0.07	0.957	No trend
	Boron (dissolved)	mg/L	2016 - 2020	4	0%	-3E-05	2.71	0.746	No trend
EW1b-13	Chloride	mg/L	2016 - 2020	10	0%	-0.001	373	0.904	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.013	708	0.001	**Decreasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-3E-04	18	0.067	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.019	984	0.032	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	10%	-3E-04	13	0.652	No trend
	Fluoride	mg/L	2016 - 2020	10	30%	-4E-04	18	0.142	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	3E-06	-0.10	0.082	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-4E-06	1.46	0.962	No trend
EW1c-13	Chloride	mg/L	2016 - 2020	10	0%	0.004	141	0.758	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.007	433	0.109	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-4E-04	21	0.027	**Decreasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.018	948	0.018	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	10%	-9E-05	6.4	0.885	No trend
	Fluoride	mg/L	2016 - 2020	10	20%	-3E-04	13	0.299	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	2E-06	-0.03	0.119	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-6E-05	4.1	0.534	No trend
EW2a-01	Chloride	mg/L	2017 - 2020	8	0%	0.002	21	0.331	No trend
	Sulfate	mg/L	2017 - 2020	8	0%	-0.013	556	0.108	No trend
	Potassium (dissolved)	mg/L	2017 - 2020	8	0%	-3E-04	16	0.045	**Decreasing**
	Sodium (dissolved)	mg/L	2017 - 2020	8	0%	-0.010	512	0.042	**Decreasing**
	Bromide	mg/L	2017 - 2020	8	0%	1E-04	-4.12	0.046	**Increasing**
	Fluoride	mg/L	2017 - 2020	8	0%	-6E-05	3.84	0.433	No trend
	Barium (dissolved)	mg/L	2016 - 2020	4	0%	-5E-05	2.21	0.232	No trend
	Boron (dissolved)	mg/L	2016 - 2020	4	0%	-4E-05	2.84	0.729	No trend
EW2b-13	Chloride	mg/L	2016 - 2020	10	0%	-0.001	143	0.647	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.005	211	0.001	**Decreasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-2E-04	11	0.185	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.007	404	0.009	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	20%	-4E-05	2.4	0.868	No trend
	Fluoride	mg/L	2016 - 2020	10	20%	-3E-04	12	0.360	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-1E-05	0.545	0.038	**Decreasing**
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	2.15	0.827	No trend
EW2c-13	Chloride	mg/L	2016 - 2020	10	0%	-3E-04	110	0.909	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.010	428	0.097	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-1E-04	8	0.653	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.008	443	0.007	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	30%	-3E-04	12.2	0.208	No trend
	Fluoride	mg/L	2016 - 2020	10	20%	-2E-04	11.4	0.380	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	4E-06	-0.023	0.832	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	4E-05	-0.60	0.664	No trend

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
OW32-90D	Chloride	mg/L	2016 - 2020	10	0%	-0.004	459	0.740	No trend
	Sulfate	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	6E-05	-0.20	0.779	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.016	942	0.107	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	10%	-5E-05	2.9	0.851	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-8E-05	3.37	0.029	**Decreasing**
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-8E-05	5.11	0.645	No trend
OW32-90S	Chloride	mg/L	2016 - 2020	10	0%	-0.004	174	0.036	**Decreasing**
	Sulfate	mg/L	2016 - 2020	10	0%	0.047	-1657	0.162	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-4E-04	20	0.132	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.003	168	0.185	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-06	0.11	0.585	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-4E-05	1.75	0.096	No trend
OW35-05D	Chloride	mg/L	2016 - 2020	9	0%	0.037	-1324	0.016	**Increasing**
	Sulfate	mg/L	2016 - 2020	9	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	9	0%	1E-04	-2.59	0.237	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	9	0%	0.018	-555	0.144	No trend
	Bromide	mg/L	2016 - 2020	9	78%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	9	22%	1E-05	0.33	0.969	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	1.11	0.414	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-7E-05	4.7	0.716	No trend
OW35-90S	Chloride	mg/L	2016 - 2020	10	0%	-5E-04	29	0.655	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.136	-5352	0.011	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	3E-04	-10	0.319	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.001	61	0.730	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-8E-07	0.066	0.905	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	2E-05	-0.49	0.846	No trend
PW1-N	Chloride	mg/L	2016 - 2020	10	0%	0.010	-85	0.678	No trend
	Sulfate	mg/L	2016 - 2020	10	10%	0.003	-106	0.015	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	2E-04	-4.5	0.309	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.011	781	0.635	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	40%	-3E-04	14	0.143	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-04	8.8	0.071	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-1E-04	7.9	0.529	No trend
PW2-S(R11)	Chloride	mg/L	2016 - 2020	10	0%	-0.047	2387	0.040	**Decreasing**
	Sulfate	mg/L	2016 - 2020	10	30%	0.004	-157	0.010	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	5E-04	-18.3	0.007	**Increasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.067	3213	0.028	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	20%	-3E-04	12	0.200	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-5E-05	2.4	0.047	**Decreasing**
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-8E-05	5.8	0.862	No trend

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW21-94-II	Chloride	mg/L	2016 - 2020	10	0%	-0.003	130	0.016	**Decreasing**
	Sulfate	mg/L	2016 - 2020	10	0%	0.009	-88	0.769	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	20%	1E-04	-4.5	0.659	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.004	215	0.175	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	3E-06	-0.076	0.403	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	1E-05	-0.506	0.179	No trend
TW22-94	Chloride	mg/L	2016 - 2020	10	0%	-2E-04	71	0.958	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.085	-3106	0.004	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-1E-04	8.33	0.607	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.014	696	0.019	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	2E-07	0.009	0.868	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	0.97	0.332	No trend
TW22-99D	Chloride	mg/L	2016 - 2020	10	0%	0.061	-1504	0.110	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	8E-05	-0.24	0.797	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.012	1481	0.687	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	2E-05	-0.51	0.527	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-4E-04	23.0	0.521	No trend
TW30-94	Chloride	mg/L	2016 - 2020	9	0%	-9E-04	42.9	0.083	No trend
	Sulfate	mg/L	2016 - 2020	9	0%	-0.022	1090	0.090	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	9	0%	-5E-04	25.3	0.160	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	9	0%	-0.006	280	0.074	No trend
	Bromide	mg/L	2016 - 2020	9	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	9	22%	5E-06	0.54	0.988	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-06	0.111	0.520	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	0.92	0.438	No trend
TW30-99D	Chloride	mg/L	2016 - 2020	10	0%	0.014	-357	0.168	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	2E-05	1.6	0.915	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.014	813	0.103	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	20%	-4E-05	2.62	0.885	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	1.03	0.535	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-04	9.9	0.359	No trend

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW32-94-II	Chloride	mg/L	2016 - 2020	7	0%	0.059	-1937	0.570	No trend
	Sulfate	mg/L	2016 - 2020	7	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	7	0%	3E-04	-8.6	0.305	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	7	0%	0.025	-626	0.700	No trend
	Bromide	mg/L	2016 - 2020	7	86%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	7	57%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2019	4	0%	-6E-05	2.96	0.462	No trend
	Boron (dissolved)	mg/L	2016 - 2019	4	0%	8E-05	-1.05	0.811	No trend
TW32-94-IV	Chloride	mg/L	2016 - 2020	10	0%	-0.005	256	0.169	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.032	1593	0.611	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	7E-04	-29	0.226	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.013	610	0.290	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	60%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	7E-06	-0.291	0.101	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	1.07	0.565	No trend
TW39-99D	Chloride	mg/L	2016 - 2020	10	0%	-0.054	2622	6E-05	**Decreasing**
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-3E-04	13.0	0.029	**Decreasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.050	2400	4E-04	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	20%	2E-04	-6.81	0.525	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	1.22	0.109	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-1E-04	7.90	0.209	No trend
TW39-99I	Chloride	mg/L	2016 - 2020	10	0%	1E-04	12.4	0.863	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.009	-86	0.313	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	6E-05	-1.32	0.740	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.004	248	0.183	No trend
	Bromide	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	30%	-1E-04	6.32	0.454	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	7E-07	0.007	0.859	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-9E-06	0.559	0.539	No trend
TW39-99S	Chloride	mg/L	2016 - 2020	10	0%	4E-04	3.19	0.622	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.007	-37	0.331	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-2E-04	9.39	0.382	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.008	394	0.099	No trend
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	30%	-7E-05	3.38	0.676	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	1E-06	-0.015	0.647	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-5E-05	2.50	0.260	No trend
TW40-99D	Chloride	mg/L	2016 - 2020	10	0%	0.023	-685	0.126	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	6E-05	-0.214	0.749	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	0.003	124	0.836	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	40%	-3E-04	12.5	0.312	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	0.93	0.487	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-7E-05	4.50	0.633	No trend

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW40-99S	Chloride	mg/L	2016 - 2020	10	0%	0.002	-49.8	0.135	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.097	-3920	2E-04	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-3E-04	16.7	0.382	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	0.001	-7.35	0.686	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	20%	-1E-04	5.55	0.582	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-1E-06	0.076	0.173	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-5E-05	2.251	0.005	**Decreasing**
TW41-99D	Chloride	mg/L	2016 - 2020	10	0%	0.003	57	0.575	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-8E-05	5.13	0.586	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.017	973	0.080	No trend
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	20%	1E-05	0.160	0.957	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-4E-06	0.254	0.556	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	2E-06	1.73	0.990	No trend
TW41-99S	Chloride	mg/L	2016 - 2020	10	0%	-0.001	87	0.874	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.094	-3676	0.038	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	2E-04	-7.23	0.350	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.004	243	0.111	No trend
	Bromide	mg/L	2016 - 2020	10	50%	9E-04	-39.8	0.076	No trend
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	4E-06	-0.152	0.372	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-3E-05	1.508	0.238	No trend
TW42-99S	Chloride	mg/L	2016 - 2020	9	0%	0.007	-279	0.140	No trend
	Sulfate	mg/L	2016 - 2020	9	0%	0.067	-1159	0.344	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	9	0%	-0.001	47.2	0.300	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	9	0%	0.005	-150	0.432	No trend
	Bromide	mg/L	2016 - 2020	9	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	9	78%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	20%	-2E-05	0.918	0.124	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-5E-05	2.5	0.205	No trend
TW43-99D	Chloride	mg/L	2016 - 2020	10	0%	0.015	-431	0.035	**Increasing**
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-1E-04	7.27	0.142	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.016	880	0.109	No trend
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	20%	4E-05	-1.22	0.839	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	6E-06	-0.107	0.789	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-4E-05	2.91	0.458	No trend

Table 14

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW43-99S	Chloride	mg/L	2016 - 2020	10	0%	0.003	-105	0.297	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.034	1567	0.474	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-2E-04	12.4	0.248	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.009	402	0.074	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	50%	-2E-04	8.75	0.136	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	5E-06	-0.178	0.075	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-6E-05	2.89	0.377	No trend
TW45-99D	Chloride	mg/L	2016 - 2020	10	0%	0.006	545	0.971	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	2E-04	-7.0	0.438	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.028	2080	0.747	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	8E-05	-3.2	0.076	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	5E-04	-19	0.131	No trend
TW45-99S	Chloride	mg/L	2016 - 2020	10	0%	-0.001	107	0.888	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.001	157	0.974	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-5E-04	23	0.157	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.003	174	0.409	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	60%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	2E-05	-0.628	0.111	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	20%	-1E-05	0.513	0.586	No trend
TW46-99D	Chloride	mg/L	2016 - 2020	10	0%	0.008	-122	0.222	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-1E-05	2.32	0.922	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.001	278	0.913	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	30%	-1E-04	5.39	0.712	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	1.15	0.094	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	7E-06	1.41	0.966	No trend
TW46-99I	Chloride	mg/L	2016 - 2020	10	0%	7E-04	10	0.531	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.018	-376	0.196	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-2E-05	2.6	0.916	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.002	136	0.385	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-6E-06	0.284	0.221	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	2E-06	0.044	0.915	No trend
TW46-99S	Chloride	mg/L	2016 - 2020	10	0%	-0.001	66	0.928	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.037	2407	0.428	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-0.002	89	0.016	**Decreasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.017	844	0.043	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-3E-06	0.136	0.169	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-0.001	61	0.061	No trend

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW47-00D	Chloride	mg/L	2016 - 2020	10	0%	0.303	-11290	0.485	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	0.001	-23	0.596	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.051	3457	0.889	No trend
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-0.001	58	0.053	**Decreasing**
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-0.002	77	0.127	No trend
TW48-00D	Chloride	mg/L	2016 - 2020	10	0%	-0.012	895	0.574	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	1E-04	-3.93	0.513	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.067	3245	0.037	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	40%	-3E-04	15.5	0.332	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	2E-05	-0.584	0.475	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-1E-04	6.83	0.758	No trend
TW48-16S	Chloride	mg/L	2016 - 2020	10	0%	7E-05	17.2	0.939	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.006	-91	0.418	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-4E-04	18.8	0.116	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.002	131	0.560	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	30%	-2E-04	8.58	0.420	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-5E-07	0.05	0.904	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	1.05	0.648	No trend
TW49-00D	Chloride	mg/L	2016 - 2020	10	0%	0.002	-10.4	0.269	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-4E-04	16.8	0.024	**Decreasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.011	597	0.016	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	30%	-1E-04	6.80	0.252	No trend
	Fluoride	mg/L	2016 - 2020	10	10%	3E-05	-0.094	0.911	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	8E-06	-0.264	0.278	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	1E-05	0.638	0.854	No trend
TW53-03D	Chloride	mg/L	2016 - 2020	10	0%	-0.068	3283	0.212	No trend
	Sulfate	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	5E-05	-0.147	0.707	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.089	4130	0.032	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	30%	-1E-04	7.14	0.617	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-4E-05	1.85	0.127	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-04	10.1	0.354	No trend
TW53-03S	Chloride	mg/L	2016 - 2020	10	0%	-0.001	67	0.346	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.010	3.8	0.789	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	10%	3E-04	-10.8	0.413	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.005	230	0.283	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-3E-07	0.043	0.928	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	5E-07	0.11	0.983	No trend

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						Slope	Intercept	Probability	Conclusion
TW54-09D	Chloride	mg/L	2016 - 2020	10	0%	0.013	-413	0.011	**Increasing**
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-1E-04	6.05	0.488	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.009	577	0.176	No trend
	Bromide	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	10%	6E-05	-1.54	0.796	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	6E-06	-0.164	0.342	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	2E-04	-7.68	0.249	No trend
TW55-09D	Chloride	mg/L	2016 - 2020	10	0%	0.041	-1359	0.016	**Increasing**
	Sulfate	mg/L	2016 - 2020	10	60%	--	--	--	Over 50% non-detect
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	3E-04	-7.9	0.191	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.015	1004	0.304	No trend
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	30%	-3E-04	15	0.269	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	1E-05	-0.27	0.457	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	1E-04	-3.81	0.384	No trend
TW55-09S	Chloride	mg/L	2016 - 2020	10	0%	2E-04	6.85	0.786	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.002	493	0.935	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-4E-05	4.70	0.755	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	0.001	25.3	0.792	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	30%	8E-06	0.088	0.961	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-5E-07	0.043	0.647	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-4E-05	1.83	0.267	No trend
TW56-11D	Chloride	mg/L	2016 - 2020	10	0%	0.008	-40	0.342	No trend
	Sulfate	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-3E-04	14.4	0.204	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.033	1725	0.049	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	20%	7E-05	-2.21	0.741	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	5E-07	0.102	0.972	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	1E-04	-4.17	0.533	No trend
TW56-11S	Chloride	mg/L	2016 - 2020	10	0%	-0.015	707	0.027	**Decreasing**
	Sulfate	mg/L	2016 - 2020	10	0%	-0.289	13330	0.022	**Decreasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-9E-04	44	7E-04	**Decreasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.017	825	0.000	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	6E-07	-0.013	0.676	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-1E-04	6.60	0.006	**Decreasing**
TW57-11D	Chloride	mg/L	2016 - 2020	10	0%	0.031	-959	0.257	No trend
	Sulfate	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	8E-05	-1.63	0.325	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.018	1152	0.538	No trend
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	40%	-4E-04	16.9	0.173	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-1E-05	0.512	0.446	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-5E-05	4.07	0.822	No trend

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Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW57-11S	Chloride	mg/L	2016 - 2020	10	0%	-0.004	184	0.072	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.093	4586	0.477	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-4E-04	21.9	0.385	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.002	131	0.743	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	40%	-2E-04	10.1	0.302	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	4E-06	-0.165	0.333	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	2E-05	-0.50	0.652	No trend
TW58-11S	Chloride	mg/L	2016 - 2020	10	0%	-0.026	1437	0.074	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.031	-203	0.591	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-3E-04	16.4	0.649	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.010	549	0.091	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-2E-07	0.021	0.786	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-3E-05	1.52	0.393	No trend
TW59-13D	Chloride	mg/L	2016 - 2020	10	0%	0.005	-72	0.207	No trend
	Sulfate	mg/L	2016 - 2020	10	90%	--	--	--	Over 50% non-detect
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-1E-04	7.42	0.013	**Decreasing**
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.018	966	0.001	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	60%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	10%	-2E-05	2.01	0.933	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	4E-06	-0.082	0.557	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-6E-05	3.76	0.644	No trend
TW59-13S	Chloride	mg/L	2016 - 2020	10	0%	0.003	-129	0.002	**Increasing**
	Sulfate	mg/L	2016 - 2020	10	0%	-0.007	432	0.039	**Decreasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	1E-04	-3.54	0.320	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.002	94.8	0.424	No trend
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	40%	-9E-05	4.43	0.698	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-1E-06	0.099	0.598	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	0.790	0.330	No trend
TW60-13D	Chloride	mg/L	2016 - 2020	10	0%	0.075	-2356	0.380	No trend
	Sulfate	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-7E-05	5.73	0.866	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	0.002	643	0.985	No trend
	Bromide	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-4E-06	0.454	0.968	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-0.001	26.5	0.630	No trend
TW61-13D	Chloride	mg/L	2016 - 2020	10	0%	-0.021	1048	0.186	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.039	-1657	8E-05	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	2E-04	-6.68	0.337	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.035	1723	0.075	No trend
	Bromide	mg/L	2016 - 2020	10	60%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	10%	3E-05	-0.662	0.872	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	7E-07	0.017	0.803	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-3E-06	1.65	0.976	No trend

Table 14

Linear Regression Results
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc. - Lambton Facility

Well	Analyte	Unit	Date Range	Number of Samples	Percent Non-Detect	Linear Regression			
						Slope	Intercept	Probability	Conclusion
TW61-13I	Chloride	mg/L	2016 - 2020	10	0%	-0.002	95	0.059	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	0.107	-4393	6E-05	**Increasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	10%	2E-04	-7.92	0.149	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	0.006	-235	2E-04	**Increasing**
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-4E-06	0.236	0.694	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	4E-05	-1.68	0.115	No trend
TW61-13S	Chloride	mg/L	2016 - 2020	10	0%	4E-04	2.98	0.584	No trend
	Sulfate	mg/L	2016 - 2020	10	0%	-0.039	1956	0.002	**Decreasing**
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-3E-04	17.0	0.123	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	0.002	-17.4	0.485	No trend
	Bromide	mg/L	2016 - 2020	10	70%	--	--	--	Over 50% non-detect
	Fluoride	mg/L	2016 - 2020	10	40%	-9E-05	4.42	0.628	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-3E-06	0.178	0.061	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-3E-05	1.63	0.443	No trend
TW62-13S	Chloride	mg/L	2016 - 2020	10	0%	0.004	-155	0.022	**Increasing**
	Sulfate	mg/L	2016 - 2020	10	0%	-0.004	371	0.494	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-2E-04	10	0.410	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.005	265	0.051	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	100%	--	--	--	No detected results
	Fluoride	mg/L	2016 - 2020	10	30%	-7E-05	3.68	0.678	No trend
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-3E-07	0.053	0.910	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-3E-06	0.274	0.576	No trend
TW63-13S	Chloride	mg/L	2016 - 2020	10	0%	-0.052	2827	0.009	**Decreasing**
	Sulfate	mg/L	2016 - 2020	10	0%	-0.003	182	0.344	No trend
	Potassium (dissolved)	mg/L	2016 - 2020	10	0%	-2E-04	12.5	0.321	No trend
	Sodium (dissolved)	mg/L	2016 - 2020	10	0%	-0.020	1021	0.053	**Decreasing**
	Bromide	mg/L	2016 - 2020	10	40%	-4E-04	17.3	0.411	No trend
	Fluoride	mg/L	2016 - 2020	10	80%	--	--	--	Over 50% non-detect
	Barium (dissolved)	mg/L	2016 - 2020	5	0%	-4E-06	0.319	0.730	No trend
	Boron (dissolved)	mg/L	2016 - 2020	5	0%	-2E-05	0.907	0.233	No trend

Notes:
Linear regressions were performed using data from the last 5 years (2016 - 2020).
No test was performed on data sets with 100% non-detects.
Probability of significance: A value less than 0.05 indicates greater than 95 percent confidence of a statistically significant trend.

Table 15

Shallow Wells along Perimeter of Facility Property, Downgradient of North Berm
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:					OW32-90S	OW32-90S	OW35-90S	OW35-90S	TW21-94-II	TW21-94-II	TW22-94	TW22-94	TW32-94-IV	TW32-94-IV	TW40-99S	TW40-99S	TW53-03S	TW53-03S
Sample ID:					GW-44985-060320-DD-32S	GW-44985-121720-DD-32S	GW-44985-060320-DD-35S	GW-44985-121720-DD-35S	GW-44985-060220-DD-21II	GW-44985-121620-DD-21II	GW-44985-060220-DD-22	GW-44985-121620-DD-22	GW-44985-060220-DD-32IV	GW-44985-121620-DD-32IV	GW-44985-060220-DD-40S	GW-44985-121620-DD-40S	GW-44985-060320-DD-53S	GW-44985-121720-DD-53S
Sample Date:					6/3/2020	12/17/2020	6/3/2020	12/17/2020	6/2/2020	12/16/2020	6/2/2020	12/16/2020	6/2/2020	12/16/2020	6/2/2020	12/16/2020	6/3/2020	12/17/2020
Parameters	**Units**	**ODWS**	**ODWS Source**	**RUC**														
Field Parameters																		
Conductivity, field	uS/cm	-	-	-	1320	1210	1520	1370	1160	1130	1800	1750	900	1330	1120	1420	1300	1340
pH, field	s.u.	6.5-8.5	OG	-	7.9	7.07	7.94	7.06	7.82	6.69	7.83	7	7.6	7.71	7.76	7.08	7.9	6.69
Temperature, field	Deg C	15	AO	-	21.5	7.59	18.9	4.15	19.8	7.13	18.6	6.23	13.7	5.09	12.6	7.22	19.1	8.24
General Indicators																		
Conductivity, electrical	uS/cm	-	-	-	1660	1300	1940	1460	1530	1240	2190	1970	1130	1310	1520	1450	1620	1450
pH, lab	s.u.	6.5-8.5	OG	-	7.77	7.8	7.77	7.66	7.66	7.71	7.67	7.77	7.73	7.77	7.75	7.82	7.66	7.81
Total dissolved solids (TDS)	mg/L	500	AO	500	**1000**	**848**	**1230**	**1060**	**902**	**814**	**1310**	**1430**	**570**	**716**	**828**	**960**	**944**	**1050**
Minor Ions - Anions																		
Alkalinity, total (as CaCO3)	mg/L	30-500	OG	438	354	286	320	270	421	426	**443**	**471**	378	424	384	**480**	367	384
Chloride	mg/L	250	AO	134.2	8.73	13.4	8.1	9.77	4.63	6.77	58.5	69.9	14.3	26.4	18.8	23.8	4.65	8.67
Sulfate	mg/L	500	AO	471.25	456	454	**668**	**590**	329	299	**605**	**633**	150	301	319	347	429	461
Major Ions - Cations																		
Calcium (dissolved)	mg/L	-	-	-	196	140	210	174	178	156	180	171	83.4	124	113	121	192	163
Magnesium (dissolved)	mg/L	-	-	-	67.4	52.6	87.4	77.6	57.3	50.6	113	118	42.8	80.8	80.9	91.4	68.9	63.1
Potassium (dissolved)	mg/L	-	-	-	1.69	2.03	3.01	3.65	0.96	0.98	1.79	2.49	1.25	3.58	1.78	3.23	1.01	1.79
Sodium (dissolved)	mg/L	20/200	AO	125.33	21.7	22.4	32.8	37.7	19.5	19	79.6	85	32.4	75.7	47.2	61.1	19.4	27.1
Major Ions - Nutrients																		
Ammonia-N	mg/L	-	-	-	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	0.03	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	10.0	MAC	2.69	ND (0.25)	ND (0.25)	ND (0.5)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.5)	ND (0.5)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	1.0	MAC	0.44	ND (0.25)	ND (0.25)	**ND (0.5)**	ND (0.25)	ND (0.25)	ND (0.25)	**ND (0.5)**	**ND (0.5)**	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous																		
Bromide	mg/L	-	-	-	ND (0.25)	ND (0.25)	ND (0.5)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.5)	ND (0.5)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	-	-	0.05	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)
Fluoride	mg/L	1.5	MAC	0.75	0.28	ND (0.05)	0.48	ND (0.05)	0.18	ND (0.05)	**0.76**	ND (0.07)	0.37	ND (0.05)	**0.82**	0.52	0.32	ND (0.05)
Metals																		
Arsenic (dissolved)	mg/L	0.01	IMAC	0.0048	ND (0.001)	-	ND (0.001)	-	ND (0.001)	-	ND (0.001)	-	ND (0.001)	-	ND (0.001)	-	ND (0.001)	-
Barium (dissolved)	mg/L	1.0	MAC	0.265	0.031	-	0.036	-	0.045	-	0.021	-	0.019	-	0.028	-	0.033	-
Boron (dissolved)	mg/L	5.0	IMAC	1.40	0.168	-	0.226	-	0.11 J+	-	0.169	-	0.112	-	0.161	-	0.133	-
Cadmium (dissolved)	mg/L	0.005	MAC	0.0013	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Chromium (dissolved)	mg/L	0.05	MAC	0.014	ND (0.002)	-	0.008	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Iron (dissolved)	mg/L	0.30	AO	0.16	0.01 J	-	0.113 J	-	ND (0.01) J	-	ND (0.01) J	-	0.022 J	-	0.01 J	-	0.011 J	-
Lead (dissolved)	mg/L	0.01	MAC	0.003	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-
Mercury (dissolved)	mg/L	0.001	MAC	0.0003	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	-	0.016 J	-	ND (0.003) J	-	ND (0.008) J	-	ND (0.005) J	-	ND (0.003) J	-	ND (0.003) J	-	ND (0.003) J	-
Zinc (dissolved)	mg/L	5.0	AO	2.50	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-	0.011 J	-	ND (0.005) J	-	ND (0.005) J	-

Notes:

ODWS	Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
RUC	Reasonable Use Concept.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated RUC standard.
ND (0.3)	Reporting limit exceeds associated RUC standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.
*	ODWS

Table 16

Shallow Wells along Perimeter of Facility Property, Removed from North Berm
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:					TW30-94	TW41-99S	TW41-99S	TW42-99S	TW42-99S	TW43-99S	TW43-99S	TW43-99S	TW45-99S	TW45-99S	TW48-16S	TW48-16S	TW62-13S	TW62-13S
Sample ID:					GW-44985-060320-DD-30	GW-44985-060320-DD-41S	GW-44985-121720-DD-41S	GW-44985-060120-DD-42S	GW-44985-121520-DD-42S	GW-44985-060120-DD-43S	GW-44985-060120-DD-43S-98	GW-44985-121520-DD-43S	GW-44985-060320-DD-45S	GW-44985-121620-DD-45S	GW-44985-060220-DD-48S	GW-44985-121520-DD-48S	GW-44985-060320-DD-62S	GW-44985-121620-DD-62S
Sample Date:					6/3/2020	6/3/2020	12/17/2020	6/1/2020	12/15/2020	6/1/2020	6/1/2020 Duplicate	12/15/2020	6/3/2020	12/16/2020	6/2/2020	12/15/2020	6/3/2020	12/16/2020
Parameters	**Units**	**ODWS**	**ODWS Source**	**RUC**														
Field Parameters																		
Conductivity, field	uS/cm	-	-	-	900	1610	1520	2940	3020	819	819	935	840	1140	920	1050	1000	970
pH, field	s.u.	6.5-8.5	OG	-	7.87	7.84	6.81	7.56	6.9	6.56	6.56	7.2	7.77	7.1	7.92	7.32	7.82	7.31
Temperature, field	Deg C	15	AO	-	18.5	15.5	6.61	15.4	7.52	13.9	13.9	9.29	16.9	9.91	20.9	7.66	14.8	9.49
General Indicators																		
Conductivity, electrical	uS/cm	-	-	-	1050	2000	1600	3670	3170	752	762	868	1320	1240	1330	1100	1180	1000
pH, lab	s.u.	6.5-8.5	OG	-	7.84	7.61	7.82	7.44	7.59	7.4	7.72	7.72	7.68	7.74	7.76	7.77	7.86	7.78
Total dissolved solids (TDS)	mg/L	500	AO	500	**504**	**1200**	**1080**	**2900**	**2970**	362	364	**526**	**694**	**782**	**656**	**698**	**596**	**628**
Minor Ions - Anions																		
Alkalinity, total (as CaCO3)	mg/L	30-500	OG	438	387	**456**	**468**	358	403	278	268	311	390	416	396	413	298	322
Chloride	mg/L	250	AO	134.2	4.24	55.5	40.2	40.1	24.7	7.04	6.98	21.3	57.8	70.5	18.9	21	38.6	36.2
Sulfate	mg/L	500	AO	471.25	112	459	419	**1770**	**1810**	50.7	51.4	146	138	178	210	190	181	180
Major Ions - Cations																		
Calcium (dissolved)	mg/L	-	-	-	81.4	225	181	388	402	87.1	88.1	96.1	131	123	102	95.6	94.9	87.6
Magnesium (dissolved)	mg/L	-	-	-	52.6	79.2	70.2	182	209	25.6	25.6	32.5	48.1	51.3	60.2	56.4	40.6	37.5
Potassium (dissolved)	mg/L	-	-	-	1.77	1.52	2.02	3.34	5.8	1.49	1.46	2.03	1.76	2.83	2.08	2.54	1.89	2.33
Sodium (dissolved)	mg/L	20/200	AO	125.33	31.2	48.8	45.4	69.8	88.1	18.3	18.2	27.9	35.7	43.9	44	46.2	54.8	50
Major Ions - Nutrients																		
Ammonia-N	mg/L	-	-	-	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	0.03	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Nitrate (as N)	mg/L	10.0	MAC	2.69	ND (0.25)	ND (0.5)	ND (0.25)	ND (1) J	ND (1)	ND (0.1) J	ND (0.1) J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Nitrite (as N)	mg/L	1.0	MAC	0.44	ND (0.25)	**ND (0.5)**	ND (0.25)	**ND (1) J**	**ND (1)**	ND (0.1) J	ND (0.1) J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Major Ions - Miscellaneous																		
Bromide	mg/L	-	-	-	ND (0.25)	2.3	1.56	ND (1)	ND (1)	ND (0.1)	ND (0.1)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Cyanide (free)	mg/L	-	-	0.05	ND (0.002)	ND (0.002)	-	ND (0.002)	-	ND (0.002)	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	-	ND (0.002)	-	ND (0.002)	-	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)
Fluoride	mg/L	1.5	MAC	0.75	**1.09**	0.47	ND (0.05)	ND (0.13)	ND (0.13)	0.24	0.2	ND (0.05)	0.42	ND (0.05)	**0.84**	ND (0.05)	0.7	ND (0.05)
Metals																		
Arsenic (dissolved)	mg/L	0.01	IMAC	0.0048	ND (0.002)	**ND (0.006)**	-	ND (0.001)	-	ND (0.001)	ND (0.001)	-	**ND (0.007)**	-	**ND (0.005)**	-	**ND (0.01)**	-
Barium (dissolved)	mg/L	1.0	MAC	0.265	0.03	0.031	-	0.015	-	0.036	0.034	-	0.087	-	0.031	-	0.042	-
Boron (dissolved)	mg/L	5.0	IMAC	1.40	0.109 J+	0.142 J+	-	0.159	-	0.06	0.054	-	ND (0.079)	-	0.249	-	0.152 J+	-
Cadmium (dissolved)	mg/L	0.005	MAC	0.0013	ND (0.0001)	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Chromium (dissolved)	mg/L	0.05	MAC	0.014	ND (0.002)	ND (0.002)	-	ND (0.002)	-	ND (0.002)	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Iron (dissolved)	mg/L	0.30	AO	0.16	ND (0.01) J	ND (0.01) J	-	ND (0.01) J	-	0.013	ND (0.01) J	-	ND (0.01) J	-	ND (0.01) J	-	ND (0.01) J	-
Lead (dissolved)	mg/L	0.01	MAC	0.003	ND (0.0005)	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-
Mercury (dissolved)	mg/L	0.001	MAC	0.0003	ND (0.0001)	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	-	ND (0.003) J	ND (0.003) J	-	ND (0.003) J	-	ND (0.009) J	ND (0.003) J	-	ND (0.003) J	-	ND (0.005) J	-	ND (0.003) J	-
Zinc (dissolved)	mg/L	5.0	AO	2.50	ND (0.005) J	ND (0.005) J	-	ND (0.005) J	-	ND (0.005)	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-

Notes:

ODWS	Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
RUC	Reasonable Use Concept.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated RUC standard.
ND (0.3)	Reporting limit exceeds associated RUC standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.
*	Background concentration exceeds ODWS, RUC Standard Defaulted to ODWS

Table 17

Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:					OW32-90D	OW32-90D	OW35-05D	OW35-05D	TW22-99D	TW22-99D	TW30-99D	TW30-99D	TW32-94-II	TW32-94-II	TW32-94-II
Sample ID:					GW-44985-060320-DD-32D	GW-44985-121720-DD-32D	GW-44985-060320-DD-35D	GW-44985-121720-DD-35D	GW-44985-060220-DD-22D	GW-44985-121620-DD-22D	GW-44985-060320-DD-30D	GW-44985-121720-DD-30D	GW-44985-060220-DD-32II	GW-44985-060220-DD-32II-98	GW-44985-121620-DD-32II
Sample Date:					6/3/2020	12/17/2020	6/3/2020	12/17/2020	6/2/2020	12/16/2020	6/3/2020	12/17/2020	6/2/2020	6/2/2020 Duplicate	12/16/2020
Parameters	**Units**	**ODWS a**	**ODWS Source**	**RUC b**											
Field Parameters															
Conductivity, field	uS/cm	-	-	-	1440	1390	1590	1720	4670	5100	1190	1150	8100	8100	5050
pH, field	s.u.	6.5-8.5	OG	-	8.99	6.96	8.81	7.47	7.96	7.29	8.62	7.22	9.69	9.69	8.82
Temperature, field	Deg C	15	AO	-	17.9	8.09	15.9	7.69	17.9	8.7	15	8.51	17.4	17.4	8.79
General Indicators															
Conductivity, electrical	uS/cm	-	-	-	1660	1460	1690	1670	5530	4960	1450	1290	2600	2230	2860
pH, lab	s.u.	6.5-8.5	OG	-	7.87	7.71	8.04	7.9	7.96	8	8.04	7.85	8.27	8.12	8.19
Total dissolved solids (TDS)	mg/L	500	AO	500	**702**	**730**	**686**	**810**	**2450**	**2590**	**620**	**612**	**1580**	**1210**	**1500**
Minor Ions - Anions															
Alkalinity, total (as CaCO3)	mg/L	30-500	OG	416	236	256	253	296	**680**	**746**	237	257	257	258	279
Chloride	mg/L	250	AO	250	**297**	**302**	**299**	**346**	**1180**	**1220**	246	249	**562**	**447**	**763**
Sulfate	mg/L	500	AO	250.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (0.5)	ND (0.5)	ND (2)	ND (1)	ND (2)
Major Ions - Cations															
Calcium (dissolved)	mg/L	-	-	-	21.5	20	21.3	21.4	34.8	32.6	21.2	20.9	15	15.1	11.8
Magnesium (dissolved)	mg/L	-	-	-	7.39	7.21	7.68	7.64	14.1	13.7	7.95	7.57	11.1	11.1	15.4
Potassium (dissolved)	mg/L	-	-	-	2.76	2.59	2.01	2.38	3.5	3.6	2.52	2.59	2.89	2.77	3.41
Sodium (dissolved)	mg/L	20/200	AO	200	**252**	**243**	**242**	**297**	**985**	**953**	**213**	**207**	**369**	**369**	**526**
Major Ions - Nutrients															
Ammonia-N	mg/L	-	-	-	-	-	-	-	0.21 J	-	-	-	-	-	-
Nitrate (as N)	mg/L	10.0	MAC	2.69	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (2.5)	ND (2.5)	ND (0.25)	ND (0.25)	ND (1)	ND (0.5) J	ND (1)
Nitrite (as N)	mg/L	1.0	MAC	0.44	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	**ND (2.5)**	**ND (2.5)**	ND (0.25)	ND (0.25)	**ND (1)**	**ND (0.5) J**	**ND (1)**
Major Ions - Miscellaneous															
Bromide	mg/L	-	-	-	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (2.5)	ND (2.5)	ND (0.25)	ND (0.25)	ND (1)	ND (0.5)	ND (1)
Cyanide (free)	mg/L	-	-	0.052	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	-	-	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	-	ND (0.002)
Fluoride	mg/L	1.5	MAC	1.04	**1.22**	0.88	1.04	0.65	ND (0.33)	ND (0.33)	**1.15**	0.78	ND (0.13) J	**1.1 J**	ND (0.13)
Metals															
Arsenic (dissolved)	mg/L	0.01	IMAC	0.0048	**ND (0.008)**	-	ND (0.002)	-	**ND (0.01)**	-	ND (0.004)	-	ND (0.001)	ND (0.001)	-
Barium (dissolved)	mg/L	1.0	MAC	0.332	0.07	-	0.145	-	**0.435**	-	**0.352**	-	0.253	0.243	-
Boron (dissolved)	mg/L	5.0	IMAC	2.60	1.61	-	1.69	-	**4.94**	-	1.71	-	2.45	2.52	-
Cadmium (dissolved)	mg/L	0.005	MAC	0.0013	ND (0.0001)	-	0.0001	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	ND (0.0001)	-
Chromium (dissolved)	mg/L	0.05	MAC	0.015	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	ND (0.002)	-
Iron (dissolved)	mg/L	0.30	AO	0.30	**3.66 J**	-	**0.671 J**	-	0.043 J	-	**0.352 J**	-	0.043 J	0.04 J	-
Lead (dissolved)	mg/L	0.01	MAC	0.003	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	ND (0.0005)	-
Mercury (dissolved)	mg/L	0.001	MAC	0.0003	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	ND (0.0001)	-
Nickel (dissolved)	mg/L	-	-	-	ND (0.003) J	-	ND (0.003) J	-	ND (0.003) J	-	ND (0.003) J	-	ND (0.003) J	ND (0.003) J	-
Zinc (dissolved)	mg/L	5.0	AO	2.50	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	ND (0.005) J	-

Table 17

Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:					OW32-90D	OW32-90D	OW35-05D	OW35-05D	TW22-99D	TW22-99D	TW30-99D	TW30-99D	TW32-94-II	TW32-94-II	TW32-94-II
Sample ID:					GW-44985-060320-DD-32D	GW-44985-121720-DD-32D	GW-44985-060320-DD-35D	GW-44985-121720-DD-35D	GW-44985-060220-DD-22D	GW-44985-121620-DD-22D	GW-44985-060320-DD-30D	GW-44985-121720-DD-30D	GW-44985-060220-DD-32II	GW-44985-060220-DD-32II-98	GW-44985-121620-DD-32II
Sample Date:					6/3/2020	12/17/2020	6/3/2020	12/17/2020	6/2/2020	12/16/2020	6/3/2020	12/17/2020	6/2/2020	6/2/2020 Duplicate	12/16/2020
Parameters	**Units**	**ODWS a**	**ODWS Source**	**RUC b**											
Volatile Organic Compounds															
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	-	-	-	ND (0.3)	-	ND (0.3)	-	-	-	ND (0.3)	-	ND (0.3)	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
1,1-Dichloroethane	ug/L	-	-	-	ND (0.3)	-	ND (0.3)	-	-	-	ND (0.3)	-	ND (0.3)	ND (0.3)	-
1,1-Dichloroethene	ug/L	14	MAC	3.5	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
1,2,4-Trichlorobenzene	ug/L	-	-	-	ND (0.3)	-	ND (0.3)	-	-	-	ND (0.3)	-	ND (0.3)	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	200	MAC	50.0	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
1,2-Dichloroethane	ug/L	5	IMAC	1.25	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
1,2-Dichloropropane	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
1,3-Dichloropropene	ug/L	-	-	-	ND (0.3)	-	ND (0.3)	-	-	-	ND (0.3)	-	ND (0.3)	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	5	MAC	1.25	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	-	-	-	ND (1)	-	ND (1)	-	-	-	ND (1)	-	ND (1)	ND (1)	-
2-Hexanone	ug/L	-	-	-	ND (1)	-	ND (1)	-	-	-	ND (1)	-	ND (1)	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	-	-	-	ND (1)	-	ND (1)	-	-	-	ND (1)	-	ND (1)	ND (1)	-
Acetone	ug/L	-	-	-	ND (1)	-	ND (1)	-	-	-	ND (1)	-	ND (1)	ND (1)	-
Benzene	ug/L	1	MAC	0.96	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Bromodichloromethane	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Bromoform	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Carbon tetrachloride	ug/L	2	MAC	0.50	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Chlorobenzene	ug/L	80	MAC	20	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
Chloroethane	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	-	-	-	ND (0.4)	-	ND (0.4)	-	-	-	ND (0.4)	-	ND (0.4)	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Dibromochloromethane	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Ethylbenzene	ug/L	140	MAC	35	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
Hexane	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
m&p-Xylenes	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	15	AO	7.5	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Methylene chloride	ug/L	50	MAC	12.5	ND (0.3)	-	ND (0.3)	-	-	-	ND (0.3)	-	ND (0.3)	ND (0.3)	-
o-Xylene	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
Styrene	ug/L	-	-	-	ND (0.1)	-	ND (0.1)	-	-	-	ND (0.1)	-	ND (0.1)	ND (0.1)	-
Tetrachloroethene	ug/L	10	MAC	2.5	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Toluene	ug/L	60	MAC	15.15	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	-	-	-	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	-	-	-	ND (0.3)	-	ND (0.3)	-	-	-	ND (0.3)	-	ND (0.3)	ND (0.3)	-
Trichloroethene	ug/L	5	MAC	1.25	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	-	-	-	ND (0.4)	-	ND (0.4)	-	-	-	ND (0.4)	-	ND (0.4)	ND (0.4)	-
Vinyl chloride	ug/L	1	MAC	0.25	ND (0.17)	-	ND (0.17)	-	-	-	ND (0.17)	-	ND (0.17)	ND (0.17)	-
Xylenes (total)	ug/L	90	MAC	22.65	ND (0.2)	-	ND (0.2)	-	-	-	ND (0.2)	-	ND (0.2)	ND (0.2)	-

Notes:

ODWS	Ontario Drinking Water Standards, Objectives and Guidelines Ontario Ministry of the Environment, as revised June 2006 (ODWS)
RUC	Reasonable Use Concept.
ND	Not detected at the associated reporting limit.
J	Estimated concentration.
4.90	Detected result exceeds associated RUC standard.
ND (0.3)	Reporting limit exceeds associated RUC standard.
OG	Operational Guideline
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration
IMAC	Interim Maximum Acceptable Concentration
-	Not applicable or not analysed.
*	Defaulted to ODWS

Table 17

Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:		TW40-99D	TW40-99D	TW41-99D	TW41-99D	TW43-99D	TW43-99D	TW45-99D	TW45-99D	TW47-00D	TW47-00D	TW48-00D	TW48-00D
Sample ID:		GW-44985-060220-DD-40D	GW-44985-121620-DD-40D	GW-44985-060320-DD-41D	GW-44985-121720-DD-41D	GW-44985-060120-DD-43D	GW-44985-121520-DD-43D	GW-44985-060320-DD-45D	GW-44985-121720-DD-45D	GW-44985-060220-DD-47D	GW-44985-121620-DD-47D	GW-44985-060220-DD-48D	GW-44985-121520-DD-48D
Sample Date:		6/2/2020	12/16/2020	6/3/2020	12/17/2020	6/1/2020	12/15/2020	6/3/2020	12/17/2020	6/2/2020	12/16/2020	6/2/2020	12/15/2020
Parameters	**Units**												
Field Parameters													
Conductivity, field	uS/cm	1550	1800	1110	1060	1610	1190	5780	5570	9120	11100	1740	1730
pH, field	s.u.	8.9	7.47	8.45	7.37	8.37	7.57	9.3	7.32	9.04	7.34	8.97	7.81
Temperature, field	Deg C	13.5	8.81	15.5	8.57	13.4	9.68	17.1	8.8	15.9	8.55	16.8	9
General Indicators													
Conductivity, electrical	uS/cm	1680	1720	1350	1200	1430	1260	4430	2960	10700	9690	2000	1800
pH, lab	s.u.	7.96	7.56	8.04	7.59	7.74	7.8	8.01	8.22	7.97	8.01	8.04	7.9
Total dissolved solids (TDS)	mg/L	**688**	**828**	**580**	**624**	**618**	**628**	**1870**	**1680**	**3960**	**4180**	**878**	**908**
Minor Ions - Anions													
Alkalinity, total (as CaCO3)	mg/L	230	270	273	297	253	276	**937**	**916**	**1030**	**1140**	324	345
Chloride	mg/L	**310**	**390**	200	200	235	237	**680**	**433**	**2600**	**2690**	**361**	**370**
Sulfate	mg/L	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (2)	ND (10)	ND (10)	ND (1)	ND (1)
Major Ions - Cations													
Calcium (dissolved)	mg/L	27.8	33.7	16.1	14.7	24	24.7	7.5	10.1	43	81	26.6	25.5
Magnesium (dissolved)	mg/L	10.5	12.2	5.56	5.18	8.91	9.09	4.2	4.69	20	38	9.61	9.35
Potassium (dissolved)	mg/L	2.59	2.8	1.76	1.91	1.83	1.88	2.6	2.1	5	10	2.8	2.69
Sodium (dissolved)	mg/L	**239**	**288**	**216**	**207**	**206**	**201**	**853**	**644**	**1070**	**2020**	**313**	**301**
Major Ions - Nutrients													
Ammonia-N	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	ND (0.25)	ND (0.5)	ND (0.25)	ND (0.25)	ND (0.25) J	ND (0.25)	ND (2.5)	ND (1)	**ND (5)**	**ND (5)**	ND (0.5)	ND (0.5)
Nitrite (as N)	mg/L	ND (0.25)	**ND (0.5)**	ND (0.25)	ND (0.25)	ND (0.25) J	ND (0.25)	**ND (2.5)**	**ND (1)**	**ND (5)**	**ND (5)**	**ND (0.5)**	**ND (0.5)**
Major Ions - Miscellaneous													
Bromide	mg/L	ND (0.25)	ND (0.5)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (2.5)	ND (1)	ND (5)	ND (5)	ND (0.5)	ND (0.5)
Cyanide (free)	mg/L	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)
Fluoride	mg/L	**1.1**	ND (0.07)	**1.12**	0.74	1.03	0.62	ND (0.33)	ND (0.13)	ND (0.7)	ND (0.7)	**1.34**	ND (0.07)
Metals													
Arsenic (dissolved)	mg/L	ND (0.004)	-	**ND (0.006)**	-	ND (0.001)	-	**ND (0.025)**	-	**ND (0.008)**	-	**ND (0.005)**	-
Barium (dissolved)	mg/L	0.214	-	0.089	-	0.18	-	0.304	-	**1.7**	-	0.222	-
Boron (dissolved)	mg/L	1.74	-	1.91	-	1.37	-	**3.5**	-	**3.41**	-	2.41	-
Cadmium (dissolved)	mg/L	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Iron (dissolved)	mg/L	**1.08 J**	-	0.066 J	-	**0.515**	-	**4.65 J**	-	**2.94 J**	-	**0.514 J**	-
Lead (dissolved)	mg/L	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-
Mercury (dissolved)	mg/L	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND (0.003) J	-	ND (0.008) J	-	ND (0.003)	-	ND (0.003) J	-	ND (0.003) J	-	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND (0.005) J	-	ND (0.005) J	-	ND (0.005)	-	ND (0.005) J	-	ND (0.005) J	-	ND (0.005) J	-

Table 17

Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:		**TW40-99D**	**TW40-99D**	**TW41-99D**	**TW41-99D**	**TW43-99D**	**TW43-99D**	**TW45-99D**	**TW45-99D**	**TW47-00D**	**TW47-00D**	**TW48-00D**	**TW48-00D**
Sample ID:		**GW-44985-060220-DD-40D**	**GW-44985-121620-DD-40D**	**GW-44985-060320-DD-41D**	**GW-44985-121720-DD-41D**	**GW-44985-060120-DD-43D**	**GW-44985-121520-DD-43D**	**GW-44985-060320-DD-45D**	**GW-44985-121720-DD-45D**	**GW-44985-060220-DD-47D**	**GW-44985-121620-DD-47D**	**GW-44985-060220-DD-48D**	**GW-44985-121520-DD-48D**
Sample Date:		**6/2/2020**	**12/16/2020**	**6/3/2020**	**12/17/2020**	**6/1/2020**	**12/15/2020**	**6/3/2020**	**12/17/2020**	**6/2/2020**	**12/16/2020**	**6/2/2020**	**12/15/2020**
Parameters	**Units**												
Volatile Organic Compounds													
1,1,1,2-Tetrachloroethane	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,1-Dichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,2,4-Trichlorobenzene	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-
2-Hexanone	ug/L	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-
Acetone	ug/L	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-	ND (1)	-
Benzene	ug/L	ND (0.2)	-	ND (0.2)	-	0.28	-	**1.9**	-	ND (0.2)	-	ND (0.2)	-
Bromodichloromethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Bromoform	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Carbon tetrachloride	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Chlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Chloroethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Dibromochloromethane	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Ethylbenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Hexane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
m&p-Xylenes	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Methylene chloride	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
o-Xylene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Styrene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Tetrachloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Toluene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
Trichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-
Vinyl chloride	ug/L	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-
Xylenes (total)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-

Notes:

ODWS	Ontario D Guidelines Guidance (ODWS)
RUC	Reasonal
ND	Not detec
J	Estimate
4.90	Detected
ND (0.3)	Reporting
OG	Operatio
AO	Aesthetic
MAC	Maximu
IMAC	Interim M
-	Not appli
*	Defaulte

Table 17

Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:		TW49-00D	TW49-00D	TW53-03D	TW53-03D	TW60-13D	TW60-13D
Sample ID:		GW-44985-060120-DD-49D	GW-44985-121520-DD-49D	GW-44985-060320-DD-53D	GW-44985-121720-DD-53D	GW-44985-060220-DD-60D	GW-44985-121620-DD-60D
Sample Date:		6/1/2020	12/15/2020	6/3/2020	12/17/2020	6/2/2020	12/16/2020
Parameters	**Units**						
Field Parameters							
Conductivity, field	uS/cm	930	802	2480	726	6070	4600
pH, field	s.u.	8.22	7.48	8.26	6.94	8.19	7.45
Temperature, field	Deg C	14.8	9.8	16.6	7.59	20.7	8.31
General Indicators							
Conductivity, electrical	uS/cm	875	762	2010	676	4750	4500
pH, lab	s.u.	7.89	7.72	7.99	7.37	8	7.97
Total dissolved solids (TDS)	mg/L	382	398	**898**	340	**2110**	**2370**
Minor Ions - Anions							
Alkalinity, total (as CaCO3)	mg/L	233	251	273	172	**594**	**692**
Chloride	mg/L	91.6	94.3	**385**	113	**976**	**1080**
Sulfate	mg/L	ND (0.5)	ND (0.2)	ND (1)	15	ND (5)	ND (5)
Major Ions - Cations							
Calcium (dissolved)	mg/L	18.7	16.6	27	27.1	28.2	28.9
Magnesium (dissolved)	mg/L	5.43	4.94	9.99	6.82	11.4	12.7
Potassium (dissolved)	mg/L	1.55	1.25	2.37	2.1	3.1	3.3
Sodium (dissolved)	mg/L	133	122	**299**	88.9	**836**	**863**
Major Ions - Nutrients							
Ammonia-N	mg/L	-	-	-	-	-	-
Nitrate (as N)	mg/L	ND (0.25) J	ND (0.1)	ND (0.5)	ND (0.1)	ND (2.5)	ND (2.5)
Nitrite (as N)	mg/L	ND (0.25) J	ND (0.1)	**ND (0.5)**	ND (0.1)	**ND (2.5)**	**ND (2.5)**
Major Ions - Miscellaneous							
Bromide	mg/L	ND (0.25)	ND (0.1)	ND (0.5)	ND (0.1)	ND (2.5)	ND (2.5)
Cyanide (free)	mg/L	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Cyanide, weak acid dissociable	mg/L	-	ND (0.002)	-	ND (0.002)	-	ND (0.002)
Fluoride	mg/L	**1.19**	**1.13**	**1.16**	0.74	ND (0.33)	ND (0.33)
Metals							
Arsenic (dissolved)	mg/L	**ND (0.007)**	-	ND (0.003)	-	**ND (0.007)**	-
Barium (dissolved)	mg/L	0.097	-	0.205	-	**0.37**	-
Boron (dissolved)	mg/L	1.19	-	1.93	-	**4.37**	-
Cadmium (dissolved)	mg/L	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Chromium (dissolved)	mg/L	ND (0.002)	-	ND (0.002)	-	ND (0.002)	-
Iron (dissolved)	mg/L	0.183	-	**0.537 J**	-	0.136 J	-
Lead (dissolved)	mg/L	ND (0.0005)	-	ND (0.0005)	-	ND (0.0005)	-
Mercury (dissolved)	mg/L	ND (0.0001)	-	ND (0.0001)	-	ND (0.0001)	-
Nickel (dissolved)	mg/L	ND (0.008)	-	ND (0.003) J	-	ND (0.003) J	-
Zinc (dissolved)	mg/L	ND (0.005)	-	ND (0.005) J	-	ND (0.005) J	-

Table 17

Deep Wells along the Perimeter of the Facility Property (Interface Aquifer)
Reasonable Use Concept Derived Criteria
2020 Annual Groundwater Monitoring Report
Clean Harbors Canada Inc.
Lambton Facility

Sample Location:		**TW49-00D**	**TW49-00D**	**TW53-03D**	**TW53-03D**	**TW60-13D**	**TW60-13D**
Sample ID:		**GW-44985-060120-DD-49D**	**GW-44985-121520-DD-49D**	**GW-44985-060320-DD-53D**	**GW-44985-121720-DD-53D**	**GW-44985-060220-DD-60D**	**GW-44985-121620-DD-60D**
Sample Date:		**6/1/2020**	**12/15/2020**	**6/3/2020**	**12/17/2020**	**6/2/2020**	**12/16/2020**
Parameters	**Units**						
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,1,1-Trichloroethane	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,1,2,2-Tetrachloroethane	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,1,2-Trichloroethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,1-Dichloroethane	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,1-Dichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,2,4-Trichlorobenzene	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,2-Dichlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,2-Dichloroethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,2-Dichloropropane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
1,3-Dichlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
1,3-Dichloropropene	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
1,4-Dichlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND (1)	-	ND (1)	-	ND (1)	-
2-Hexanone	ug/L	ND (1)	-	ND (1)	-	ND (1)	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND (1)	-	ND (1)	-	ND (1)	-
Acetone	ug/L	ND (1)	-	ND (1)	-	ND (1)	-
Benzene	ug/L	ND (0.2)	-	ND (0.2)	-	0.4	-
Bromodichloromethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Bromoform	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Bromomethane (Methyl bromide)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Carbon tetrachloride	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Chlorobenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Chloroethane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Chloroform (Trichloromethane)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Chloromethane (Methyl chloride)	ug/L	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-
cis-1,2-Dichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
cis-1,3-Dichloropropene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Dibromochloromethane	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Dichlorodifluoromethane (CFC-12)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Ethylbenzene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Hexane	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
m&p-Xylenes	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Methyl tert butyl ether (MTBE)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Methylene chloride	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
o-Xylene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Styrene	ug/L	ND (0.1)	-	ND (0.1)	-	ND (0.1)	-
Tetrachloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Toluene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
trans-1,2-Dichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
trans-1,3-Dichloropropene	ug/L	ND (0.3)	-	ND (0.3)	-	ND (0.3)	-
Trichloroethene	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-
Trichlorofluoromethane (CFC-11)	ug/L	ND (0.4)	-	ND (0.4)	-	ND (0.4)	-
Vinyl chloride	ug/L	ND (0.17)	-	ND (0.17)	-	ND (0.17)	-
Xylenes (total)	ug/L	ND (0.2)	-	ND (0.2)	-	ND (0.2)	-

Notes:

ODWS	Ontario D Guidelines Guidance (ODWS)
RUC	Reasonal
ND	Not detec
J	Estimate
4.90	Detected
ND (0.3)	Reporting
OG	Operatio
AO	Aesthetic
MAC	Maximu
IMAC	Interim M
-	Not appli
*	Defaulte

Appendices

Appendix A
Quality Assurance/Quality Control Data Validation Memoranda

Memorandum

February 4, 2021

To:	Brian Packer, Jeff Leader, Ben Kempel, Jim Yardley	Ref. No.:	044985-42
From:	Laura Kloeze/an/71	Tel:	519-340-4375

Subject: **Analytical Data Verification**
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

1. Introduction

The following document details an analytical data verification of results for groundwater samples collected at the Clean Harbors Canada Inc. site in Sarnia, Ontario during June and December 2020. Samples were submitted to AGAT Laboratories (AGAT) located in Mississauga, Ontario for routine analyses as well as Bureau Veritas Laboratories (BV Labs) located in Mississauga, Ontario for radiological analyses. A sample collection and analysis summary is presented in Table 1. A summary of the analytical methodology is presented in Table 2.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and applicable guidance from the documents entitled:

i) "National Functional Guidelines for Superfund Organic Methods Data Review", USEPA-540-R-2016-002, September 2016

ii) "National Functional Guidelines for Inorganic Superfund Methods Data Review", USEPA-540-R-2016-001, September 2016

Items i) and ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 2. Sample chain of custody documents and analytical reports were used to determine sample holding times. Most samples were prepared and analyzed within the required holding times. Data which were obtained past the recommended holding time have been qualified as estimated (see Table 3).

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature of <10 degrees Celsius (°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike Analyses

To evaluate the effects of sample matrices on the extraction or digestion process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS samples. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

Organic Analyses

The MS samples were spiked with all compounds of interest. All MS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses

The MS samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries were within the control limits, demonstrating acceptable analytical accuracy.

7. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory. The laboratory performed additional site-specific duplicate analyses internally. The relative percent differences (RPDs) associated with these duplicate samples must be less than 20 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is a difference of one times the RL value for water samples. Most duplicate analyses performed were acceptable, demonstrating acceptable analytical precision. Metal results that showed variability have been qualified as estimated (see Table 4).

8. Field QA/QC Samples

The field QA/QC consisted of one trip blank, six field blanks and seven field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank sample was submitted to the laboratory for VOC analysis as outlined in Table 1. All results were non-detect for the compounds of interest.

Field Blank Sample Analysis

To evaluate contamination sample collection, transportation, storage, and analytical activities, six field blank samples were collected and submitted to the laboratory for analyses.

Most sample concentrations were non-detect for the compounds of interest. Select metals were detected in the field blanks. For inorganic analytes, associated samples with concentrations similar to the field blank concentrations were qualified as non-detect or estimated with a potential high bias (see Table 5). Associated sample concentrations that were greater than ten times the blank value were not qualified.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, seven field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the RL, the evaluation criteria is a difference of one times the RL value for water samples.

Most field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision. The fluoride results for sample GW-44985-060220-DD-32II and its field duplicate did display some variability. The original and duplicate sample results were qualified as estimated (see Table 6).

9. Conclusion

Based on the assessment detailed in the foregoing, the data are acceptable with the specific qualifications noted herein.

Table 1

Sample Collection and Analysis Summary
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

					Analysis/Parameters												
Lab Report #	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Alkalinity	Ammonia-N	pH	Metals	Cations	Mercury	Cyanide, free	Conductivity	Total Dissolved Solids	Anions (Cl, Br, F, NO2-N, NO3-N, SO4)	Volatile Organic Compounds	Gross Alpha & Gross Beta	Comments
20T609989	GW-44985-060120-DD-43S	TW43-99S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060120-DD-43D	TW43-99D	Groundwater	06/01/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060120-DD-49D	TW49-00D	Groundwater	06/01/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060120-DD-42S	TW42-99S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060120-DD-55D	TW55-09D	Groundwater	06/01/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060120-DD-55S	TW55-09S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060120-DD-57D	TW57-11D	Groundwater	06/01/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060120-DD-57S	TW57-11S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060120-DD-58S	TW58-11S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060120-DD-56S	TW56-11S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060120-DD-56D	TW56-11D	Groundwater	06/01/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-61I	TW61-13I	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-61D	TW61-13D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-61S	TW61-13S	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-39S	TW39-99S	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-39I	TW39-99I	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-39D	TW39-99D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-46D	TW46-99D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-46I	TW46-99I	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-46S	TW46-99S	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-32IV	TW32-94-IV	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-32II	TW32-94-II	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-40S	TW40-99S	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-40D	TW40-99D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-47D	TW47-00D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-21II	TW21-94-II	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-22	TW22-94	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-60D	TW60-13D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-22D	TW22-99D	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060220-DD-48D	TW48-00D	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060220-DD-48S	TW48-16S	Groundwater	06/02/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-59S	TW59-13S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-59D	TW59-13D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-63S	TW63-13S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	

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					Analysis/Parameters												
Lab Report #	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Alkalinity	Ammonia-N	pH	Metals	Cations	Mercury	Cyanide, free	Conductivity	Total Dissolved Solids	Anions (Cl, Br, F, NO2-N, NO3-N, SO4)	Volatile Organic Compounds	Gross Alpha & Gross Beta	Comments
20T609989	GW-44985-060320-DD-62S	TW62-13S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-45S	TW45-99S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-45D	TW45-99D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-54D	TW54-09D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-41S	TW41-99S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-41D	TW41-99D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-30	TW30-94	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-32S	OW32-90S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-30D	TW30-99D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-32D	OW32-90D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-53S	TW53-03S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-53D	TW53-03D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060320-DD-35S	OW35-90S	Groundwater	06/03/2020	X	X	X	X	X	X	X	X	X	X	-	-	
20T609989	GW-44985-060320-DD-35D	OW35-05D	Groundwater	06/03/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-PW2	PW2-S(R11)	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-EW2A	EW2a-01	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-EW1A	EW1a-01	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-PW2-98	PW2-S(R11)	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	FD (GW-44985-060420-DD-PW2
20T609989	GW-44985-060420-DD-PW1	PW1-N	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-EW2C	EW2c-13	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-EW2B	EW2b-13	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-EW1C	EW1c-13	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-EW1B	EW1b-13	Groundwater	06/04/2020	X	-	X	X	X	X	X	X	X	X	X	-	
20T609989	GW-44985-060420-DD-B1	-	Water	06/04/2020	X	X	X	X	X	X	X	X	X	X	-	-	Field Blank
20T609989	GW-44985-060420-DD-B2	-	Water	06/04/2020	X	X	X	X	X	X	X	X	X	X	-	-	Field Blank
20T609989	GW-44985-060420-DD-B3	-	Water	06/04/2020	X	X	X	X	X	X	X	X	X	X	X	-	Field Blank
20T609989	Trip Blank	-	Water	06/02/2020	-	-	-	-	-	-	-	-	-	-	X	-	Trip Blank
20T609989	GW-44985-060120-DD-43S-98	TW43-99S	Groundwater	06/01/2020	X	X	X	X	X	X	X	X	X	X	-	-	FD (GW-44985-060120-DD-43S)
20T609989	GW-44985-060220-DD-32II-98	TW32-94-II	Groundwater	06/02/2020	X	-	X	X	X	X	X	X	X	X	X	-	FD (GW-44985-060220-DD-32II)
C0E0424	GW-44985-20-DD-49D	TW49-00D	Groundwater	06/01/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-42S	TW42-99S	Groundwater	06/01/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-39S	TW39-99S	Groundwater	06/02/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-39I	TW39-99I	Groundwater	06/02/2020	-	-	-	-	-	-	-	-	-	-	-	X	

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					Analysis/Parameters												
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C0E0424	GW-44985-20-DD-39D	TW39-99D	Groundwater	06/02/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-48D	TW48-00D	Groundwater	06/02/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-48S	TW48-16S	Groundwater	06/02/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-59D	TW59-13D	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-63S	TW63-13S	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-45S	TW45-99S	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-45D	TW45-99D	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-41S	TW41-99S	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-41D	TW41-99D	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-30	TW30-94	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-30D	TW30-99D	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-35S	OW35-90S	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-35D	OW35-05D	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-EW1A	EW1a-01	Groundwater	06/04/2020	-	-	-	-	-	-	-	-	-	-	-	X	
C0E0424	GW-44985-20-DD-EW1A-98	EW1a-01	Groundwater	06/04/2020	-	-	-	-	-	-	-	-	-	-	-	X	FD (GW-44985-20-DD-EW1A)
C0E0424	GW-44985-20-DD-59S	TW59-13S	Groundwater	06/03/2020	-	-	-	-	-	-	-	-	-	-	-	X	
20T692507	GW-44985-121520-DD-58S	TW58-11S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-56D	TW56-11D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-56S	TW56-11S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-566S	TW56-11S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	FD (GW-44985-121520-DD-56S)
20T692507	GW-44985-121520-DD-B1	-	Water	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	Field Blank
20T692507	GW-44985-121520-DD-57S	TW57-11S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-57D	TW57-11D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-577D	TW57-11D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	FD (GW-44985-121520-DD-57D)
20T692507	GW-44985-121520-DD-B2	-	Water	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	Field Blank
20T692507	GW-44985-121520-DD-55S	TW55-09S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-55D	TW55-09D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-43S	TW43-99S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-43D	TW43-99D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-49D	TW49-00D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-42S	TW42-99S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-59S	TW59-13S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-59D	TW59-13D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	

Table 1

Sample Collection and Analysis Summary
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

					Analysis/Parameters												
Lab Report #	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Alkalinity	Ammonia-N	pH	Metals	Cations	Mercury	Cyanide, free	Conductivity	Total Dissolved Solids	Anions (Cl, Br, F, NO2-N, NO3-N, SO4)	Volatile Organic Compounds	Gross Alpha & Gross Beta	Comments
20T692507	GW-44985-121520-DD-48S	TW48-16S	Groundwater	12/15/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121520-DD-48D	TW48-00D	Groundwater	12/15/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-63S	TW63-13S	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-62S	TW62-13S	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-45S	TW45-99S	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-54D	TW54-09D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-61D	TW61-13D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-61I	TW61-13I	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-61S	TW61-13S	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-22	TW22-94	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-22D	TW22-99D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-60D	TW60-13D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-39D	TW39-99D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-39I	TW39-99I	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-39S	TW39-99S	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-21II	TW21-94-II	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-47D	TW47-00D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-40D	TW40-99D	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-40S	TW40-99S	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-32II	TW32-94-II	Groundwater	12/16/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-32IV	TW32-94-IV	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121620-DD-46I	TW46-99I	Groundwater	12/16/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-46D	TW46-99D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-46S	TW46-99S	Groundwater	12/17/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-35S	OW35-90S	Groundwater	12/17/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-35D	OW35-05D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-53S	TW53-03S	Groundwater	12/17/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-53D	TW53-03D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-32S	OW32-90S	Groundwater	12/17/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-32D	OW32-90D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-30D	TW30-99D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-45D	TW45-99D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	

Table 1

Sample Collection and Analysis Summary
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

					Analysis/Parameters												
Lab Report #	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Alkalinity	Ammonia-N	pH	Metals	Cations	Mercury	Cyanide, free	Conductivity	Total Dissolved Solids	Anions (Cl, Br, F, NO2-N, NO3-N, SO4)	Volatile Organic Compounds	Gross Alpha & Gross Beta	Comments
20T692507	GW-44985-121720-DD-41D	TW41-99D	Groundwater	12/17/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T692507	GW-44985-121720-DD-41S	TW41-99S	Groundwater	12/17/2020	X	X	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-PW2	PW2-S(R11)	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-PW22	PW2-S(R11)	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	FD (GW-44985-121820-DD-PW2)
20T693055	GW-44985-121820-DD-B3	-	Water	12/18/2020	X	X	X	-	X	-	X	X	X	X	-	-	Field Blank
20T693055	GW-44985-121820-DD-EW2A	EW2a-01	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-EW1A	EW1a-01	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-PW1	PW1-N	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-EW2C	EW2c-13	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-EW2B	EW2b-13	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-EW1C	EW1c-13	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	
20T693055	GW-44985-121820-DD-EW1B	EW1b-13	Groundwater	12/18/2020	X	-	X	-	X	-	X	X	X	X	-	-	

Notes:
"-" - Not applicable
FD - Field Duplicate Sample of sample in parenthesis
N - Nitrogen
Cl - Chloride
Br - Bromide
F - Fluoride
NO2-N - Nitrite-Nitrogen
NO3-N - Nitrate-Nitrogen
SO4 - Sulphate

Table 2

Analytical Method and Holding Time Criteria
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Parameters	Methodology [1]	Holding Time Criteria Water
Alkalinity	SM 2320B	14 days
Ammonia-N (preserved)	SM 4500 NH3-H	28 days
Ammonia-N (unpreserved)	SM 4500 NH3-H	3 days
pH	SM 4500-H+B	28 days
Metals	EPA 200.8/EPA 3005A	60 days
Cations	EPA 6010D	60 days
Mercury	EPA 245.2/SM 3112B	28 days
Cyanide, free	SM 4500 CN-I	14 days
Conductivity	SM 2510	28 days
Total Dissolved Solids	SM 2540C	7 days
Anions (Chloride, Bromide, Fluoride, Sulphate)	SM 4110B	28 days
Anions (Nitrite-N, Nitrate-N)	SM 4110B	7 days
Volatile Organic Compounds	EPA 5030B/8260D	14 days
Gross Alpha & Gross Beta	GFPC	180 days

Notes:
[1] Methods referenced from the following:
SM - "Standard Methods for the Examination of Water and Wastewater", 21st Ed., APHA, September 2005 with subsequent revisions
EPA - U.S. Environmental protection Agency. Analytical Methodology (October, 2007)
GFPC - Gas Flow Proportional Counting
N - Nitrogen

Table 3

Qualified Sample Data Due To Holding Time Exceedance
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Parameter	Sample ID	Holding Time	Holding Time Criteria	Analyte	Qualified Sample Results	Units
20T609989	Anion	GW-44985-060120-DD-43S	8 days	7 days	Nitrate (as N)	0.10 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-43S	8 days	7 days	Nitrite (as N)	0.10 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-43D	8 days	7 days	Nitrate (as N)	0.25 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-43D	8 days	7 days	Nitrite (as N)	0.25 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-49D	8 days	7 days	Nitrate (as N)	0.25 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-49D	8 days	7 days	Nitrite (as N)	0.25 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-42S	8 days	7 days	Nitrate (as N)	1.0 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-42S	8 days	7 days	Nitrite (as N)	1.0 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-55D	8 days	7 days	Nitrate (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-55D	8 days	7 days	Nitrite (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-55S	8 days	7 days	Nitrate (as N)	0.25 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-55S	8 days	7 days	Nitrite (as N)	0.25 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-57D	8 days	7 days	Nitrate (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-57D	8 days	7 days	Nitrite (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-57S	8 days	7 days	Nitrate (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-57S	8 days	7 days	Nitrite (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-58S	8 days	7 days	Nitrate (as N)	1.0 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-58S	8 days	7 days	Nitrite (as N)	1.0 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-56S	8 days	7 days	Nitrate (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-56S	8 days	7 days	Nitrite (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-56D	8 days	7 days	Nitrate (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-56D	8 days	7 days	Nitrite (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-43S-9[illegible]	9 days	7 days	Nitrate (as N)	0.10 UJ	mg/L
20T609989	Anion	GW-44985-060120-DD-43S-9[illegible]	9 days	7 days	Nitrite (as N)	0.10 UJ	mg/L
20T609989	Anion	GW-44985-060220-DD-32II-9[illegible]	8 days	7 days	Nitrate (as N)	0.5 UJ	mg/L
20T609989	Anion	GW-44985-060220-DD-32II-9[illegible]	8 days	7 days	Nitrite (as N)	0.5 UJ	mg/L
20T609989	Gen Chem	GW-44985-060220-DD-22D	10 days	3 days	Ammonia-N	0.21 J	mg/L

Notes:
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
Gen Chem - General Chemistry
N - Nitrogen

Qualified Sample Data Due To Outlying Laboratory Duplicate Results
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Parameter	Sample ID	Analyte	Diff	Associated Sample IDs	Qualified Result	Units
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-42S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-55D	0.295 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-55S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-57D	2.11 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-57S	0.015 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-58S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-56S	0.021 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-56D	1.21 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-61I	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-61D	0.028 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-61S	0.053 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-39S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-39I	0.012 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-39D	0.412 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-46D	0.490 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-46I	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-46S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-32IV	0.022 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-32II	0.043 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-40S	0.010 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-40D	1.08 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-47D	2.94 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-21II	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-22	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-60D	0.136 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-22D	0.043 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-48D	0.514 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-48S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-59S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-59D	0.453 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-63S	0.015 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-62S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-45S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-45D	4.65 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-54D	0.128 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-41S	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-41D	0.066 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-30	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-32S	0.010 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-30D	0.352 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-32D	3.66 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-53S	0.011 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-53D	0.537 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-35S	0.113 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060320-DD-35D	0.671 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-PW2	0.103 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-EW2A	0.032 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-EW1A	0.029 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-PW2-98	0.111 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-PW1	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-EW2C	0.019 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-EW2B	0.121 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-EW1C	0.710 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060420-DD-EW1B	0.566 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060120-DD-43S-98	0.010 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Iron (dissolved)	>1xRL	GW-44985-060220-DD-32II-98	0.040 J	mg/L

Qualified Sample Data Due To Outlying Laboratory Duplicate Results
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Parameter	Sample ID	Analyte	Diff	Associated Sample IDs	Qualified Result	Units
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-43S	0.009 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-42S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-55D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-55S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-57D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-57S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-58S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-56S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-56D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-61I	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-61D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-61S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-39S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-39I	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-39D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-46D	0.024 J	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-46I	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-46S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-32IV	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-32II	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-40S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-40D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-47D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-21II	0.008 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-22	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-60D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-22D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-48D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-48S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-59S	0.004 UJ	mg/L

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Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Parameter	Sample ID	Analyte	Diff	Associated Sample IDs	Qualified Result	Units
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-59D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-63S	0.081 J	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-62S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-45S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-45D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-54D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-41S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-41D	0.008 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-30	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-32S	0.016 J	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-30D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-32D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-53S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-53D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-35S	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060320-DD-35D	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-PW2	0.007 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-EW2A	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-EW1A	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-PW2-98	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-PW1	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-EW2C	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-EW2B	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-EW1C	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060420-DD-EW1B	0.004 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060120-DD-43S-98	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060120-DD-43S; GW-44985-060120-DD-43S-	Nickel (dissolved	>1xRL	GW-44985-060220-DD-32II-98	0.003 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-42S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-55D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-55S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-57D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-57S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-58S	0.005 UJ	mg/L

Qualified Sample Data Due To Outlying Laboratory Duplicate Results
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Parameter	Sample ID	Analyte	Diff	Associated Sample IDs	Qualified Result	Units
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-56S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-56D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-61I	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-61D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-61S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-39S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-39I	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-39D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-46D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-46I	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-46S	0.006 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-32IV	0.011 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-32II	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-40S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-40D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-47D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-21II	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-22	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-60D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-22D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-48D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-48S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-59S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-59D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-63S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-62S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-45S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-45D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-54D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-41S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-41D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-30	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-32S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-30D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-32D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-53S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-53D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-35S	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060320-DD-35D	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-PW2	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-EW2A	0.006 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-EW1A	0.013 J	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-PW2-98	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-PW1	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-EW2C	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-EW2B	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-EW1C	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060420-DD-EW1B	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060120-DD-43S-98	0.005 UJ	mg/L
20T609989	Metal	GW-44985-060220-DD-32IV	Zinc (dissolved)	>1xRL	GW-44985-060220-DD-32II-98	0.005 UJ	mg/L

Notes:
Diff - Difference (i.e., >1X RL for waters)
RL - Reporting limit
UJ - Not detected; associated reporting limit is estimated
J - Estimated concentration

Table 5

Qualified Sample Data Due To Analyte Concentrations in the Field Blank
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Rinse Blank ID	Blank Result	Parameter	Analyte	Associated Sample ID	Qualified Result	Units
20T609989	GW-44985-060420-DD-B1	0.009	Metal	Arsenic (dissolved)	GW-44985-060120-DD-49D	0.007 U	mg/L
	GW-44985-060420-DD-B2	0.007	Metal	Arsenic (dissolved)	GW-44985-060120-DD-55D	0.001 U	mg/L
	GW-44985-060420-DD-B3	0.007	Metal	Arsenic (dissolved)	GW-44985-060120-DD-58S	0.002 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060120-DD-56D	0.009 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-61I	0.001 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-61D	0.005 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-61S	0.005 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-39S	0.003 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-39I	0.003 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-39D	0.005 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-46D	0.006 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-46S	0.002 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-40D	0.004 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-47D	0.008 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-21II	0.001 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-60D	0.007 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-22D	0.010 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-48D	0.005 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060220-DD-48S	0.005 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-59S	0.002 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-59D	0.007 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-63S	0.008 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-62S	0.010 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-45S	0.007 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-45D	0.025 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-54D	0.007 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-41S	0.006 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-41D	0.006 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-30	0.002 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-30D	0.004 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-32D	0.008 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-53D	0.003 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-35S	0.001 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060320-DD-35D	0.002 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-EW2A	0.001 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-PW2-	0.008 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-PW1	0.005 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-EW2(	0.006 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-EW2I	0.006 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-EW1(	0.007 U	mg/L
			Metal	Arsenic (dissolved)	GW-44985-060420-DD-EW1I	0.004 U	mg/L
20T609989	GW-44985-060420-DD-B1	0.020	Metal	Boron (dissolved)	GW-44985-060220-DD-61I	0.157 J+	mg/L
	GW-44985-060420-DD-B2	0.016	Metal	Boron (dissolved)	GW-44985-060220-DD-39I	0.177 J+	mg/L
	GW-44985-060420-DD-B3	0.013	Metal	Boron (dissolved)	GW-44985-060220-DD-21II	0.110 J+	mg/L
			Metal	Boron (dissolved)	GW-44985-060320-DD-59S	0.126 J+	mg/L
			Metal	Boron (dissolved)	GW-44985-060320-DD-62S	0.152 J+	mg/L
			Metal	Boron (dissolved)	GW-44985-060320-DD-45S	0.079 U	mg/L
			Metal	Boron (dissolved)	GW-44985-060320-DD-41S	0.142 J+	mg/L
			Metal	Boron (dissolved)	GW-44985-060320-DD-30	0.109 J+	mg/L

Table 5

Qualified Sample Data Due To Analyte Concentrations in the Field Blank
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Rinse Blank ID	Blank Result	Parameter	Analyte	Associated Sample ID	Qualified Result		Units
20T609989	GW-44985-060420-DD-B1	0.003	Metal	Nickel (dissolved)	GW-44985-060120-DD-43S	0.009	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060120-DD-49D	0.008	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060120-DD-57S	0.003	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060220-DD-39S	0.003	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060220-DD-46D	0.024	J+	mg/L
			Metal	Nickel (dissolved)	GW-44985-060220-DD-21II	0.008	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060220-DD-22	0.005	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060220-DD-48S	0.005	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060320-DD-59S	0.004	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060320-DD-41D	0.008	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060320-DD-32S	0.016	J+	mg/L
			Metal	Nickel (dissolved)	GW-44985-060420-DD-PW2	0.007	U	mg/L
			Metal	Nickel (dissolved)	GW-44985-060420-DD-EW1I	0.004	U	mg/L

Notes:
U - Not detected at the assoicated reporting limit
J+ - Estimated concentration; the result may be biased high

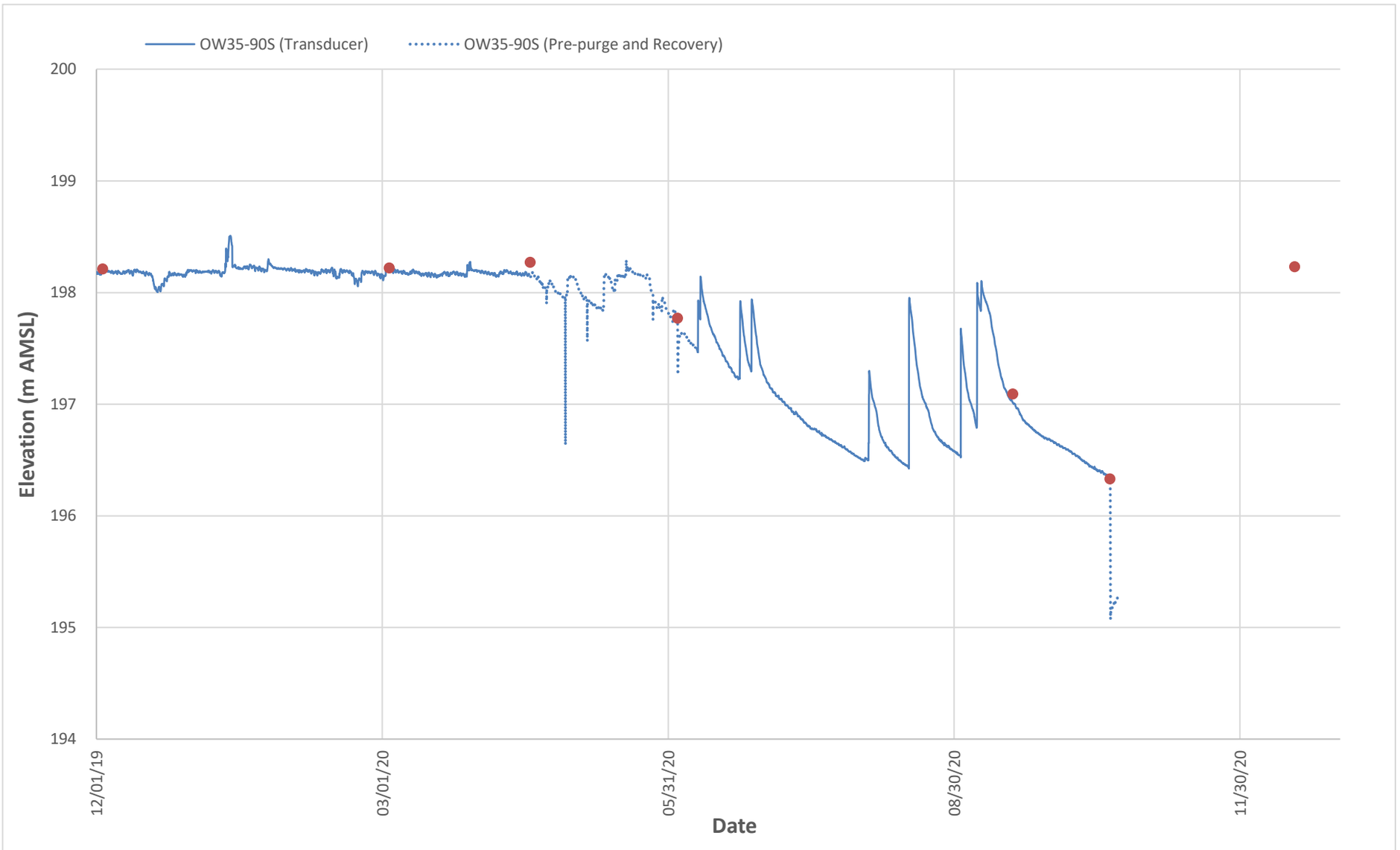
Table 6

Qualified Sample Data Due To Variability in Field Duplicate Results
Groundwater Sampling Events
Clean Harbors Canada Inc.
Sarnia, Ontario
June and December 2020

Lab Report #	Parameter	Analyte	Diff	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
20T609989	Anion	Fluoride	>1xRL	GW-44985-060220-DD-32II	0.13 UJ	GW-44985-060220-DD-32II-98	1.1 J	mg/L

Notes:
Diff - Difference (i.e., >1X RL for waters)
RL - Reporting limit
UJ - Not detected; associated reporting limit is estimated
J - Estimated concentration

Appendix B
Transducer Hydrographs



Notes:

● Manual Water Level

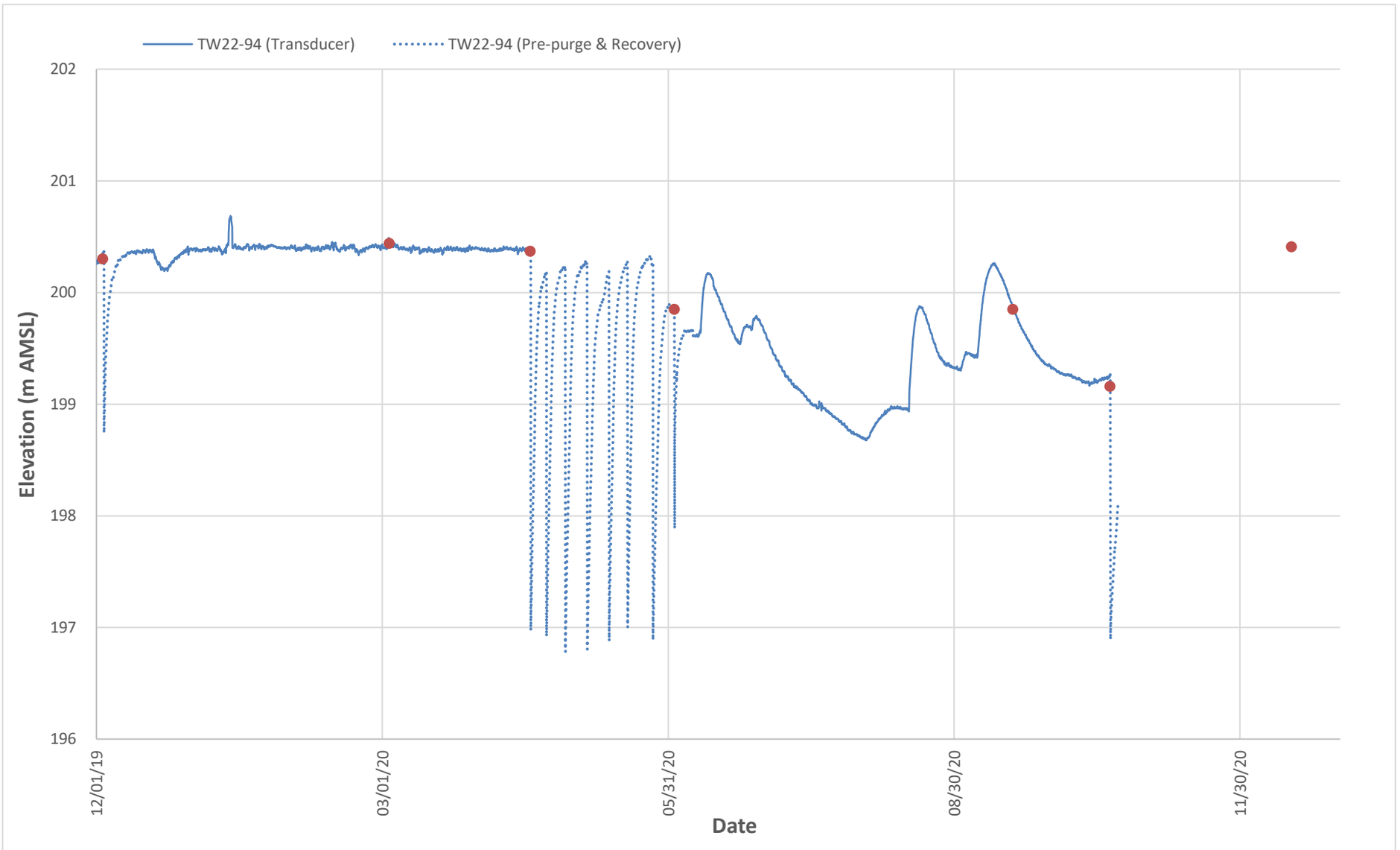
Figure B-1

ACTIVE AQUITARD HYDROGRAPH - OW35-90S

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

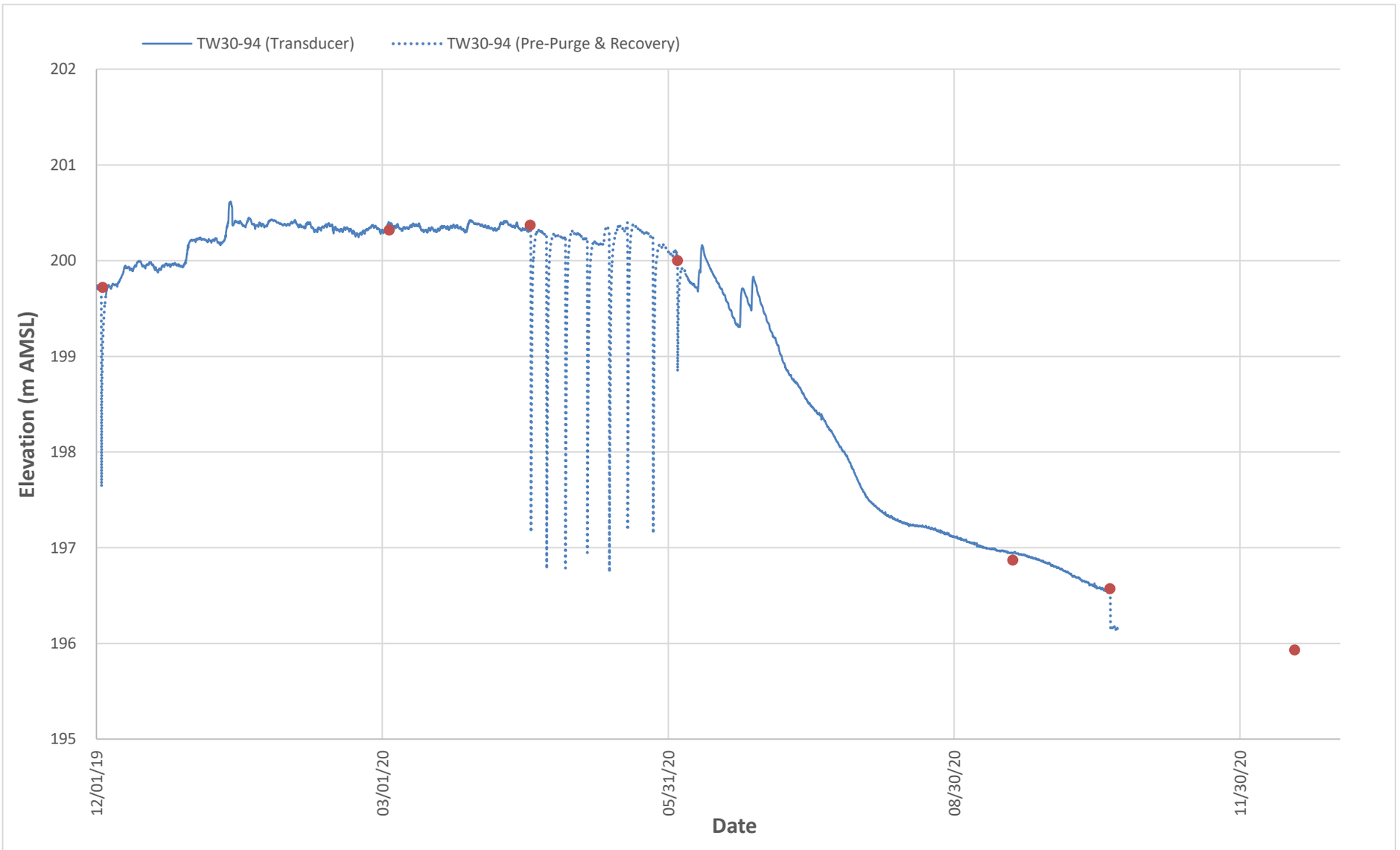
Figure B-2

ACTIVE AQUITARD HYDROGRAPH - TW22-94

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

Manual Water Level

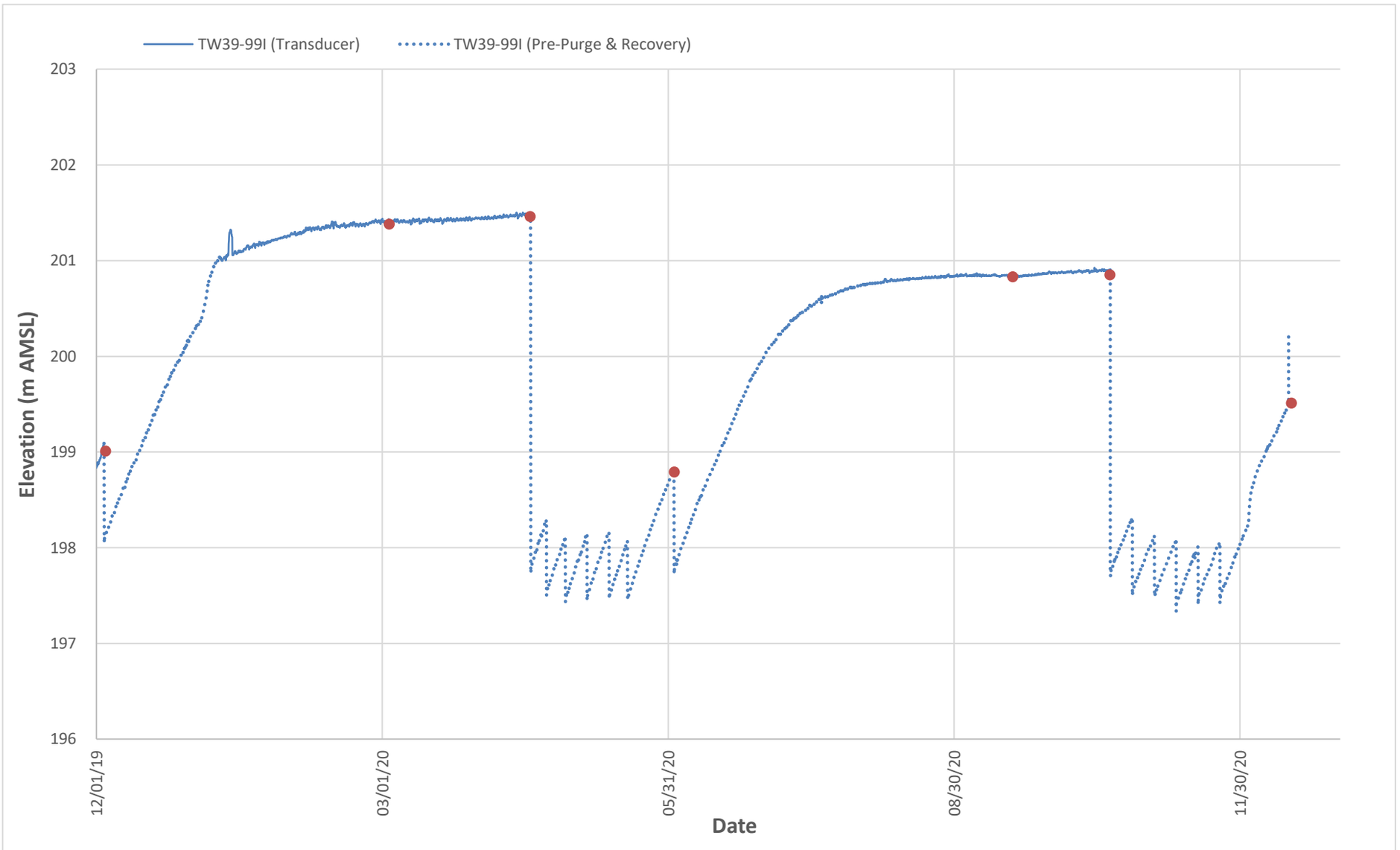
Figure B-3

ACTIVE AQUITARD HYDROGRAPH - TW30-94

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

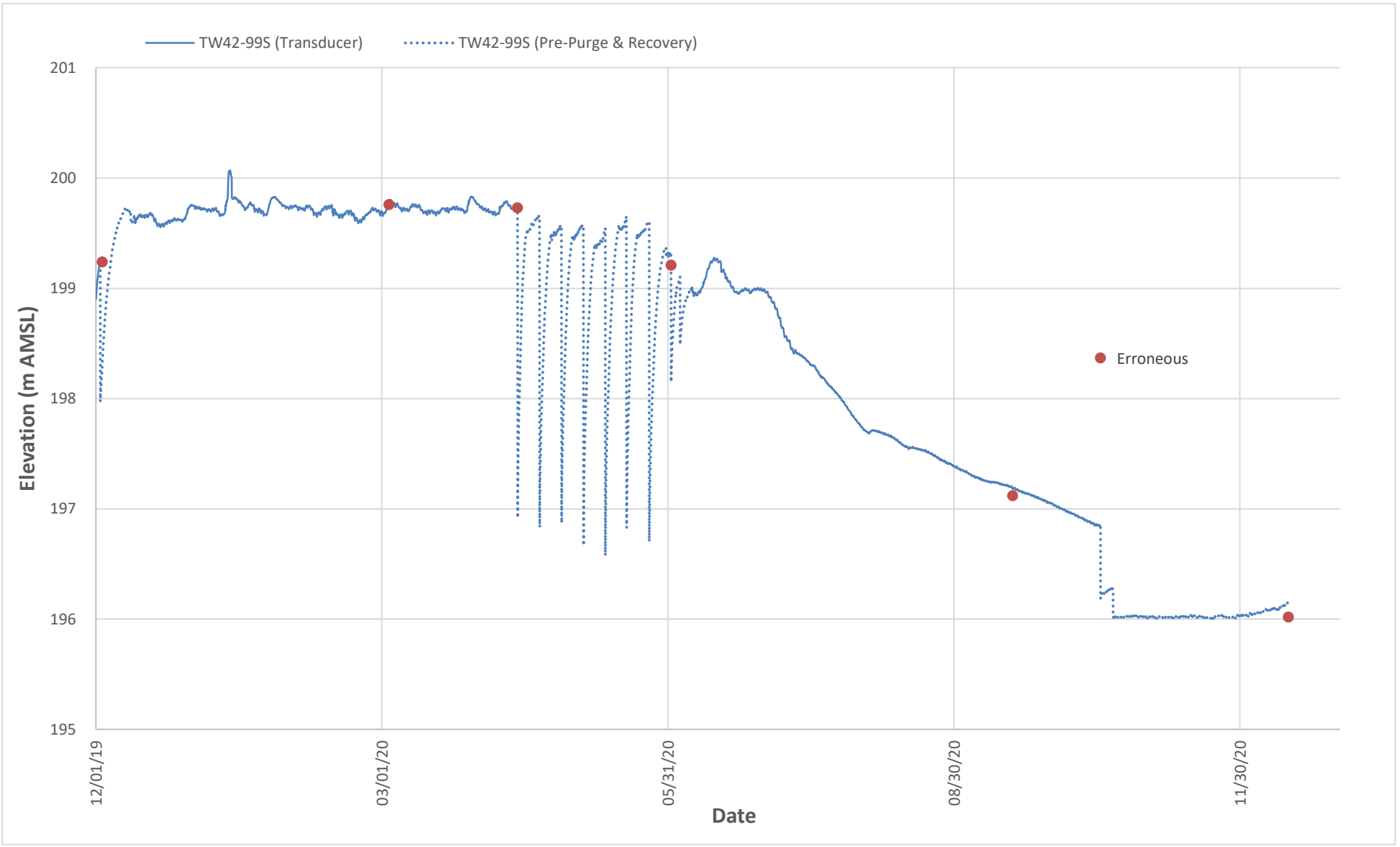
Figure B-4

ACTIVE AQUITARD HYDROGRAPH - TW39-99I

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

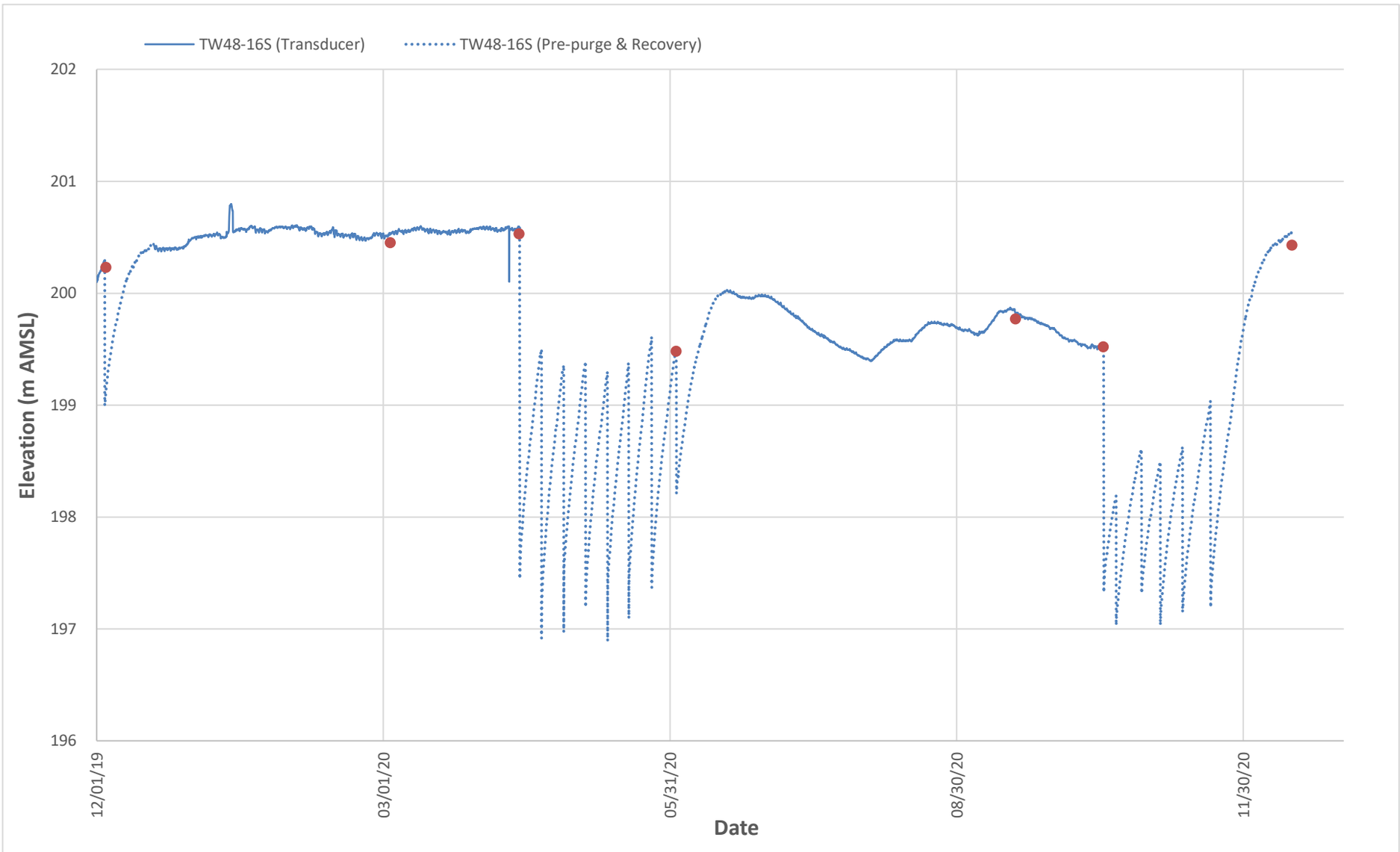
Figure B-5

ACTIVE AQUITARD HYDROGRAPH - TW42-99S

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

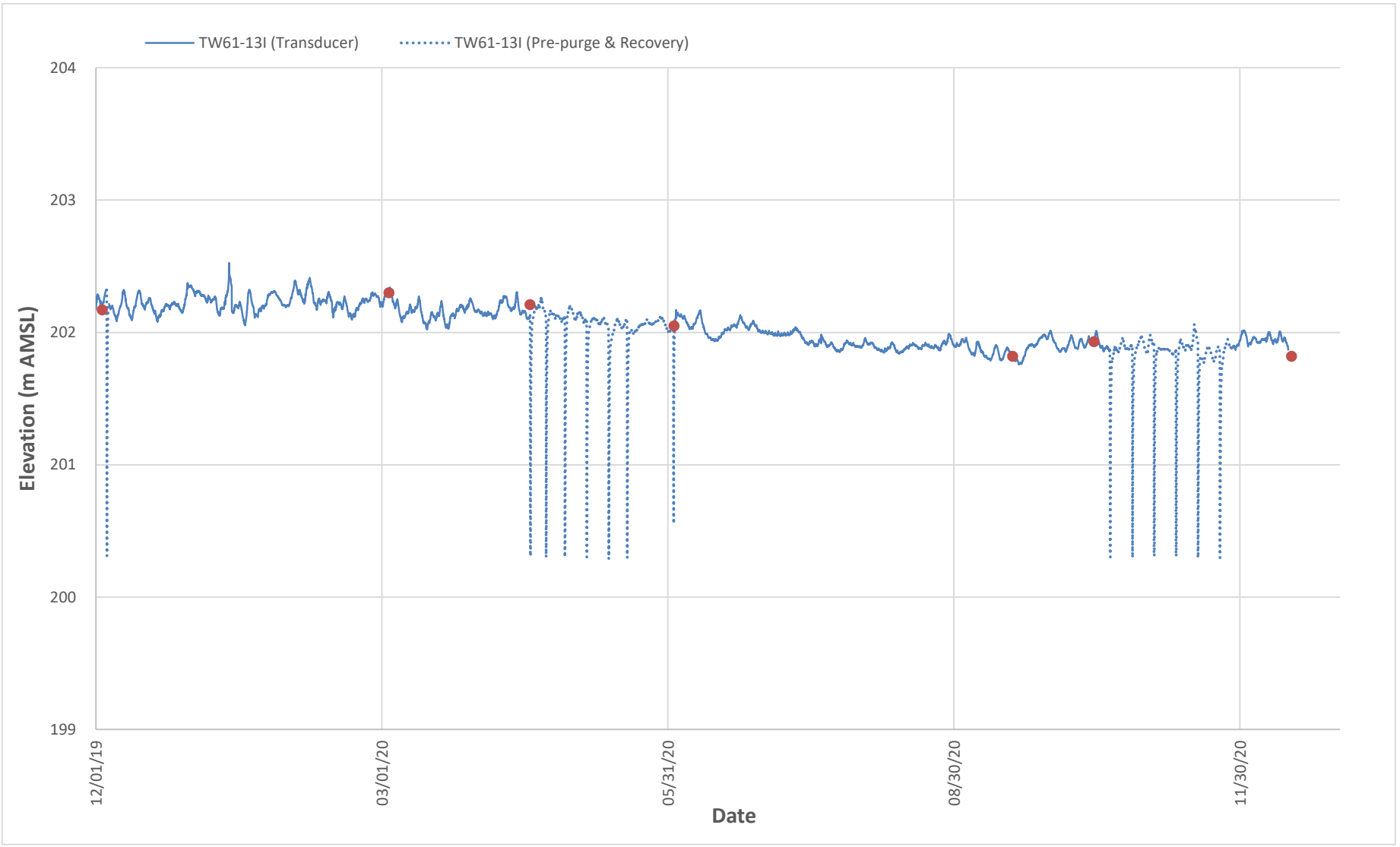
Figure B-6

ACTIVE AQUITARD HYDROGRAPH - TW48-16S

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

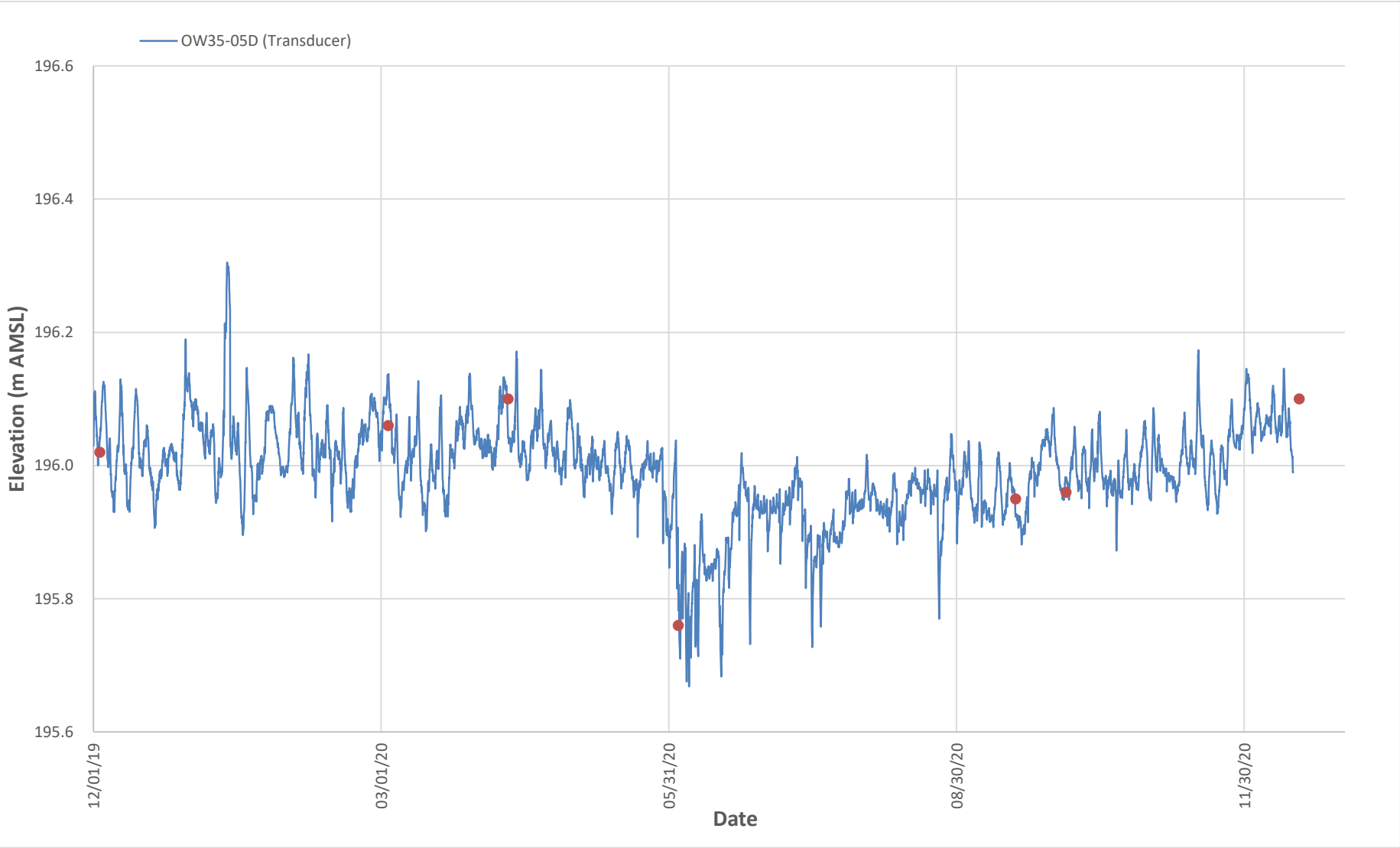
Figure B-7

ACTIVE AQUITARD HYDROGRAPH - TW61-13I

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

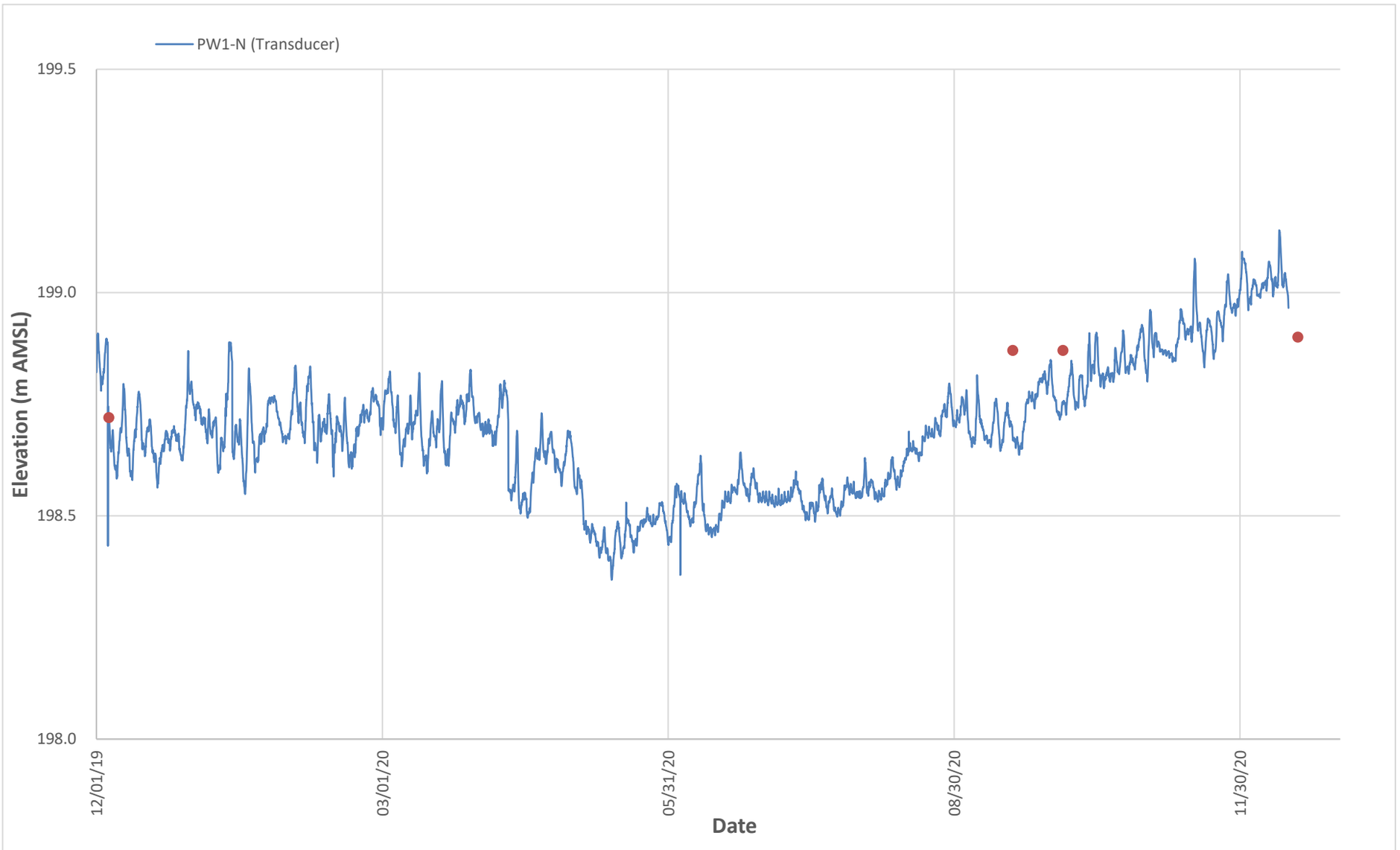
Figure B-8

INTERFACE AQUIFER HYDROGRAPH - OW35-05D

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

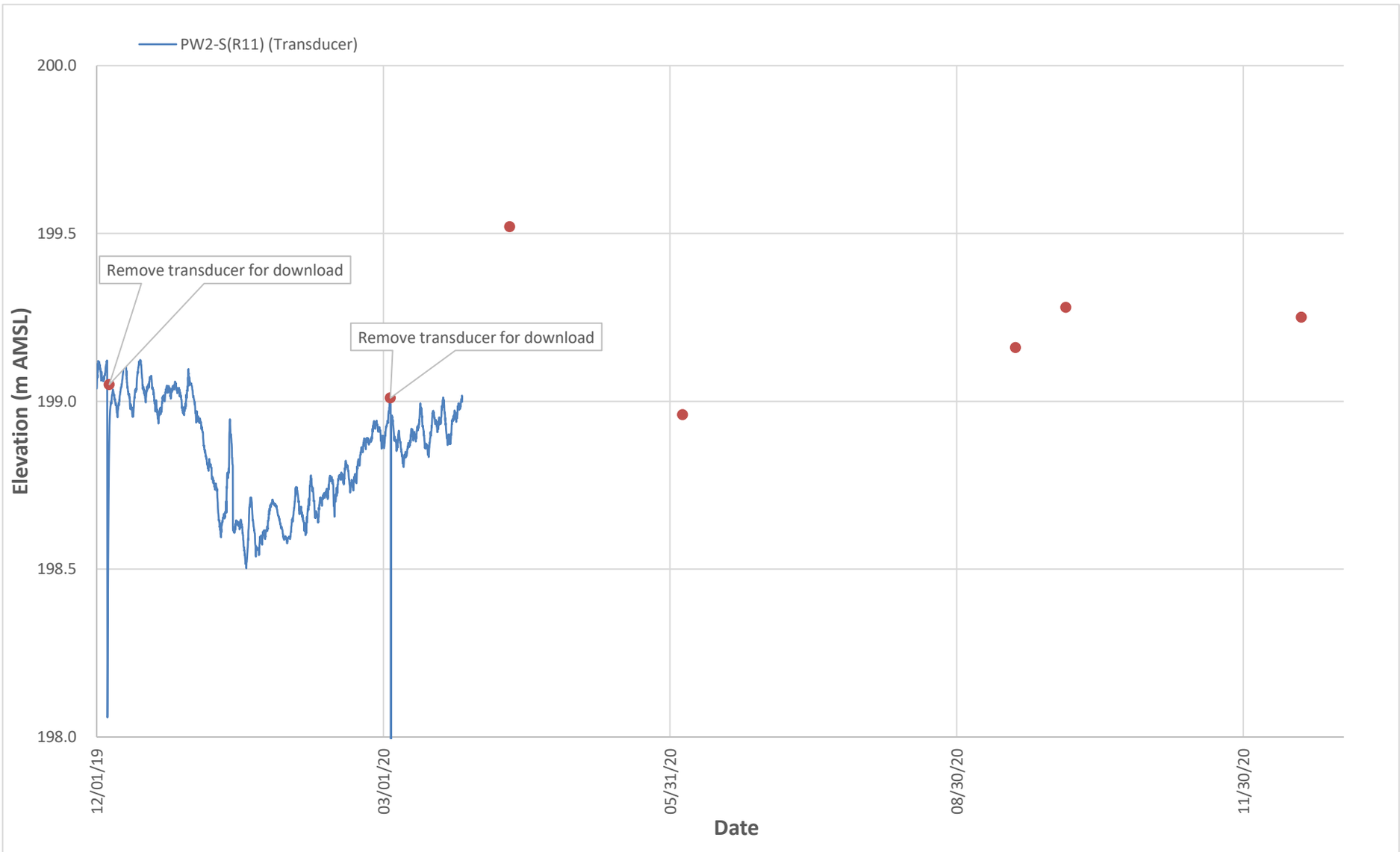
Figure B-9

INTERFACE AQUIFER HYDROGRAPH - PW1-N

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility

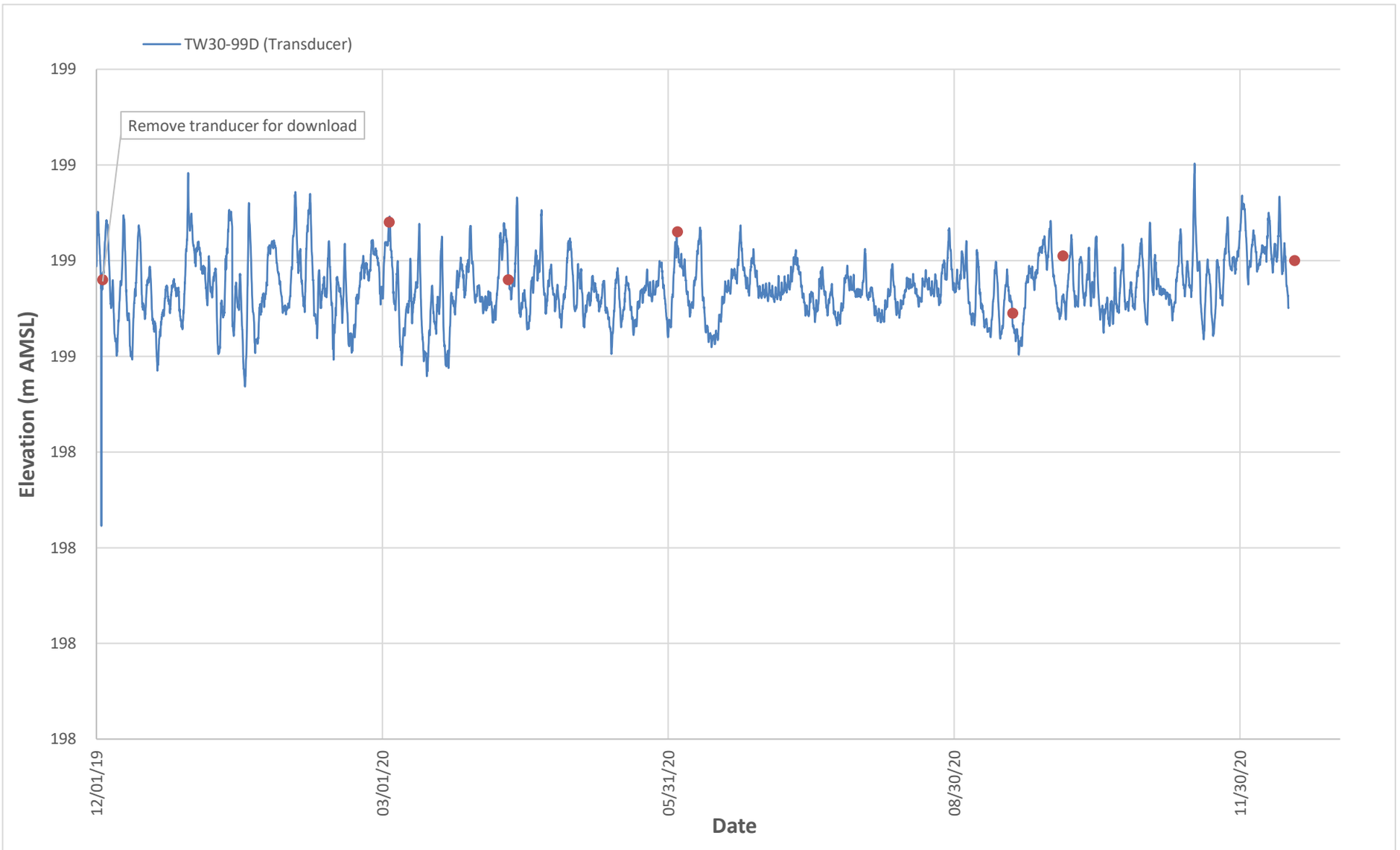


Notes:

Manual Water Level

Figure B-10

INTERFACE AQUIFER HYDROGRAPH - PW2-S(R11)
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

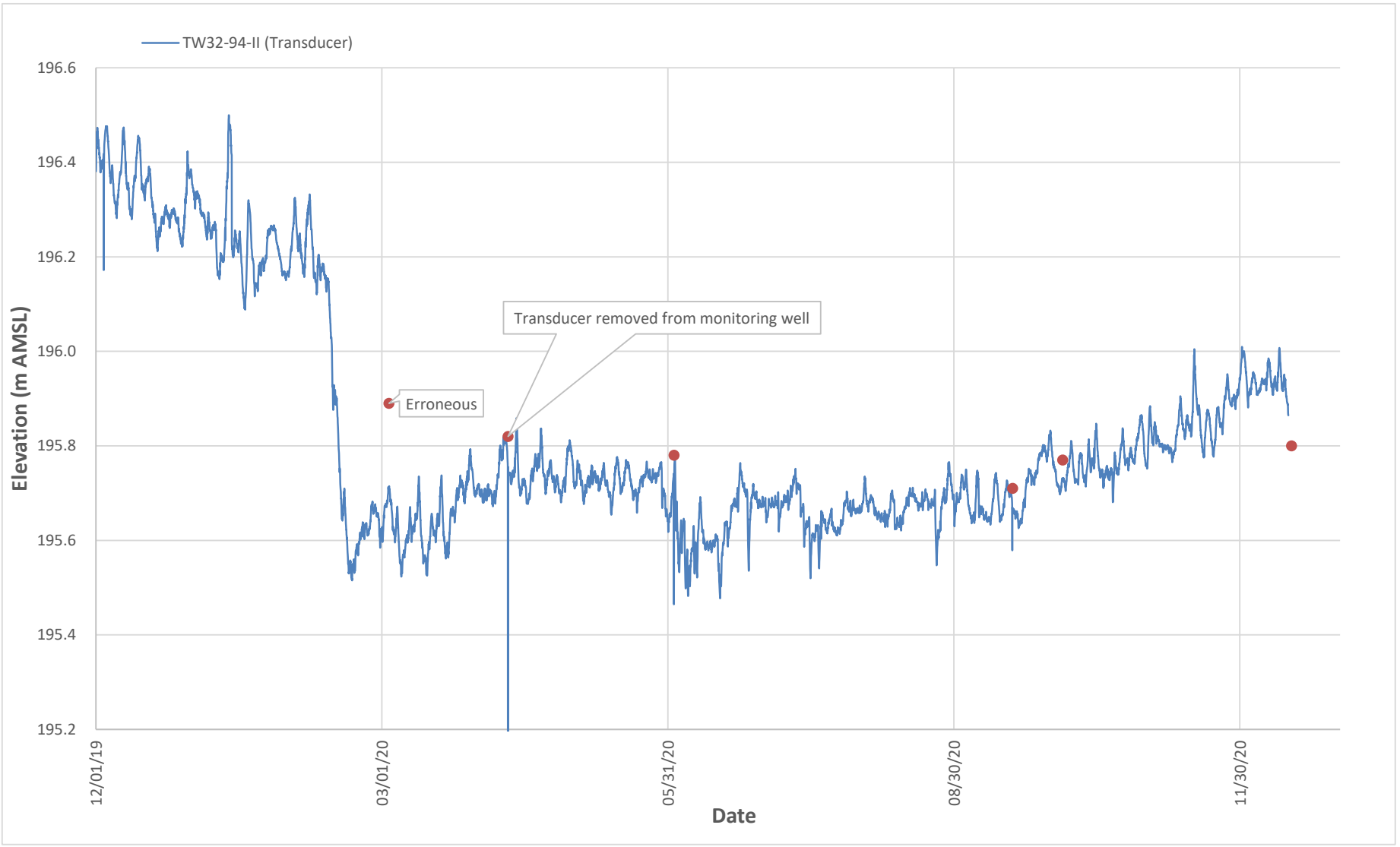


Notes:

● Manual Water Level

Figure B-11

INTERFACE AQUIFER HYDROGRAPH - TW30-99D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

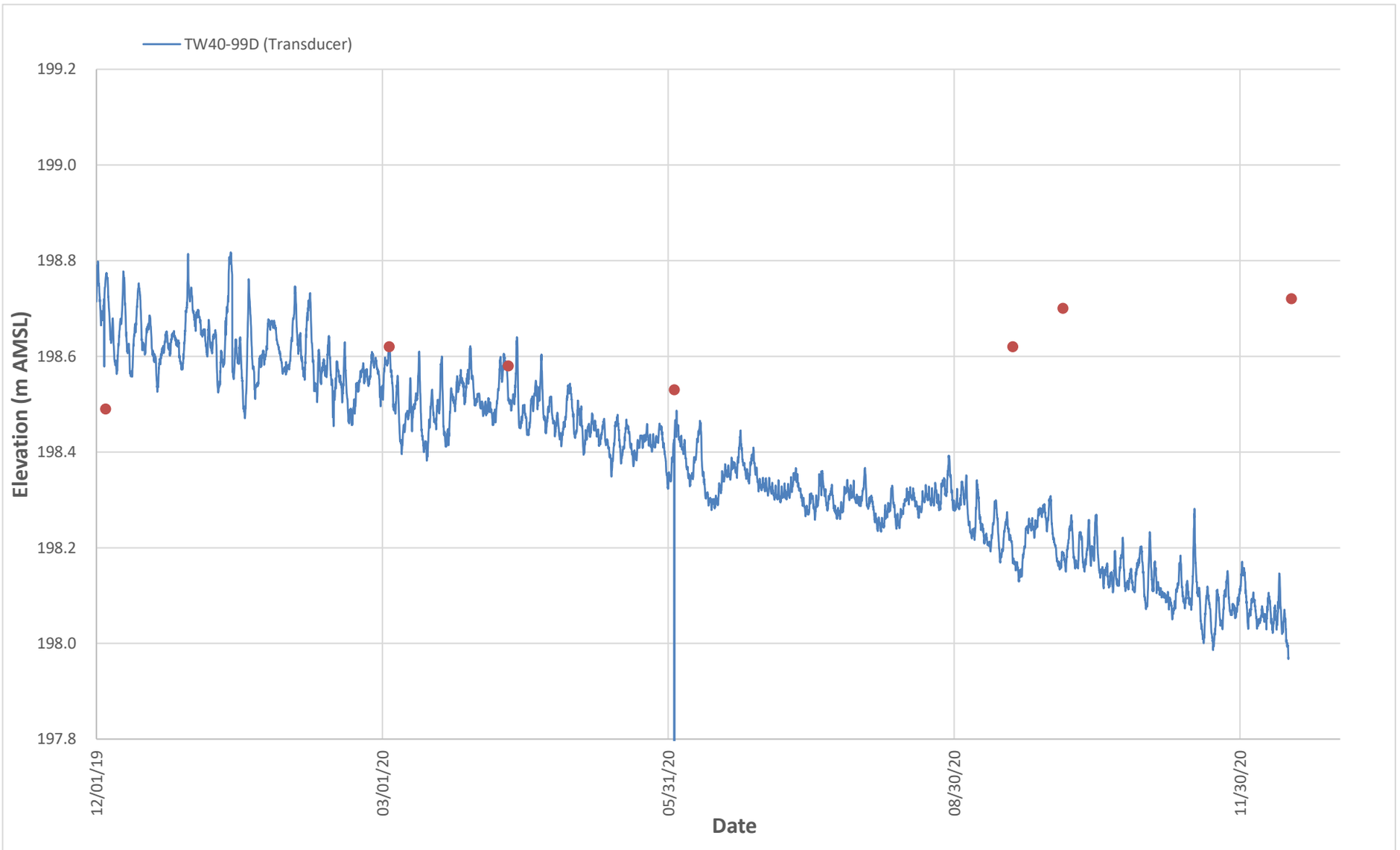


Notes:

● Manual Water Level

Figure B-12

INTERFACE AQUIFER HYDROGRAPH - TW32-94-II
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes: Suspect tranducer sensor driftor malfunction beginning at approximately October 2019.

● Manual Water Level

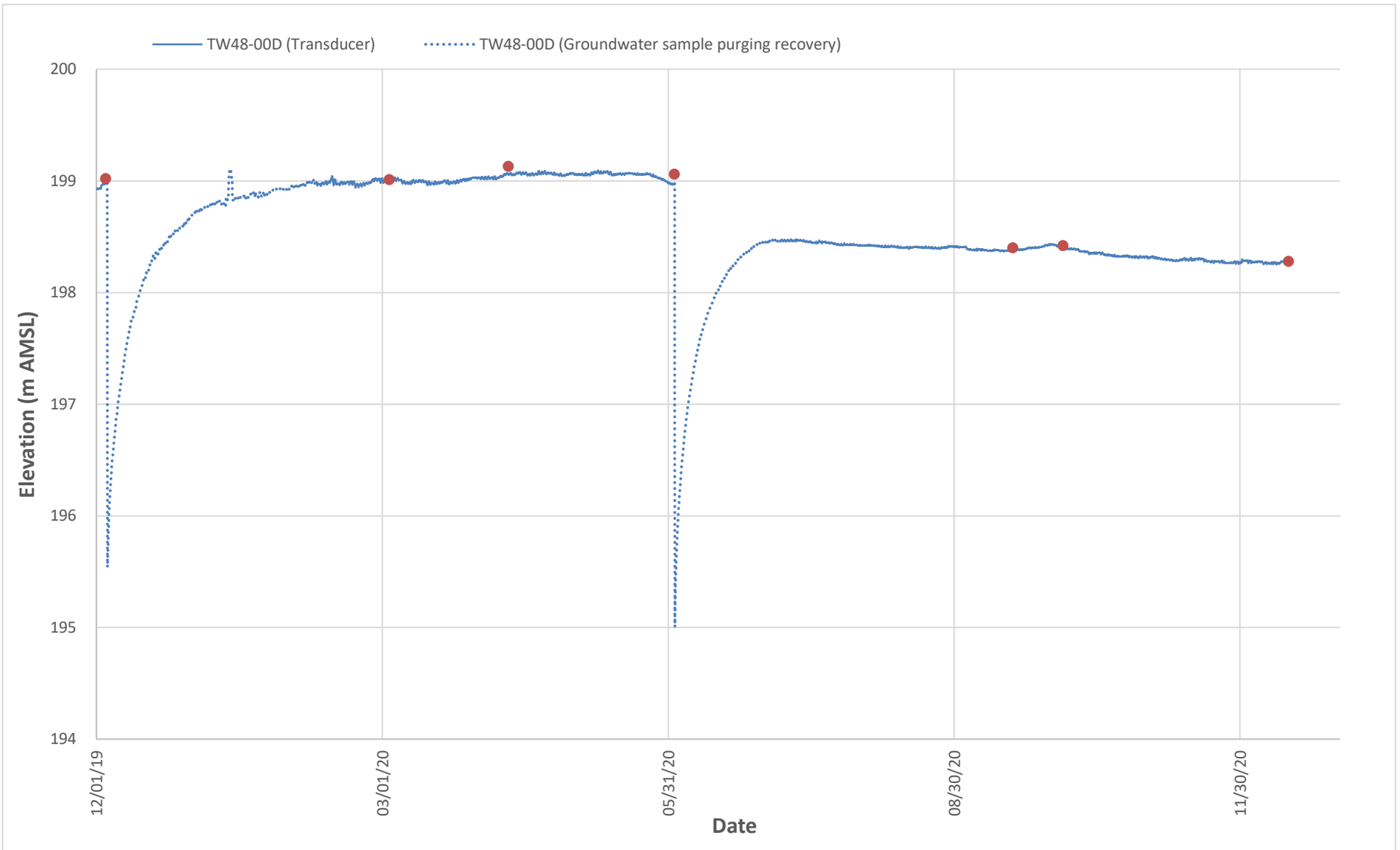
Figure B-13

INTERFACE AQUIFER HYDROGRAPH - TW40-99D

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility

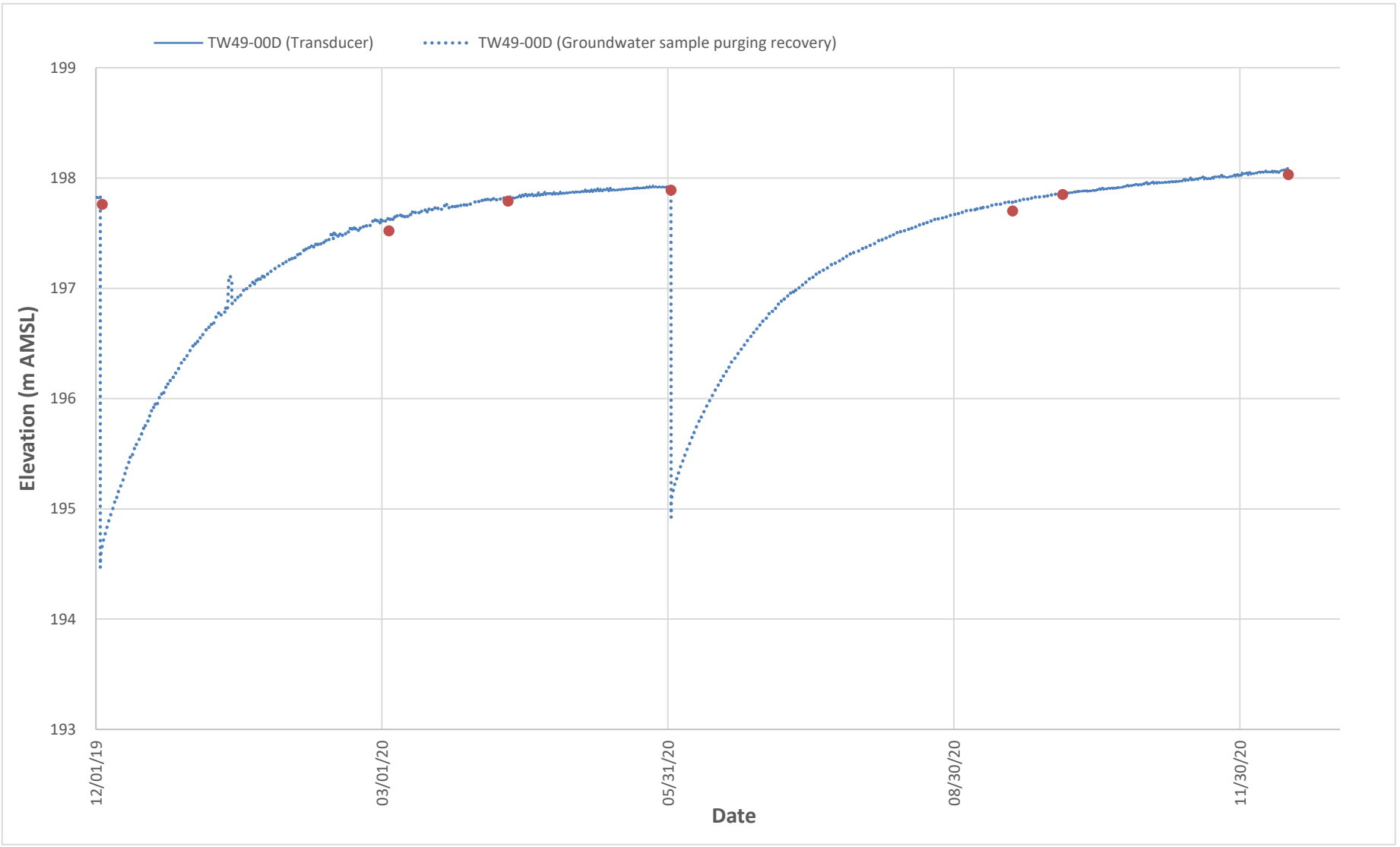


Notes:

● Manual Water Level

Figure B-14

INTERFACE AQUIFER HYDROGRAPH - TW48-00D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

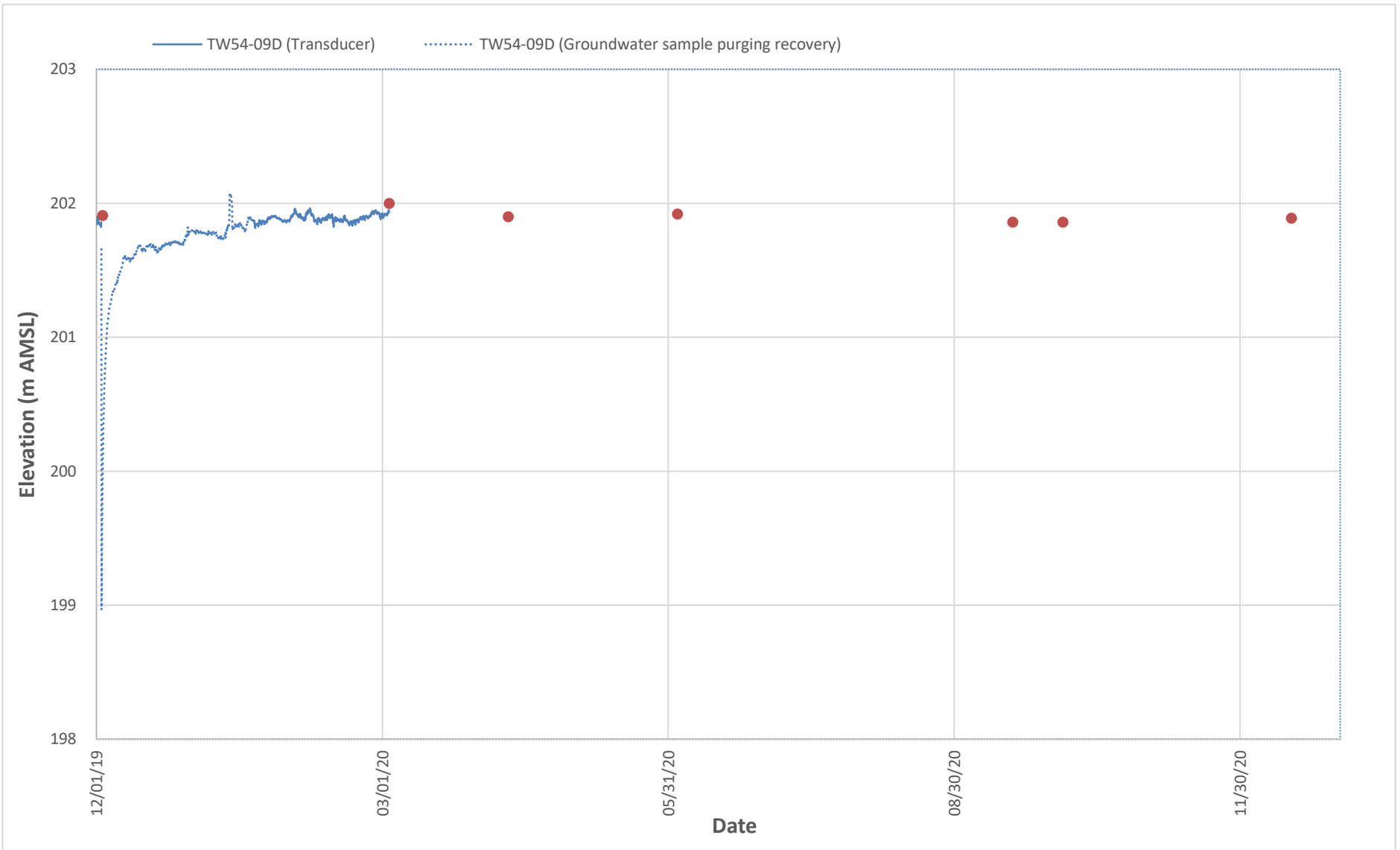


Notes:

● Manual Water Level

Figure B-15

INTERFACE AQUIFER HYDROGRAPH - TW49-00D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

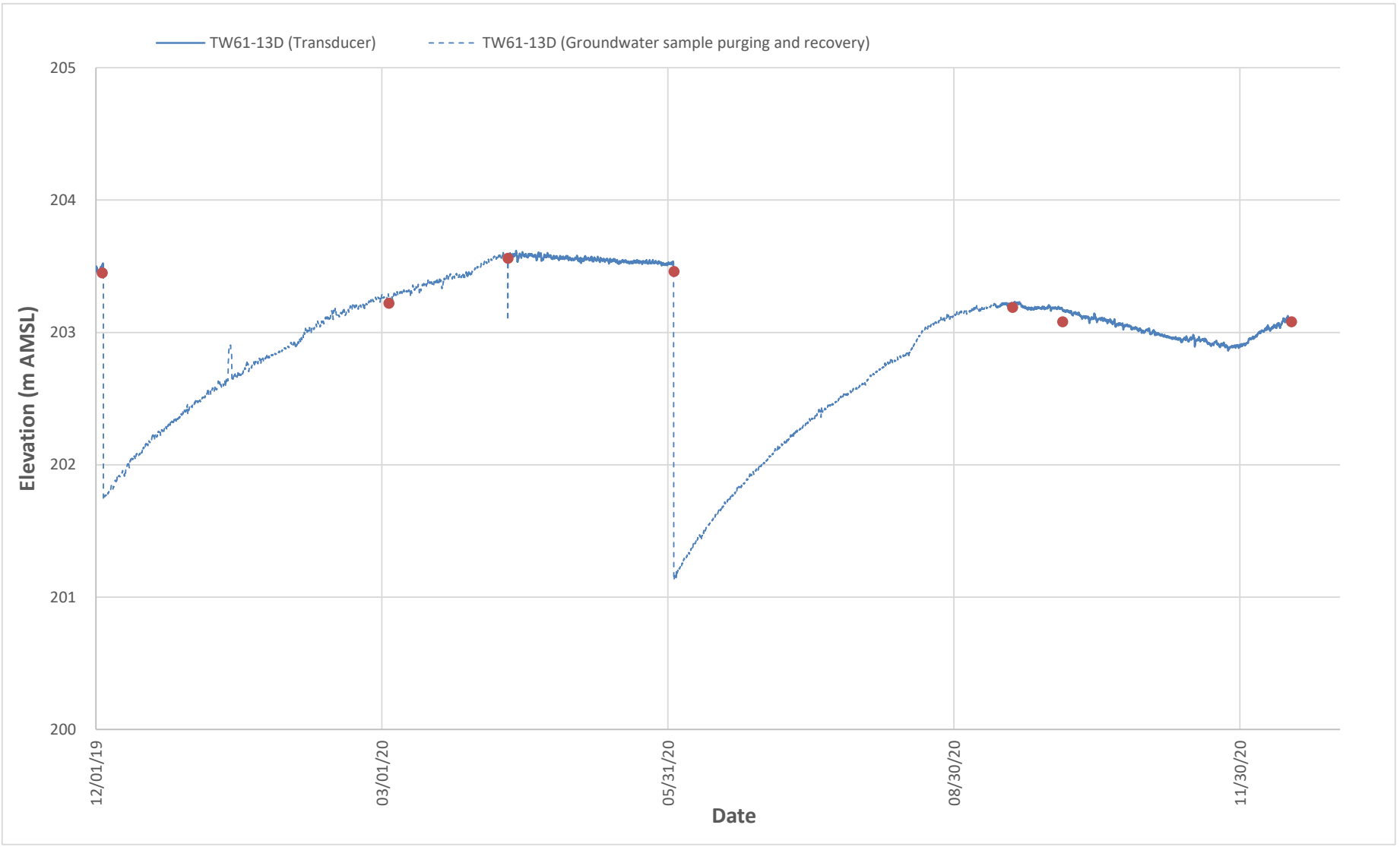


Notes:

● Manual Water Level

Figure B-16

INTERFACE AQUIFER HYDROGRAPH - TW54-09D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

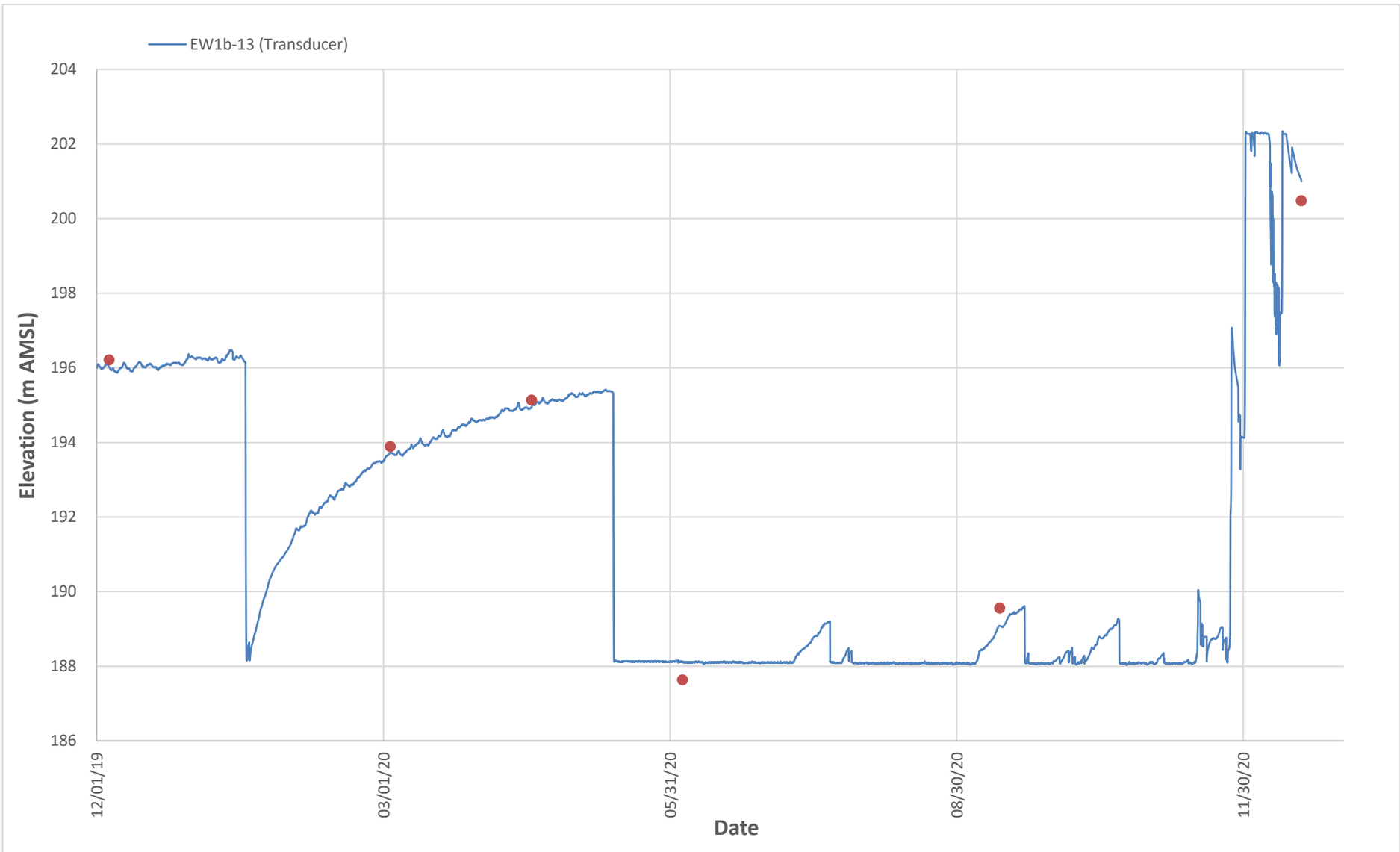


Notes:

● Manual Water Level

Figure B-17

INTERFACE AQUIFER HYDROGRAPH - TW61-13D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility

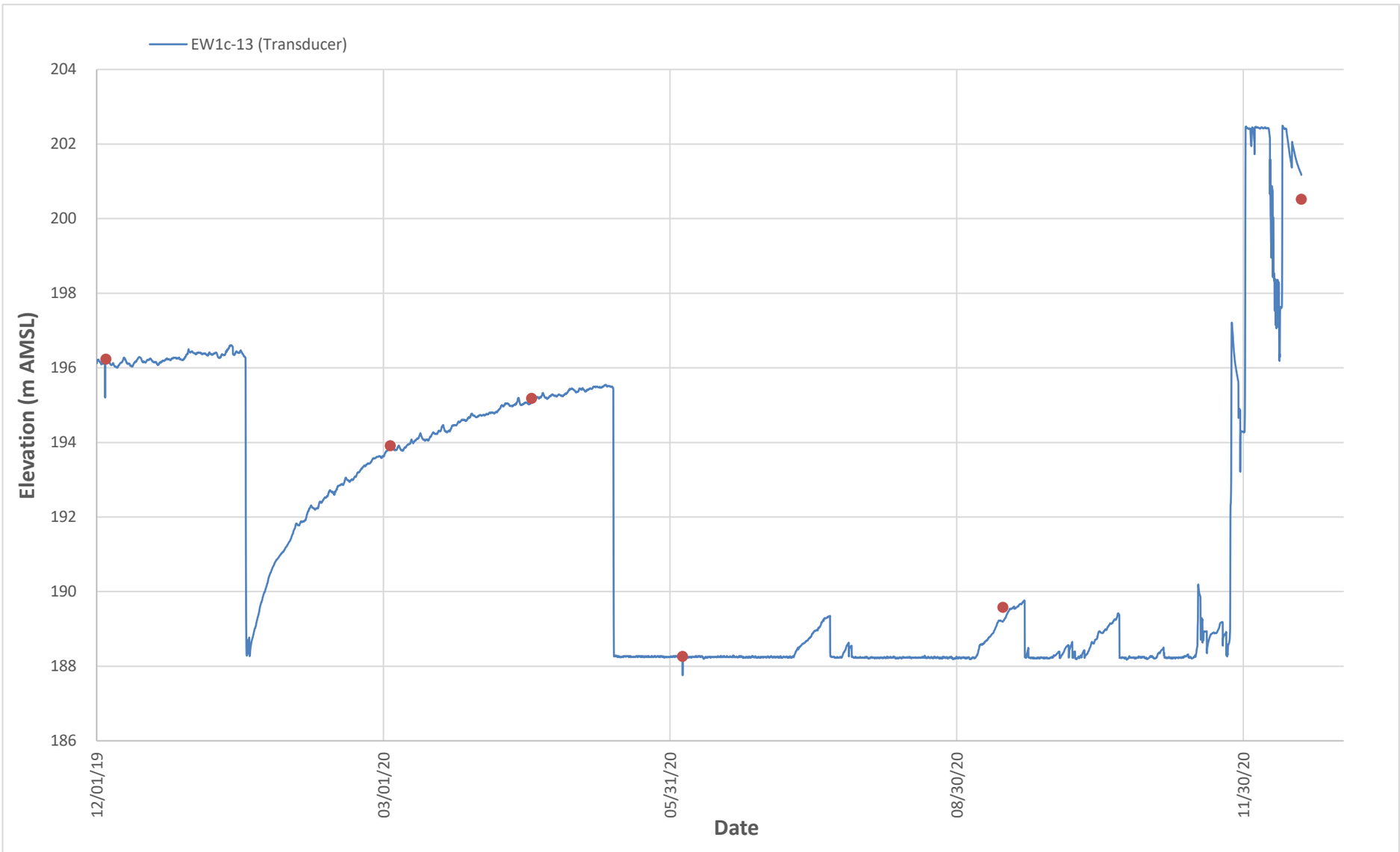


Notes:

● Manual Water Level

Figure B-18

SUB-CELL 3 HYDRAULIC CONTROL LAYER HYDROGRAPH - EW1b-13
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes:

● Manual Water Level

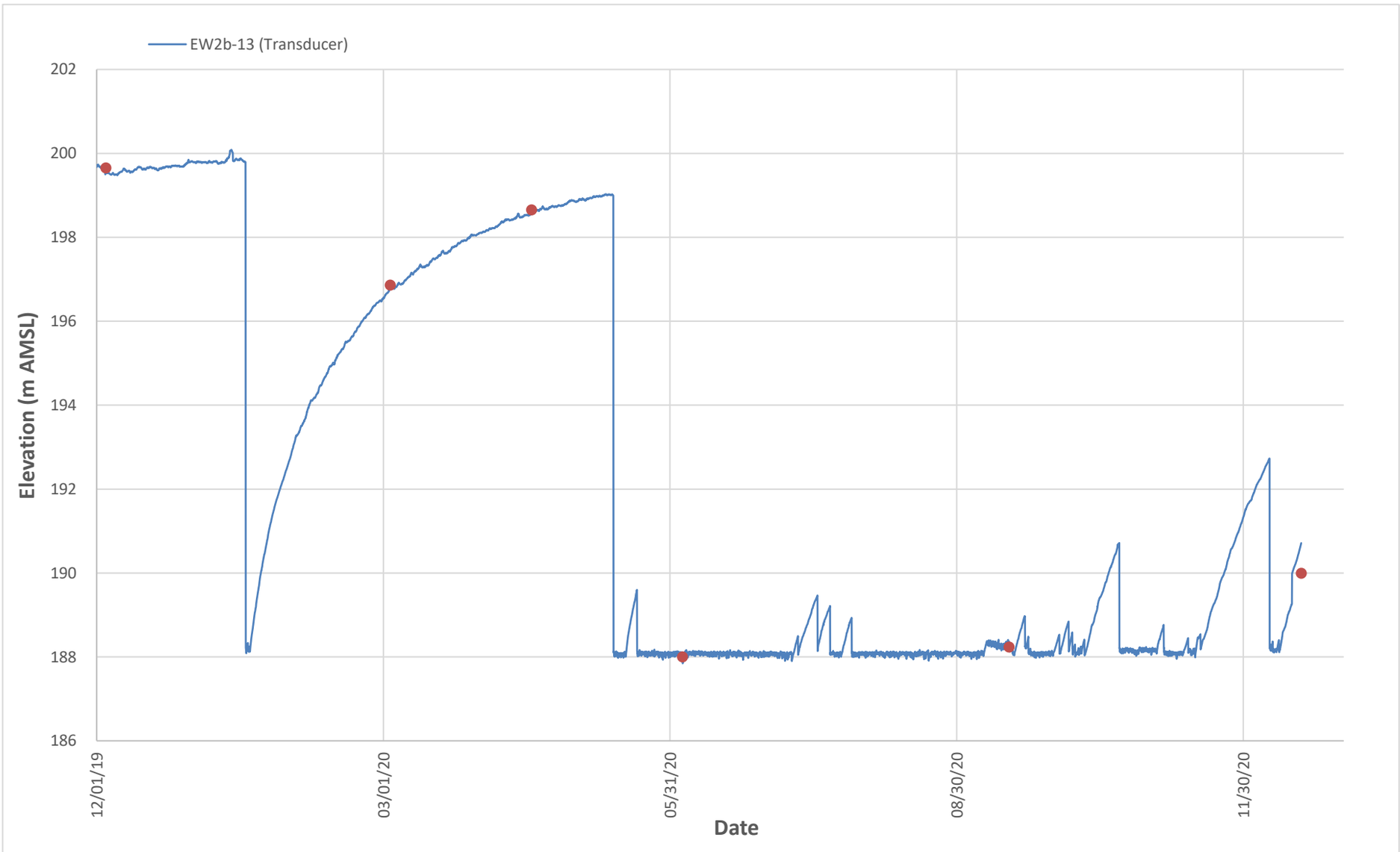
Figure B-19

SUB-CELL 3 HYDRAULIC CONTROL LAYER HYDROGRAPH - EW1c-13

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes:

● Manual Water Level

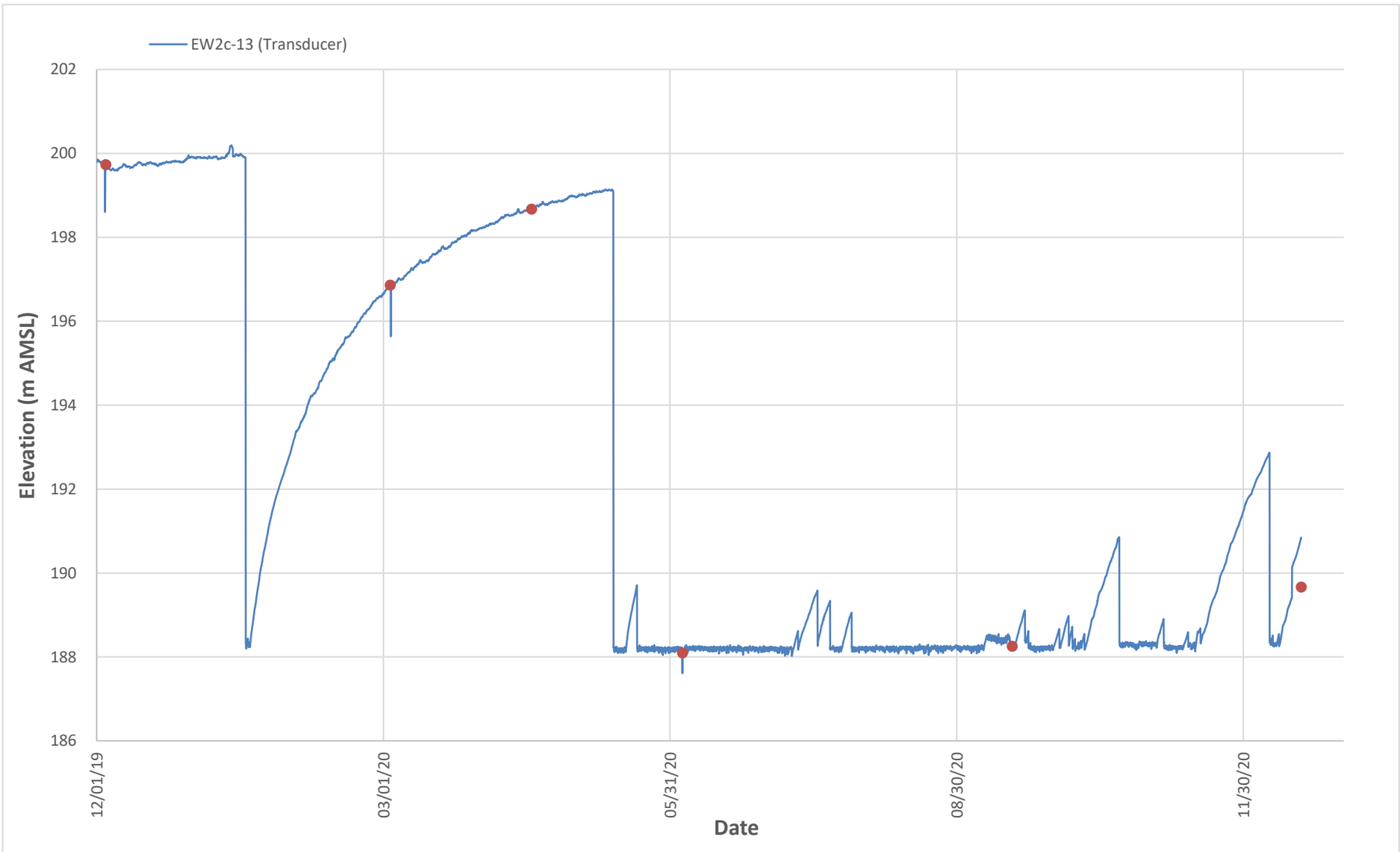
Figure B-20

SUB-CELL 3 HYDRAULIC CONTROL LAYER HYDROGRAPH - EW2b-13

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility

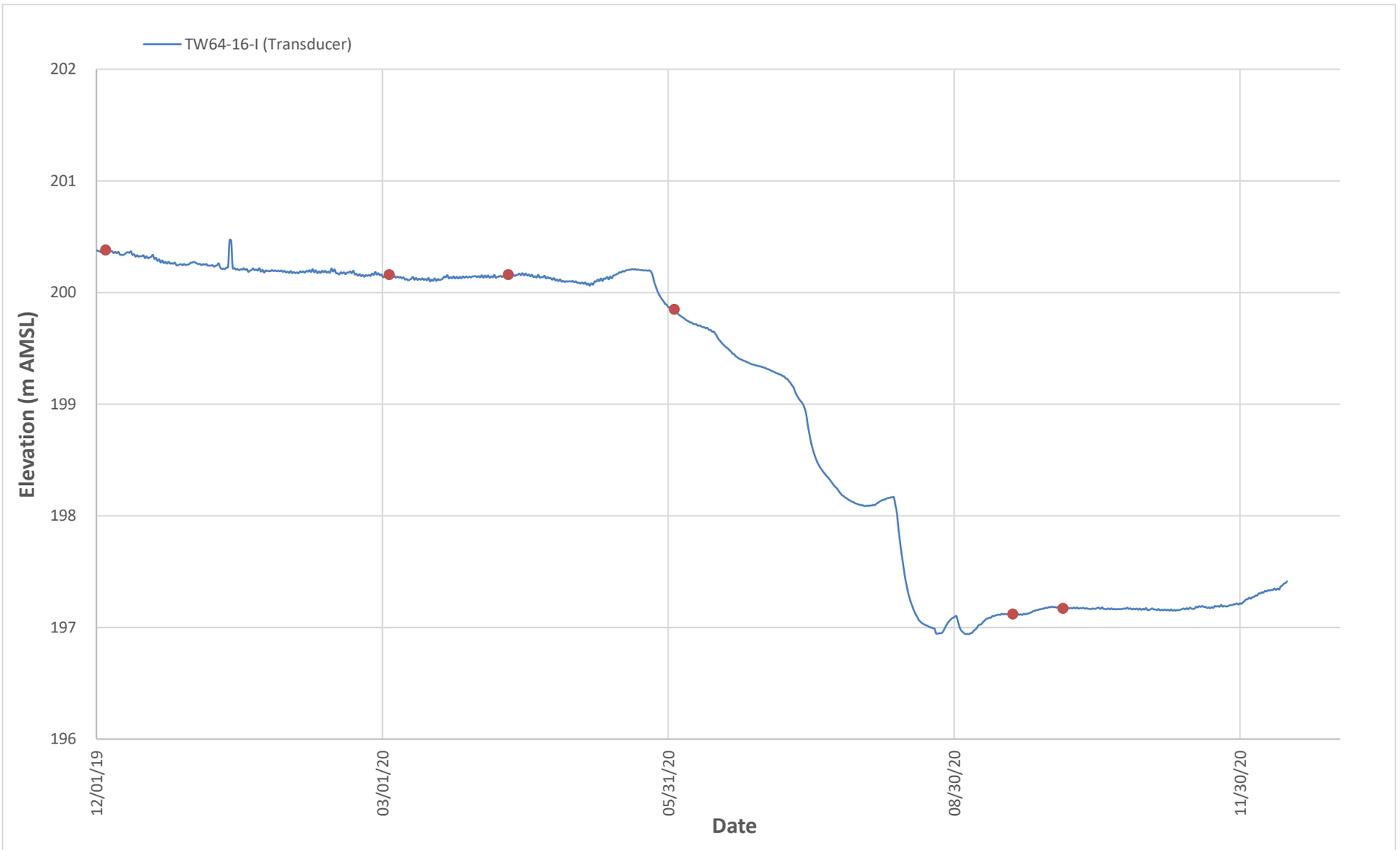


Notes:

Manual Water Level

Figure B-21

SUB-CELL 3 HYDRAULIC CONTROL LAYER HYDROGRAPH - EW2c-13
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes: ● Manual Water Level

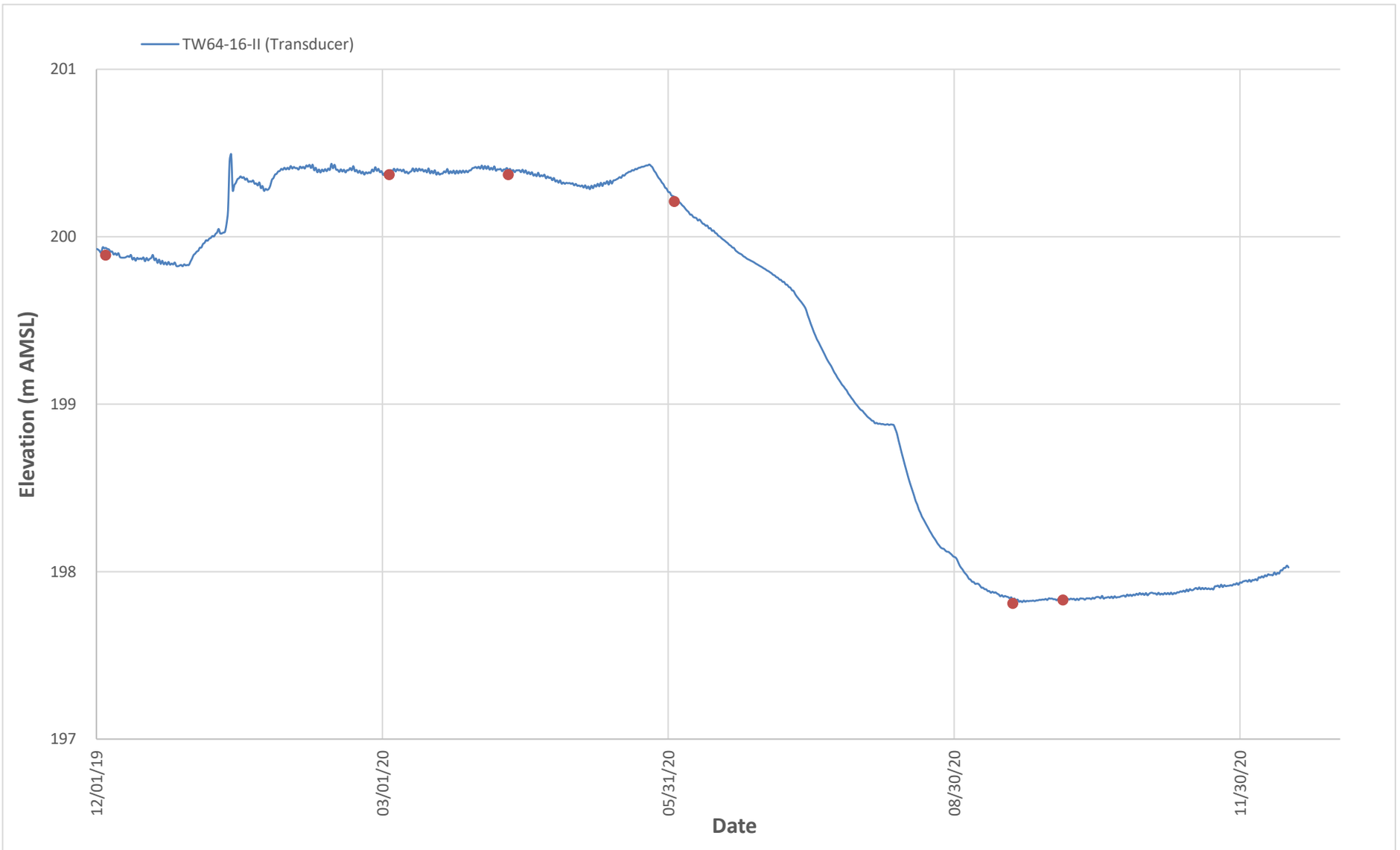
Figure B-22

SOUTHWEST BERM TRANSECT INACTIVE AQUITARD HYDROGRAPH - TW64-16-I

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

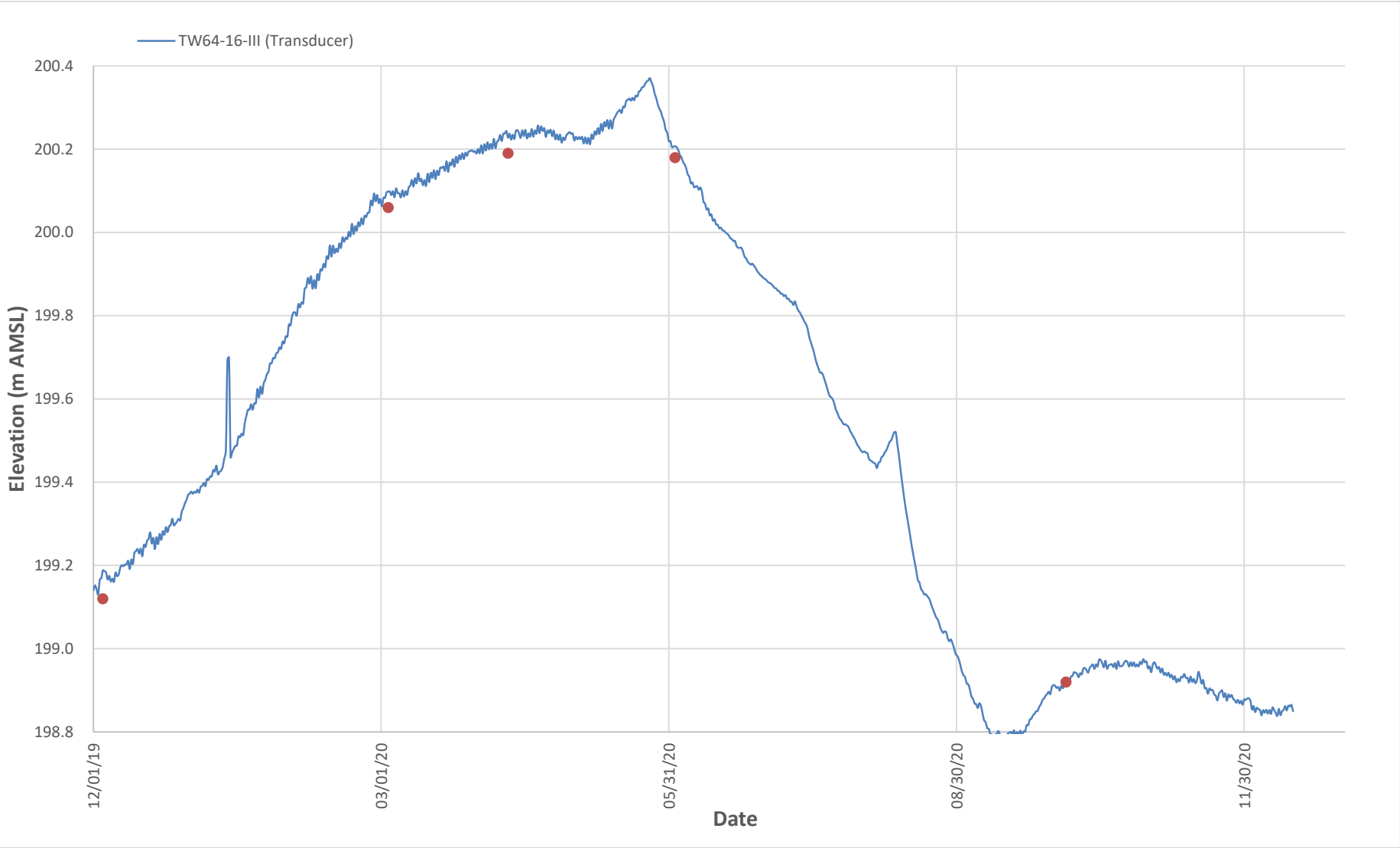
Lambton Facility



Notes: ● Manual Water Level

Figure B-23

SOUTHWEST BERM TRANSECT INACTIVE AQUITARD HYDROGRAPH - TW64-16-II
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes: ● Manual Water Level

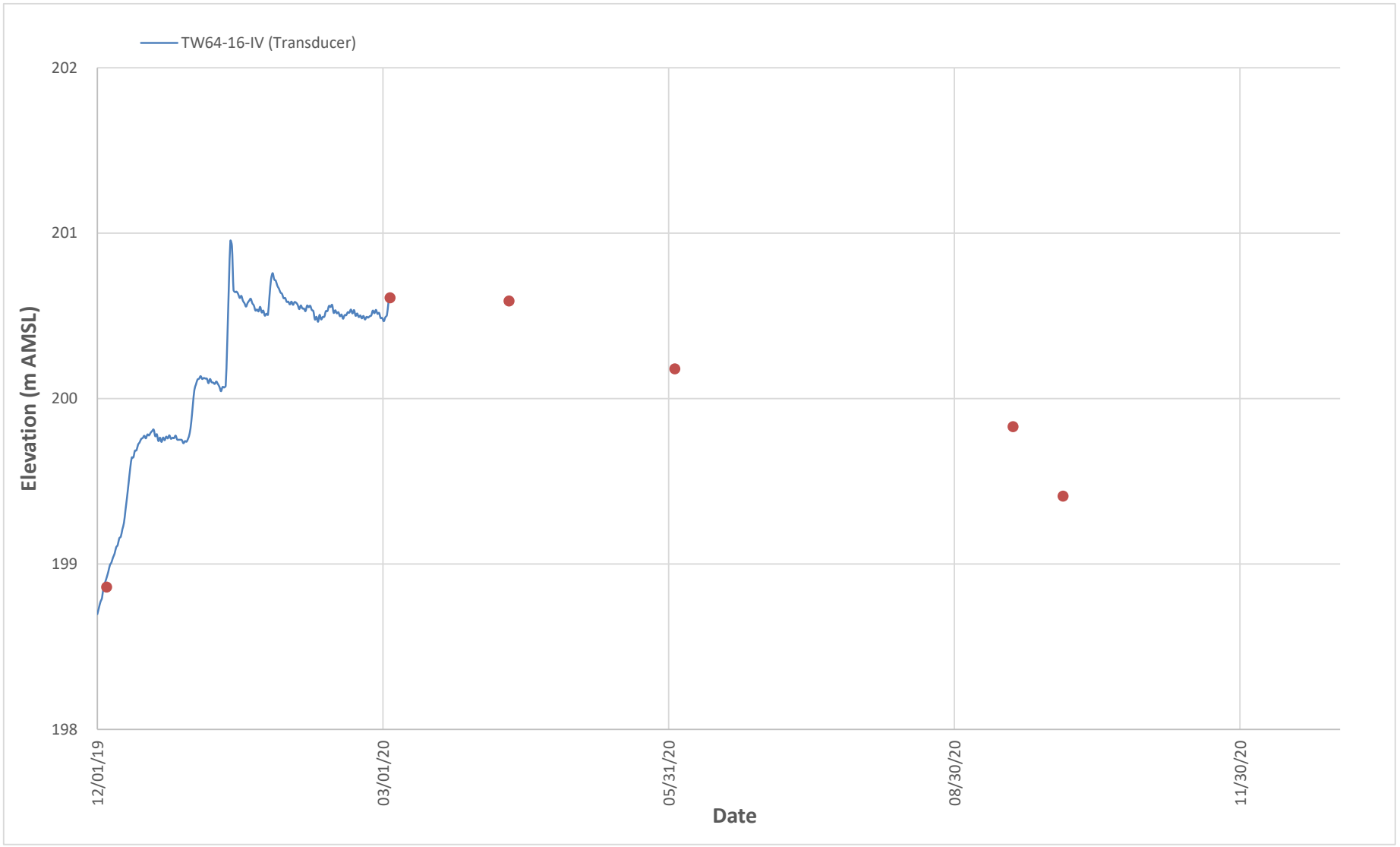
Figure B-24

SOUTHWEST BERM TRANSECT TRANSITION ZONE HYDROGRAPH - TW64-16-III

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes: Manual Water Level

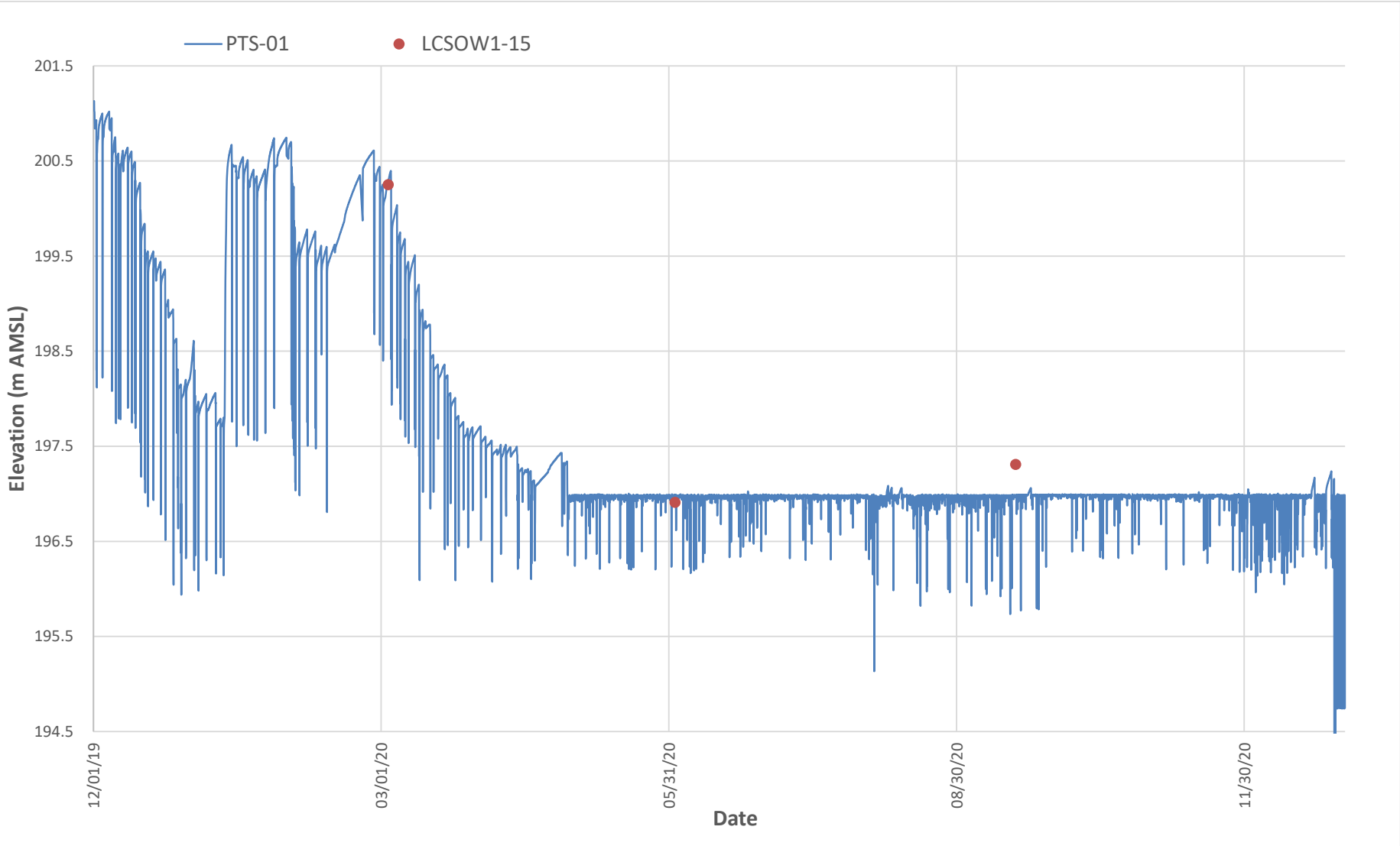
Figure B-25

SOUTHWEST BERM TRANSECT ACTIVE AQUITARD HYDROGRAPH - TW64-16-IV

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

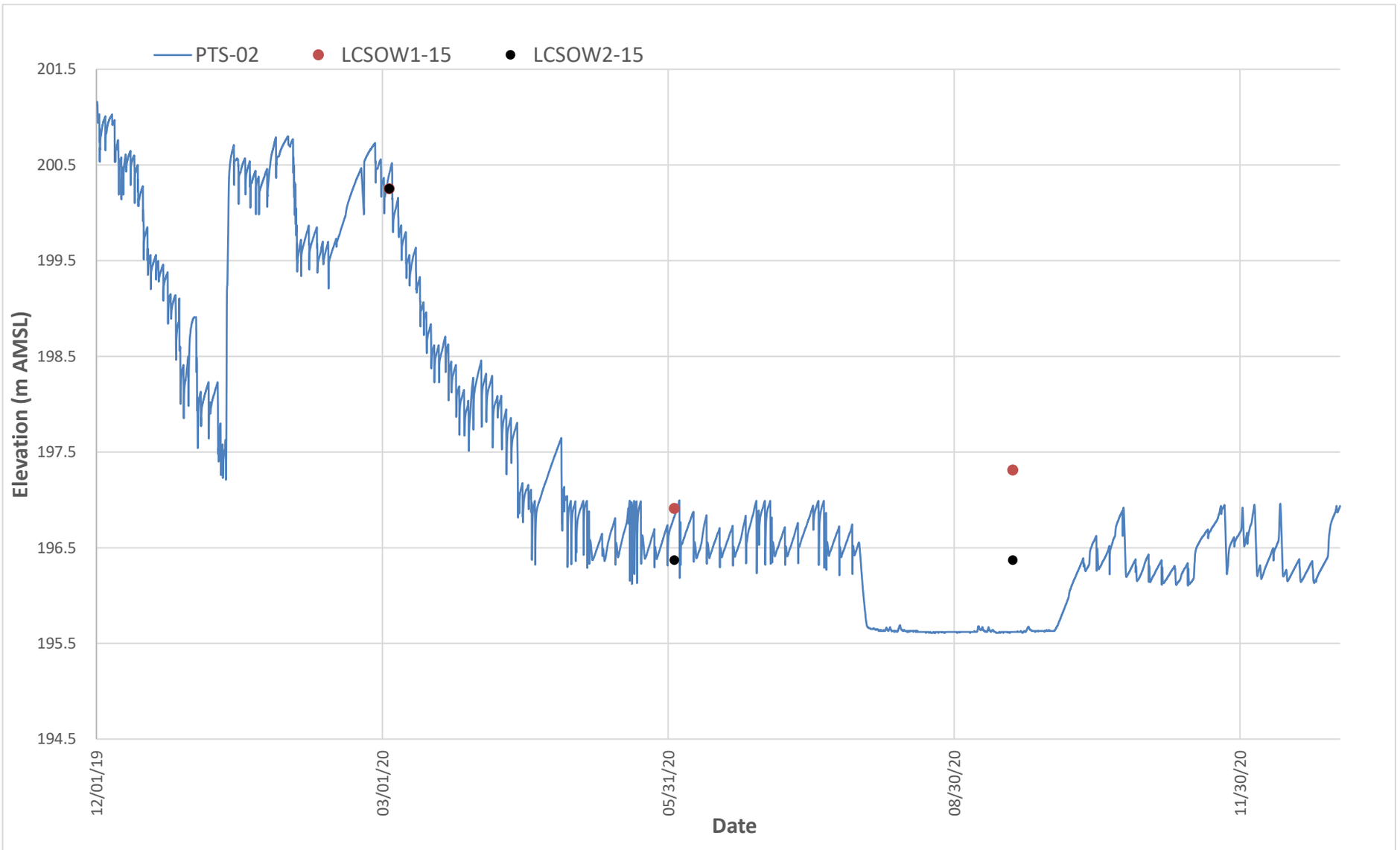
Lambton Facility



Notes: Manual Water Level

Figure B-26

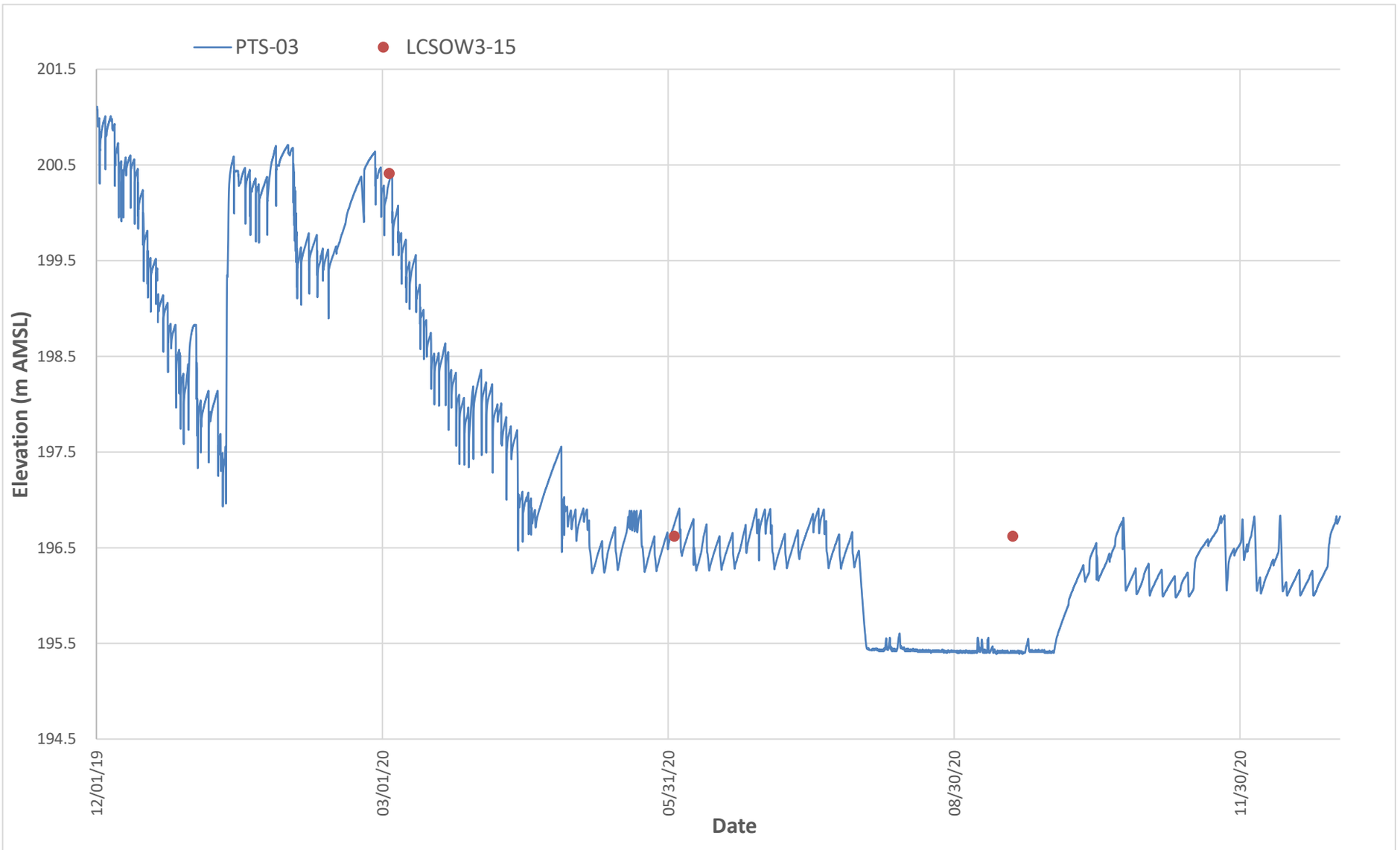
LEACHATE COLLECTION SYSTEM SUMP HYDROGRAPH - PTS-01
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes: Manual Water Level

Figure B-27

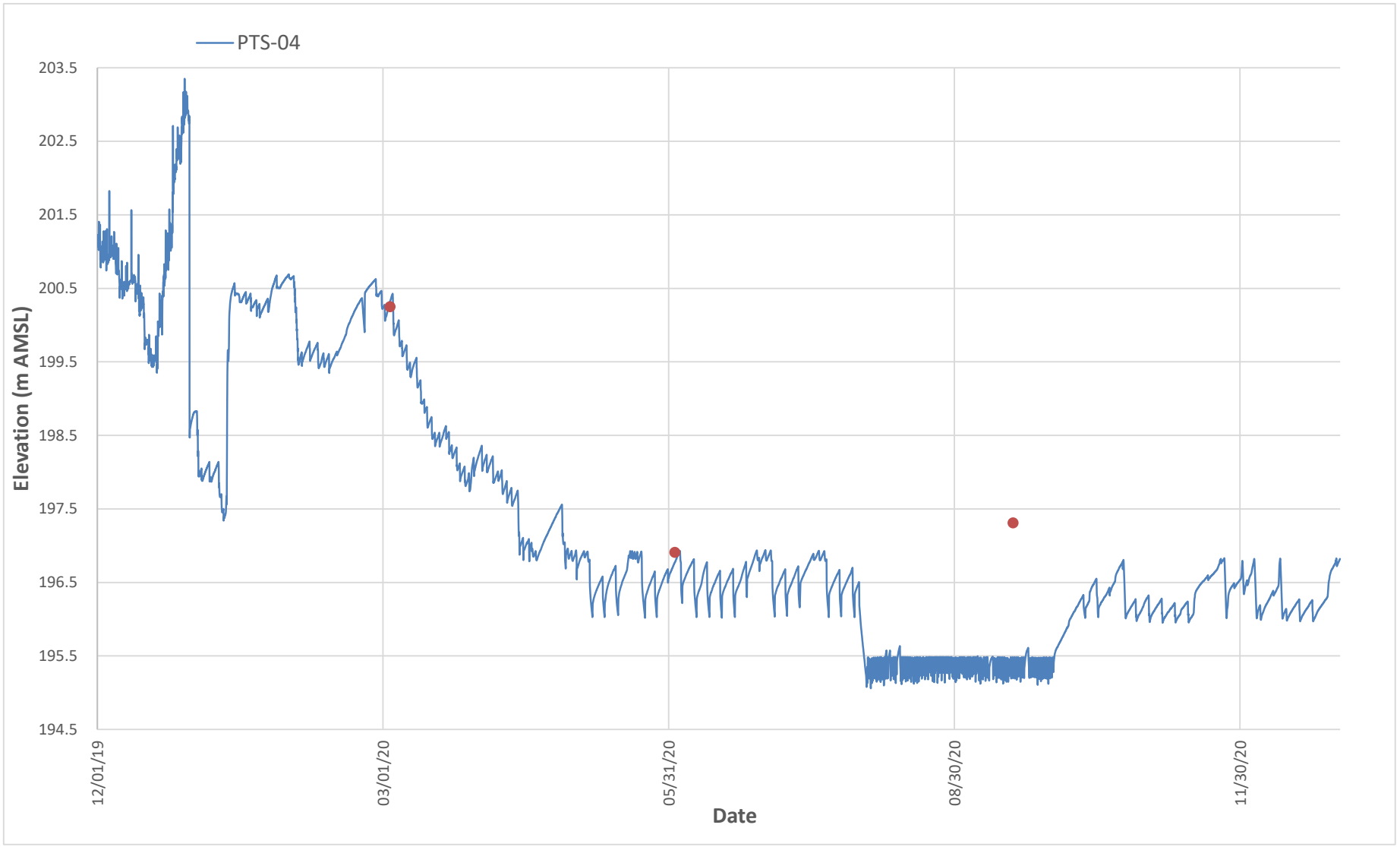
LEACHATE COLLECTION SYSTEM SUMP HYDROGRAPH - PTS-02
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes: Manual Water Level

Figure B-28

LEACHATE COLLECTION SYSTEM SUMP HYDROGRAPH - PTS-03
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.
Lambton Facility



Notes: ● Manual Water Level

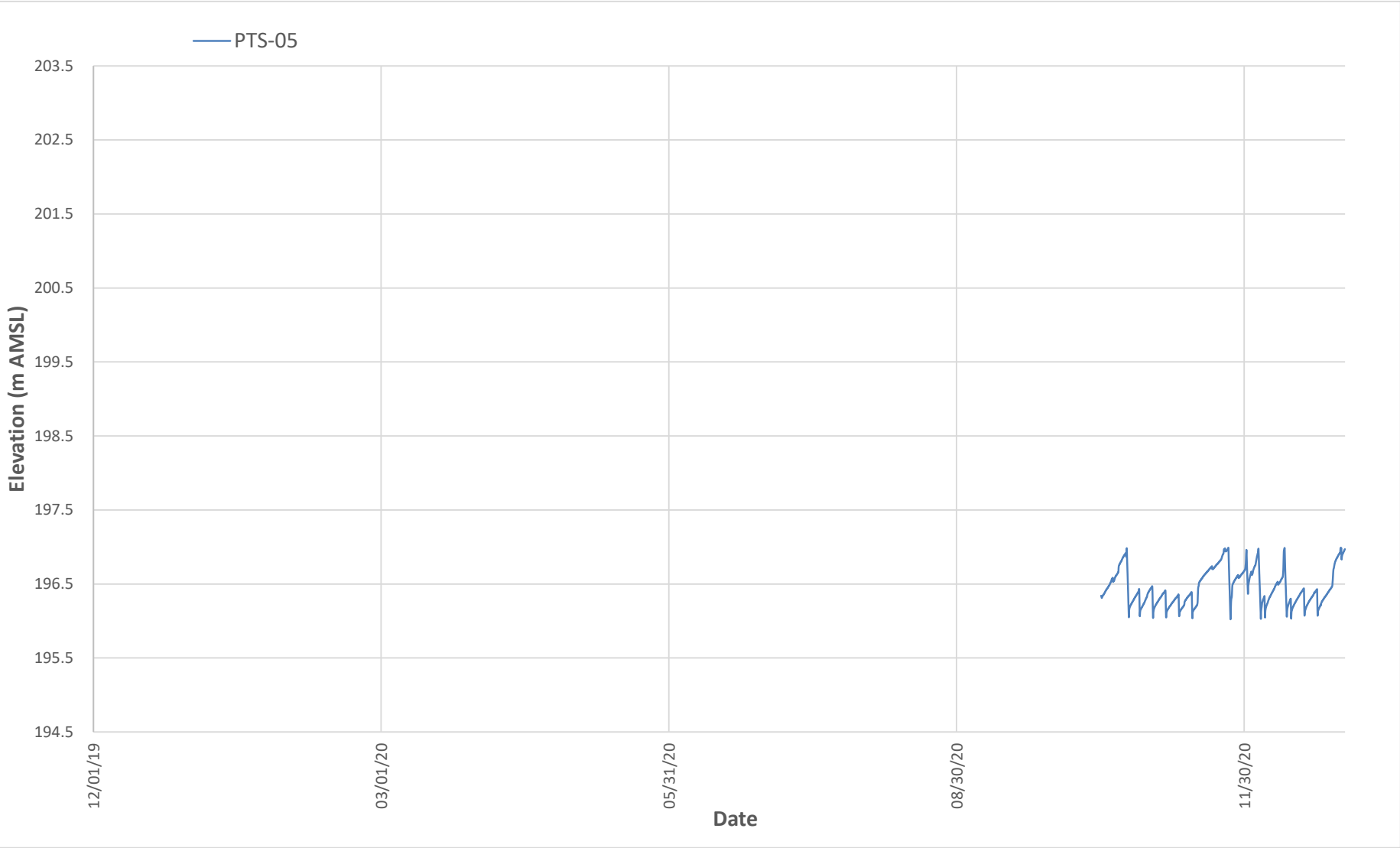
Figure B-29

LEACHATE COLLECTION SYSTEM SUMP HYDROGRAPH - PTS-04

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility



Notes: PTS-05 PLC became operational on October 15, 2020.

● Manual Water Level

Figure B-30

LEACHATE COLLECTION SYSTEM SUMP HYDROGRAPH - PTS-05

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

Lambton Facility

Appendix C
Historical Manual Hydrographs

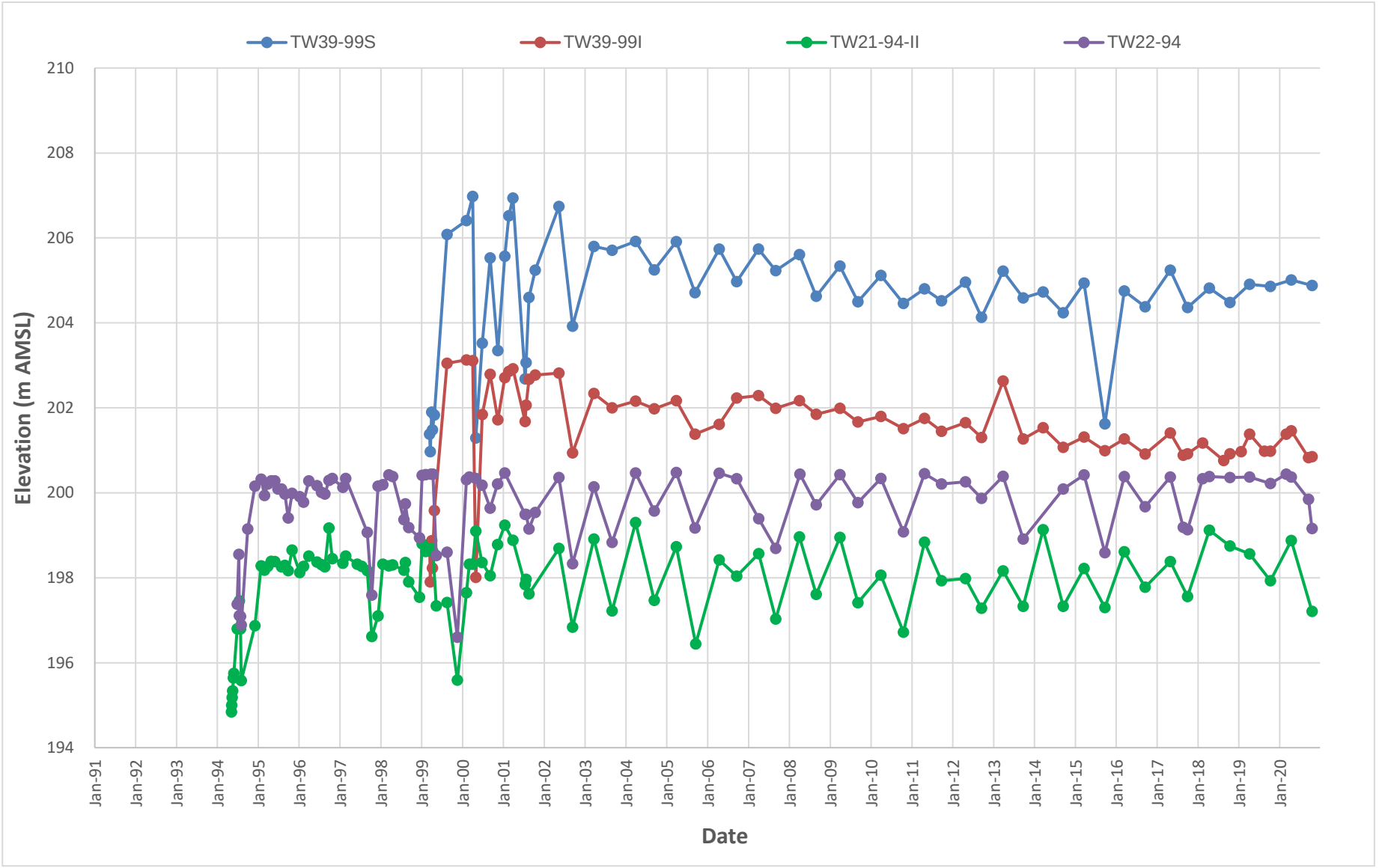


figure C-1

HYDROGRAPHS FOR SHALLOW GROUNDWATER WELLS IN THE VACINITY OF THE FACILITY NORTH-WEST CORNER BERM AREA

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

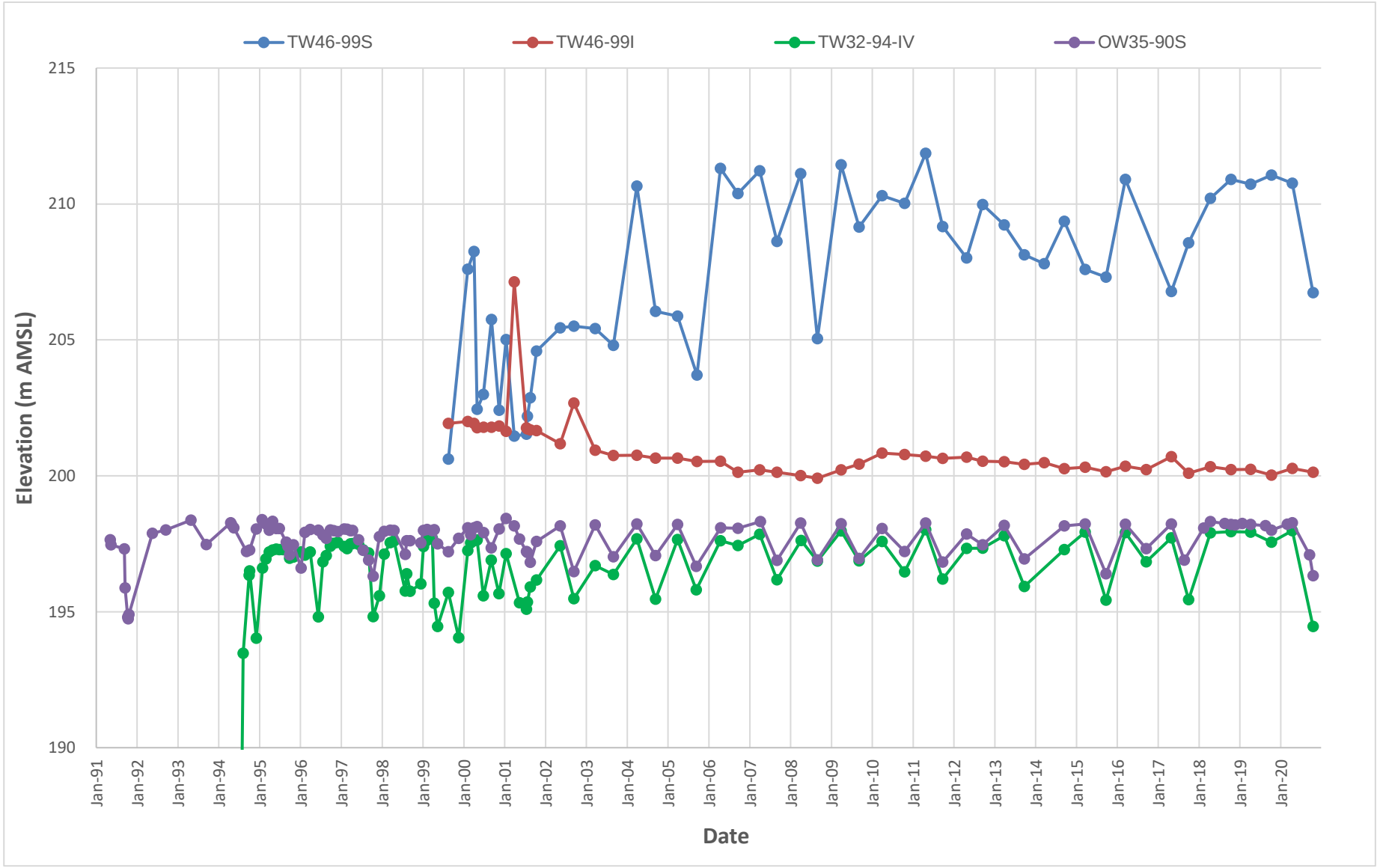


figure C-2

HYDROGRAPHS FOR SHALLOW GROUNDWATER WELLS IN THE VACINITY OF THE FACILITY
NORTH-EAST CORNER BERM AREA
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

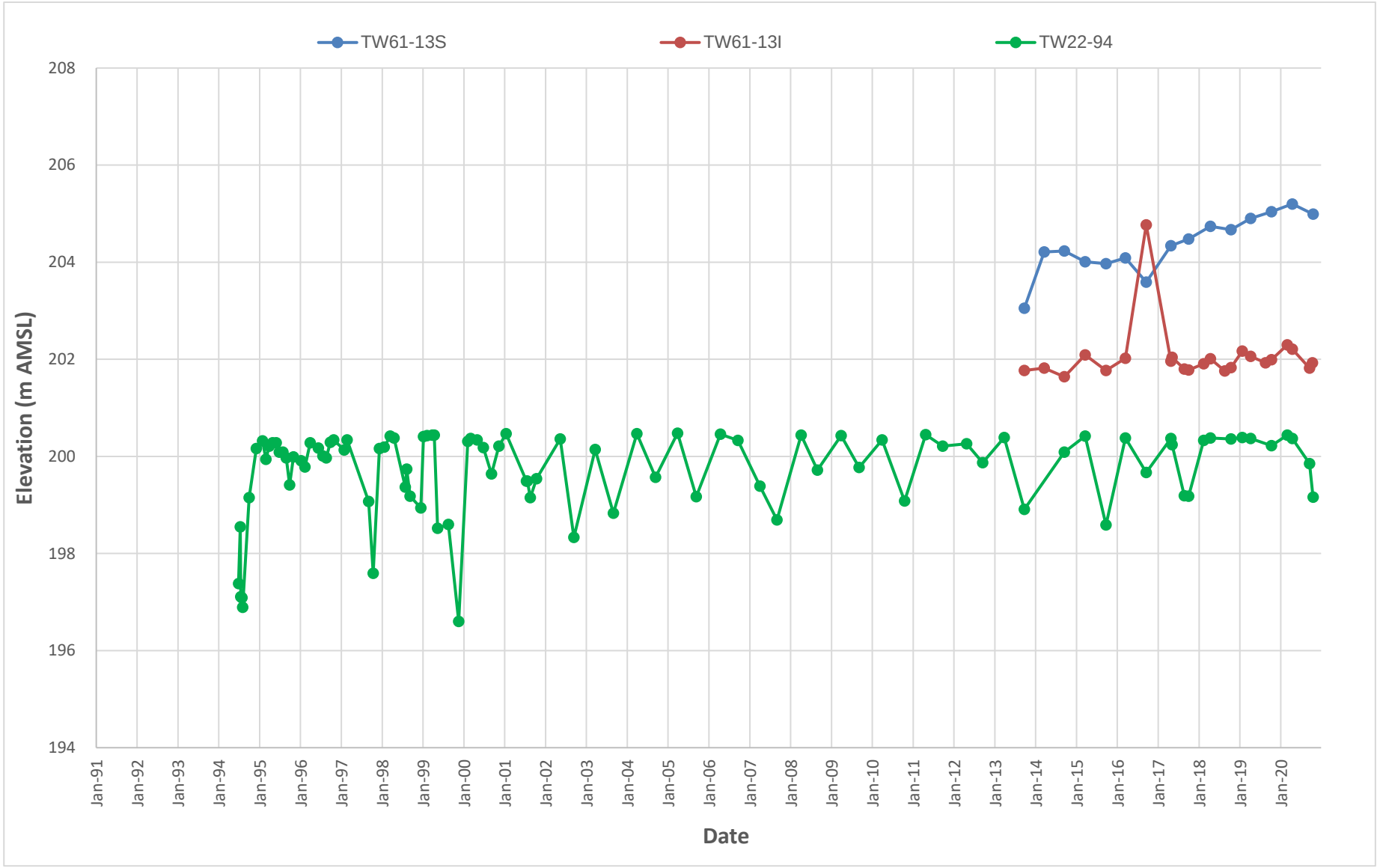


figure C-3

HYDROGRAPHS FOR SHALLOW GROUNDWATER WELLS IN THE VACINITY OF THE FACILITY
NORTH-WEST BERM AREA
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

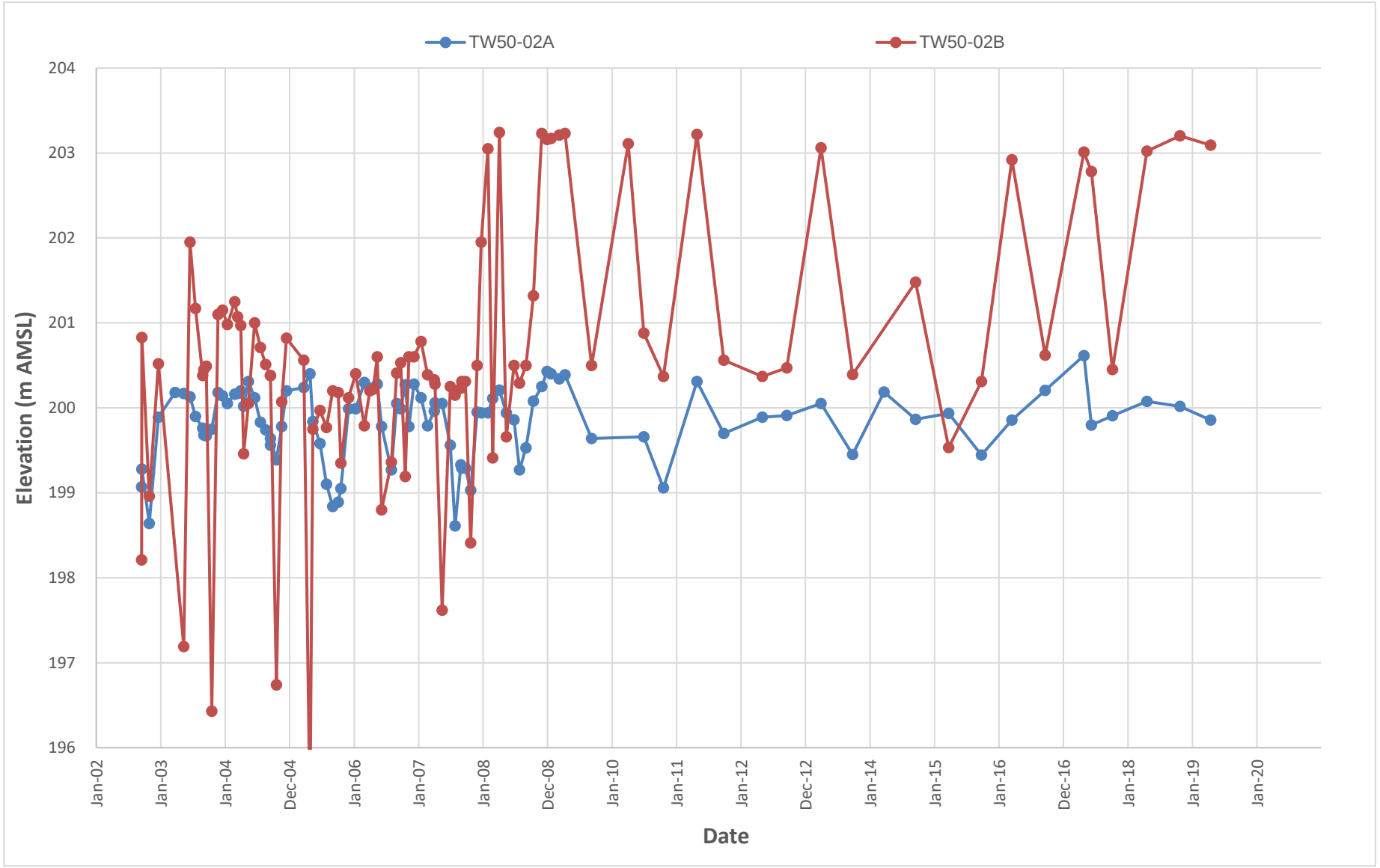


figure C-4

HYDROGRAPHS FOR SHALLOW GROUNDWATER WELLS IN THE VACINITY OF THE FACILITY
SOUTHERN BERM WELL NEST TW50-02
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

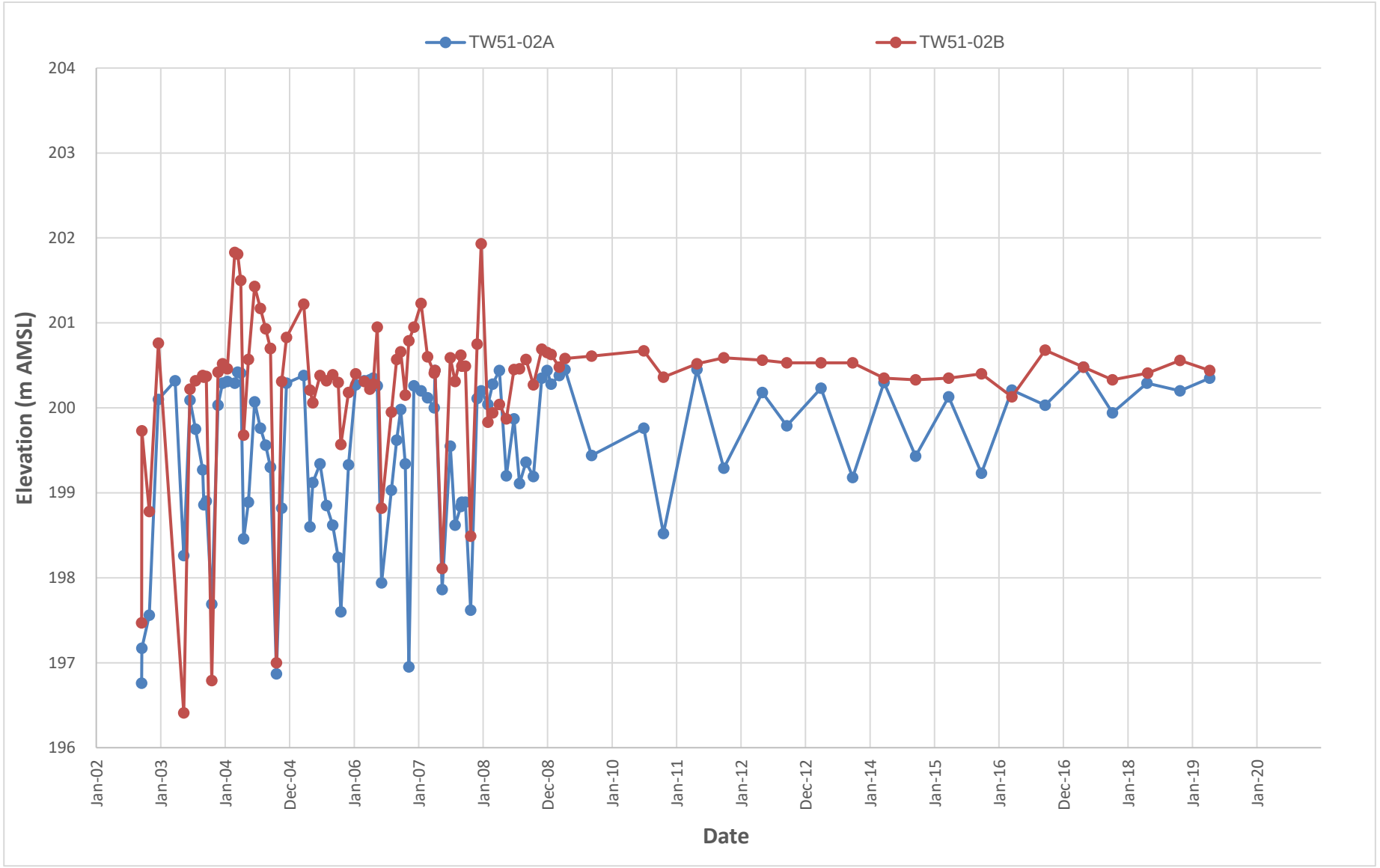


figure C-5

HYDROGRAPHS FOR SHALLOW GROUNDWATER WELLS IN THE VACINITY OF THE FACILITY
SOUTHERN BERM WELL NEST TW51-02
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

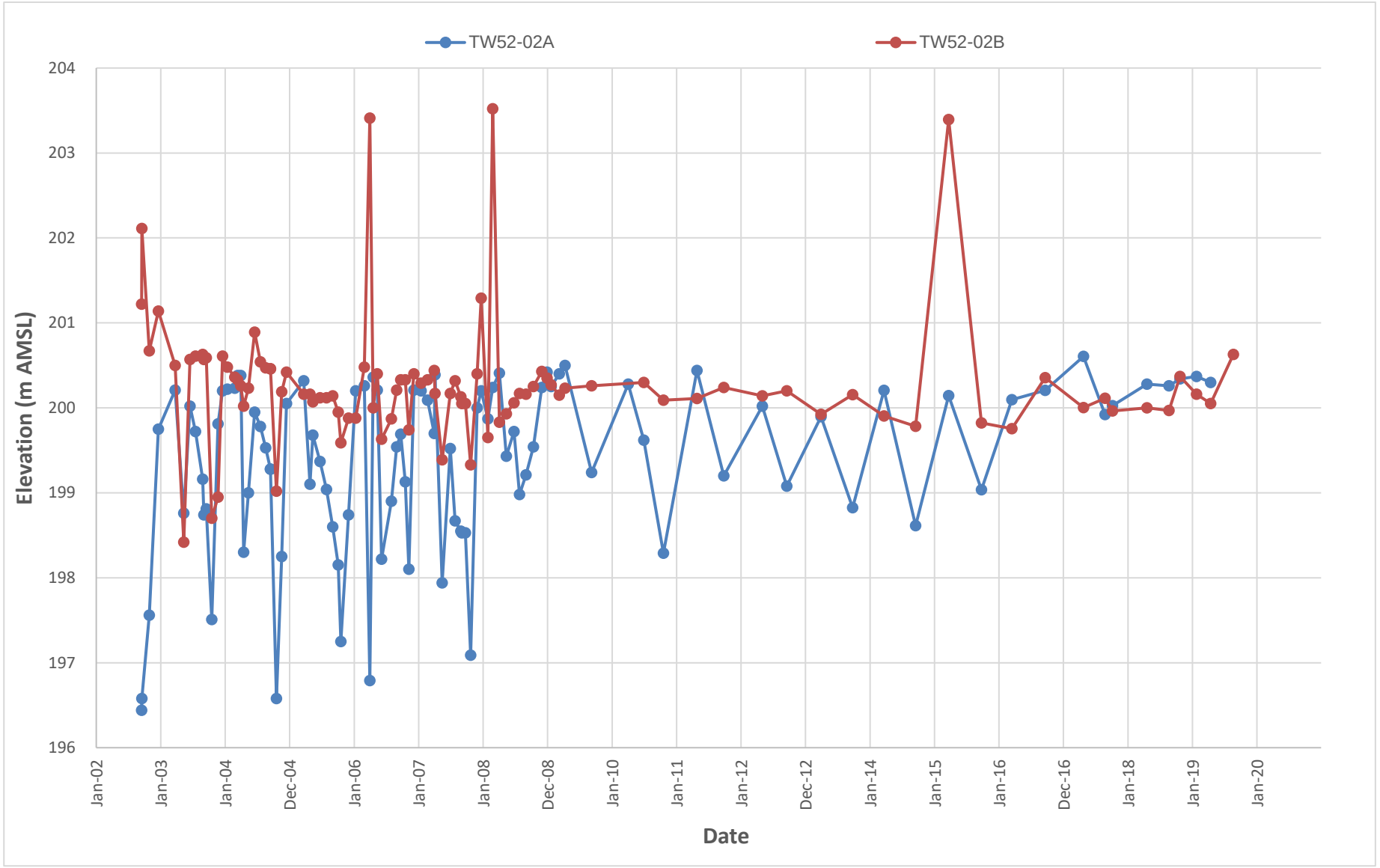


figure C-6

HYDROGRAPHS FOR SHALLOW GROUNDWATER WELLS IN THE VACINITY OF THE FACILITY
SOUTHERN BERM WELL NEST TW52-02
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

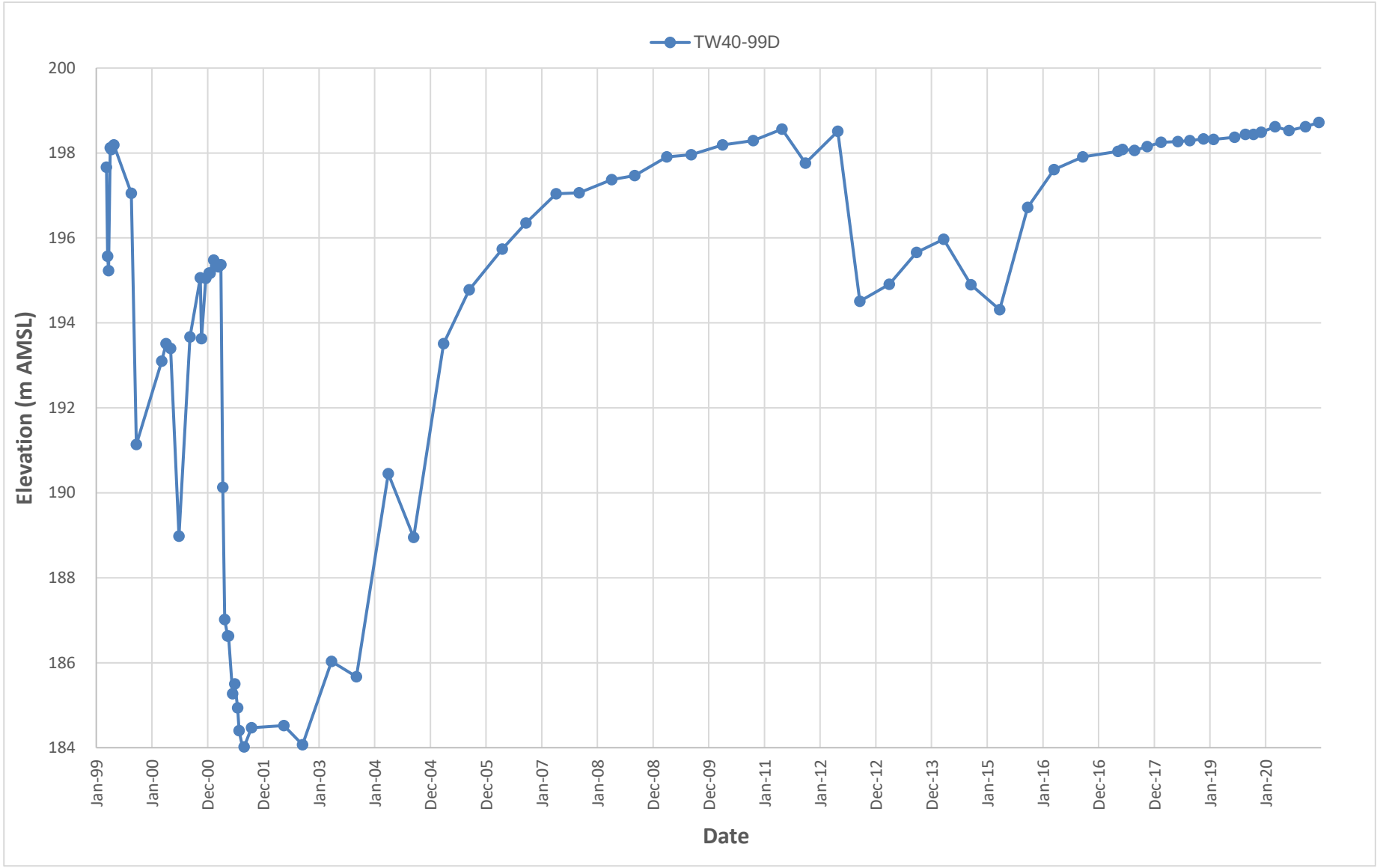


figure C-7
SELECT HYDROGRAPHS - ON-SITE INTERFACE AQUIFER
TW40-99D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

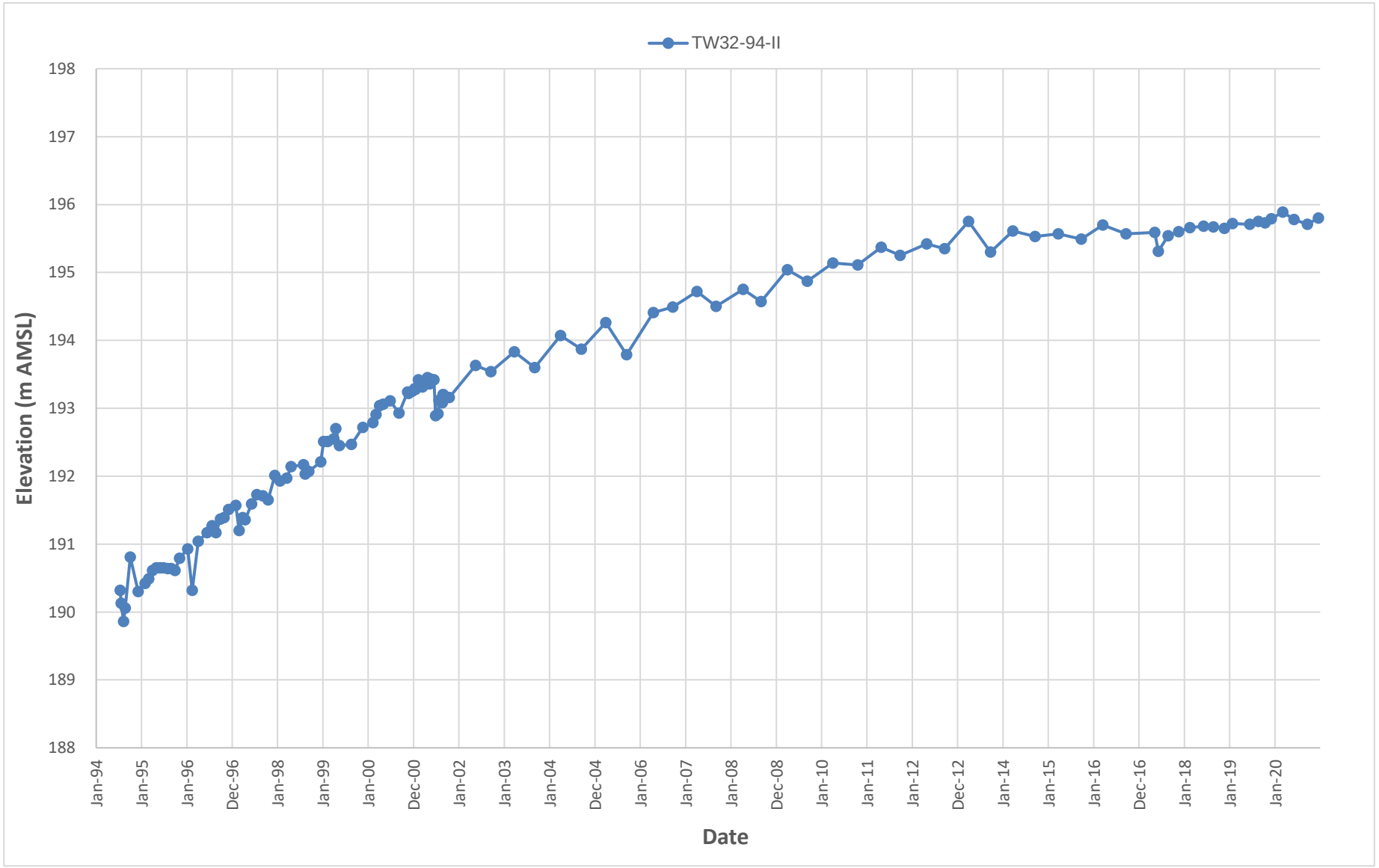


figure C-8
SELECT HYDROGRAPHS - ON-SITE INTERFACE AQUIFER
TW32-94-II
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

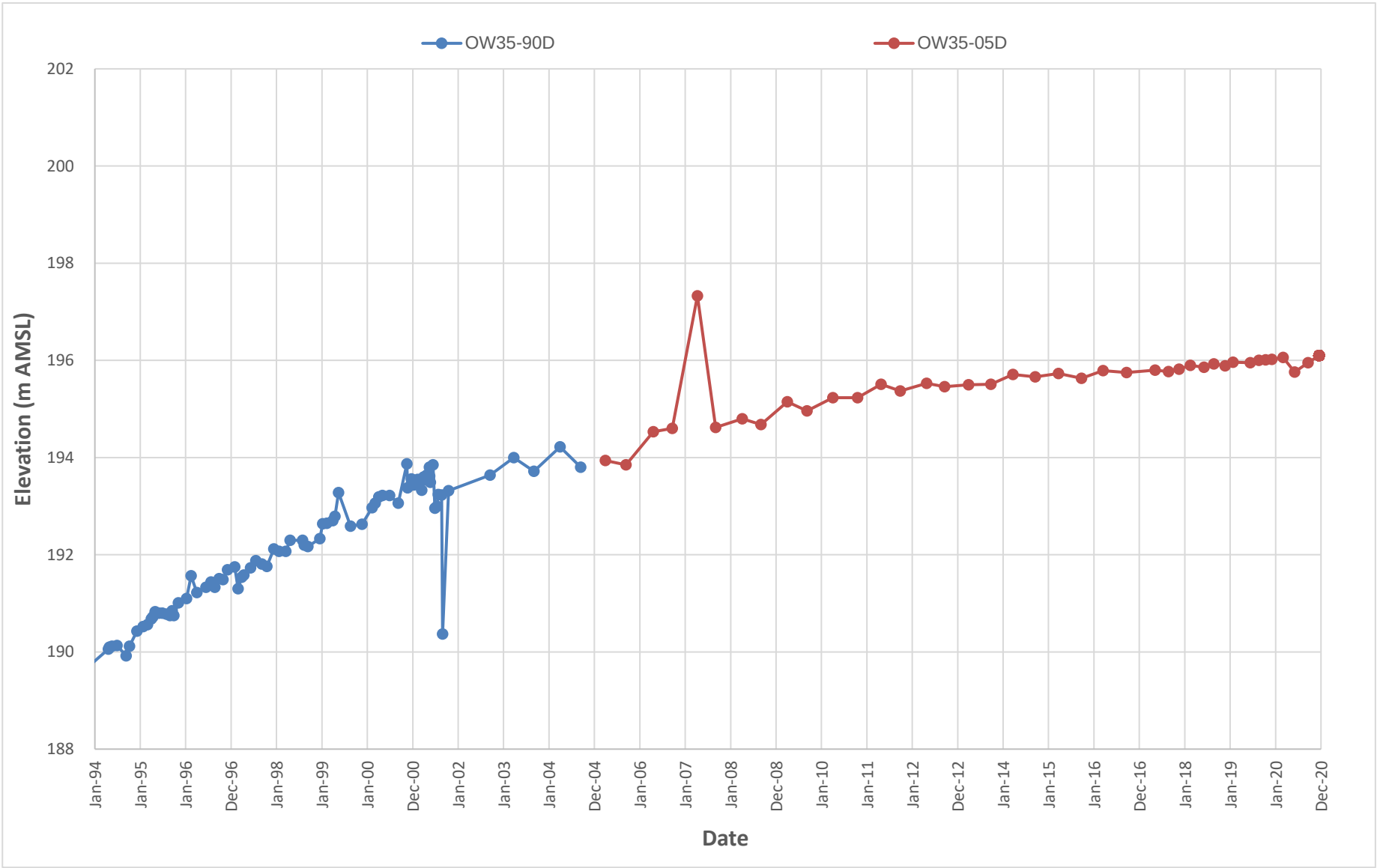


figure C-9

SELECT HYDROGRAPHS - ON-SITE INTERFACE AQUIFER

OW35-90D/OW35-05D

2020 ANNUAL GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA INC.

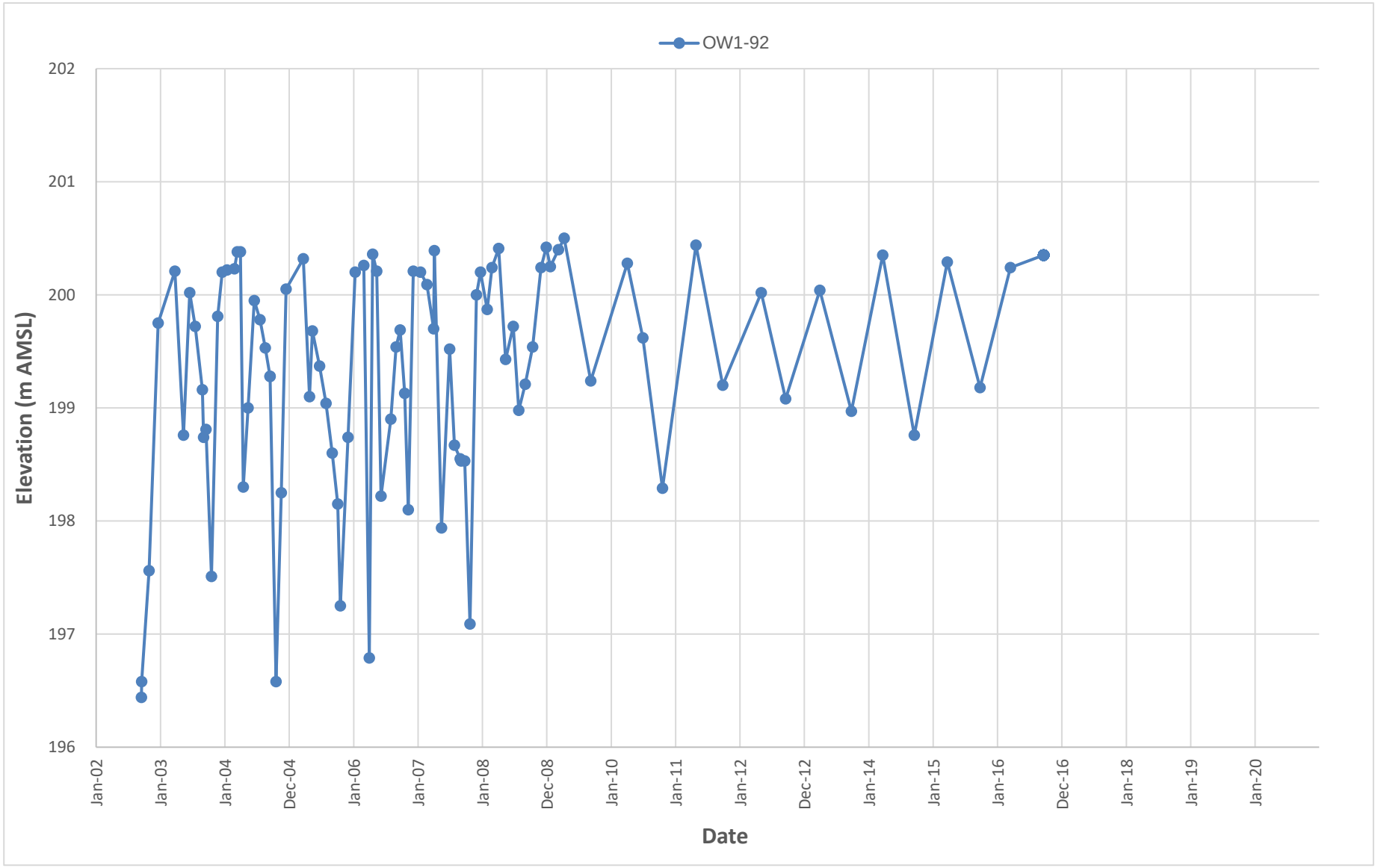


figure C-10
SELECT HYDROGRAPHS - ON-SITE INTERFACE AQUIFER
OW1-92
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

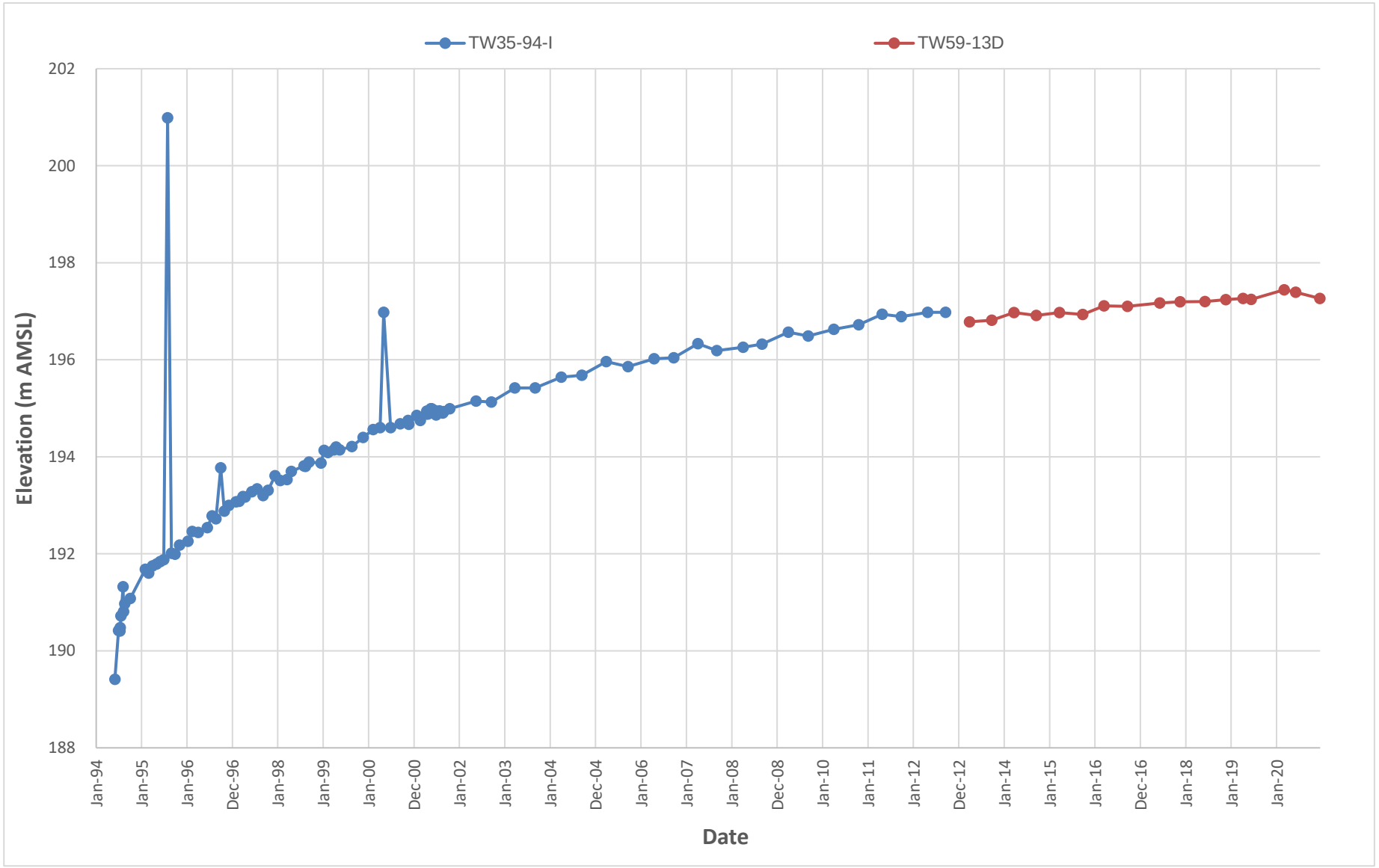


figure C-11
SELECT HYDROGRAPHS - OFF-SITE INTERFACE AQUIFER
TW35-94-I/TW59-13D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

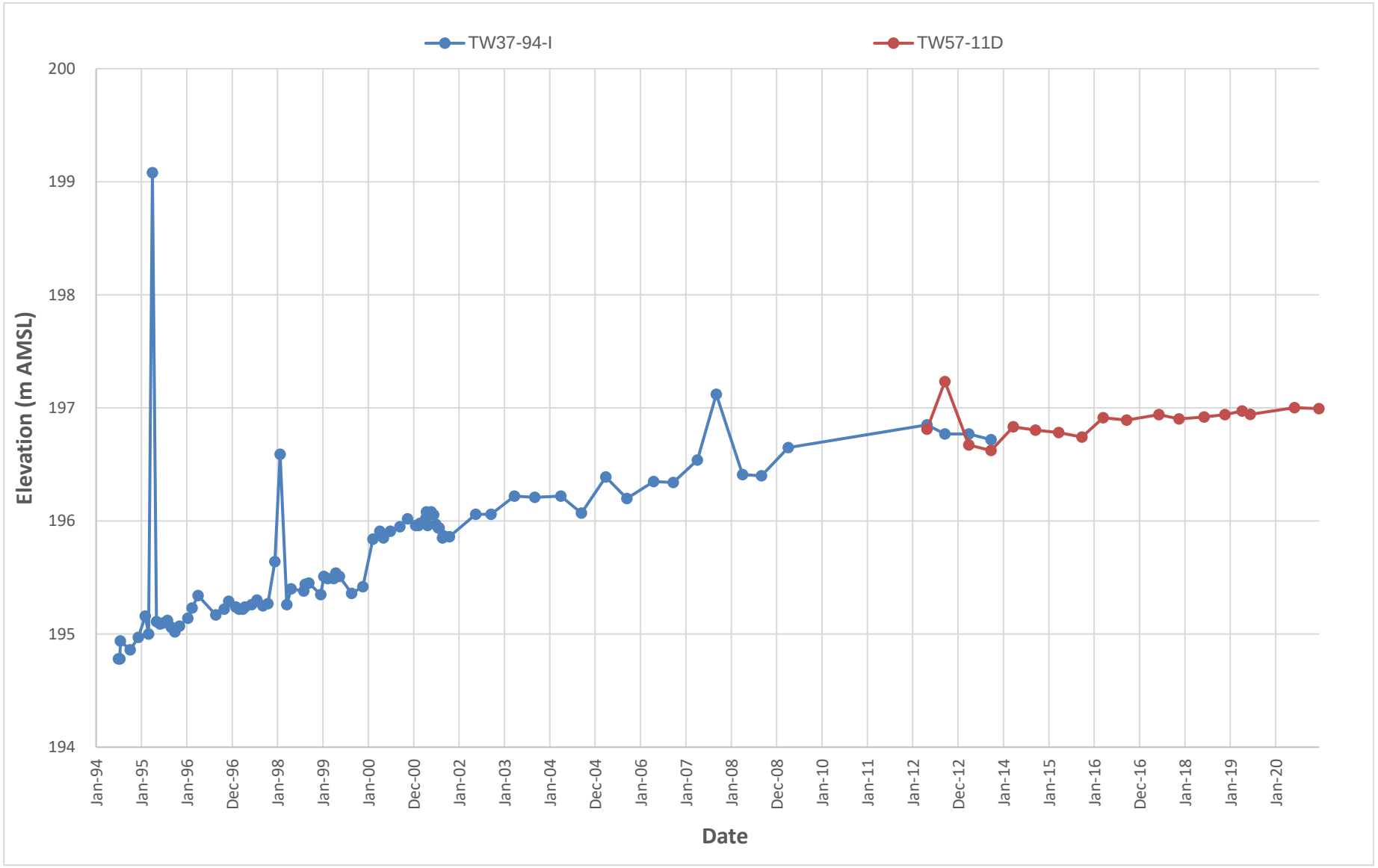


figure C-13
SELECT HYDROGRAPHS - OFF-SITE INTERFACE AQUIFER
TW37-94-I/TW57-1D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

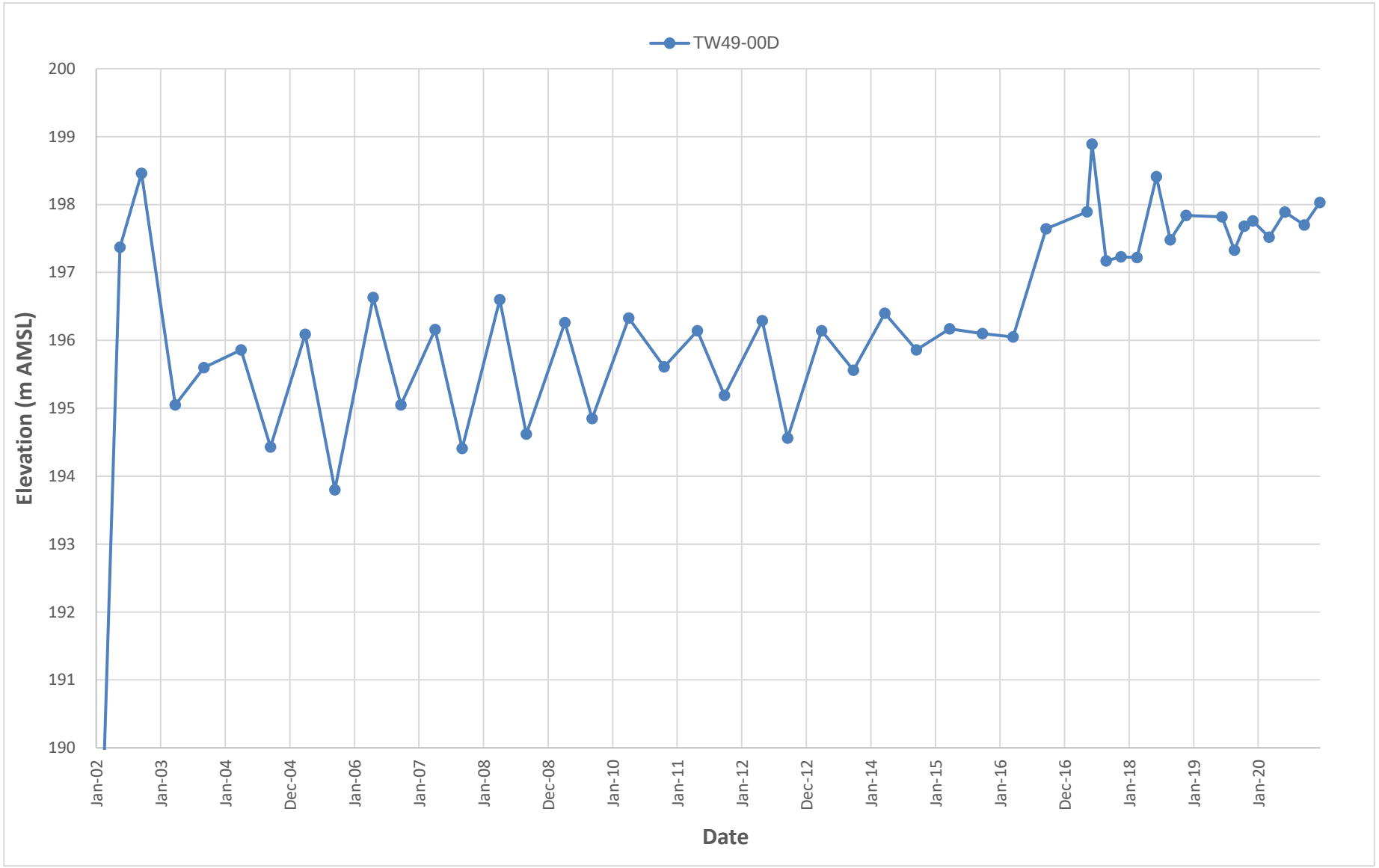
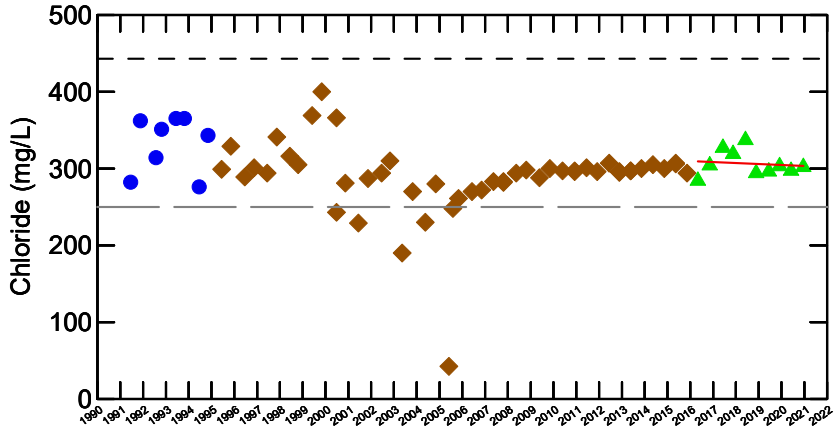
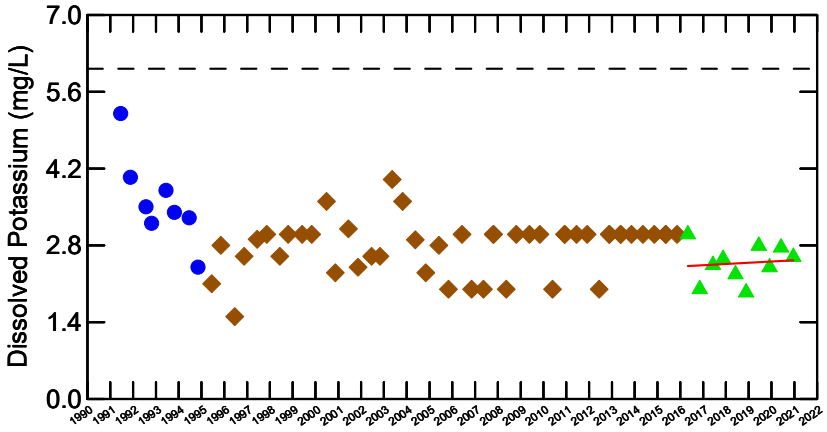


figure C-14
SELECT HYDROGRAPHS - OFF-SITE INTERFACE AQUIFER
TW49-00D
2020 ANNUAL GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA INC.

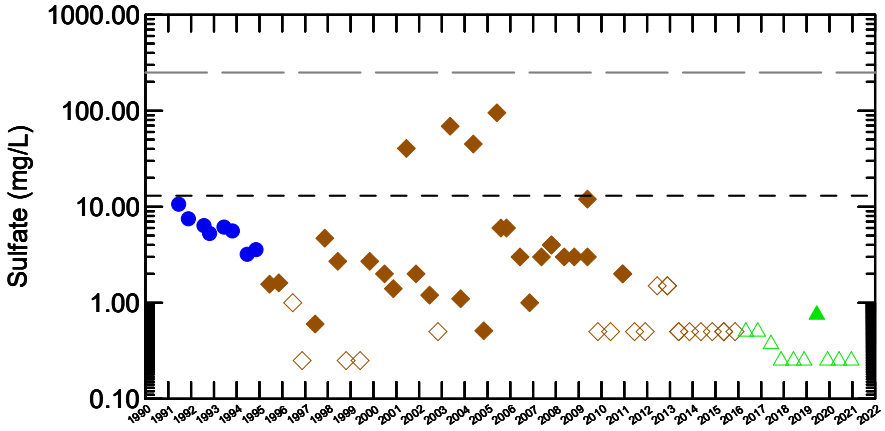
Appendix D
Concentration Versus Time Plots



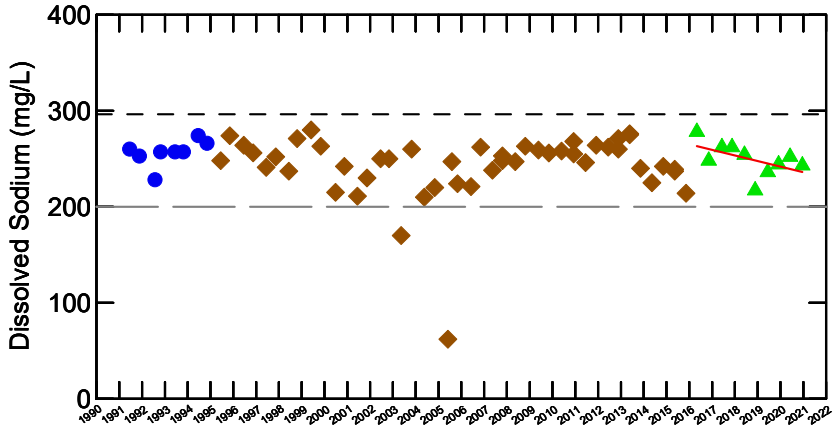
No trend



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

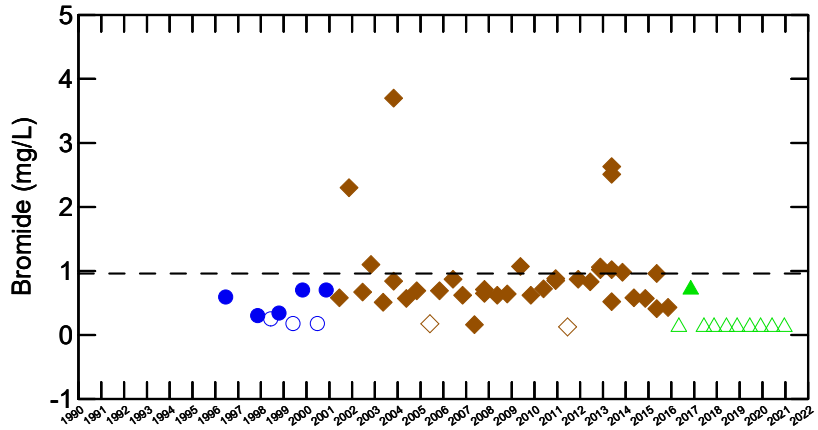
WELL OW32-90D

DEEP WELL (INTERFACE AQUIFER)

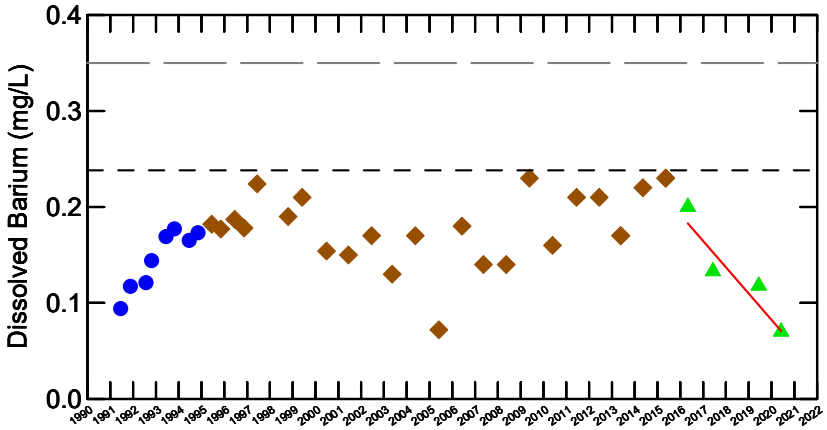
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

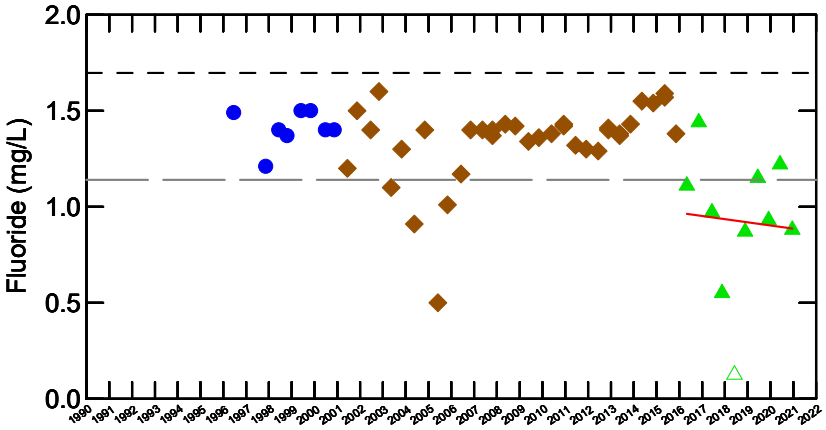
Lambton County, Ontario



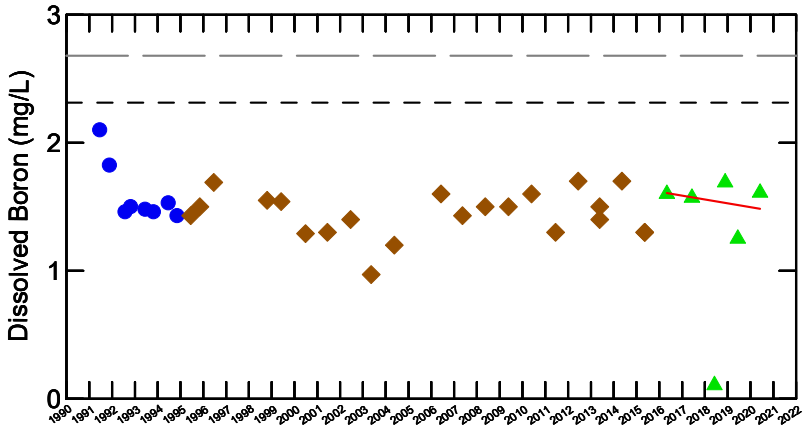
Over 50% non-detect



Decreasing trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

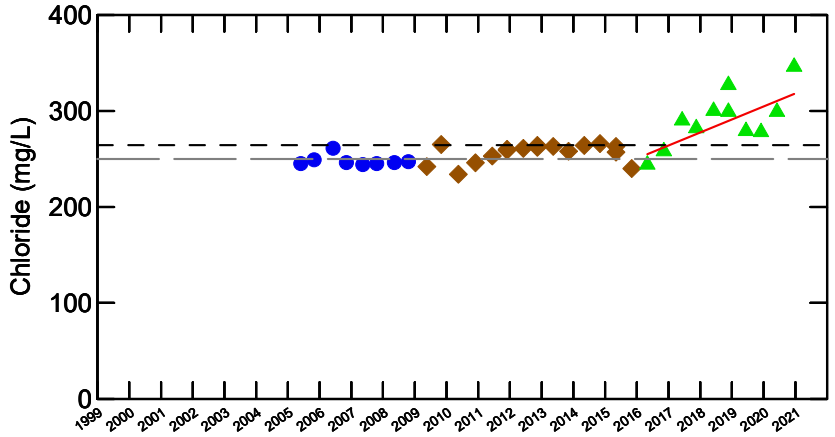
WELL OW32-90D

DEEP WELL (INTERFACE AQUIFER)

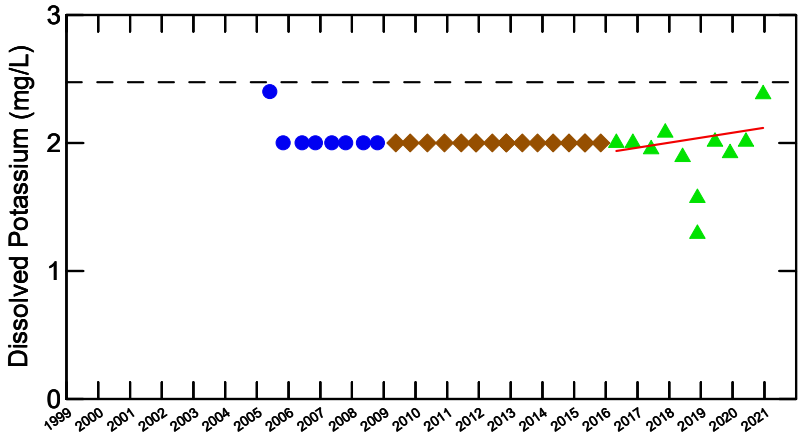
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

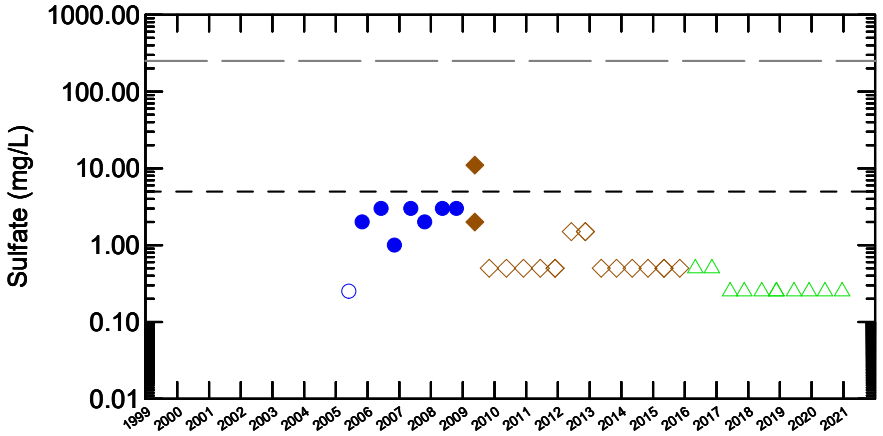
Lambton County, Ontario



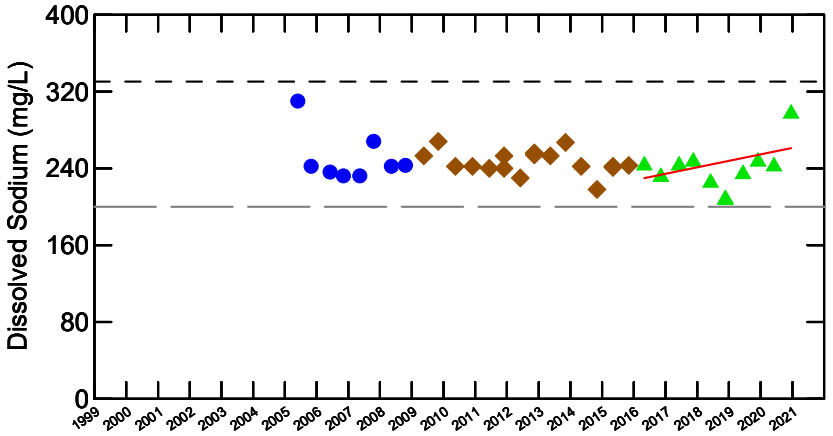
Increasing trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

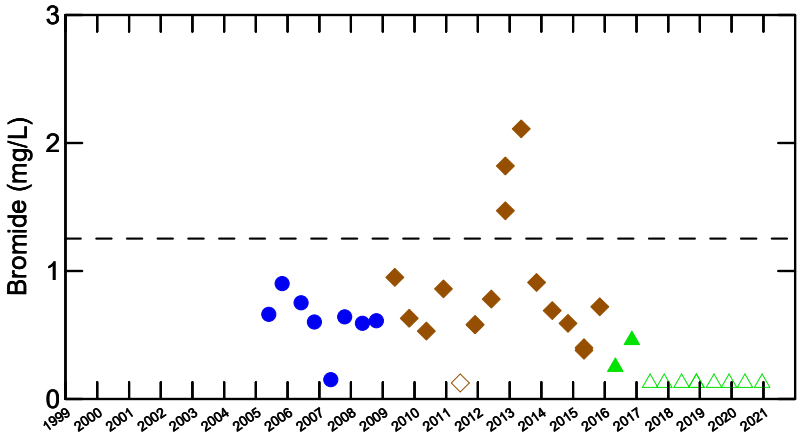
WELL OW35-05D

DEEP WELL (INTERFACE AQUIFER)

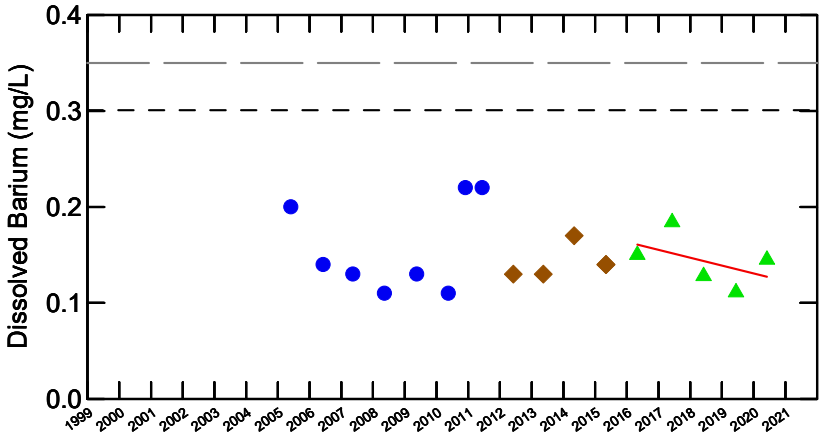
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

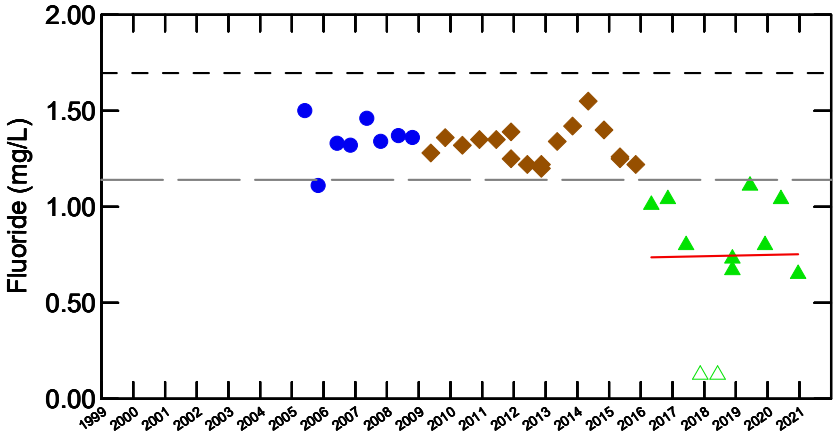
Lambton County, Ontario



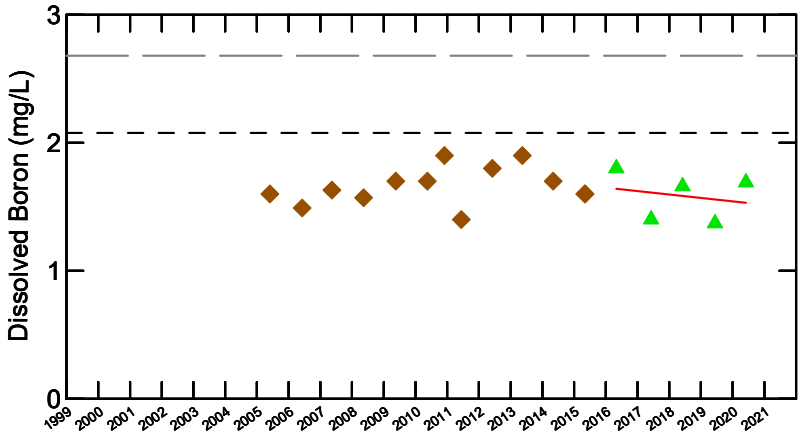
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

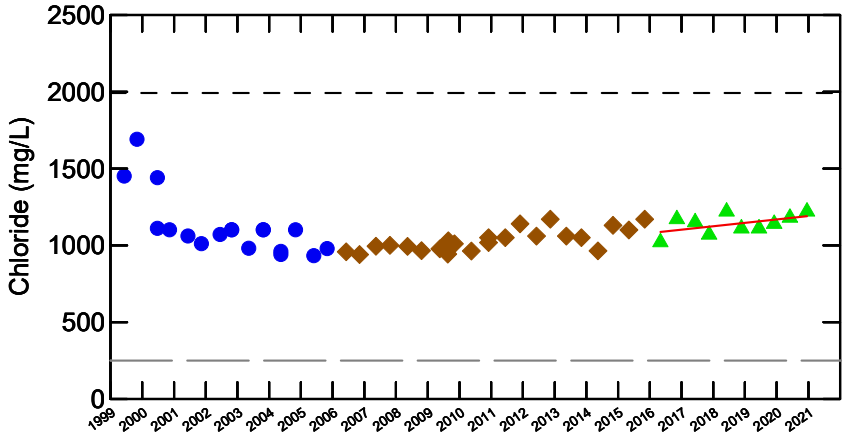
WELL OW35-05D

DEEP WELL (INTERFACE AQUIFER)

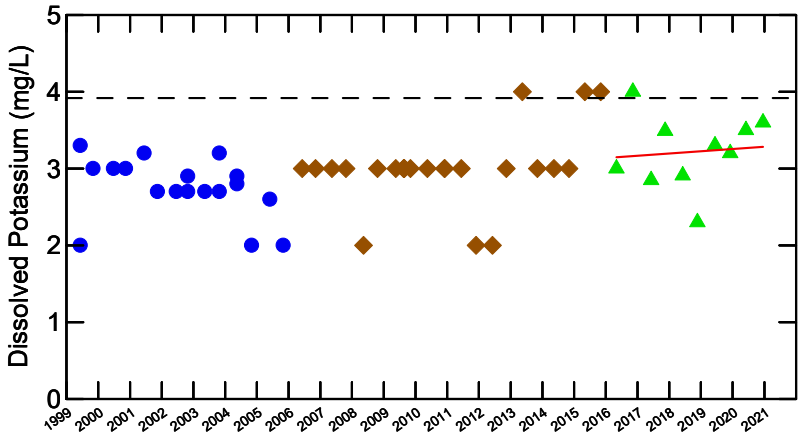
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

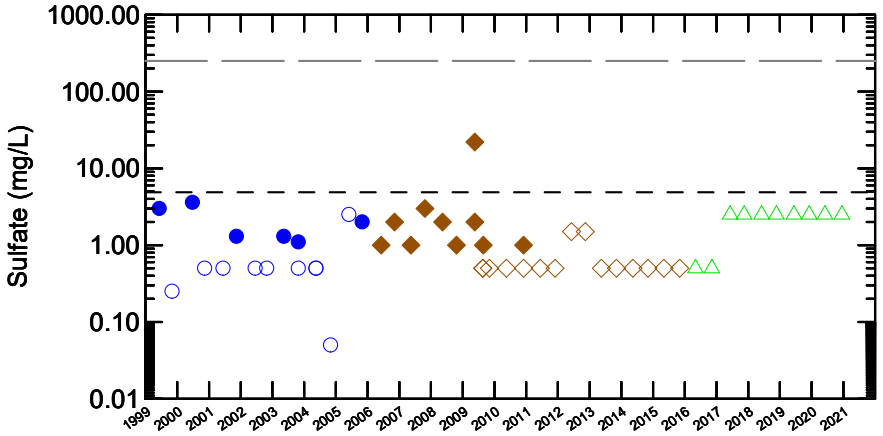
Lambton County, Ontario



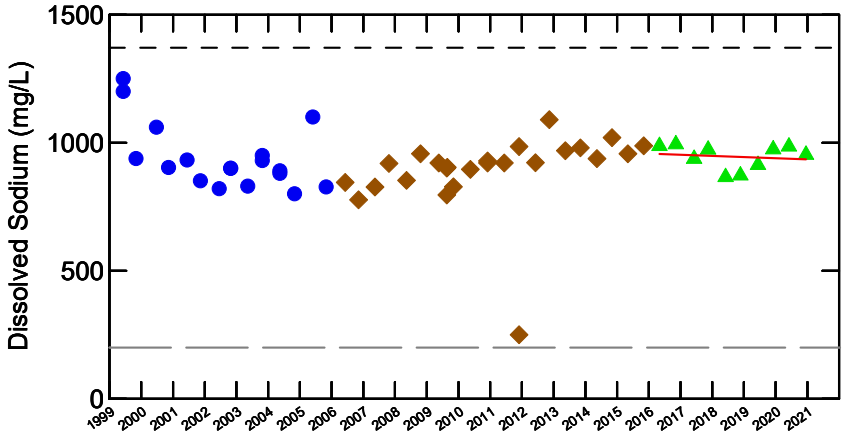
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

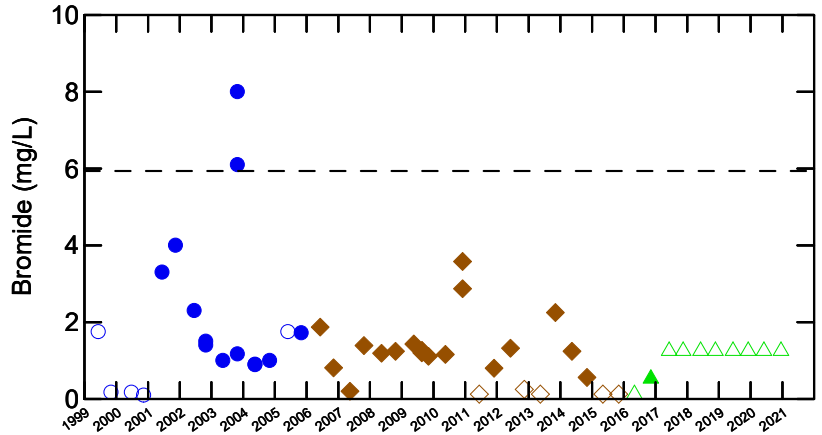
WELL TW22-99D

DEEP WELL (INTERFACE AQUIFER)

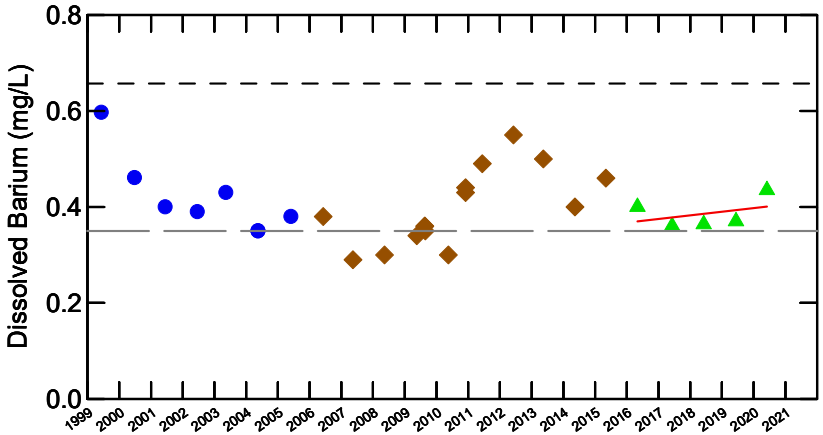
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

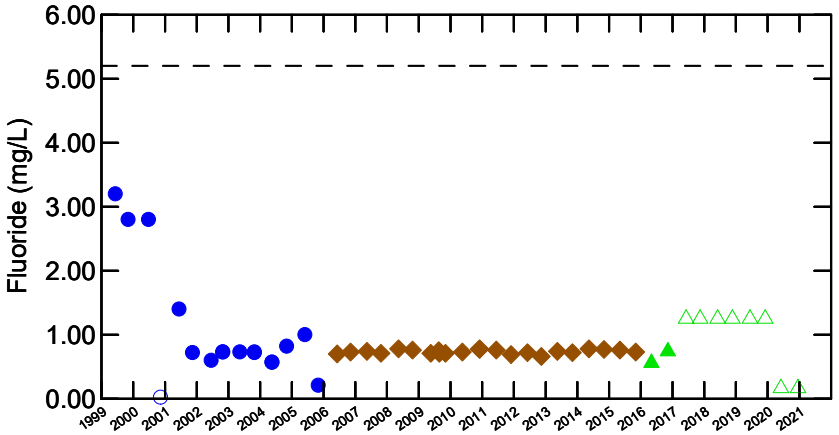
Lambton County, Ontario



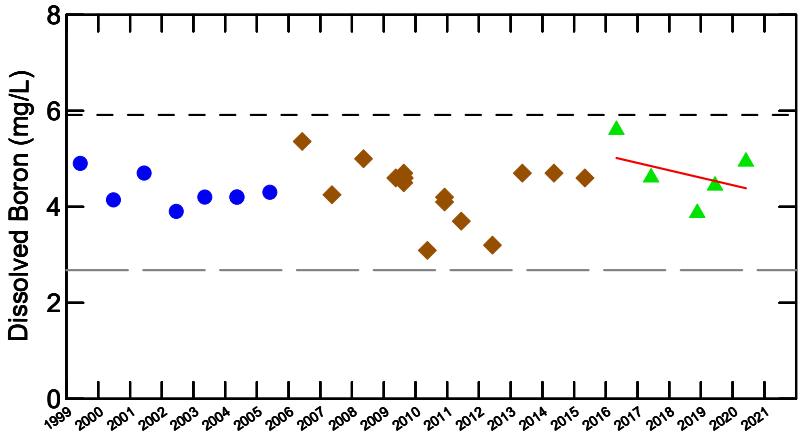
Over 50% non-detect



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

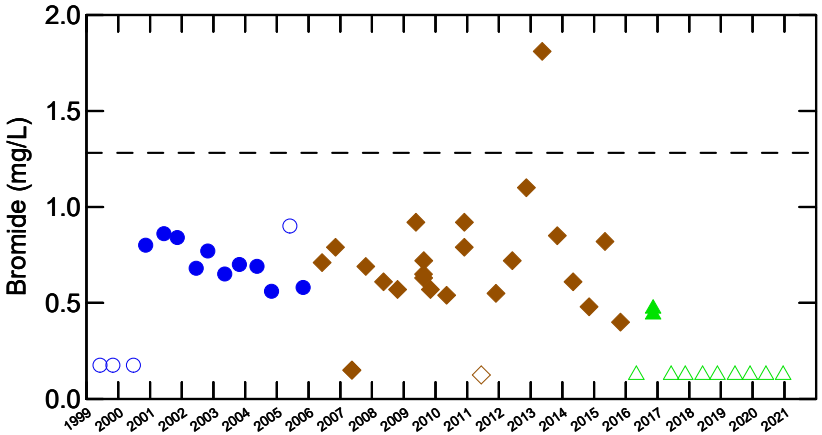
WELL TW22-99D

DEEP WELL (INTERFACE AQUIFER)

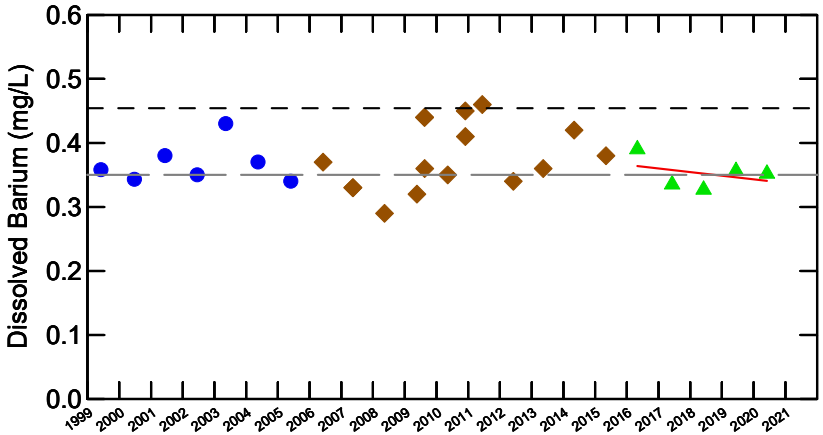
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

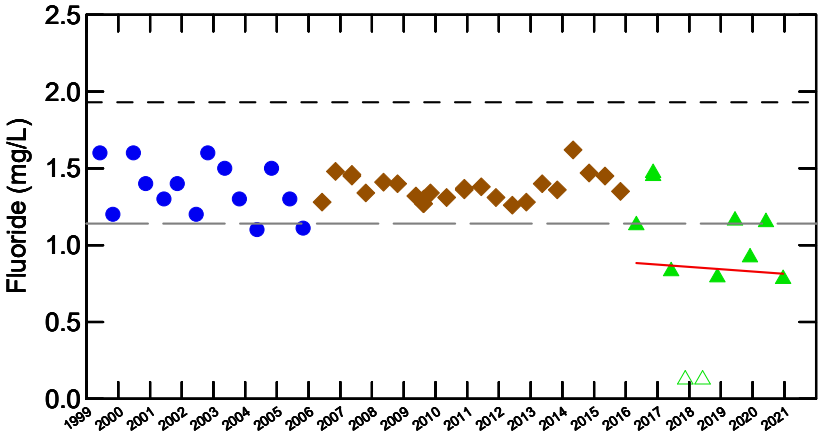
Lambton County, Ontario



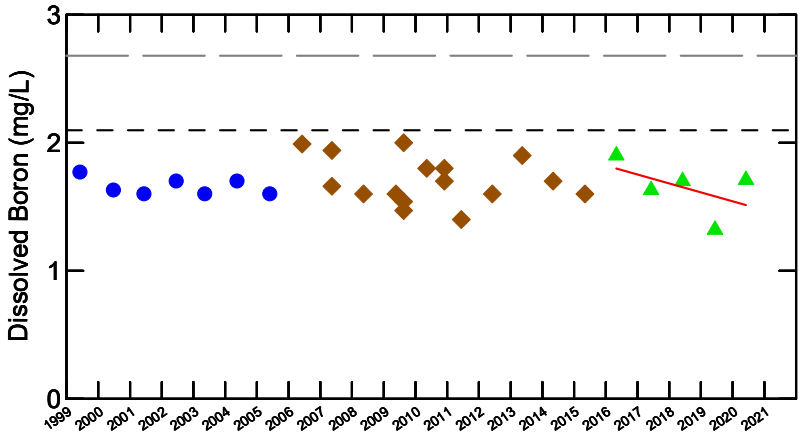
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

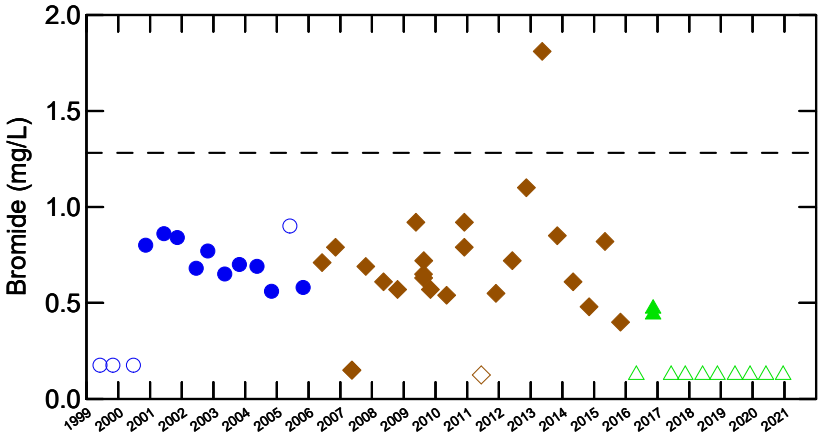
WELL TW30-99D

DEEP WELL (INTERFACE AQUIFER)

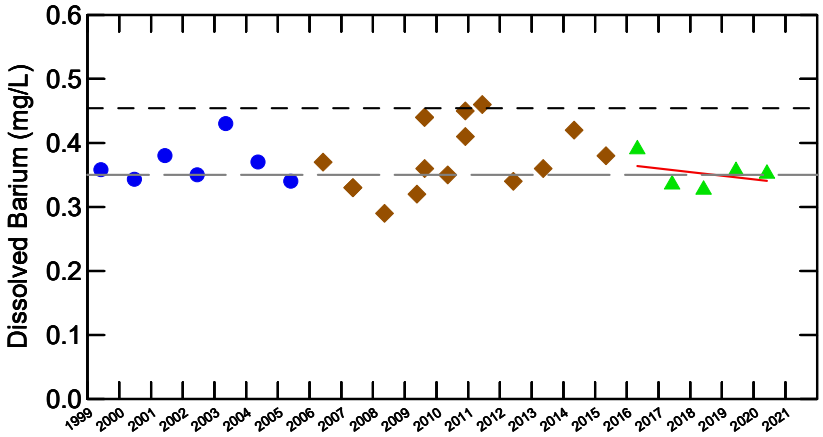
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

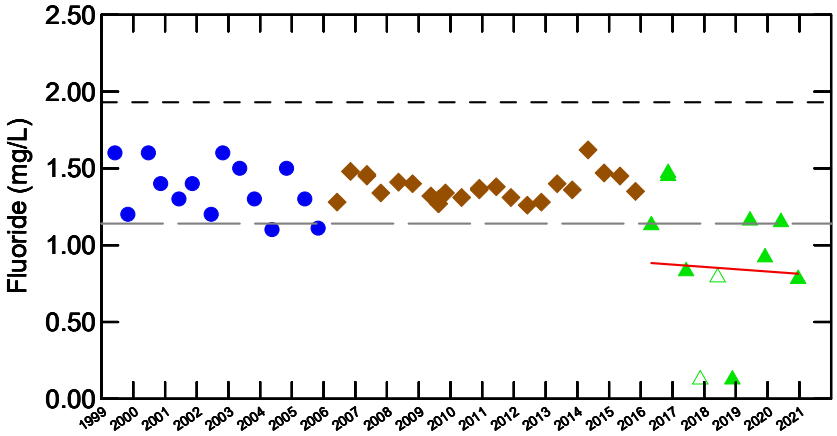
Lambton County, Ontario



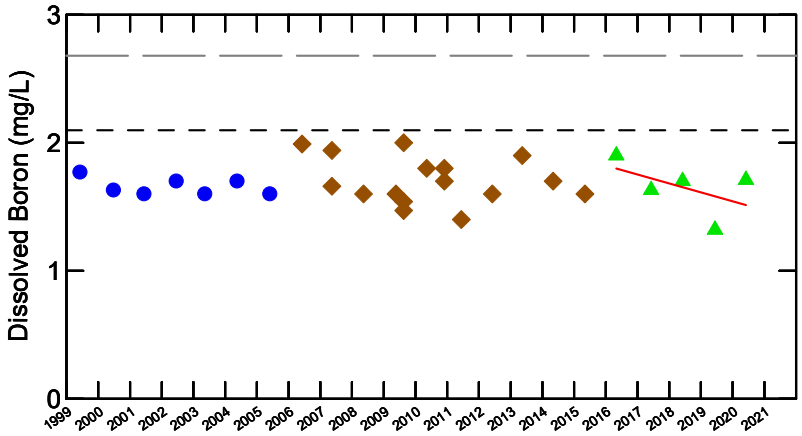
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

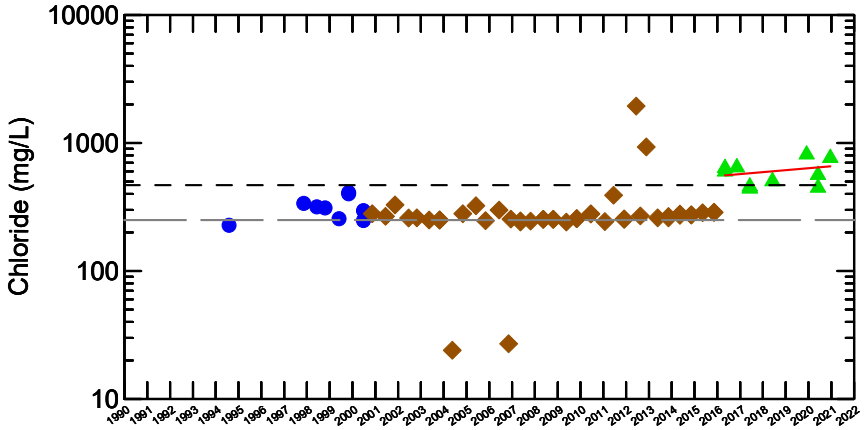
WELL TW30-99D

DEEP WELL (INTERFACE AQUIFER)

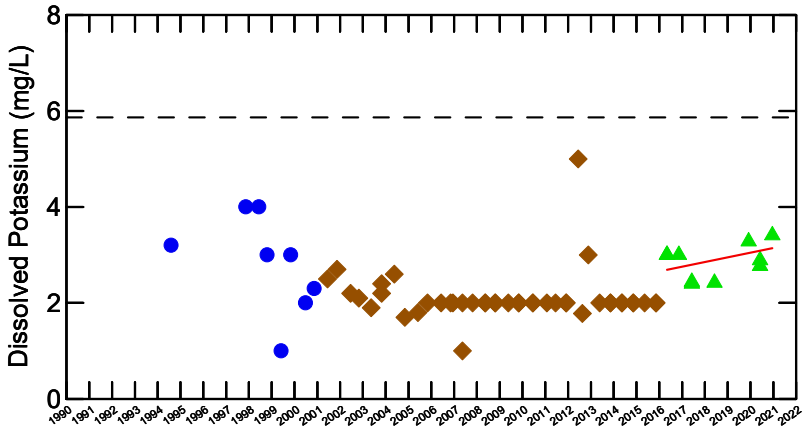
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

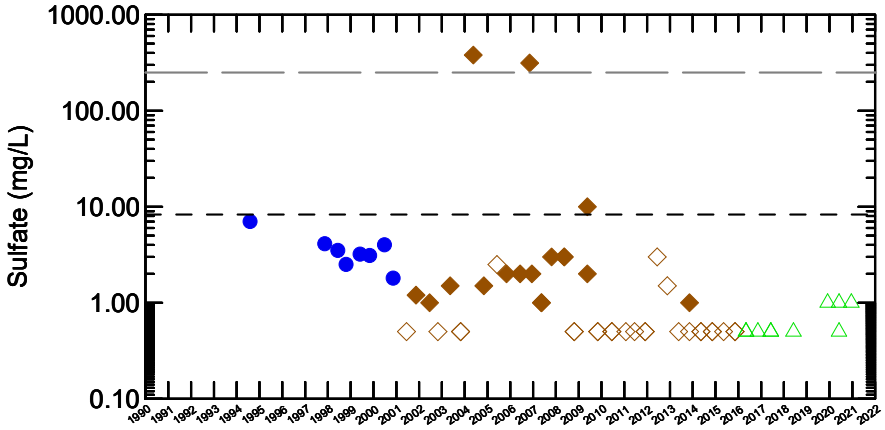
Lambton County, Ontario



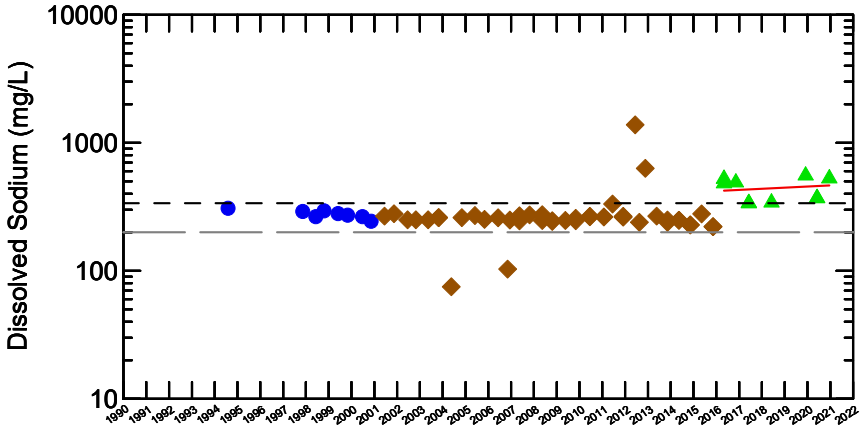
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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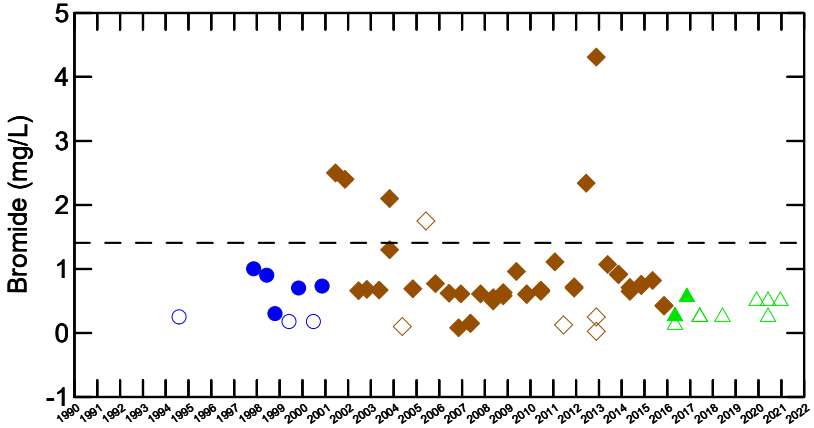
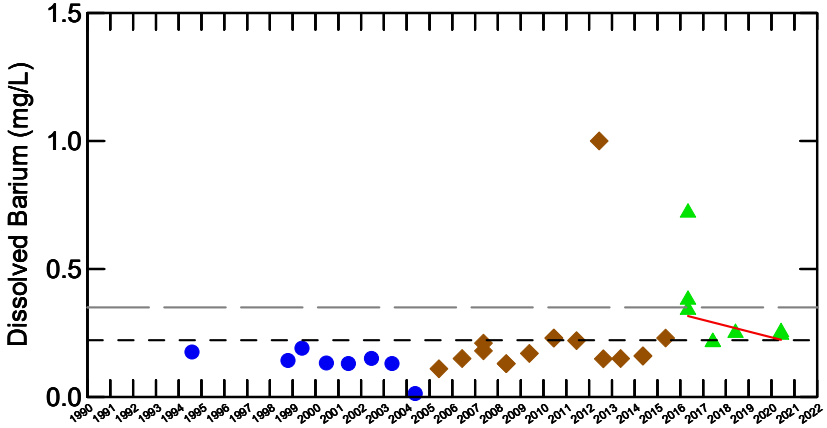
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

WELL TW32-94-II

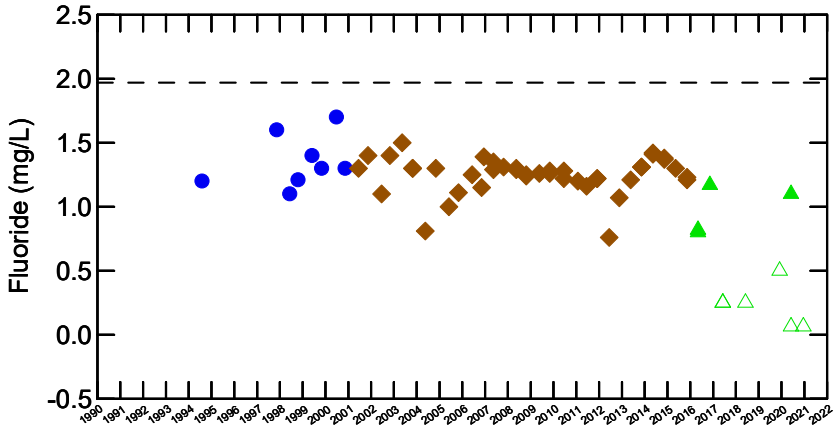
DEEP WELL (INTERFACE AQUIFER)
2020 GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA, INC.
Lambton County, Ontario



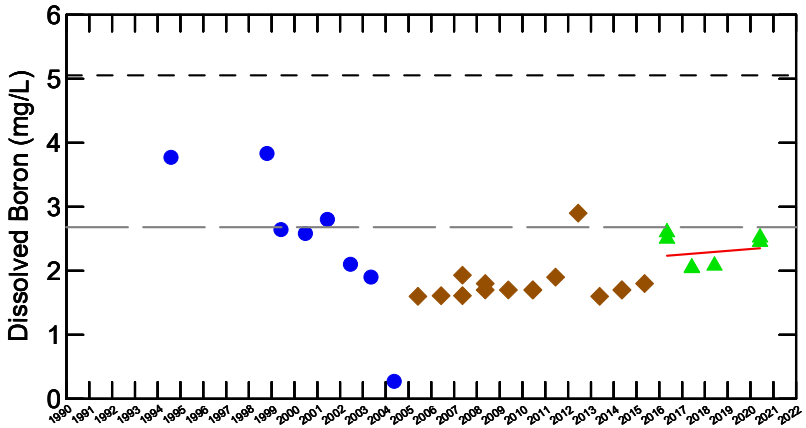
Over 50% non-detect



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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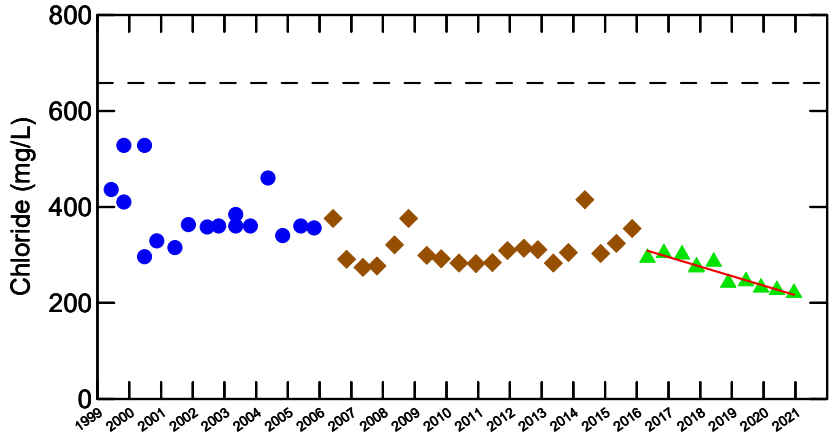
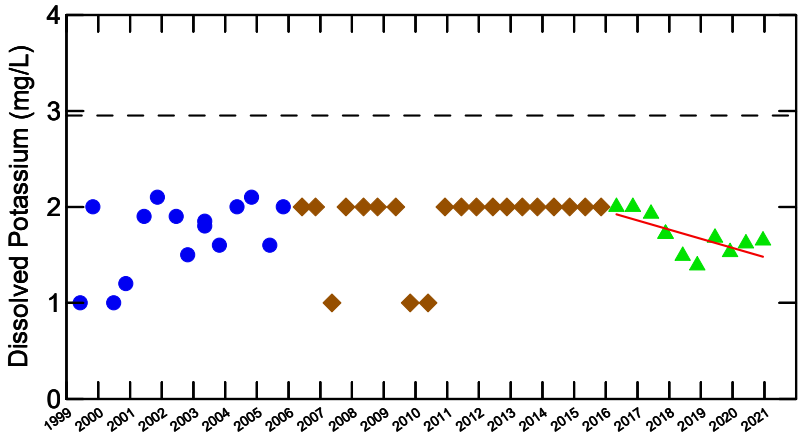
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

WELL TW32-94-II

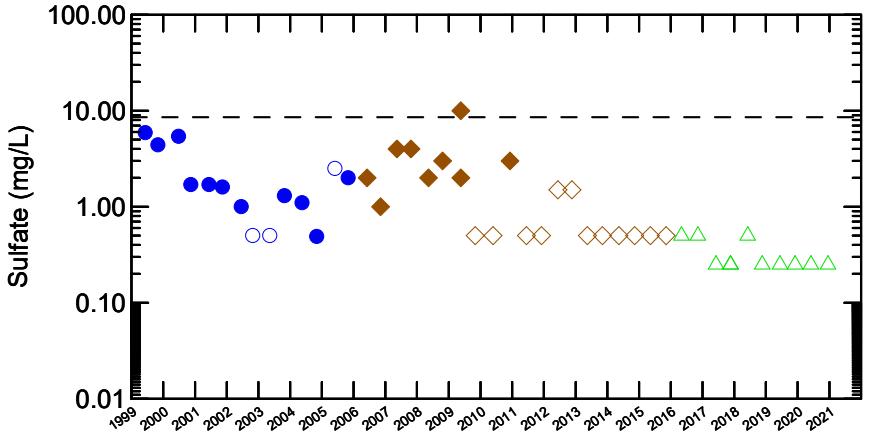
DEEP WELL (INTERFACE AQUIFER)
2020 GROUNDWATER MONITORING REPORT
CLEAN HARBORS CANADA, INC.
Lambton County, Ontario



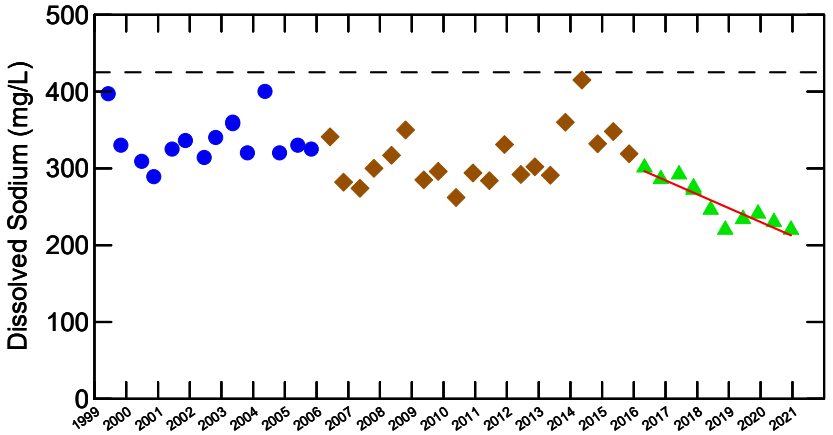
Decreasing trend



Decreasing trend



No detected results



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

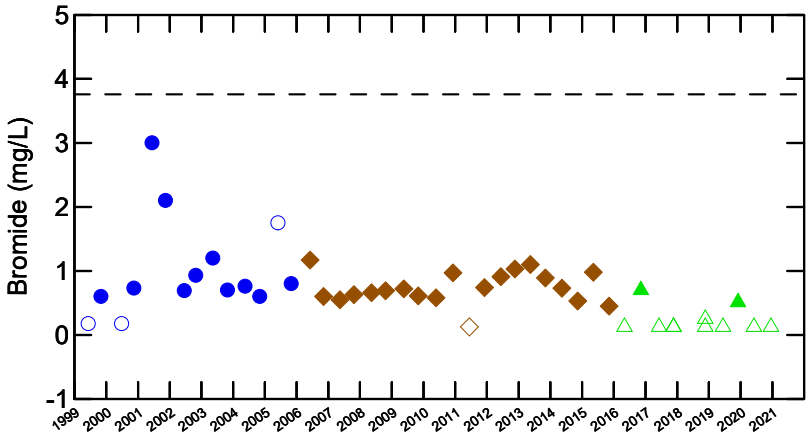
WELL TW39-99D

DEEP WELL (INTERFACE AQUIFER)

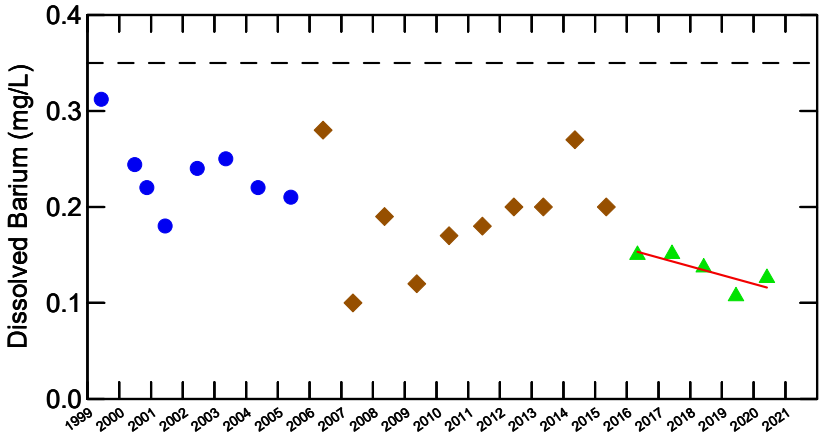
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

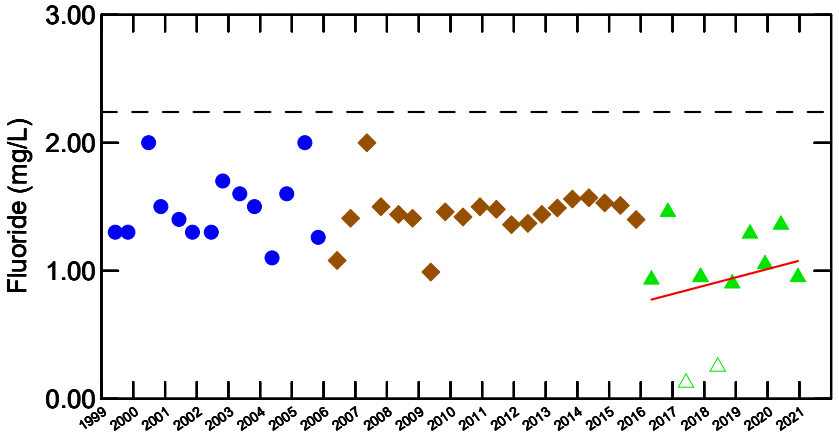
Lambton County, Ontario



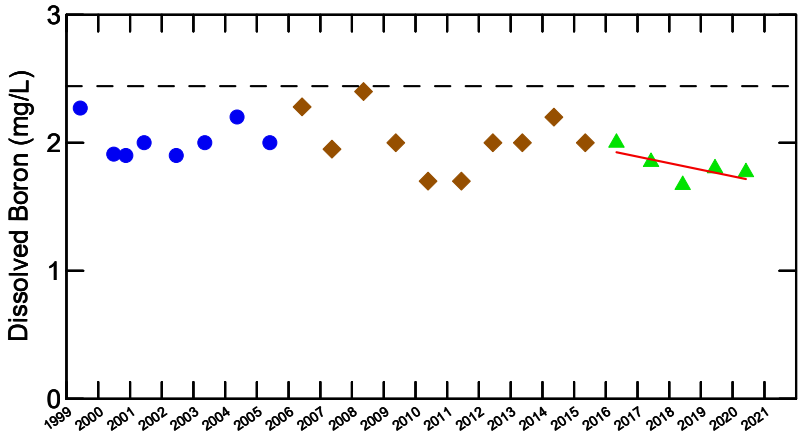
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

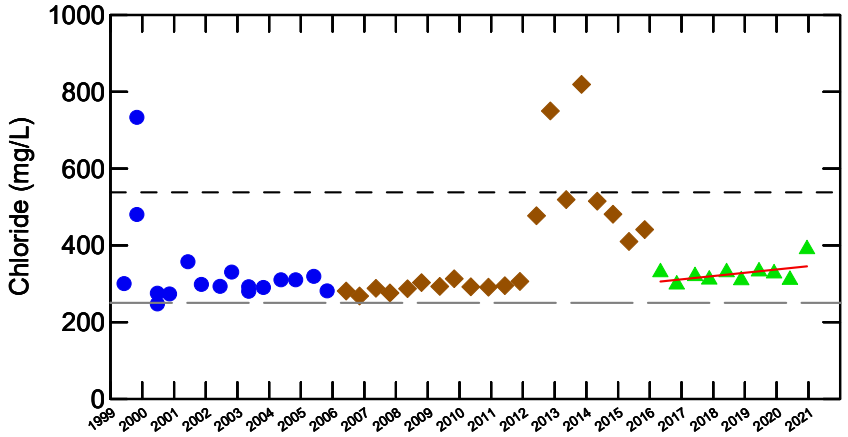
WELL TW39-99D

DEEP WELL (INTERFACE AQUIFER)

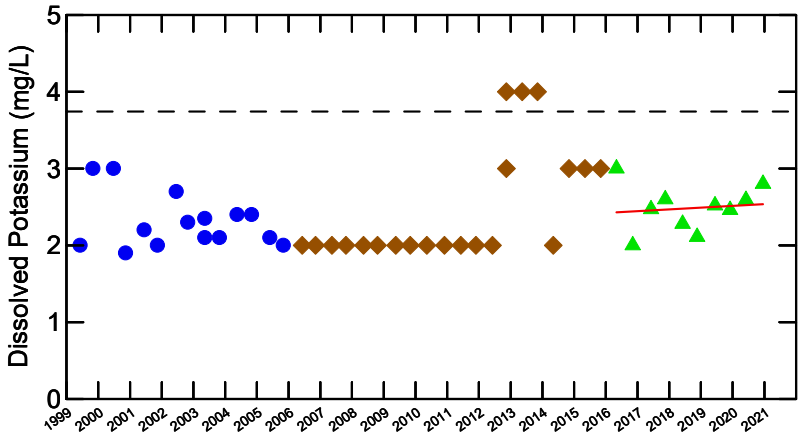
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

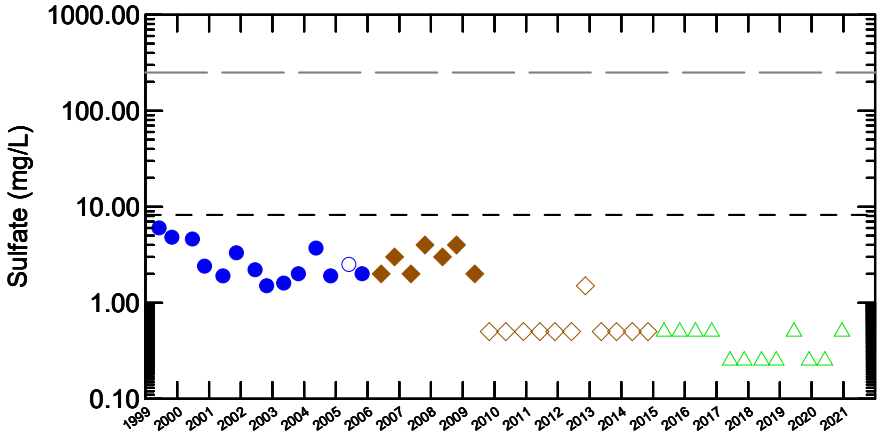
Lambton County, Ontario



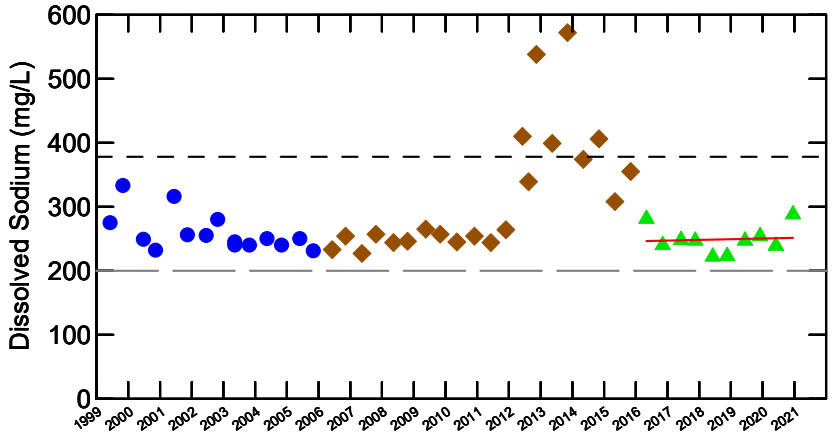
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

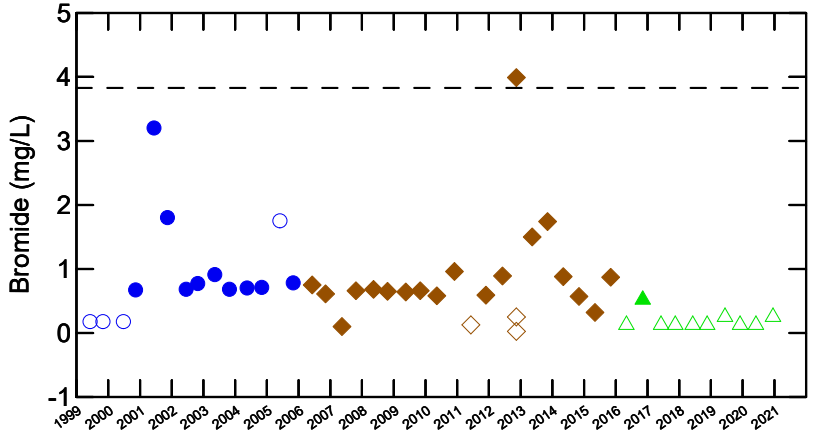
WELL TW40-99D

DEEP WELL (INTERFACE AQUIFER)

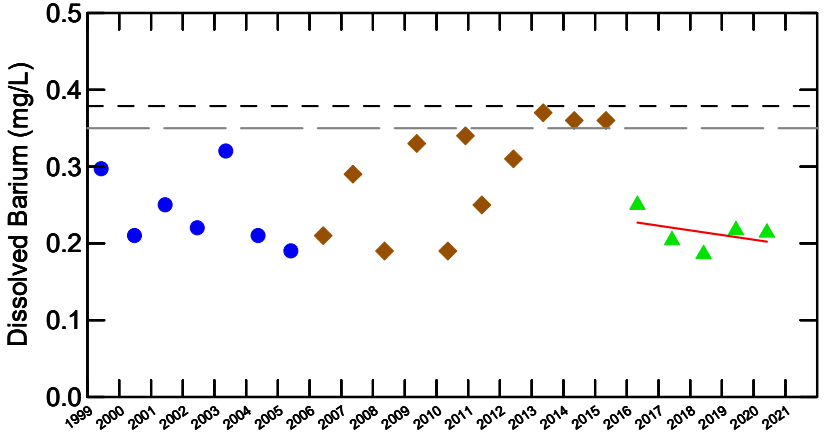
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

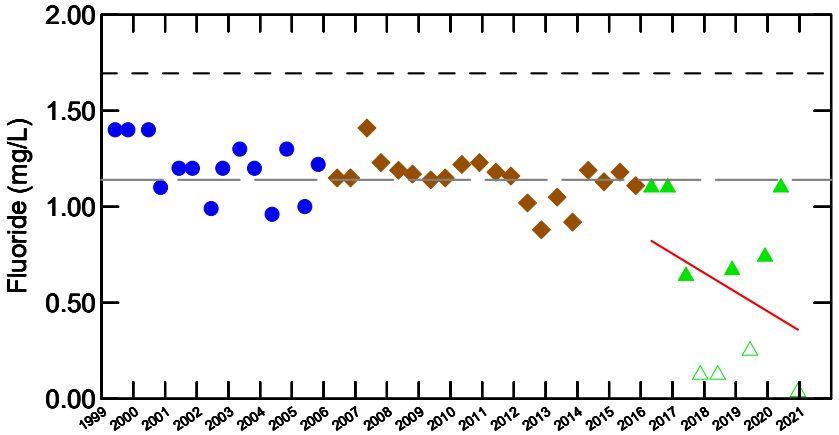
Lambton County, Ontario



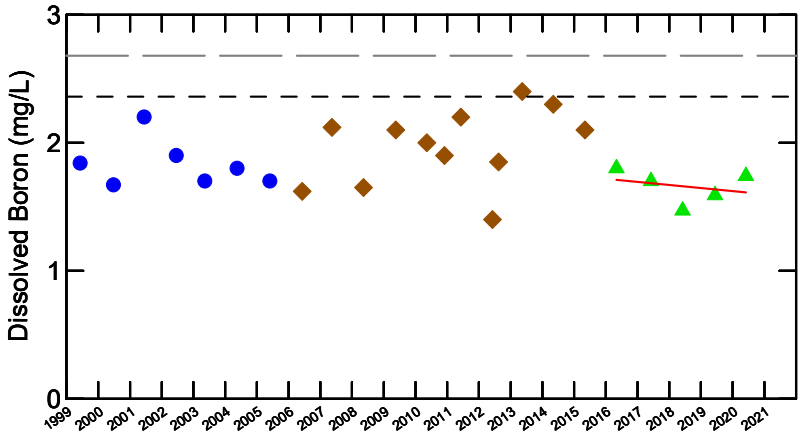
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

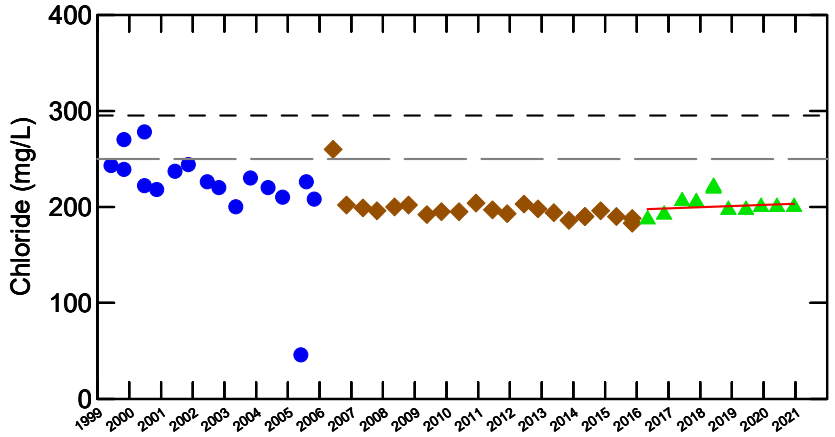
WELL TW40-99D

DEEP WELL (INTERFACE AQUIFER)

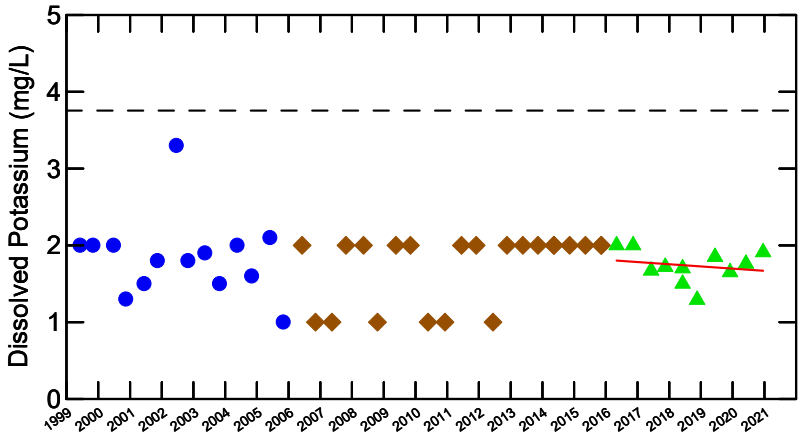
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

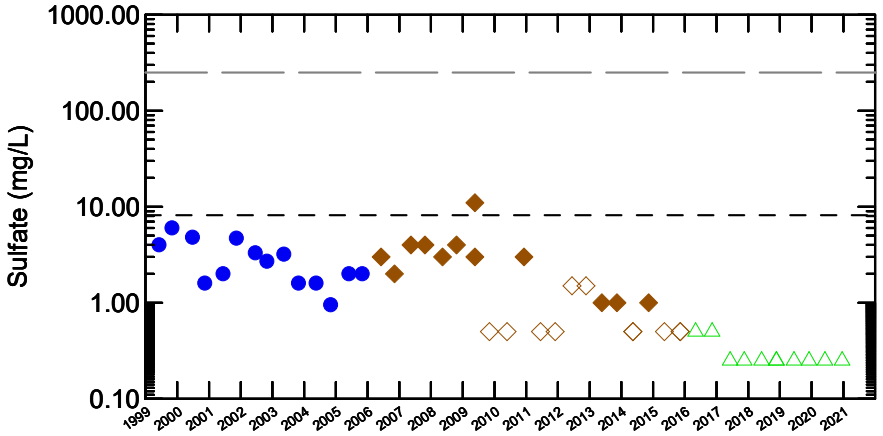
Lambton County, Ontario



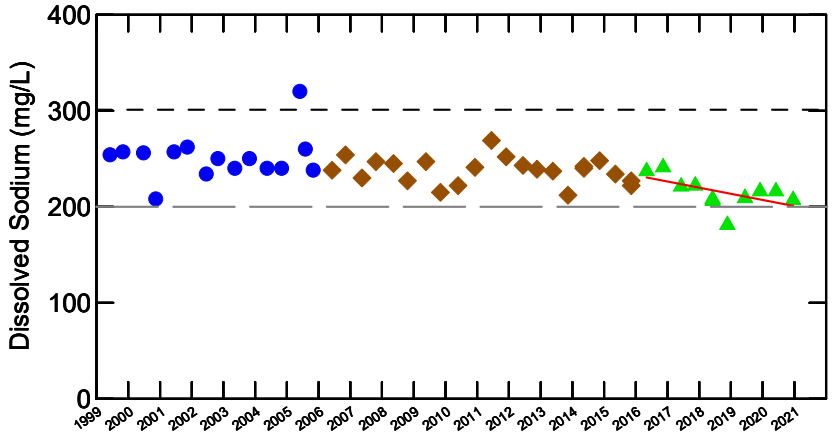
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

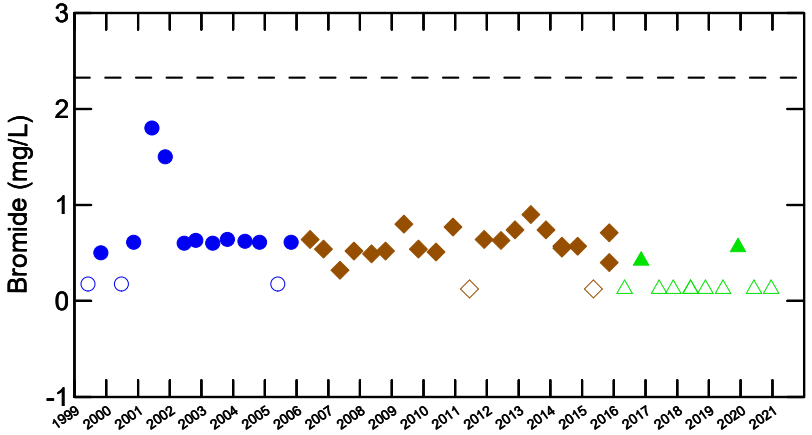
WELL TW41-99D

DEEP WELL (INTERFACE AQUIFER)

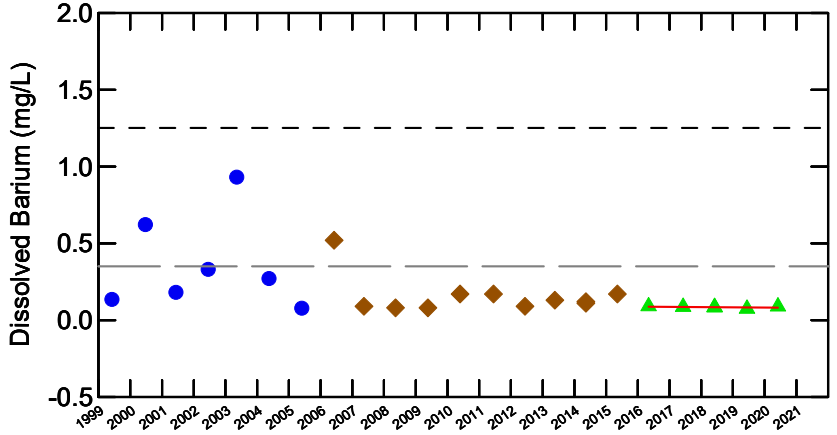
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

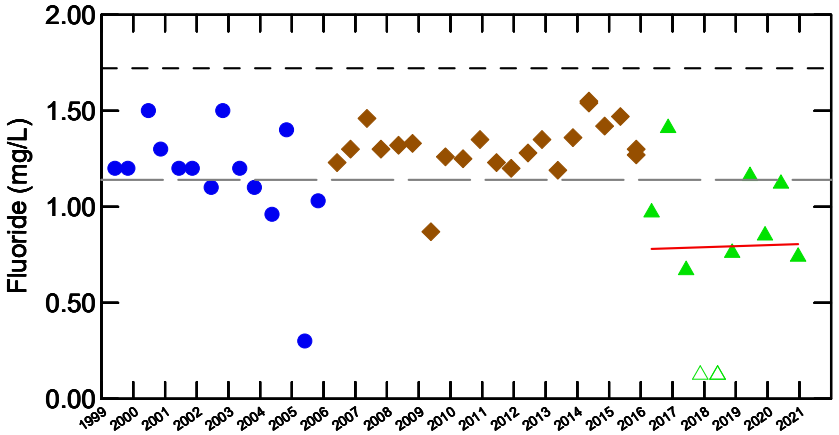
Lambton County, Ontario



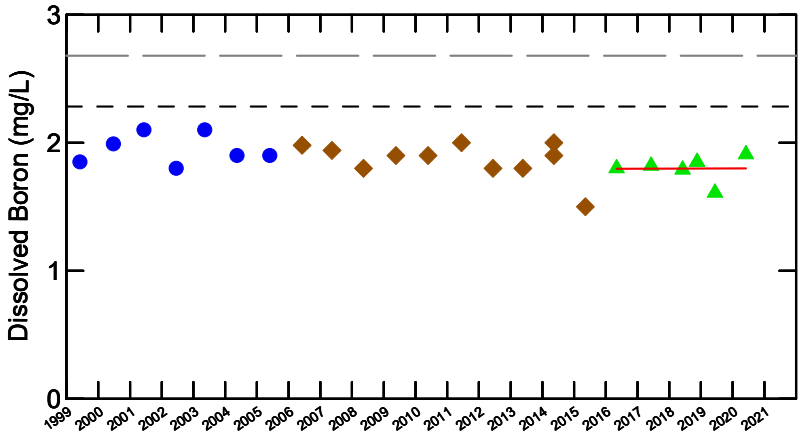
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

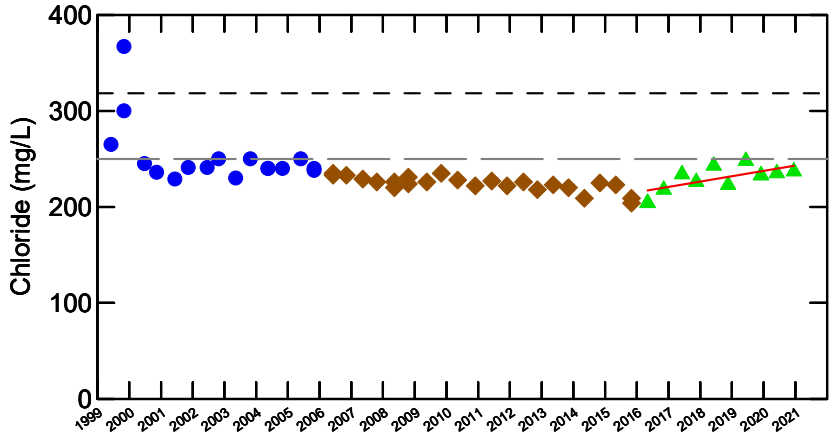
WELL TW41-99D

DEEP WELL (INTERFACE AQUIFER)

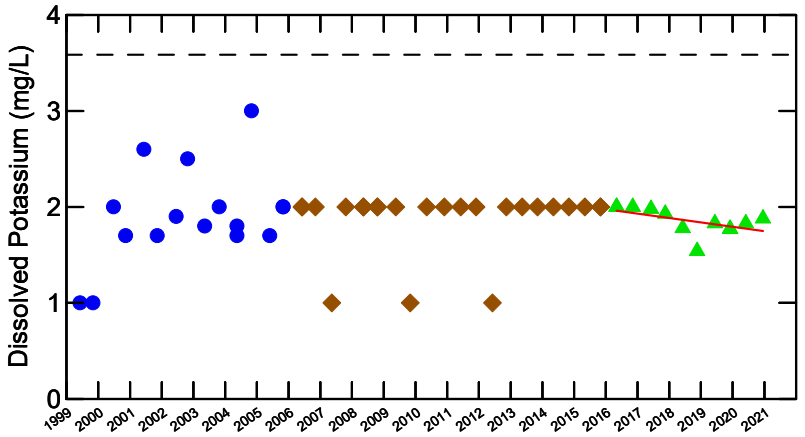
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

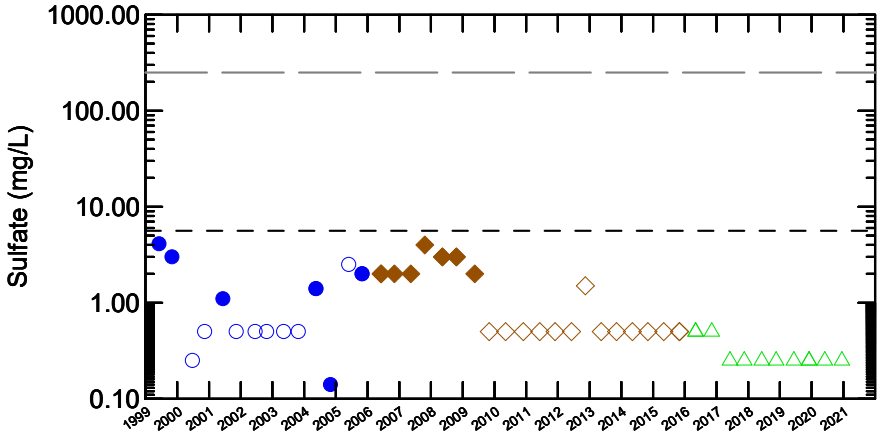
Lambton County, Ontario



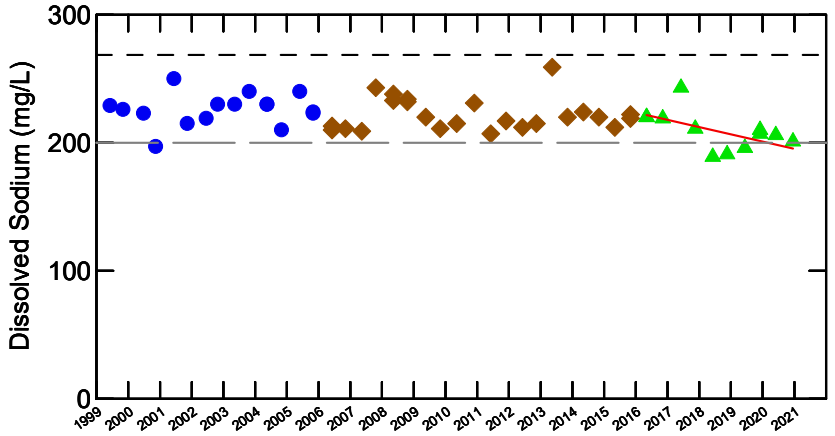
Increasing trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

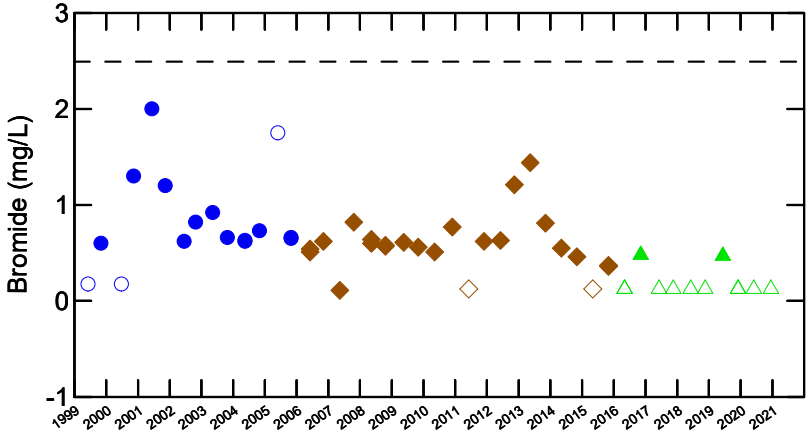
WELL TW43-99D

DEEP WELL (INTERFACE AQUIFER)

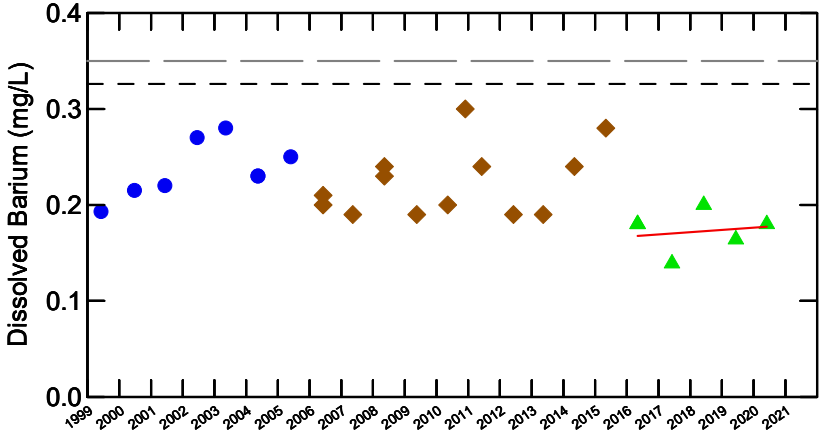
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

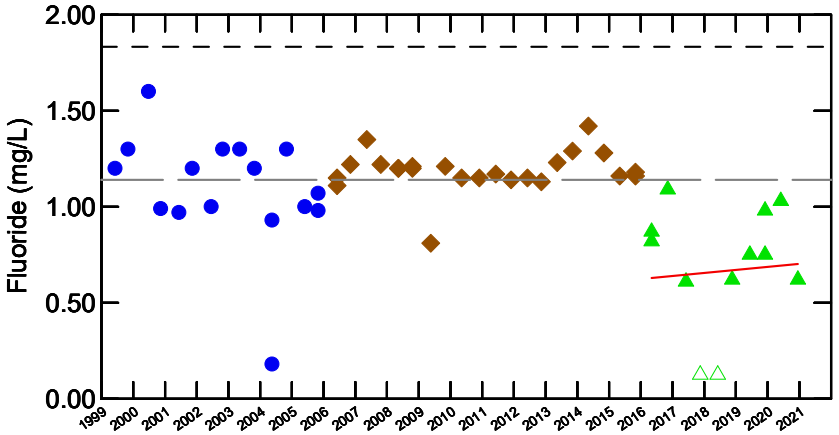
Lambton County, Ontario



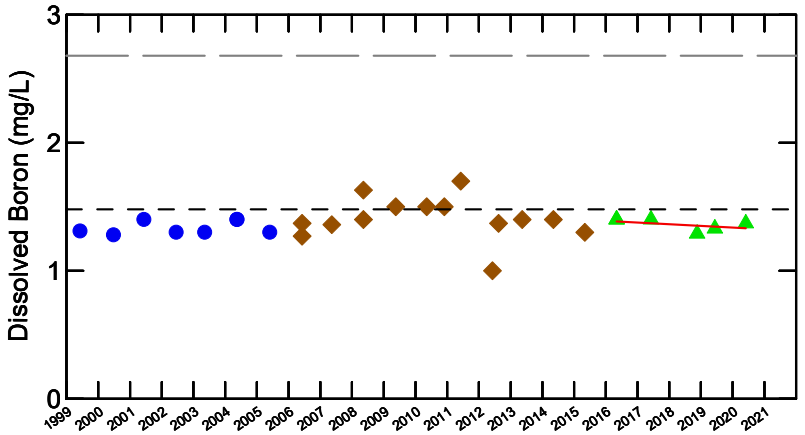
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

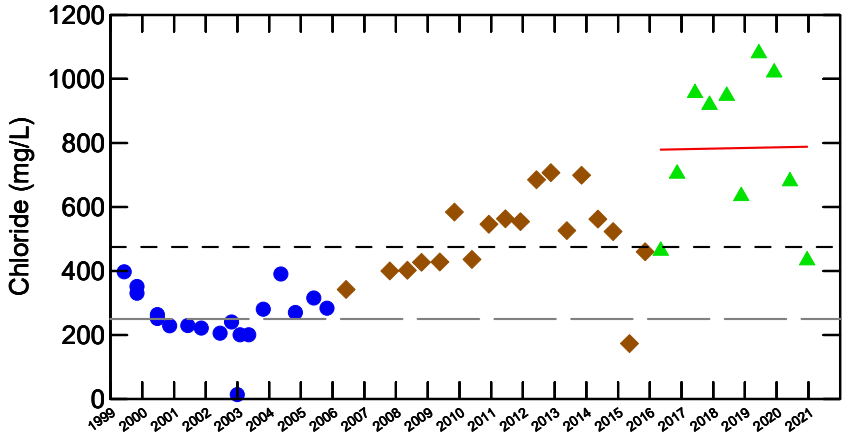
WELL TW43-99D

DEEP WELL (INTERFACE AQUIFER)

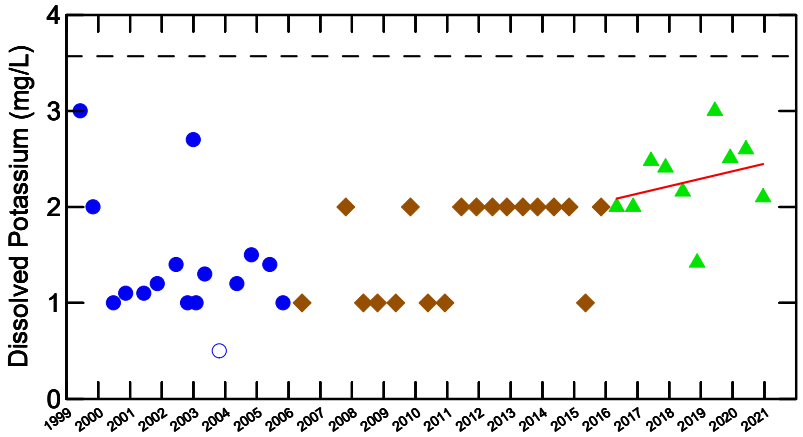
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

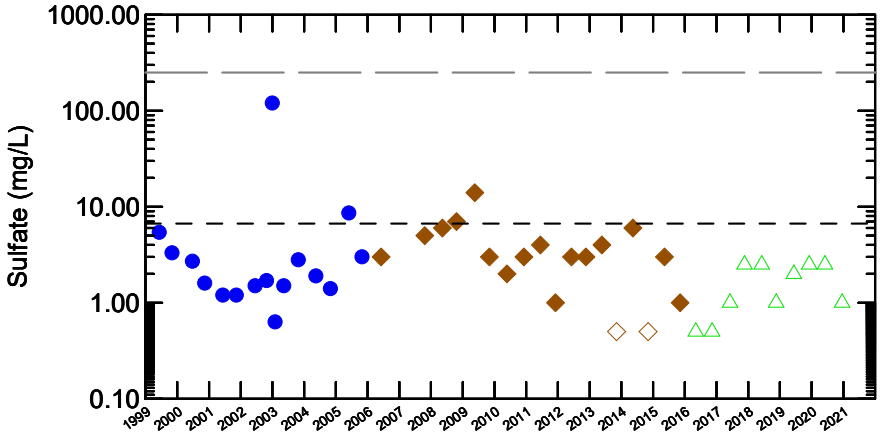
Lambton County, Ontario



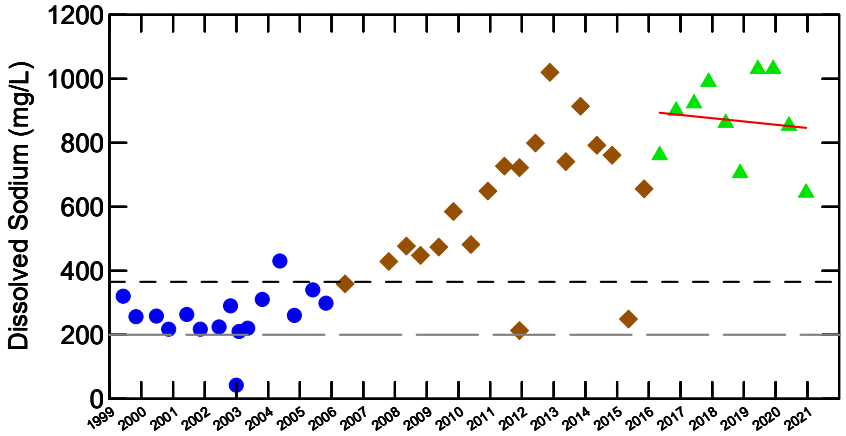
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

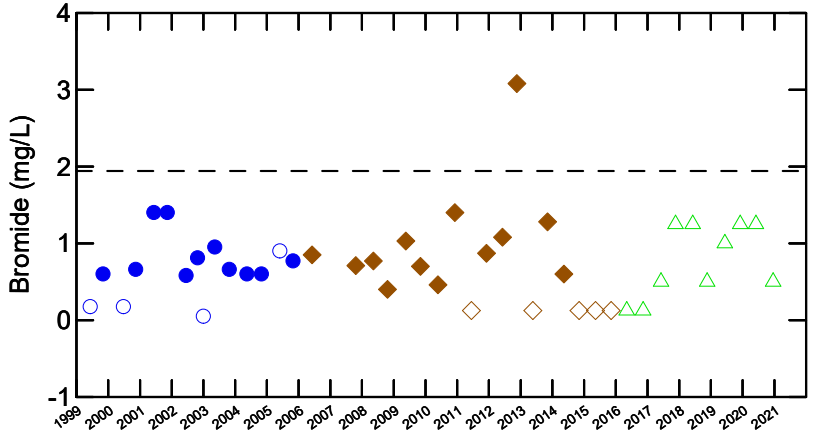
WELL TW45-99D

DEEP WELL (INTERFACE AQUIFER)

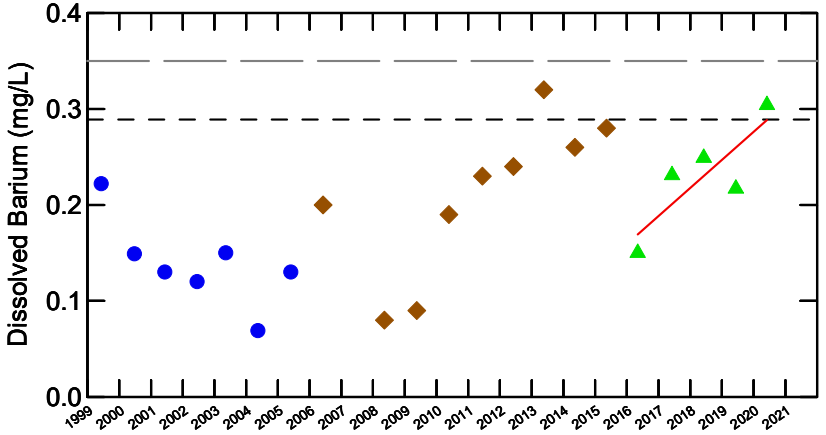
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

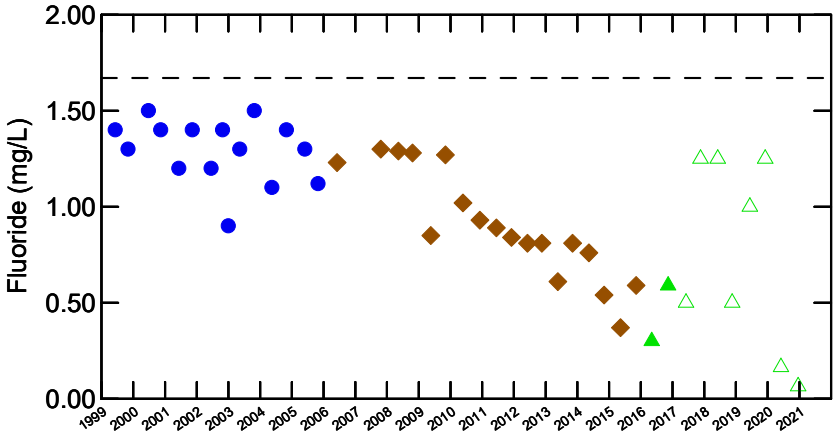
Lambton County, Ontario



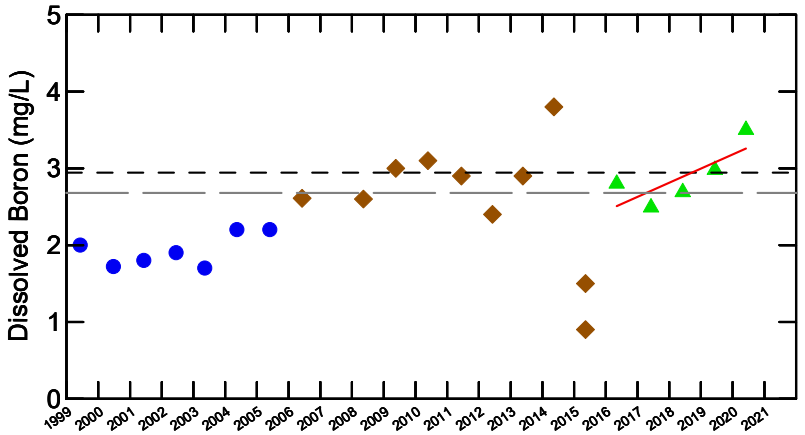
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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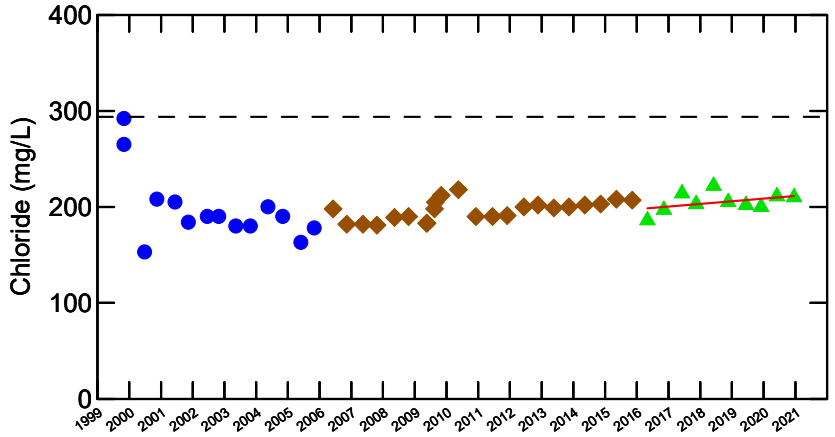
WELL TW45-99D

DEEP WELL (INTERFACE AQUIFER)

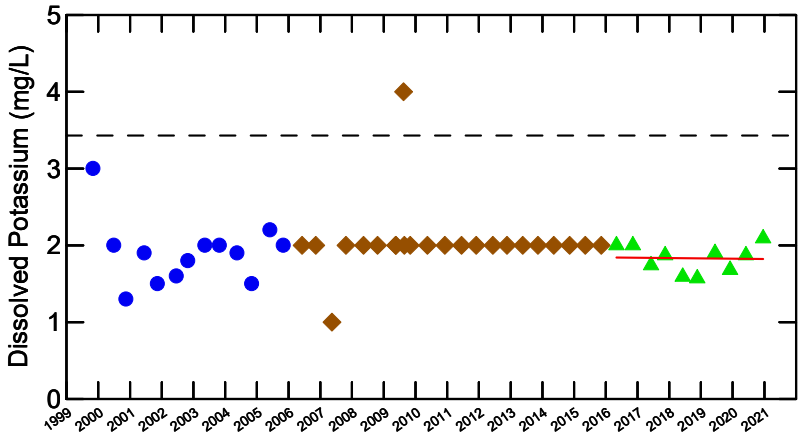
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

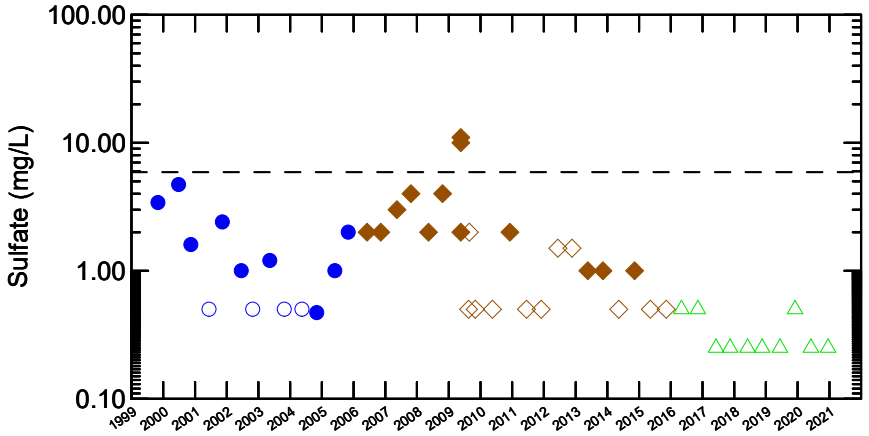
Lambton County, Ontario



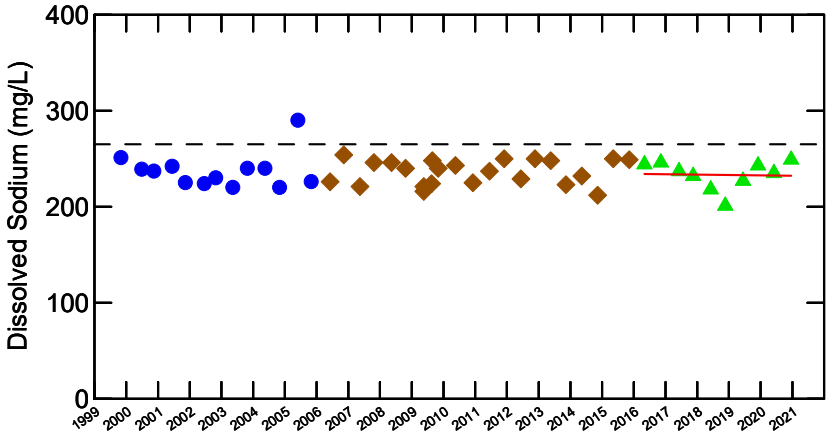
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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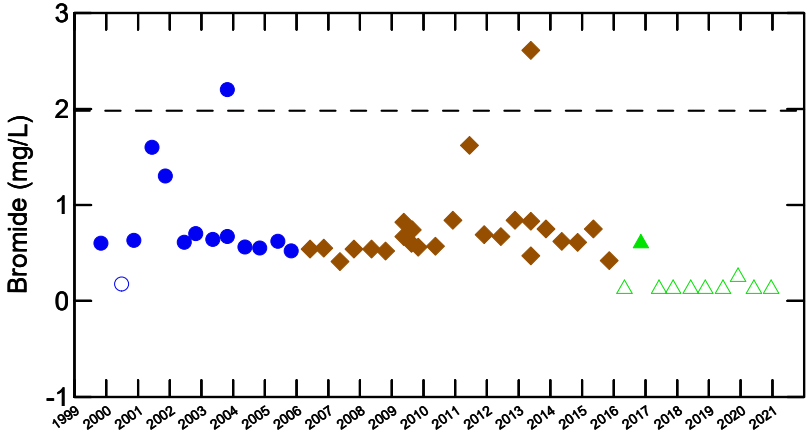
WELL TW46-99D

DEEP WELL (INTERFACE AQUIFER)

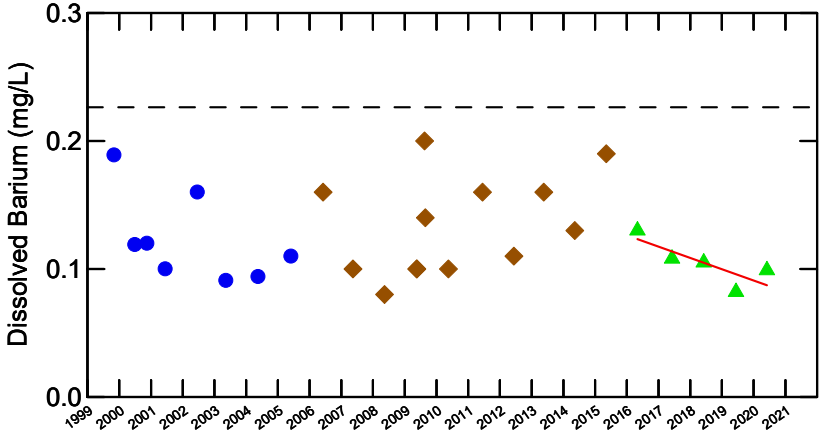
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

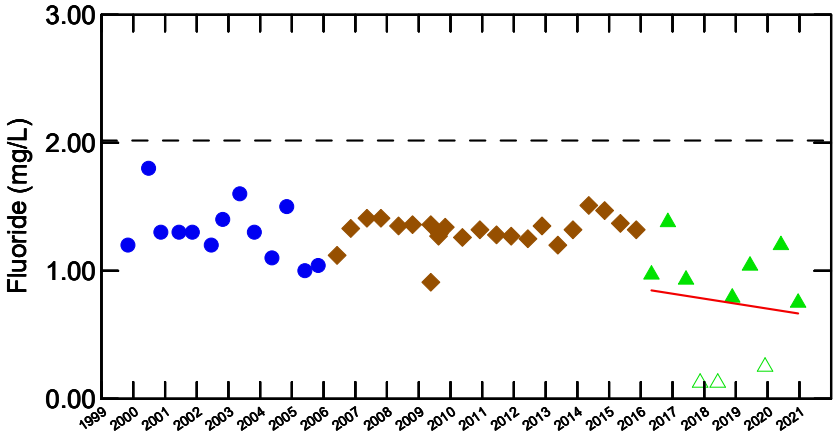
Lambton County, Ontario



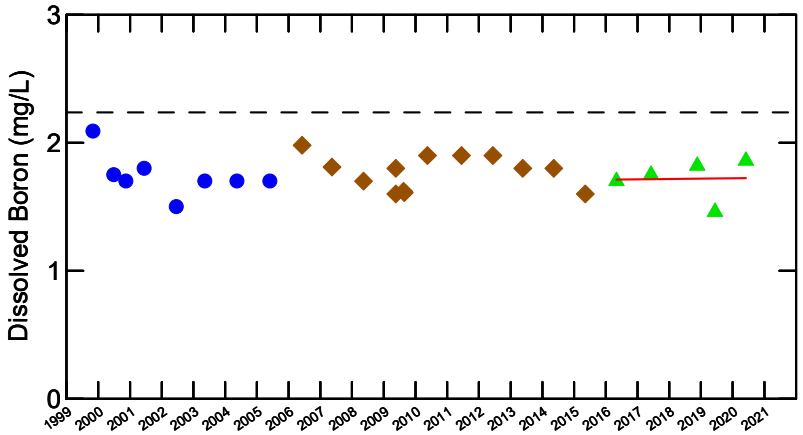
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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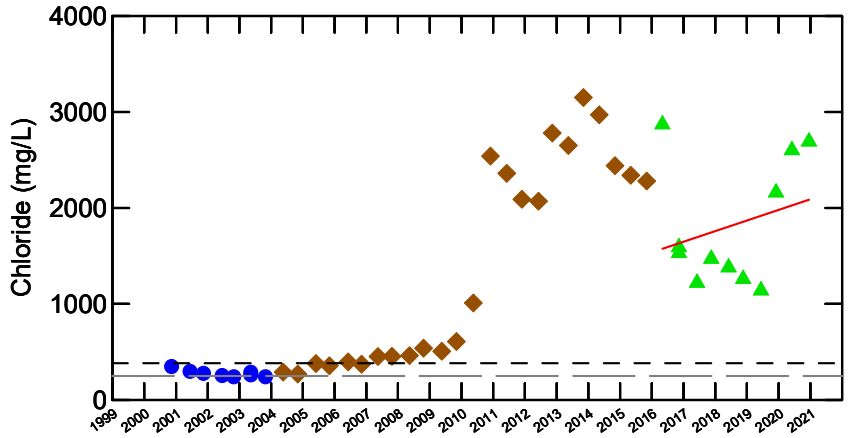
WELL TW46-99D

DEEP WELL (INTERFACE AQUIFER)

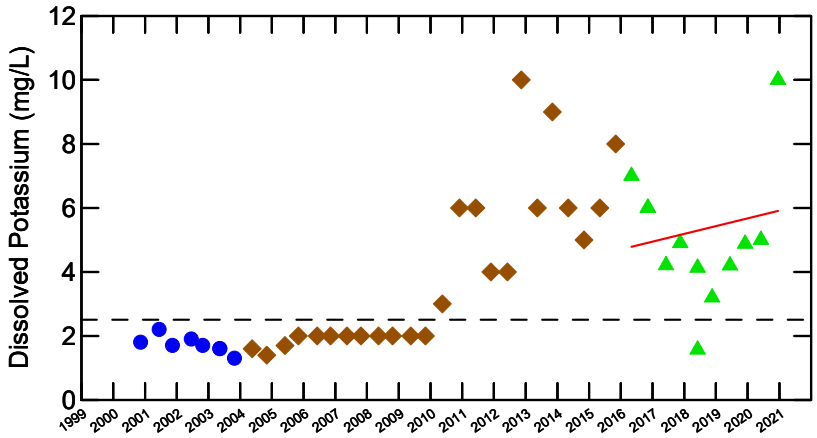
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

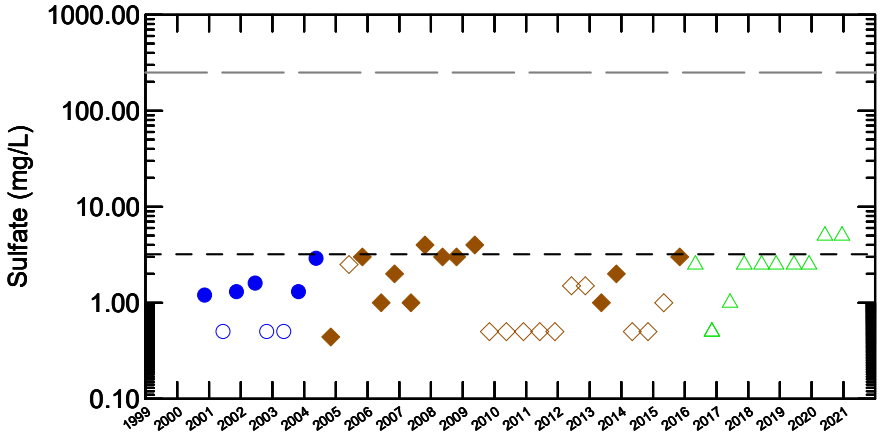
Lambton County, Ontario



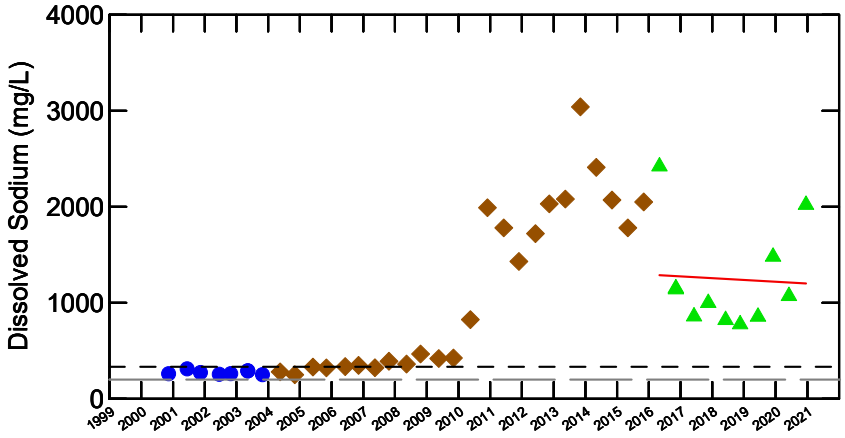
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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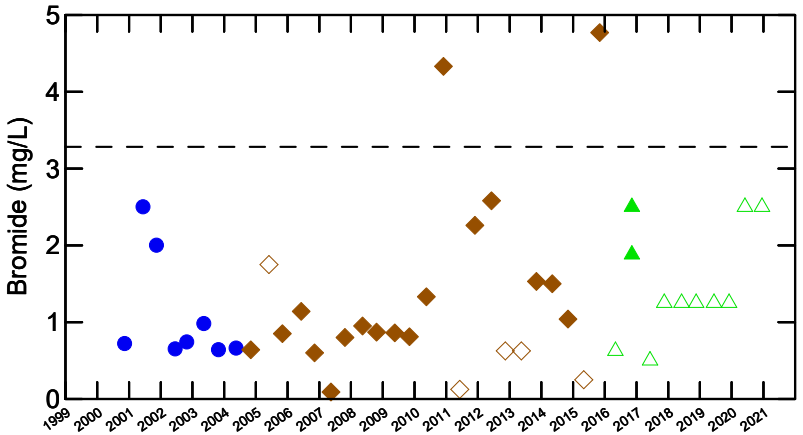
WELL TW47-00D

DEEP WELL (INTERFACE AQUIFER)

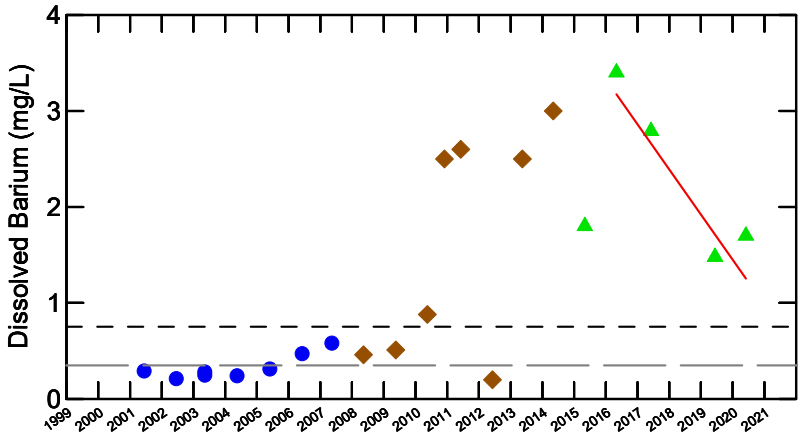
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

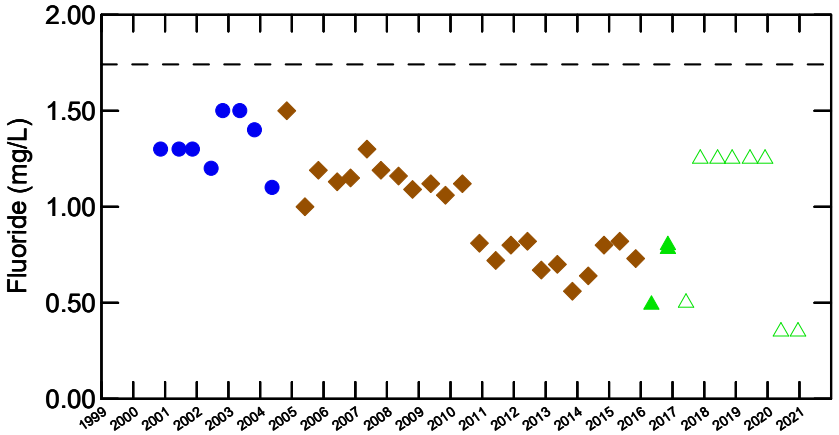
Lambton County, Ontario



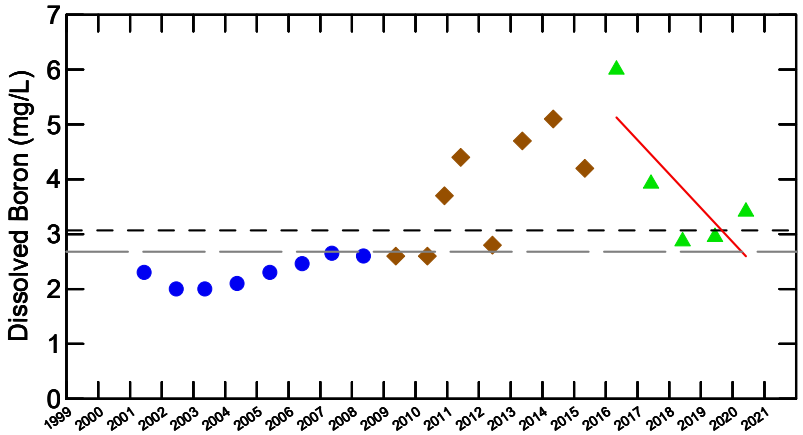
Over 50% non-detect



Decreasing trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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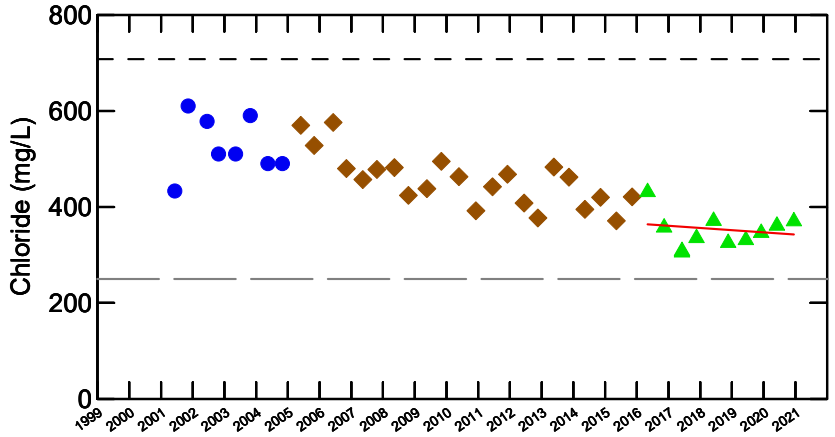
WELL TW47-00D

DEEP WELL (INTERFACE AQUIFER)

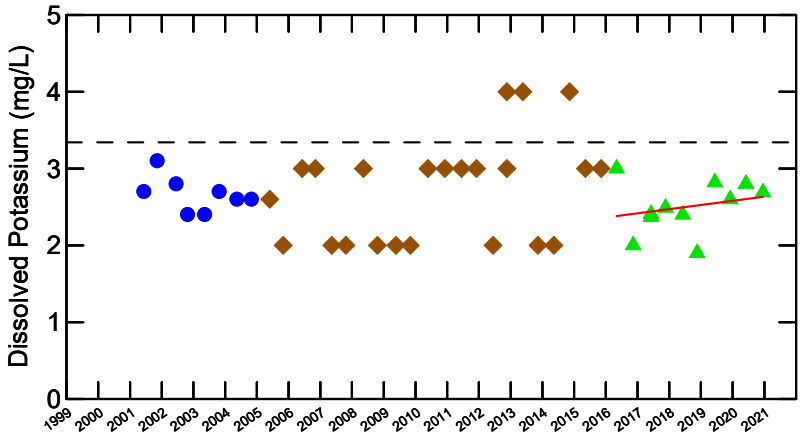
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

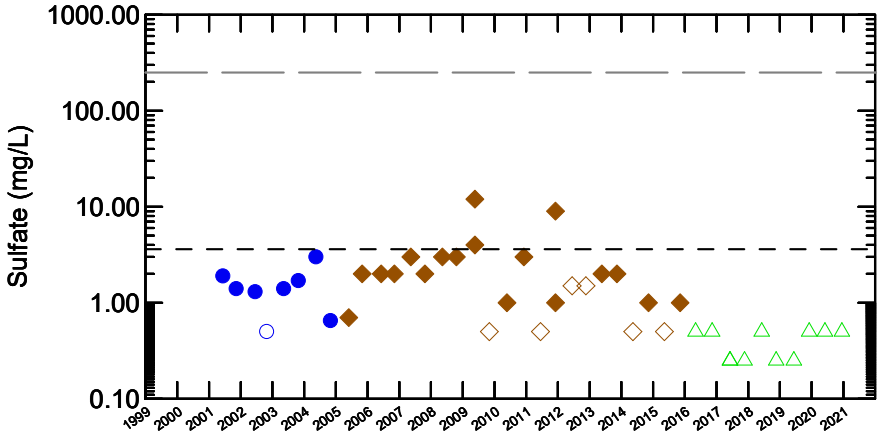
Lambton County, Ontario



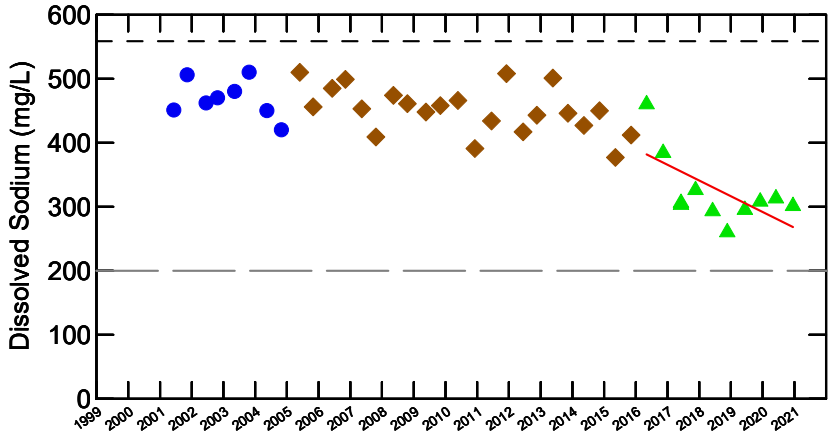
No trend



No trend



No detected results



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

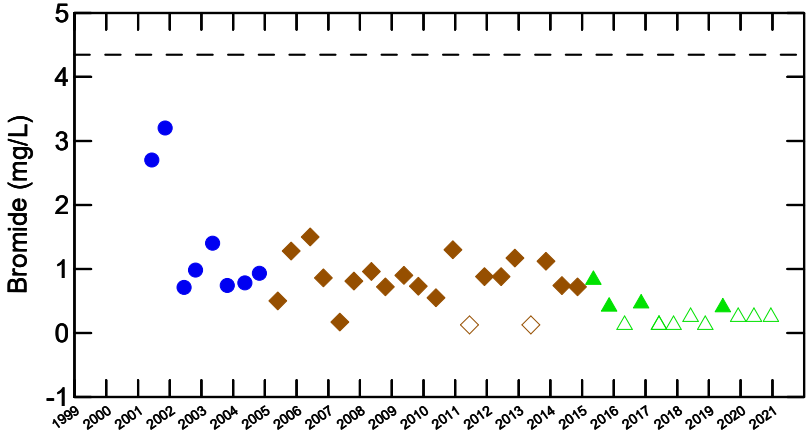
WELL TW48-00D

DEEP WELL (INTERFACE AQUIFER)

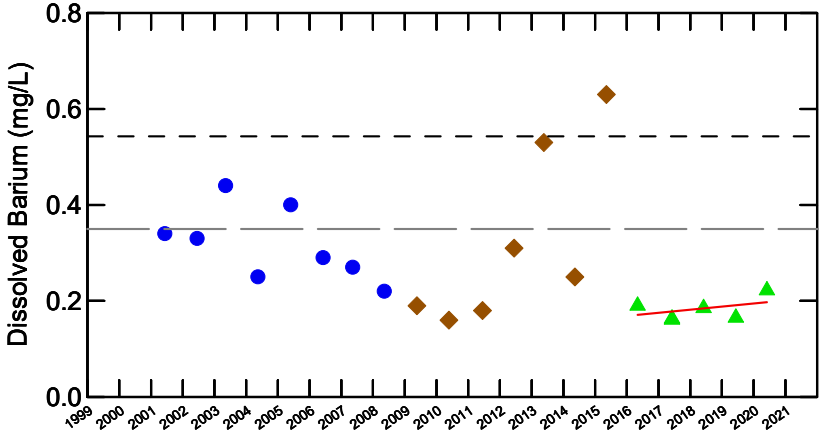
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

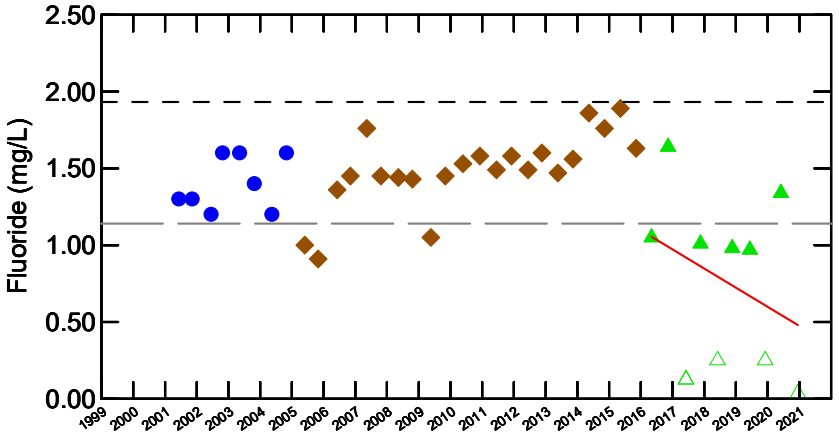
Lambton County, Ontario



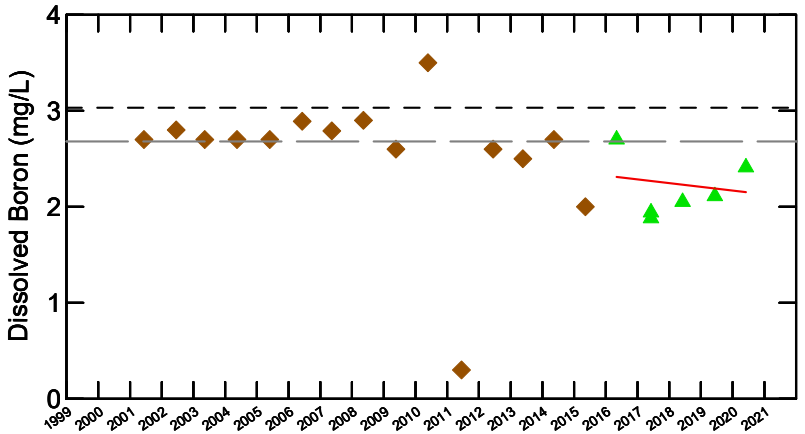
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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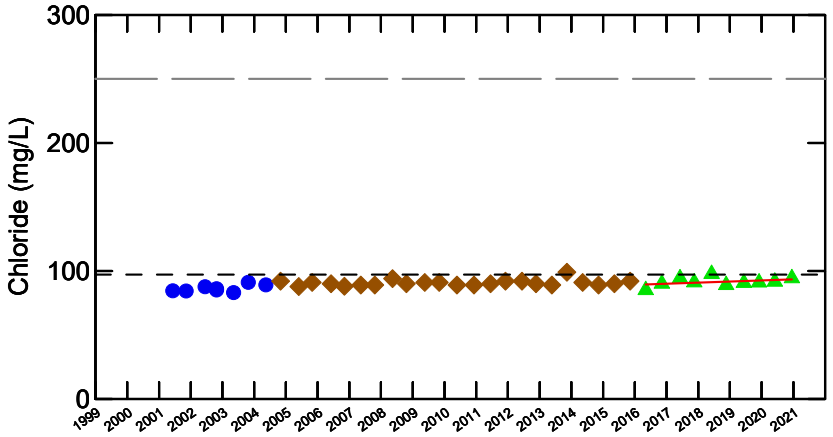
WELL TW48-00D

DEEP WELL (INTERFACE AQUIFER)

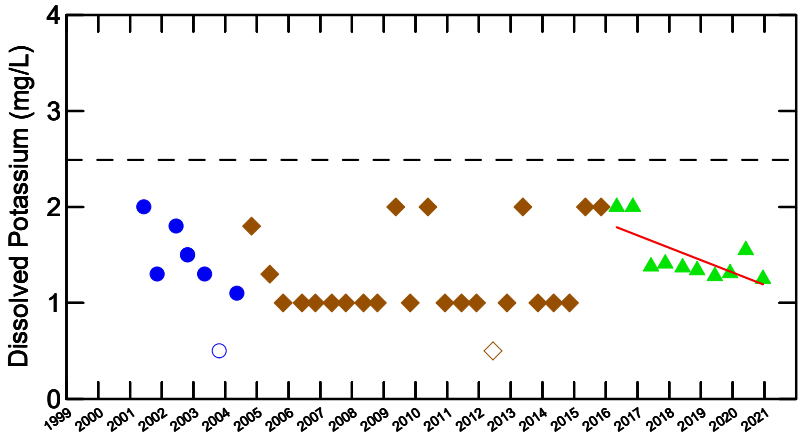
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

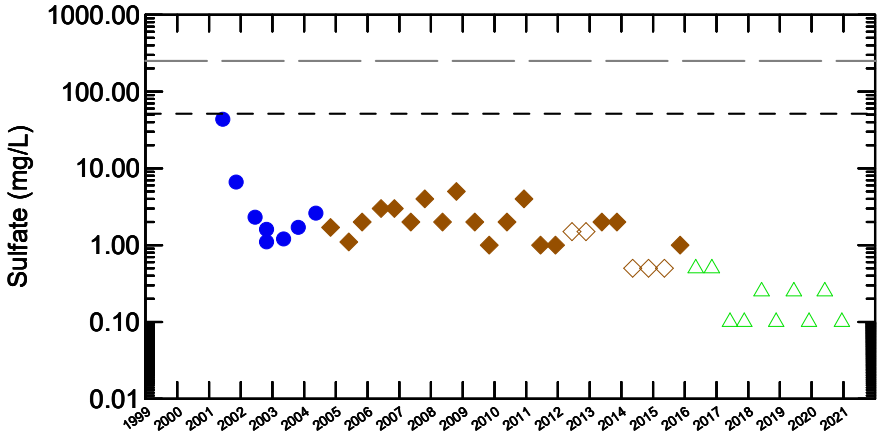
Lambton County, Ontario



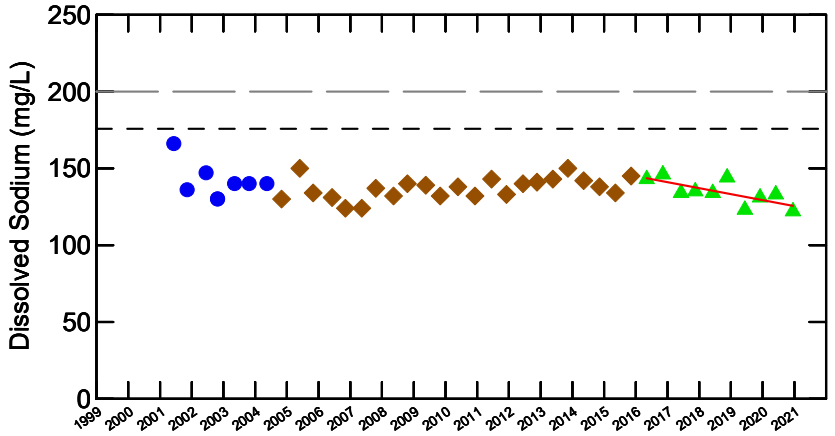
No trend



Decreasing trend



No detected results



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

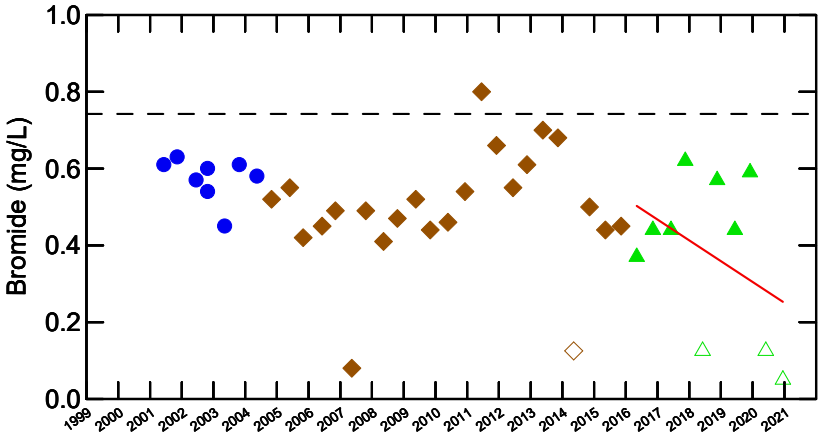
WELL TW49-00D

DEEP WELL (INTERFACE AQUIFER)

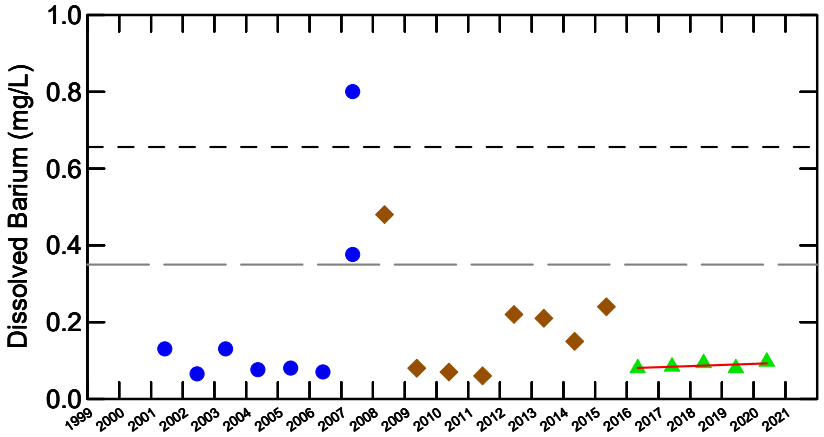
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

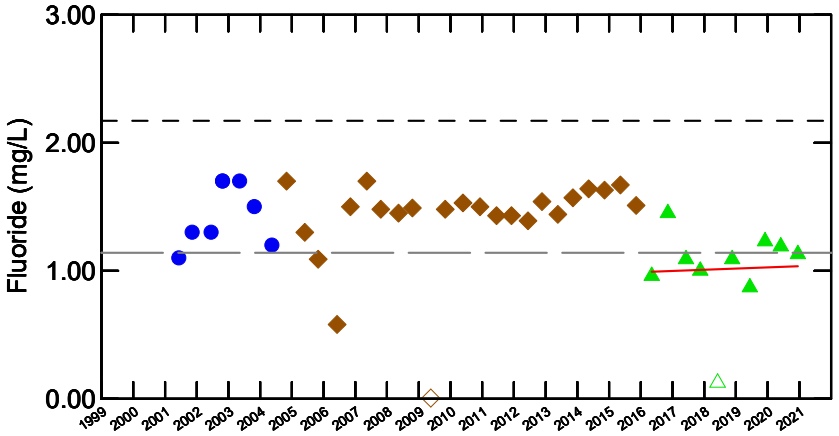
Lambton County, Ontario



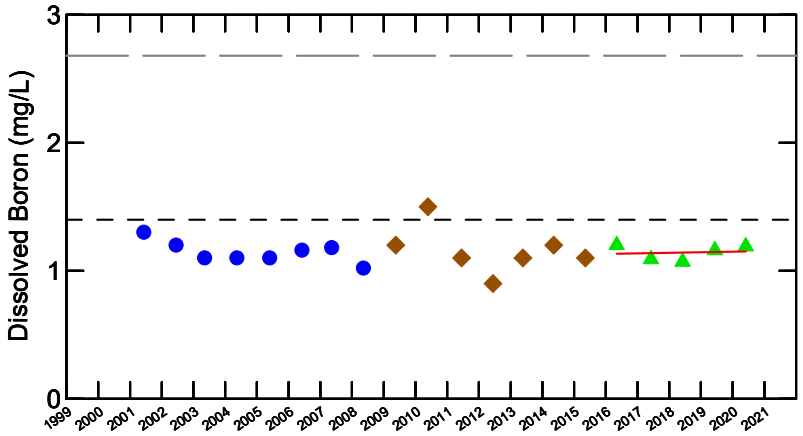
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

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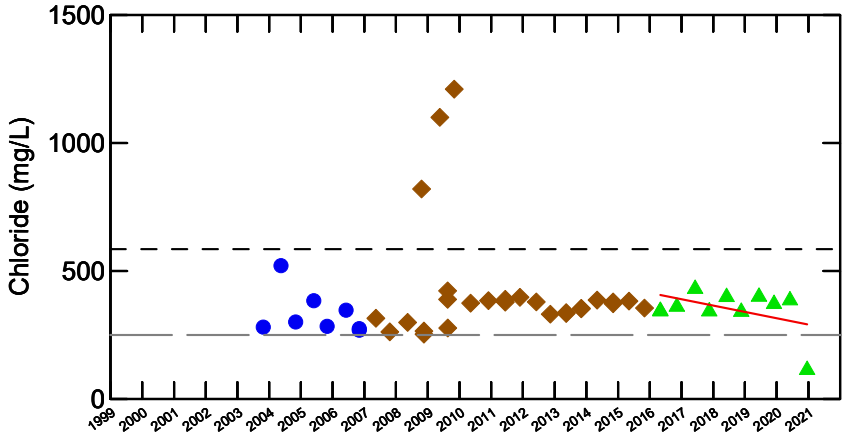
WELL TW49-00D

DEEP WELL (INTERFACE AQUIFER)

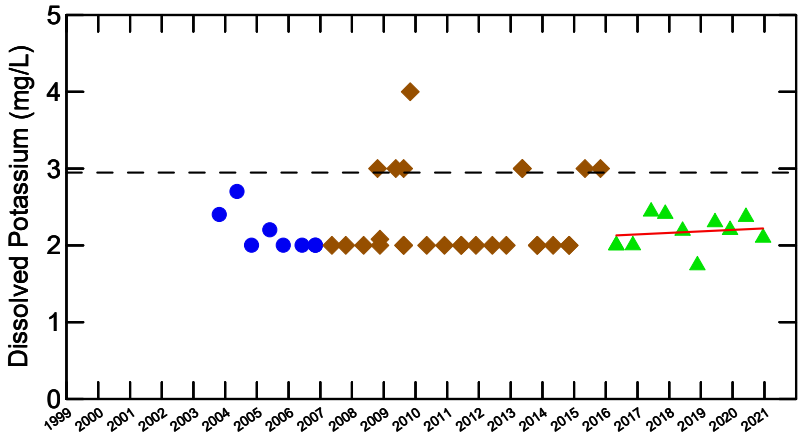
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

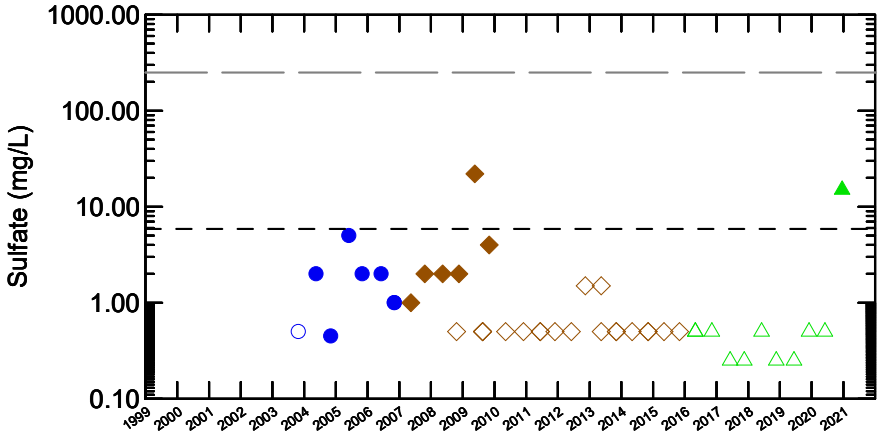
Lambton County, Ontario



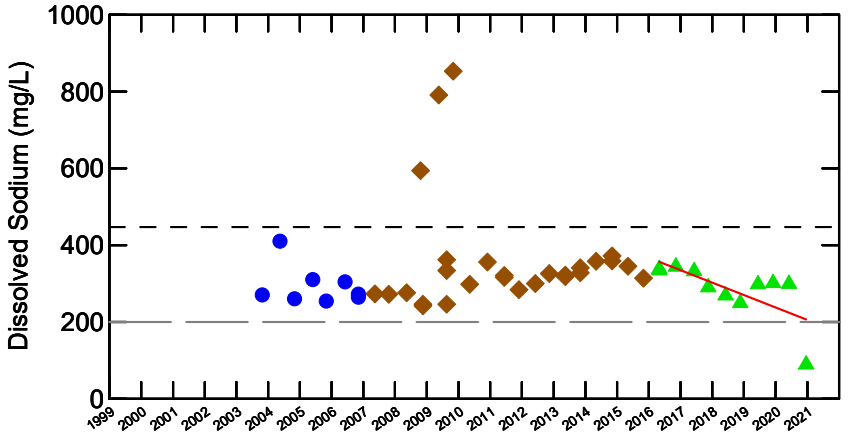
No trend



No trend



No detected results



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

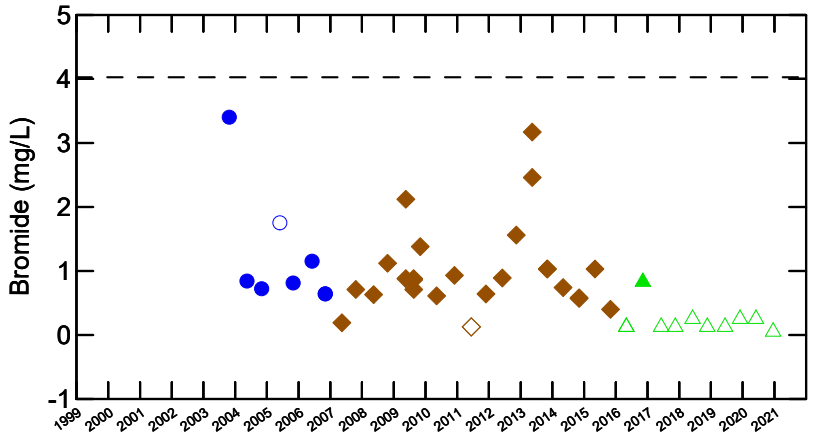
WELL TW53-03D

DEEP WELL (INTERFACE AQUIFER)

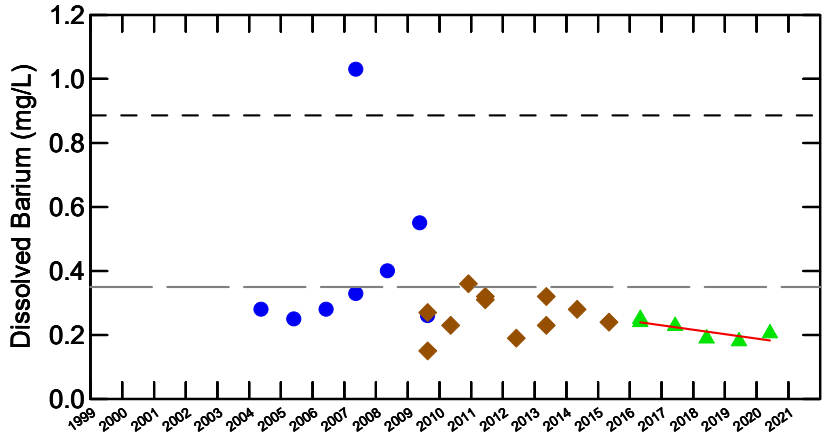
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

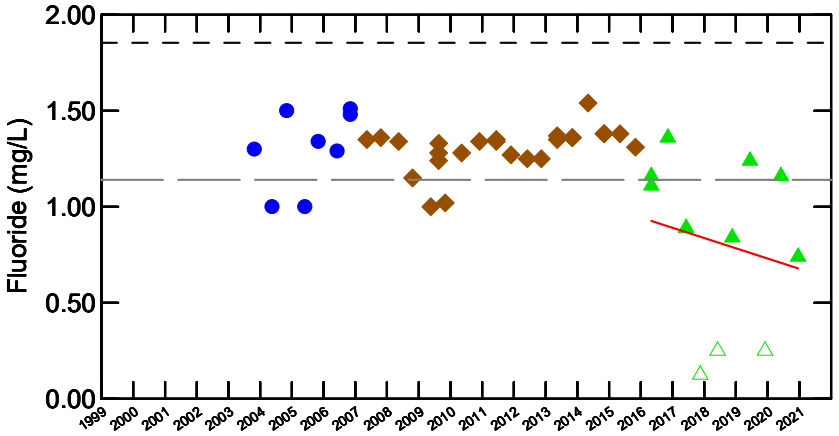
Lambton County, Ontario



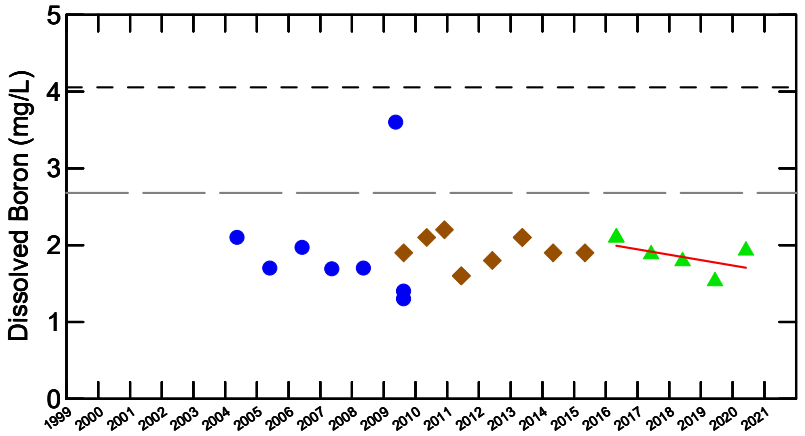
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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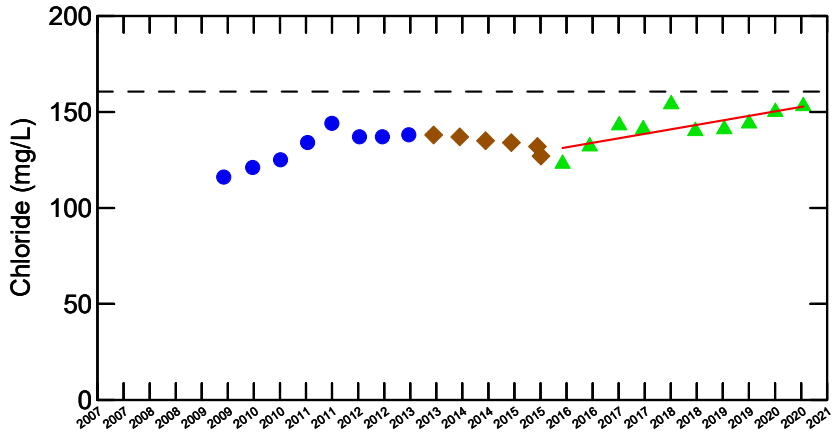
WELL TW53-03D

DEEP WELL (INTERFACE AQUIFER)

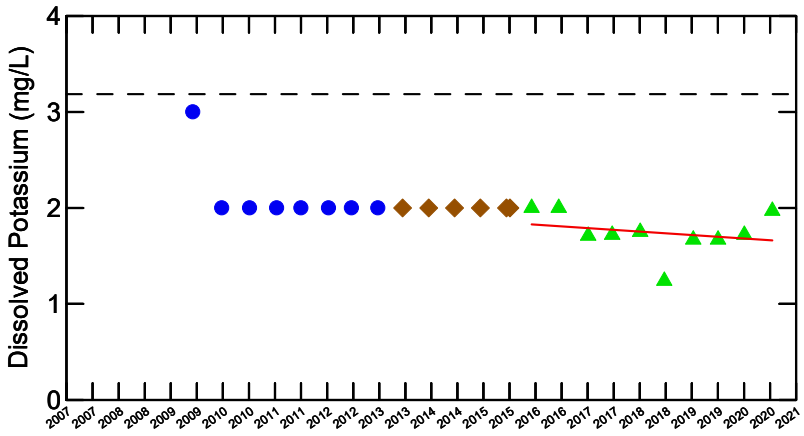
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

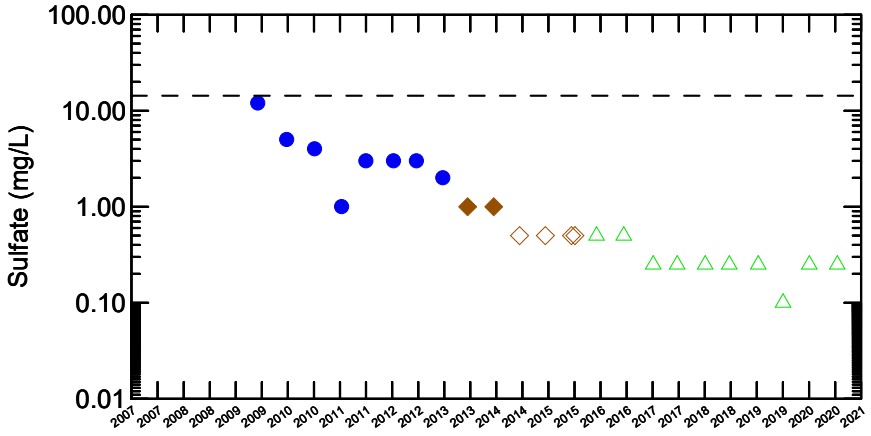
Lambton County, Ontario



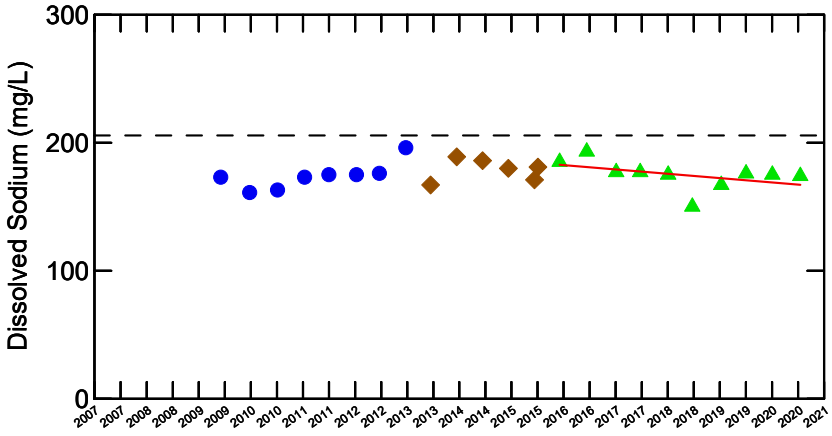
Increasing trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

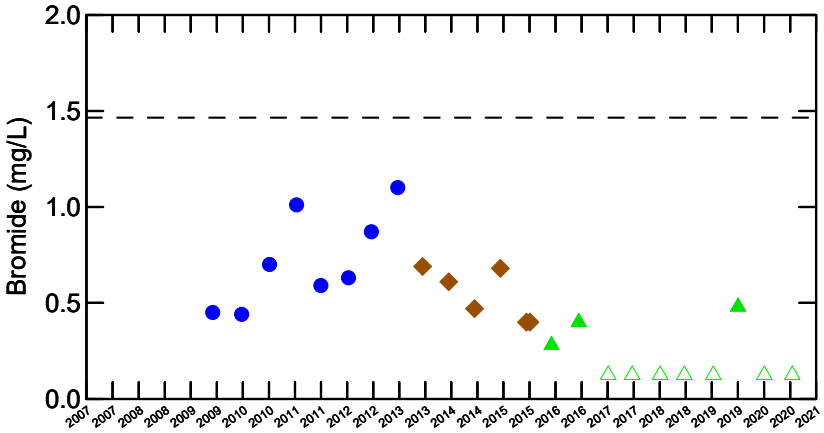
WELL TW54-09D

DEEP WELL (INTERFACE AQUIFER)

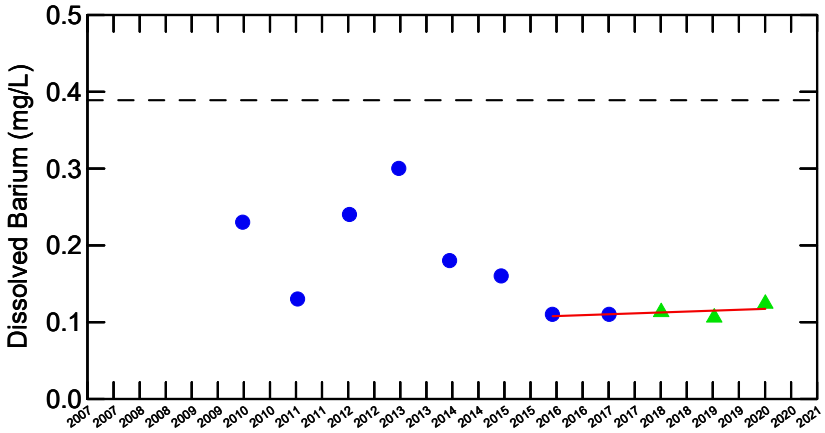
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

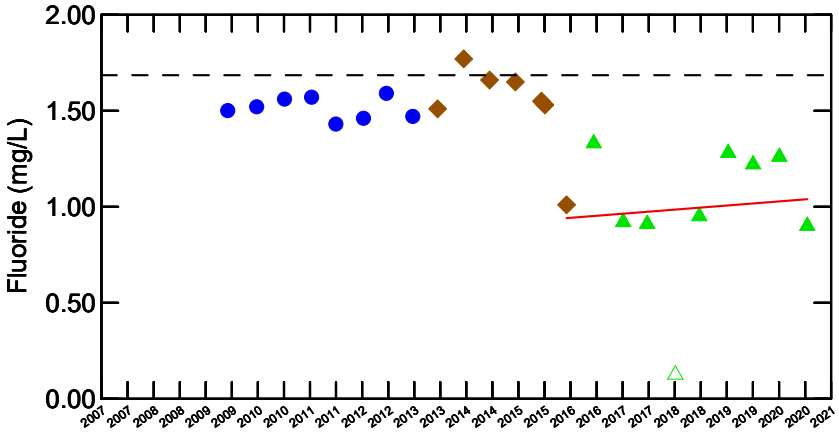
Lambton County, Ontario



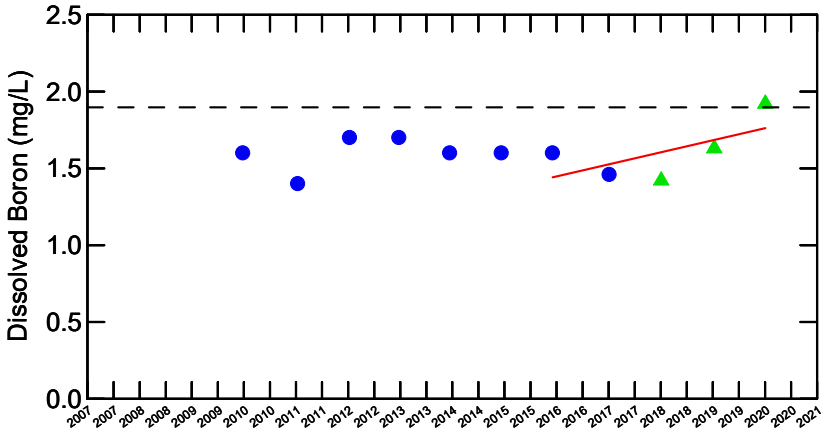
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

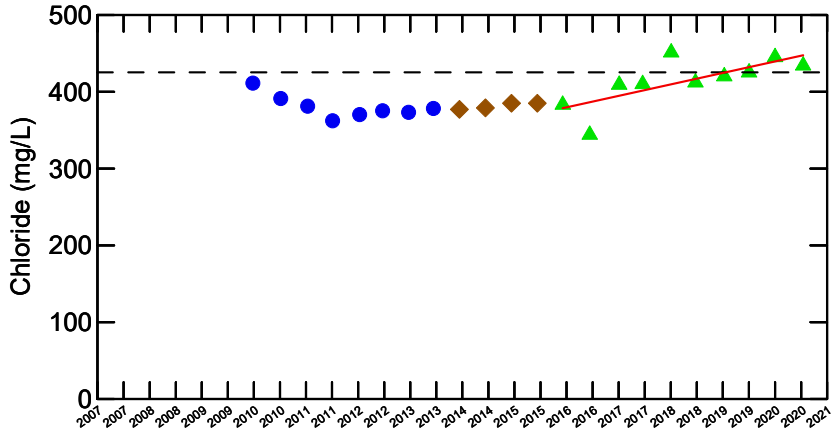
WELL TW54-09D

DEEP WELL (INTERFACE AQUIFER)

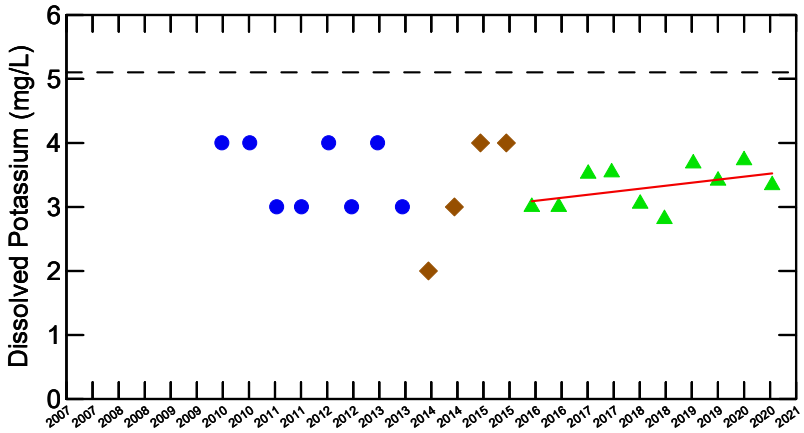
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

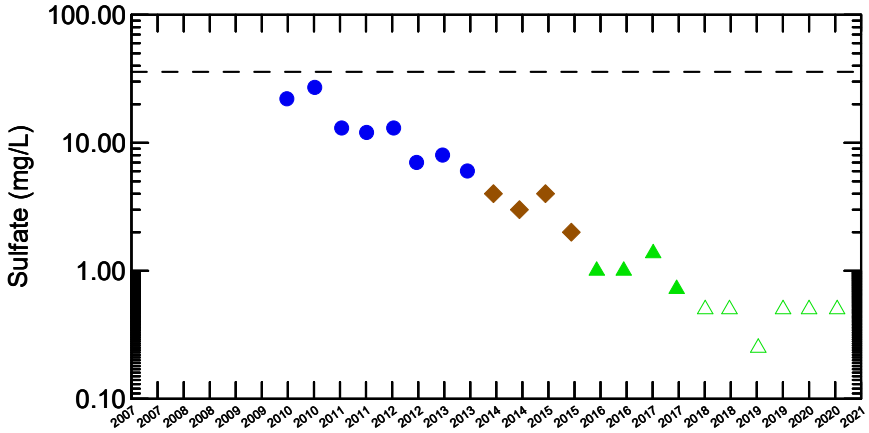
Lambton County, Ontario



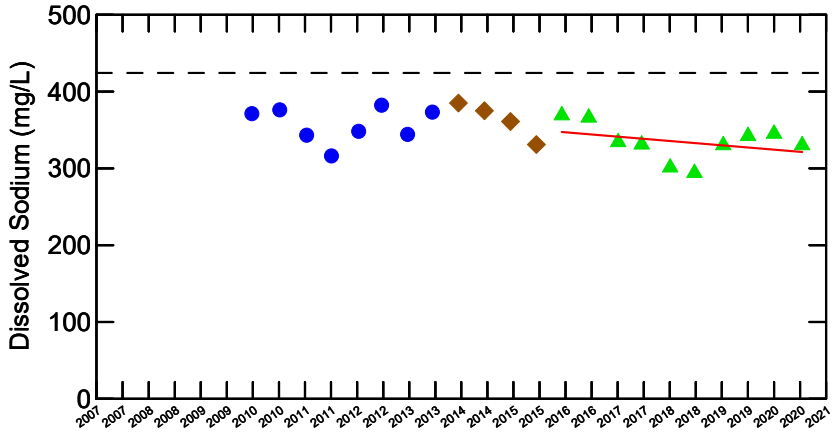
Increasing trend



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

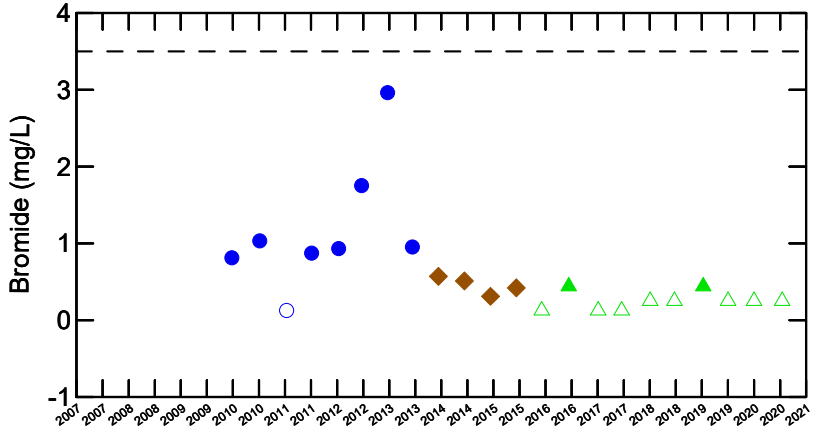
WELL TW55-09D

DEEP WELL (INTERFACE AQUIFER)

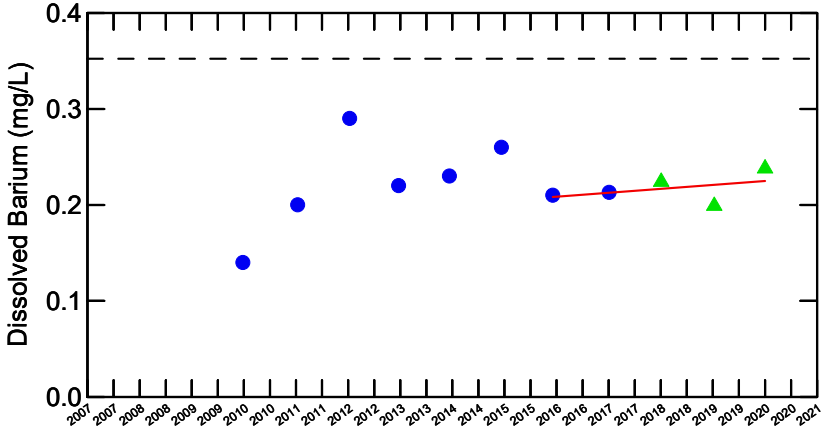
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

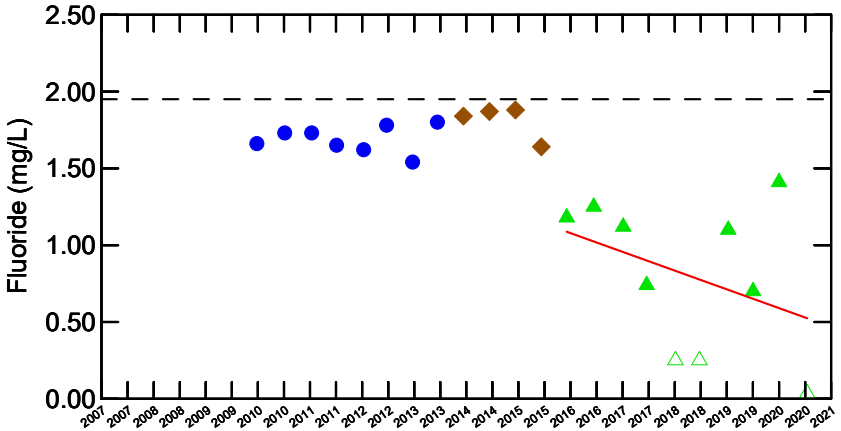
Lambton County, Ontario



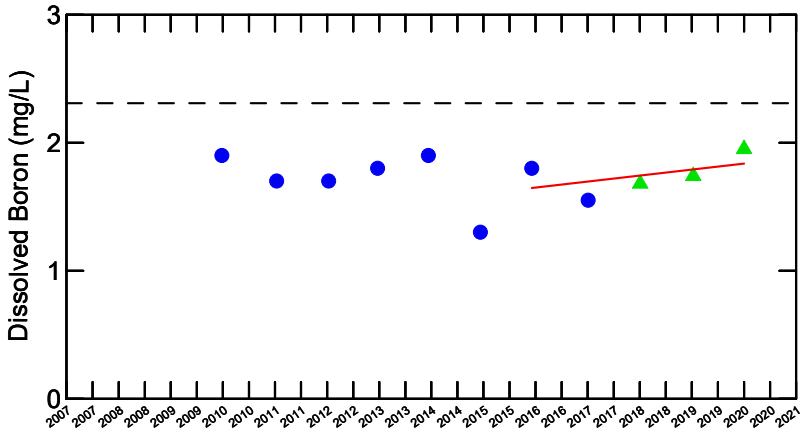
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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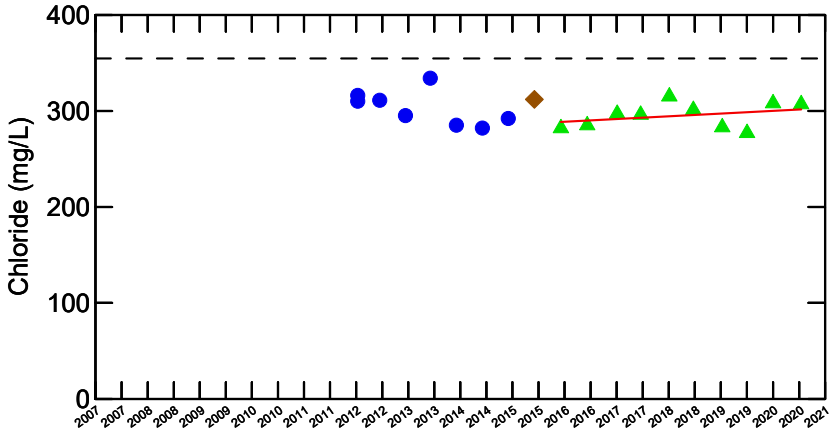
WELL TW55-09D

DEEP WELL (INTERFACE AQUIFER)

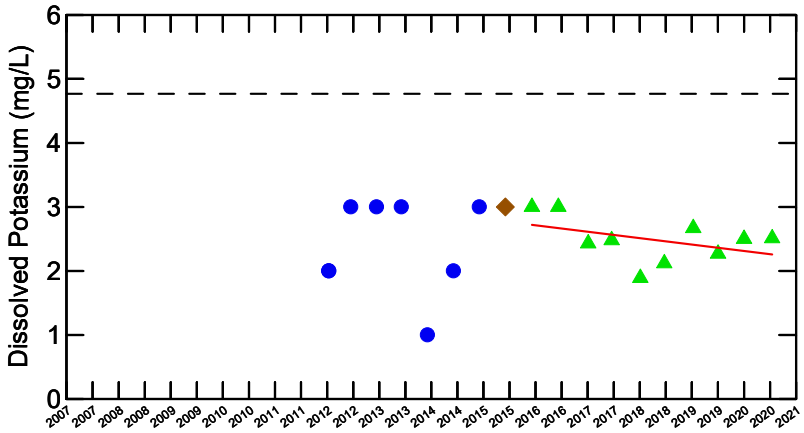
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

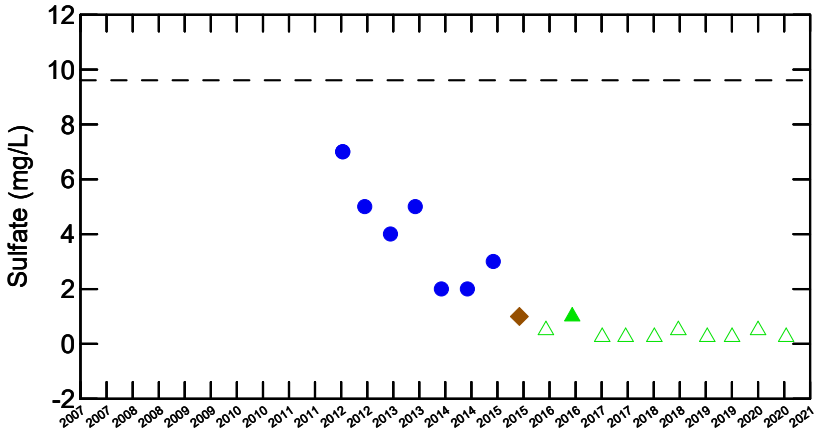
Lambton County, Ontario



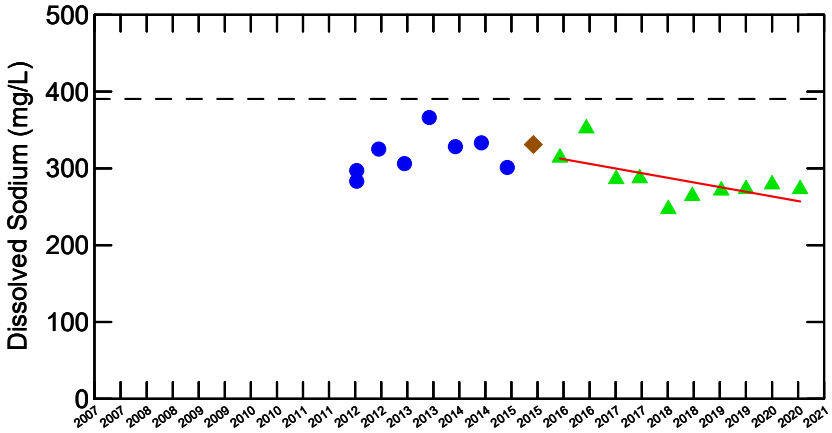
No trend



No trend



Over 50% non-detect



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

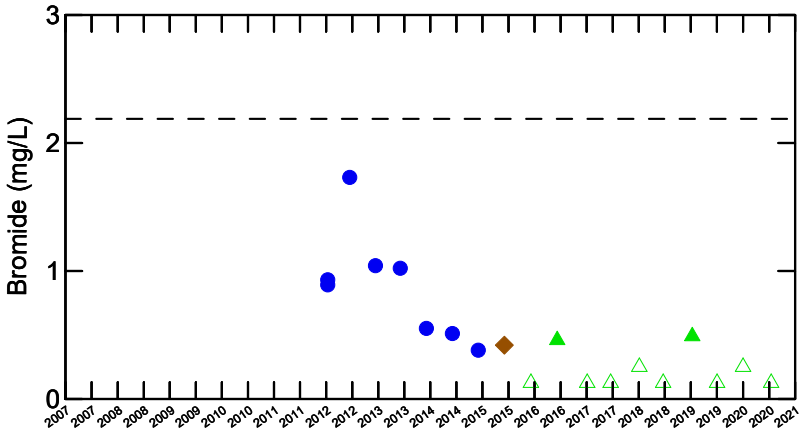
WELL TW56-11D

DEEP WELL (INTERFACE AQUIFER)

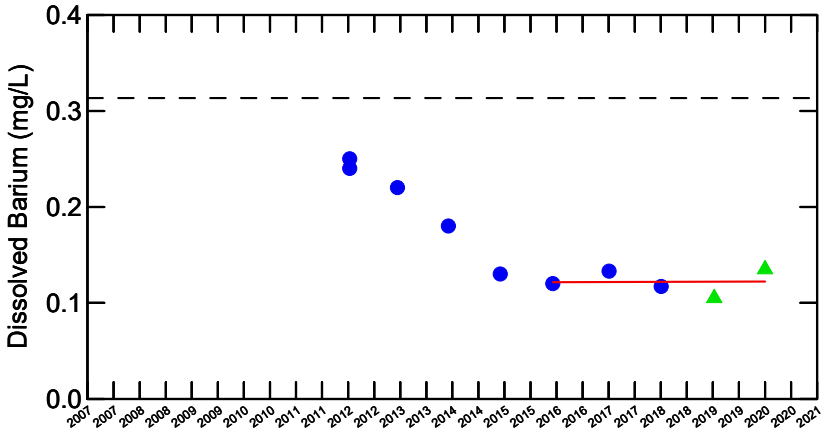
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

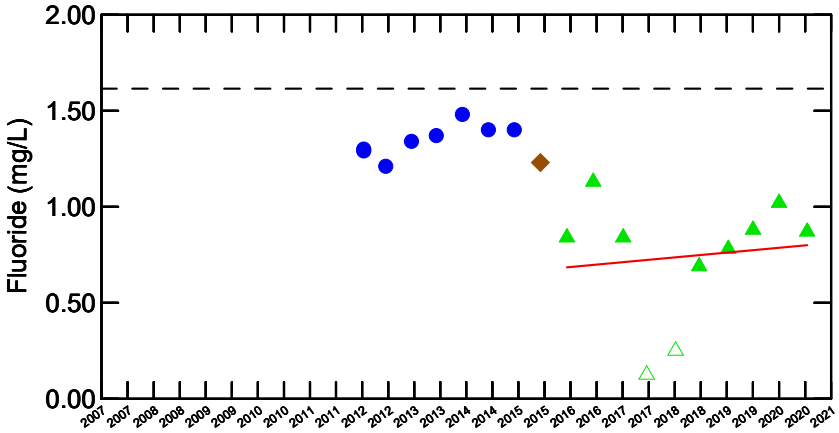
Lambton County, Ontario



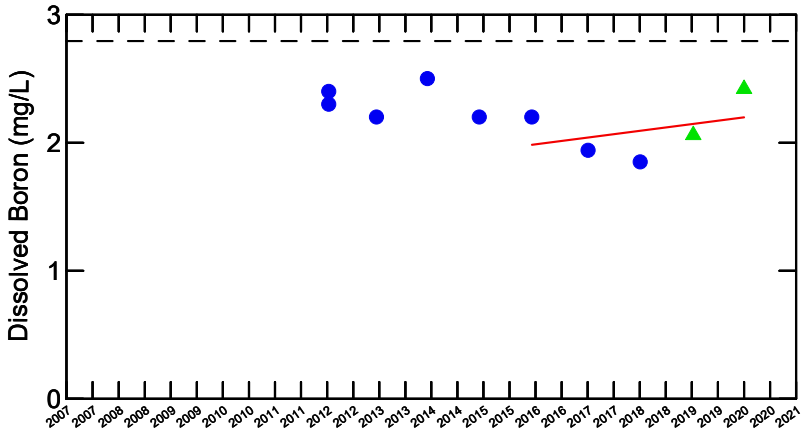
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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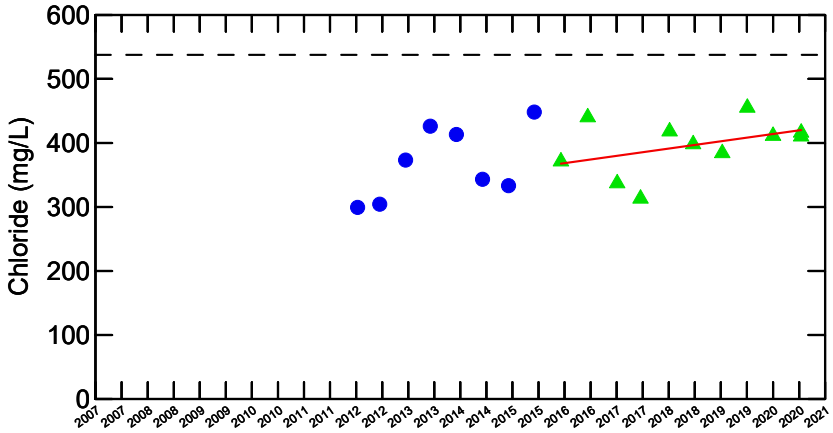
WELL TW56-11D

DEEP WELL (INTERFACE AQUIFER)

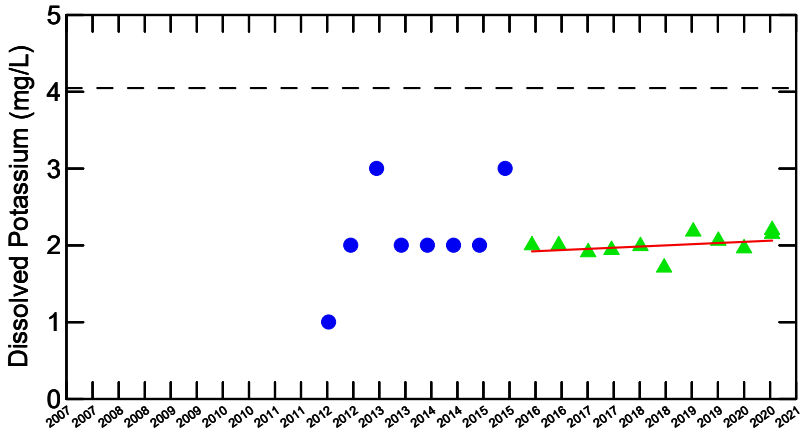
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

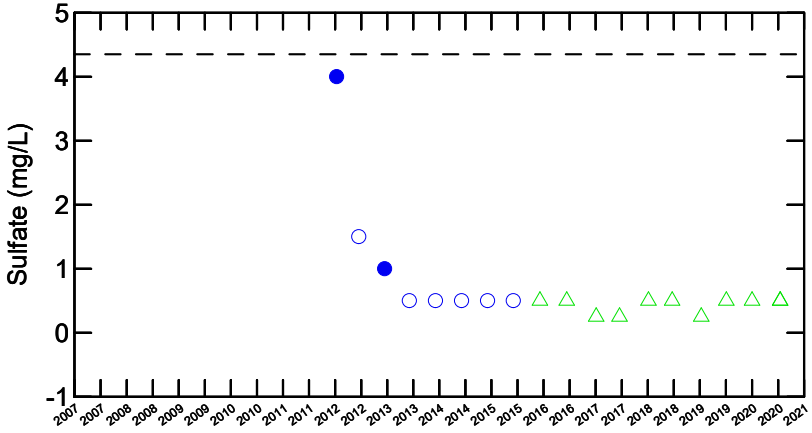
Lambton County, Ontario



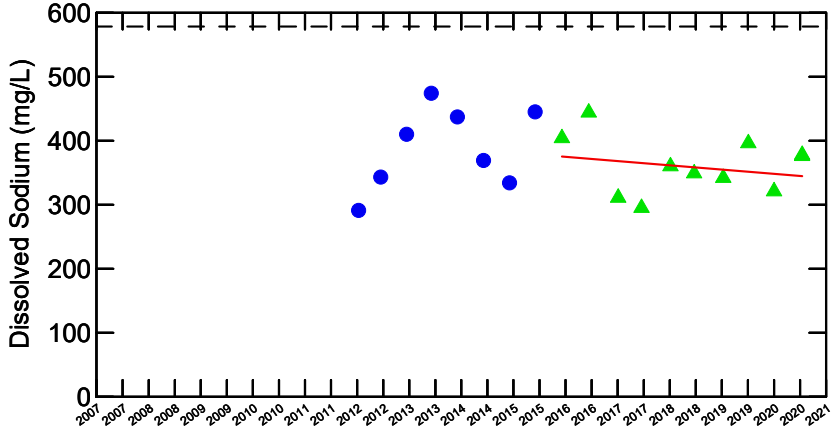
No trend



No trend



No detected results



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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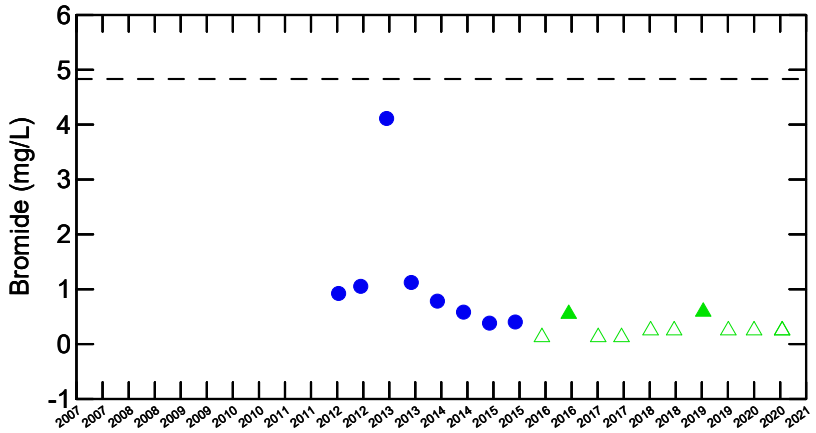
WELL TW57-11D

DEEP WELL (INTERFACE AQUIFER)

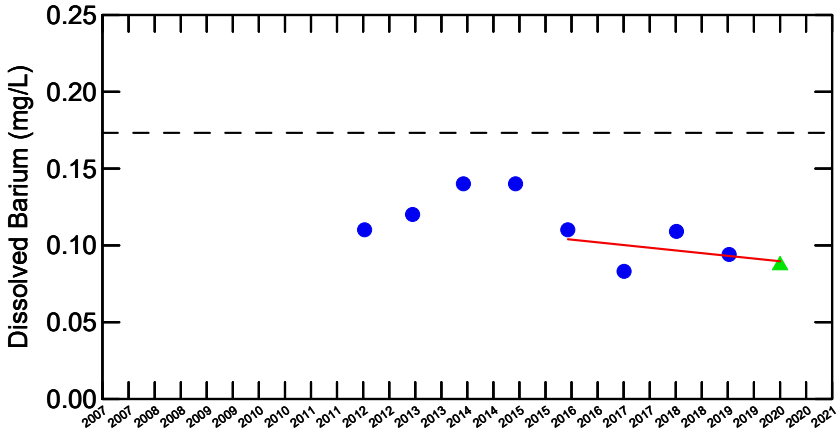
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

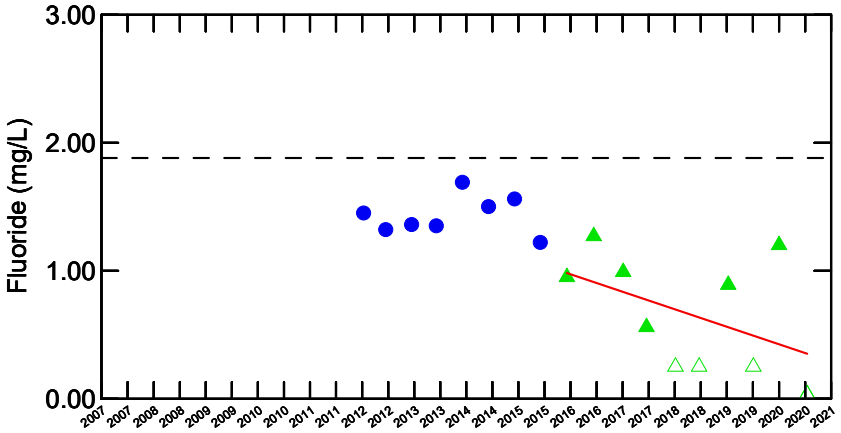
Lambton County, Ontario



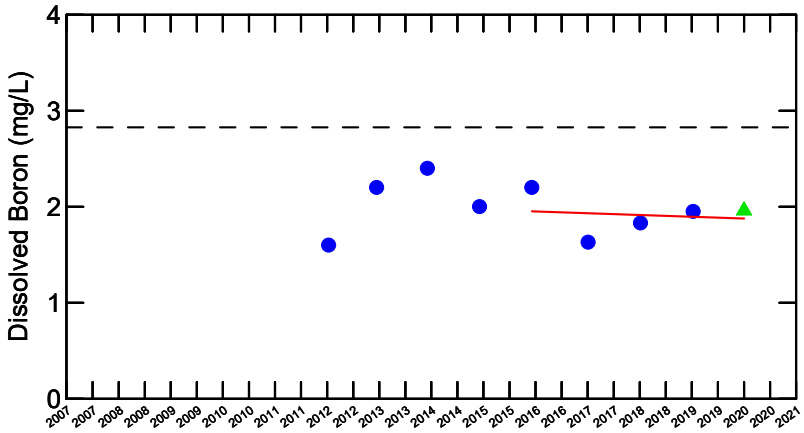
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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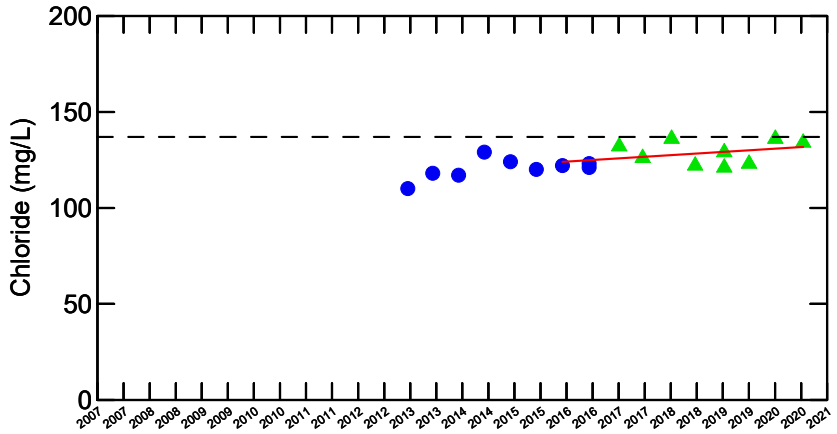
WELL TW57-11D

DEEP WELL (INTERFACE AQUIFER)

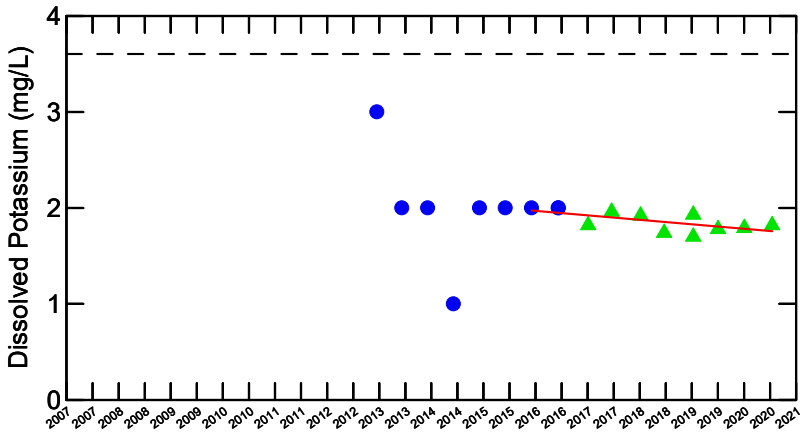
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

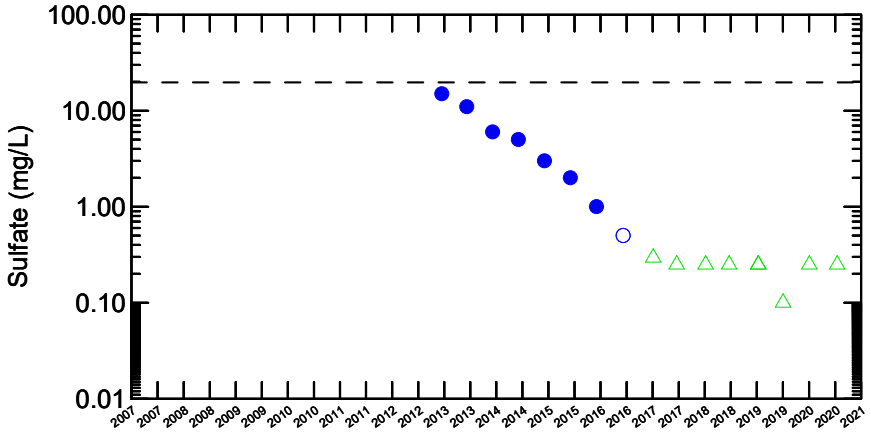
Lambton County, Ontario



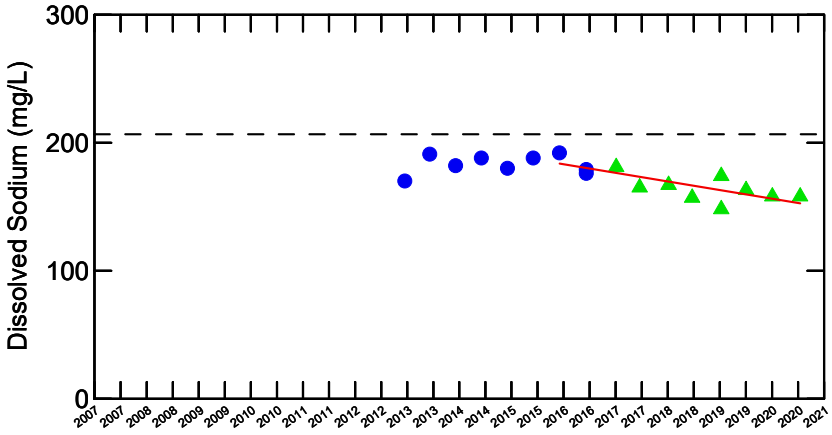
No trend



Decreasing trend



Over 50% non-detect



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

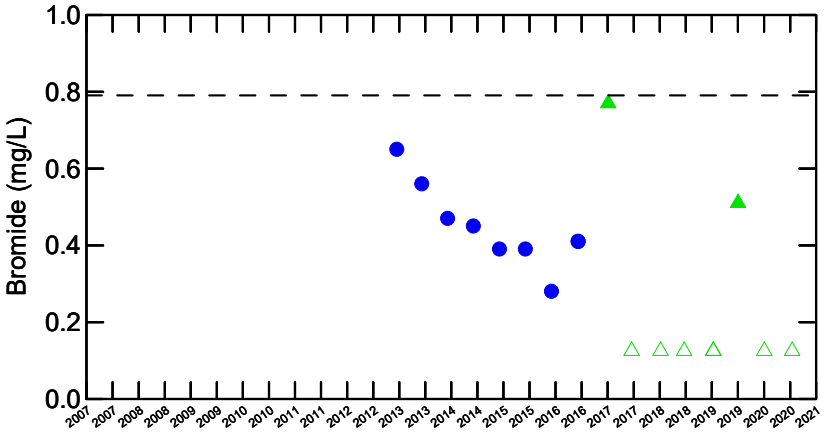
WELL TW59-13D

DEEP WELL (INTERFACE AQUIFER)

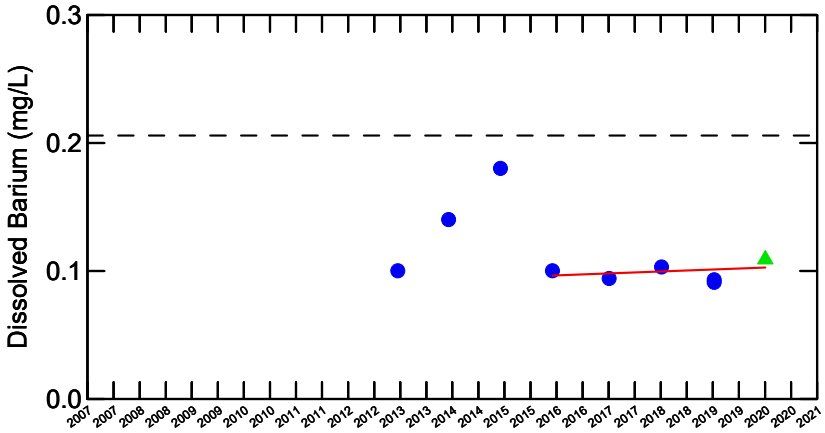
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

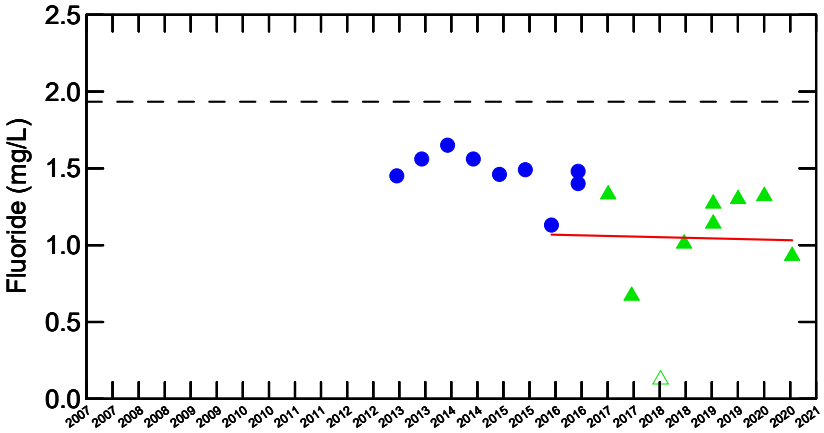
Lambton County, Ontario



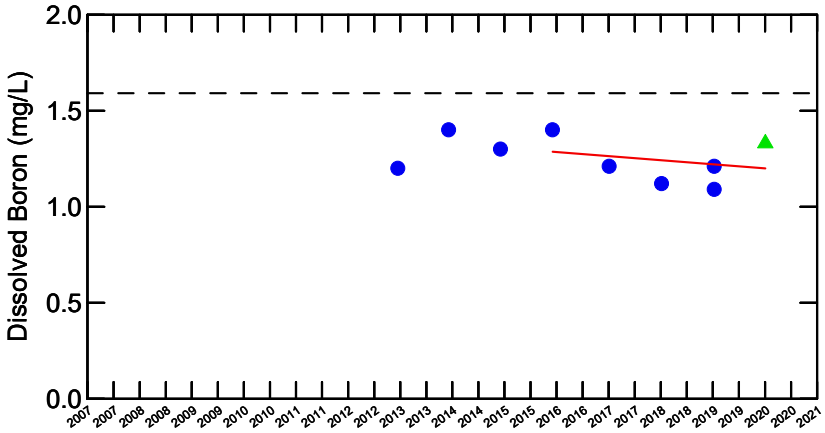
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

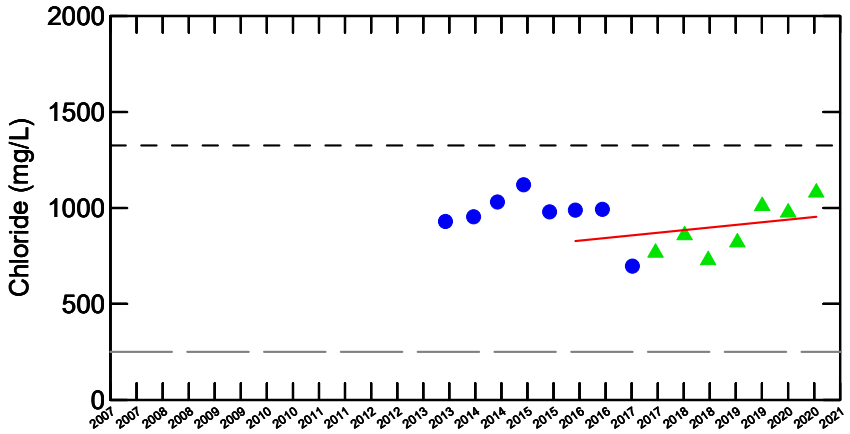
WELL TW59-13D

DEEP WELL (INTERFACE AQUIFER)

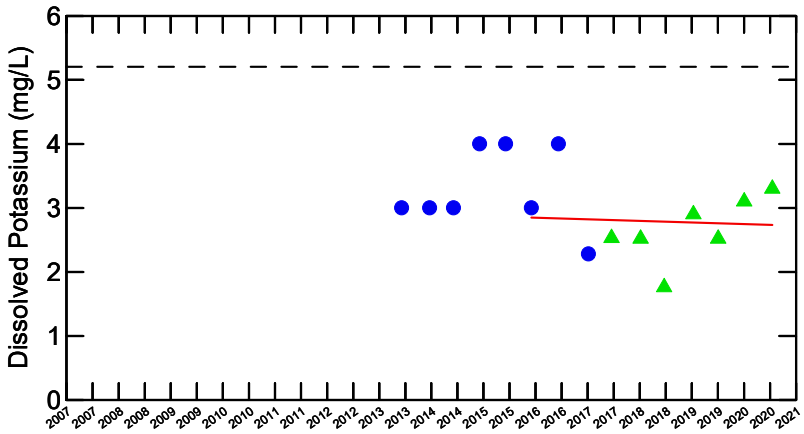
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

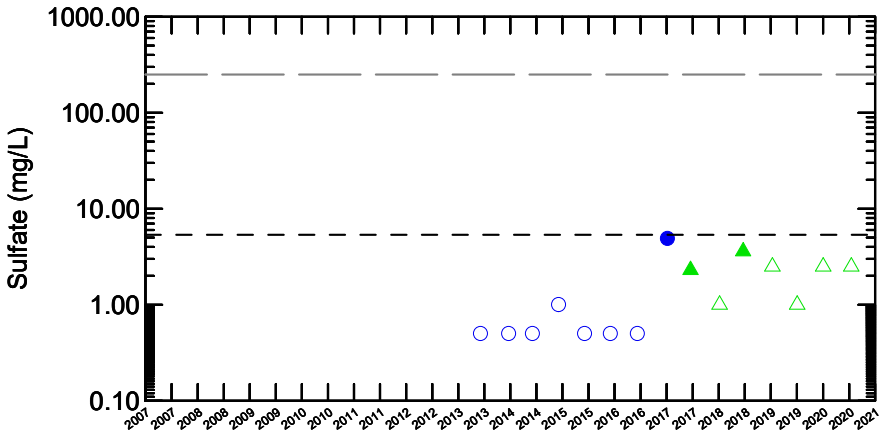
Lambton County, Ontario



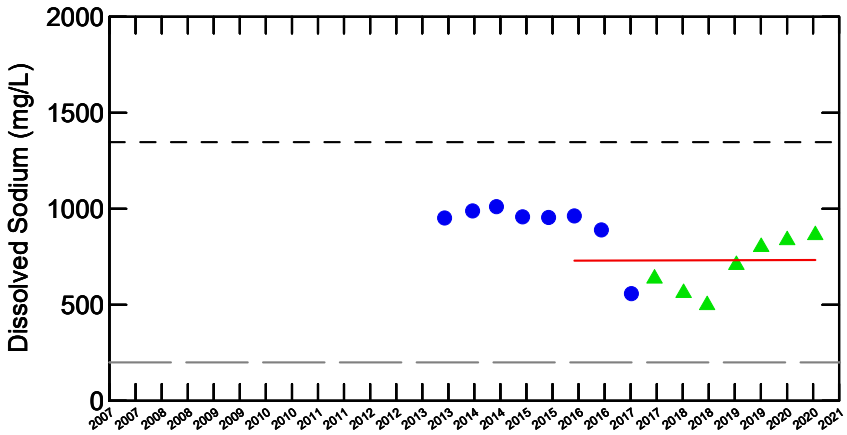
No trend



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

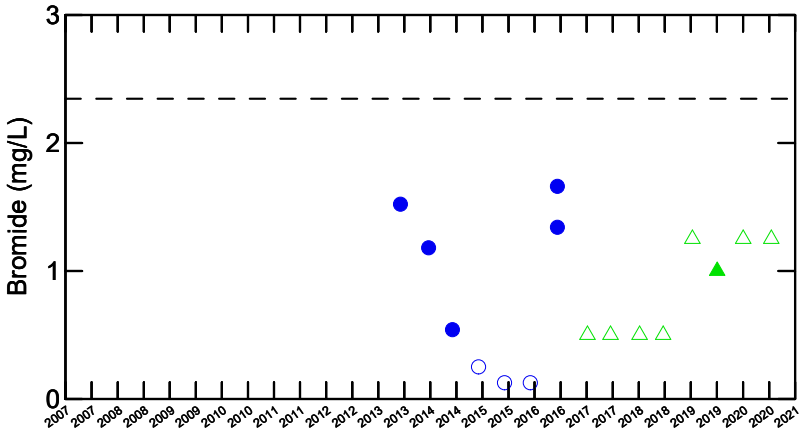
WELL TW60-13D

DEEP WELL (INTERFACE AQUIFER)

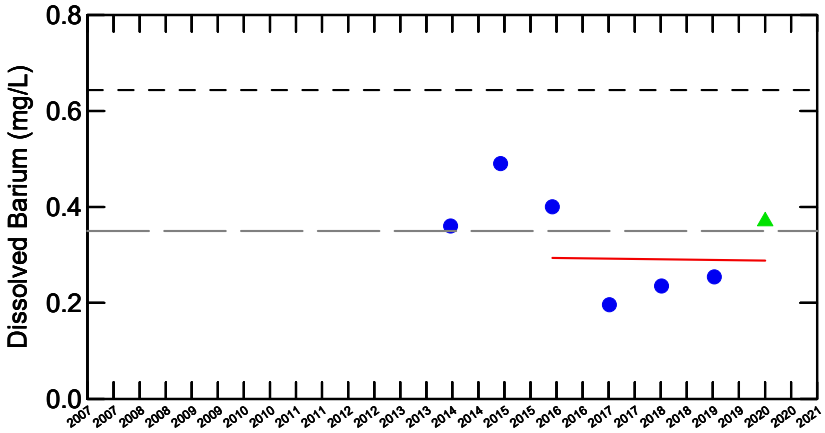
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

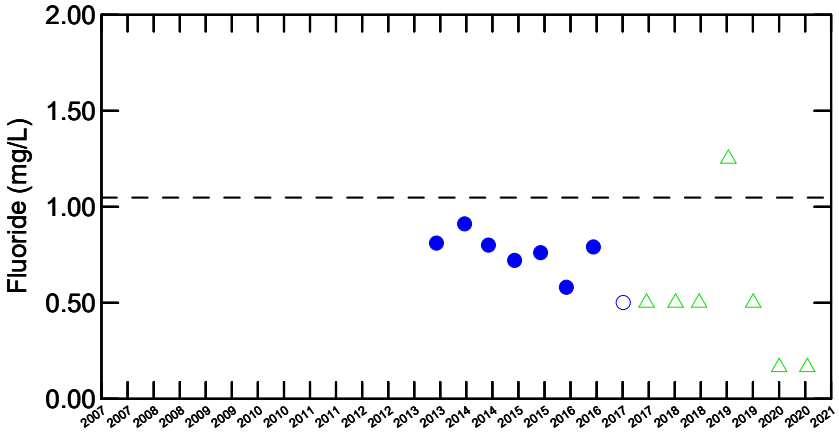
Lambton County, Ontario



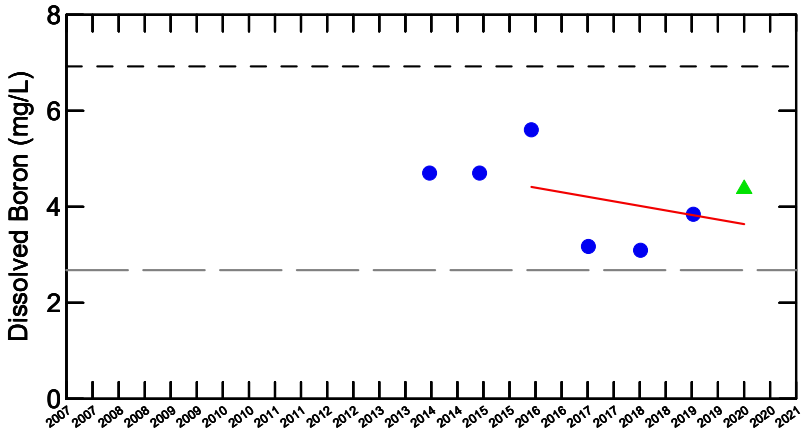
Over 50% non-detect



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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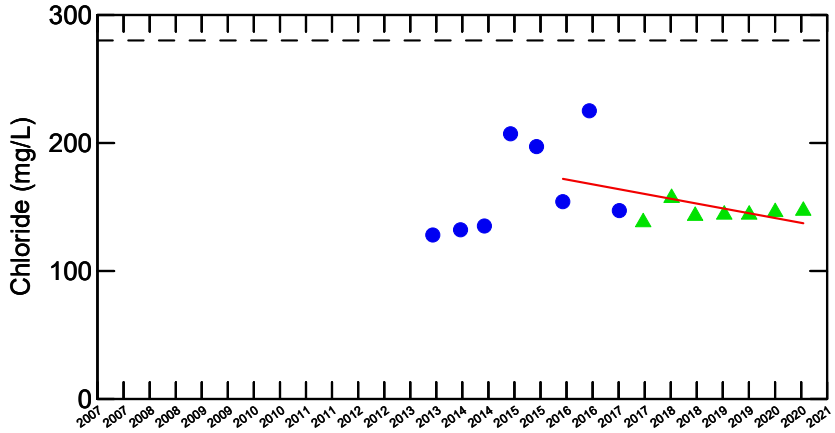
WELL TW60-13D

DEEP WELL (INTERFACE AQUIFER)

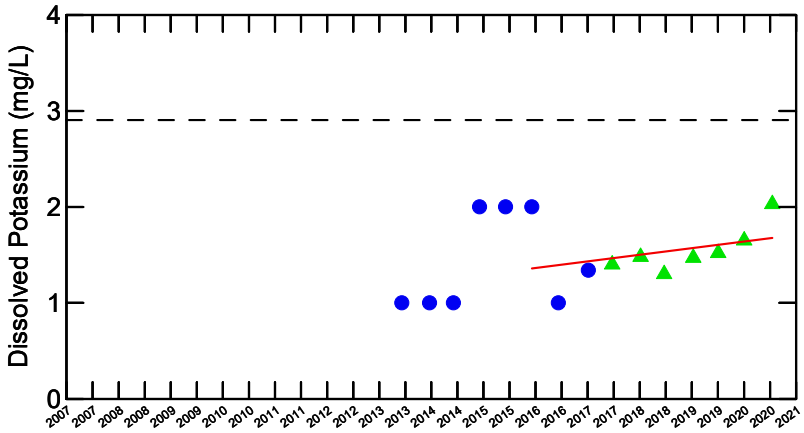
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

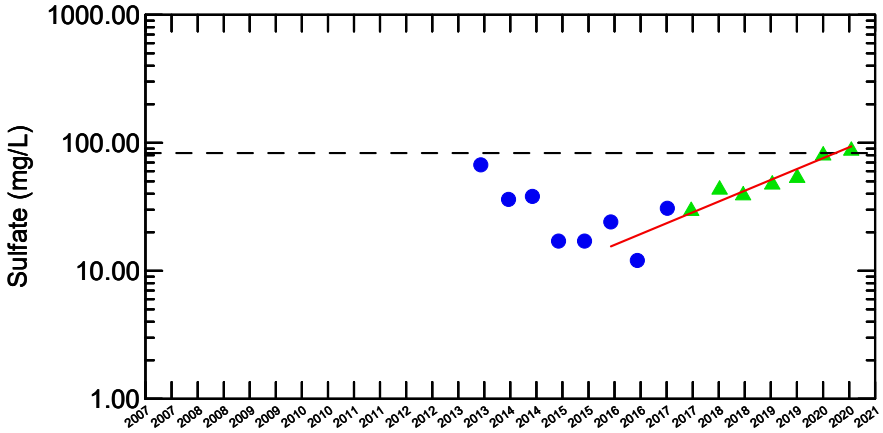
Lambton County, Ontario



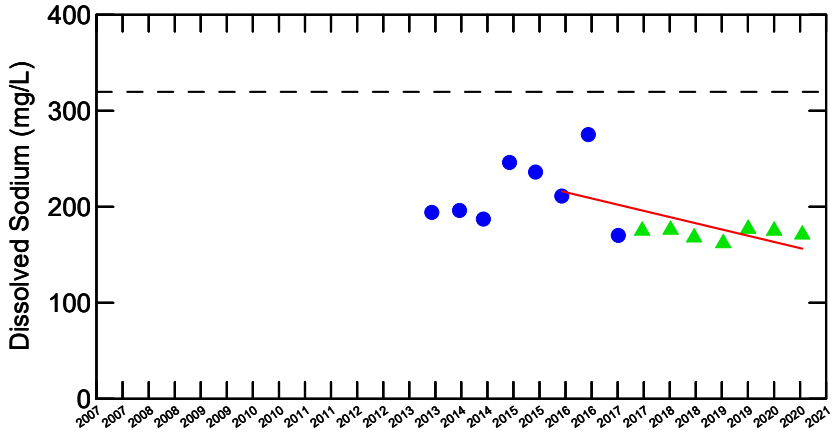
No trend



No trend



Increasing trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

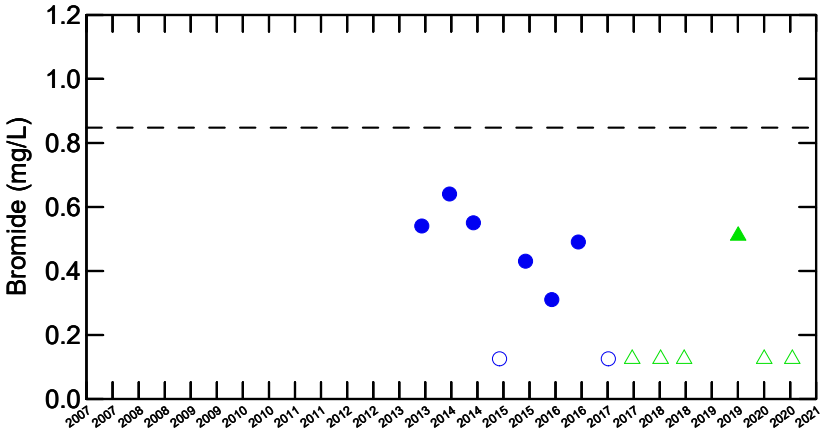
WELL TW61-13D

DEEP WELL (INTERFACE AQUIFER)

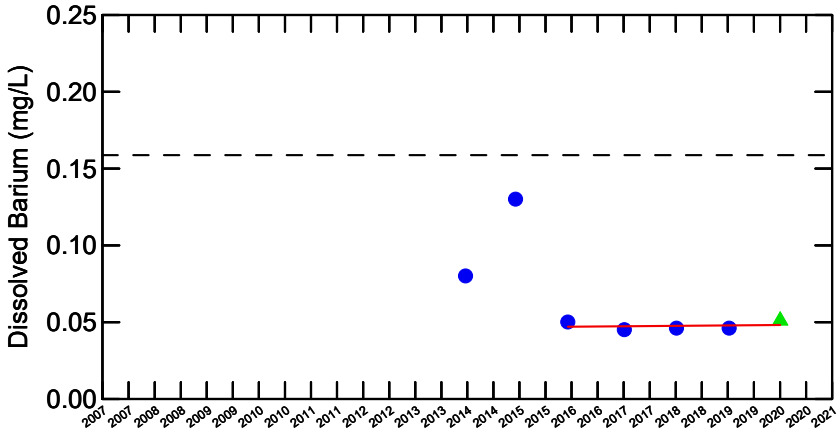
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

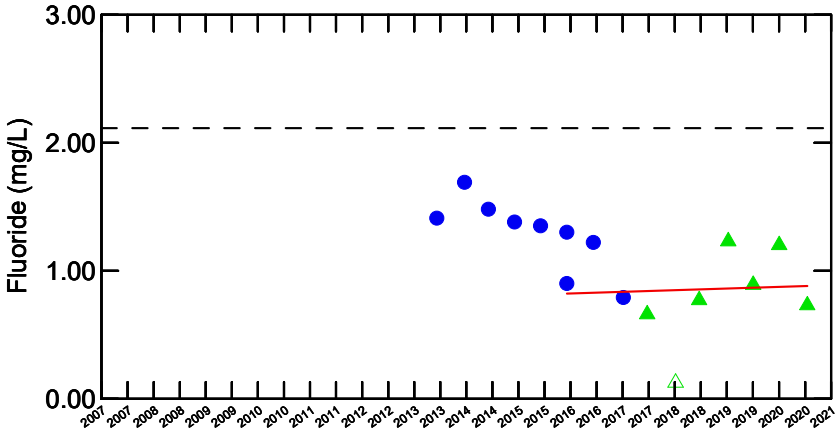
Lambton County, Ontario



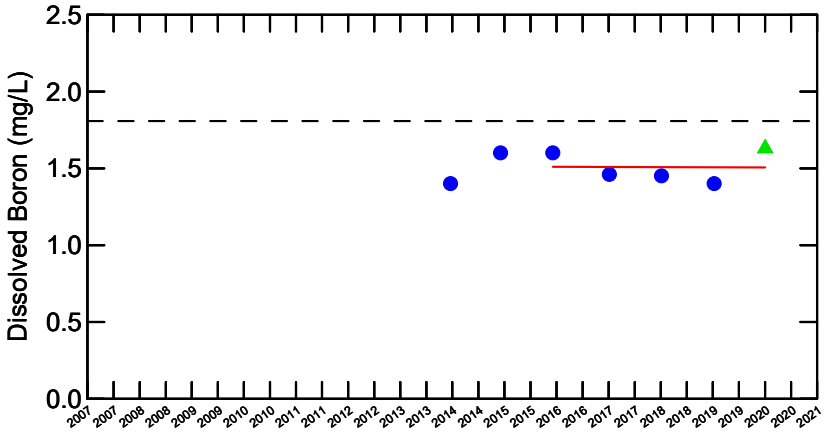
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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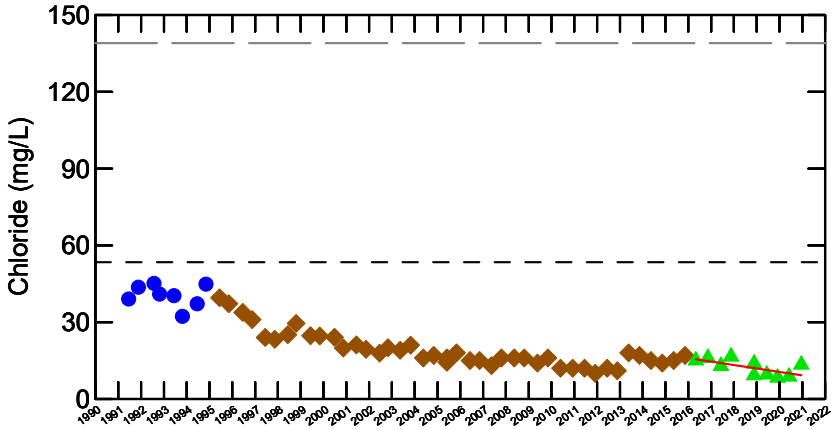
WELL TW61-13D

DEEP WELL (INTERFACE AQUIFER)

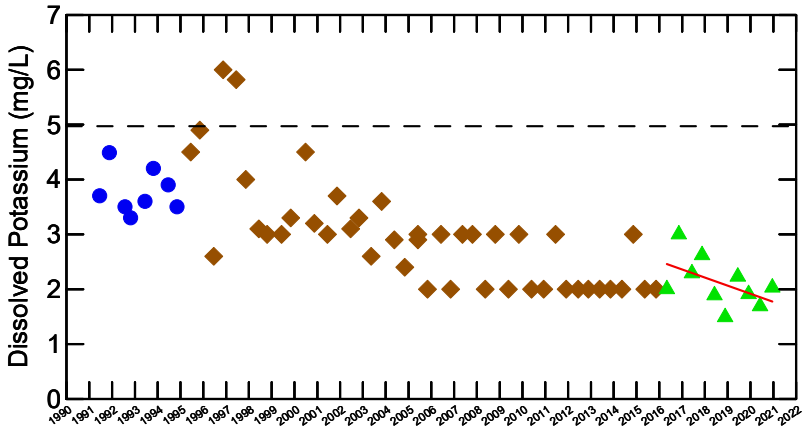
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

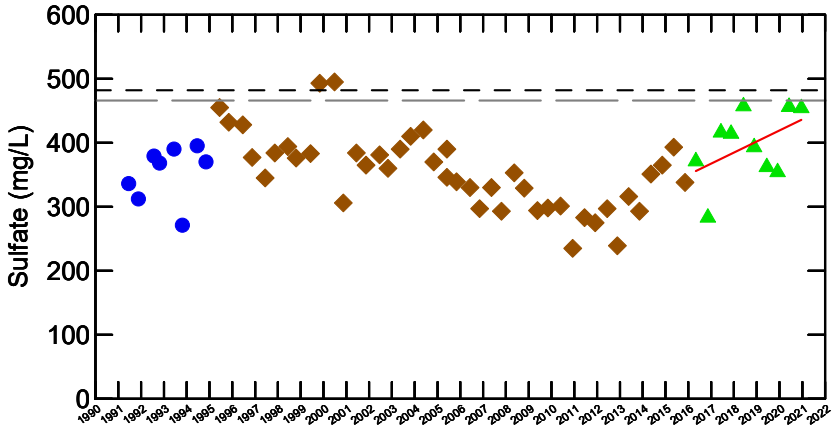
Lambton County, Ontario



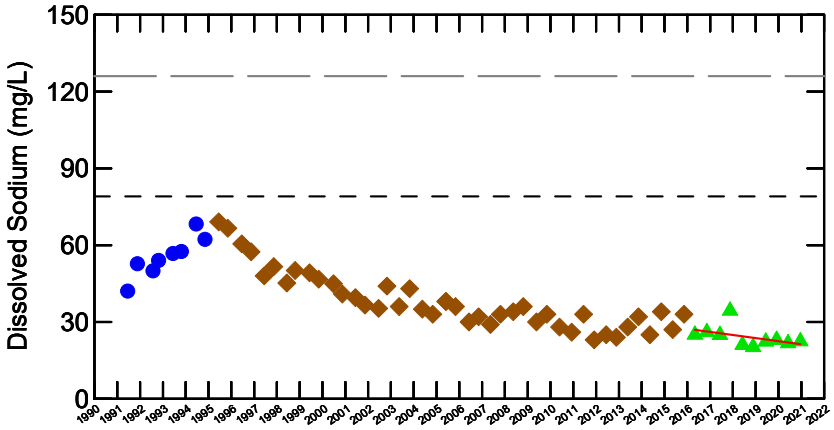
Decreasing trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

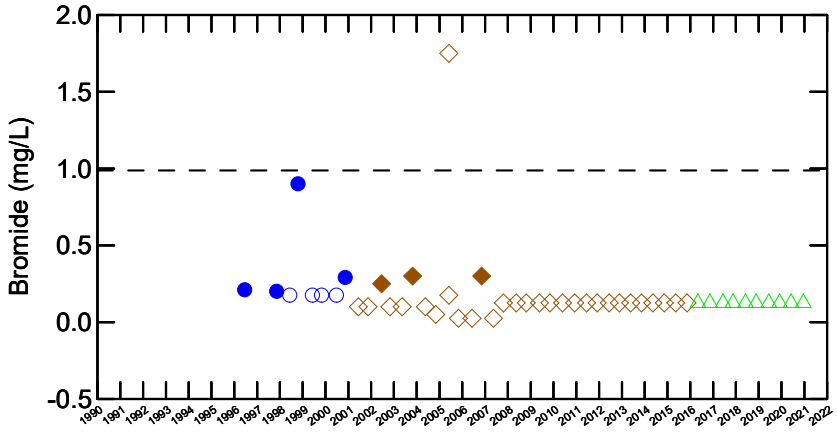
WELL OW32-90S

SHALLOW WELL (ACTIVE AQUITARD)

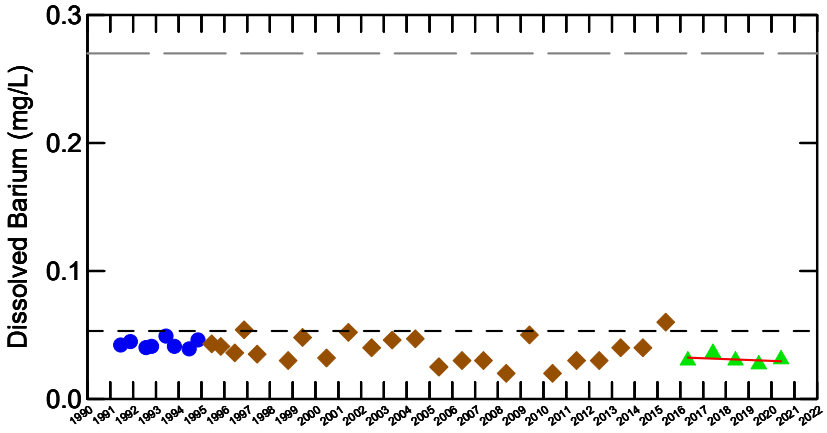
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

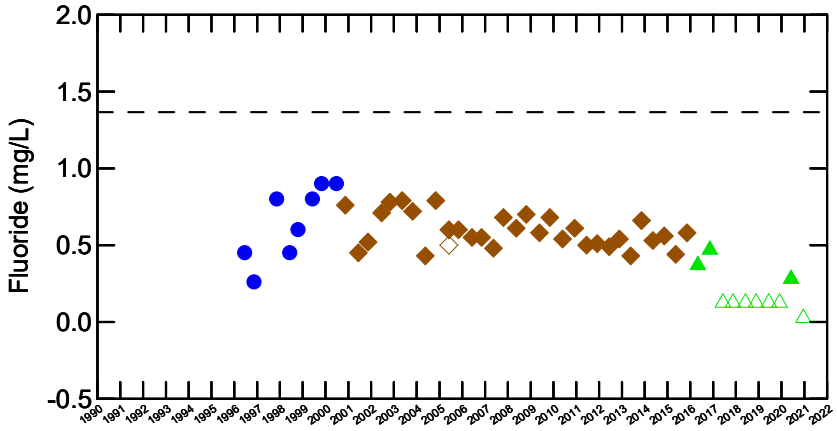
Lambton County, Ontario



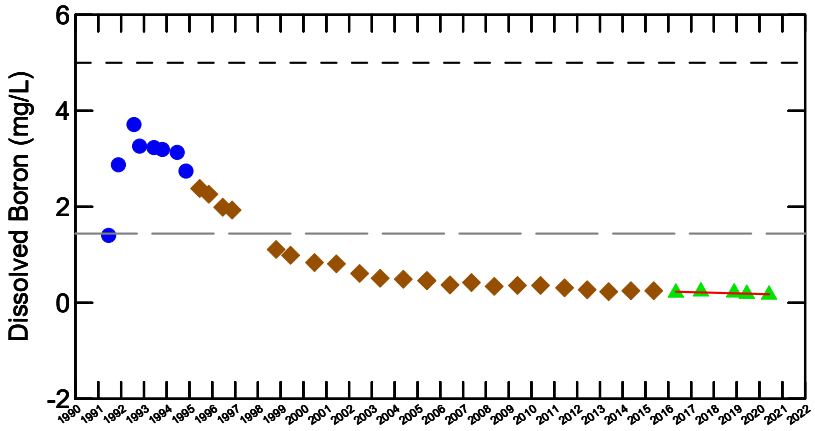
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

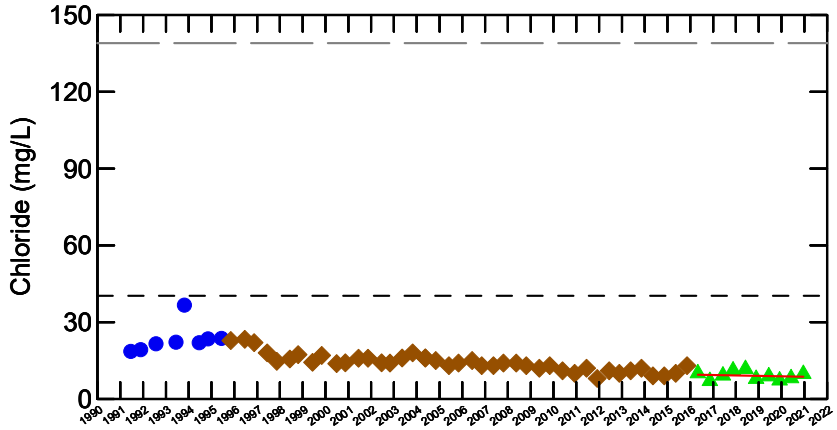
WELL OW32-90S

SHALLOW WELL (ACTIVE AQUITARD)

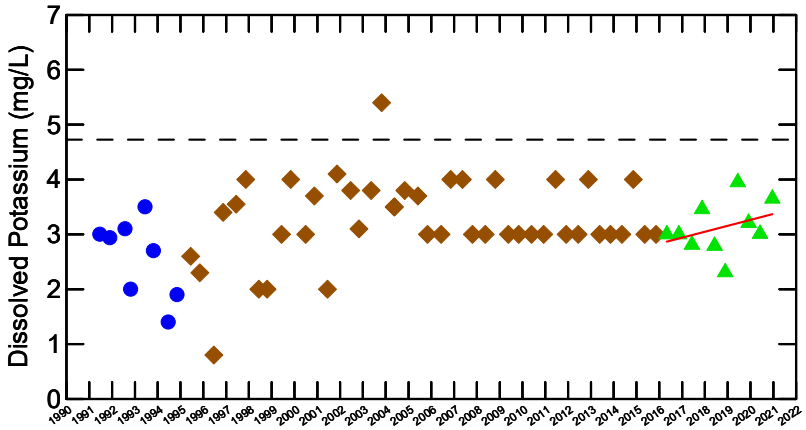
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

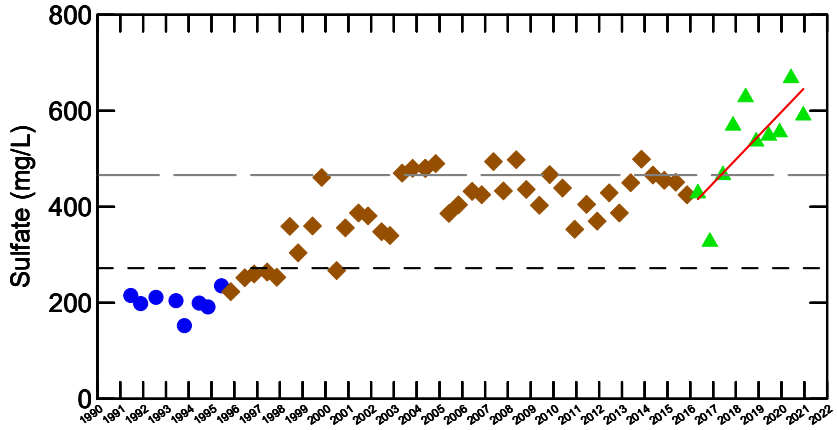
Lambton County, Ontario



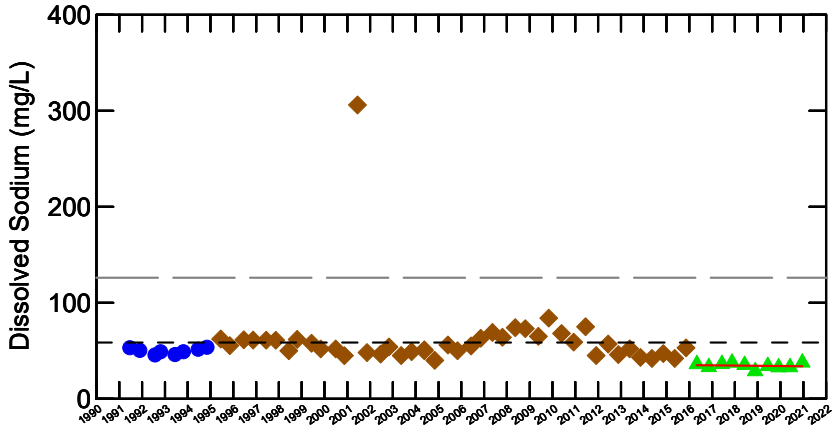
No trend



No trend



Increasing trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

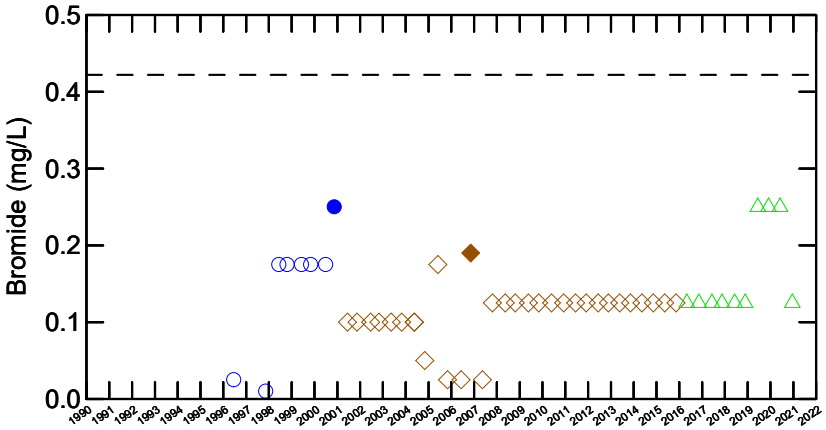
WELL OW35-90S

SHALLOW WELL (ACTIVE AQUITARD)

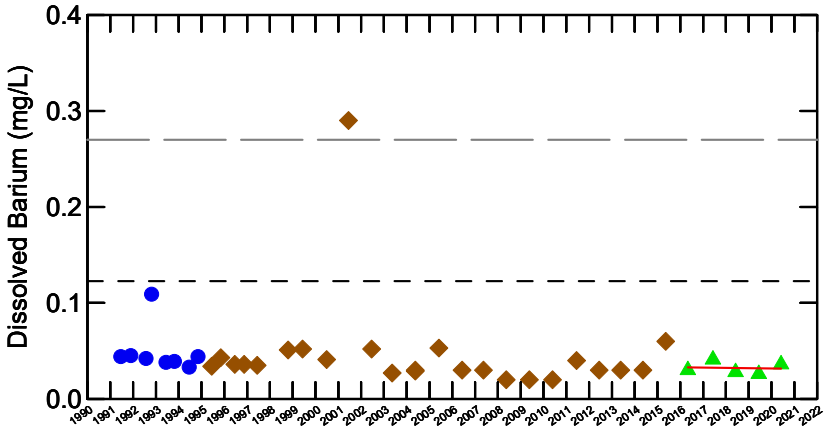
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

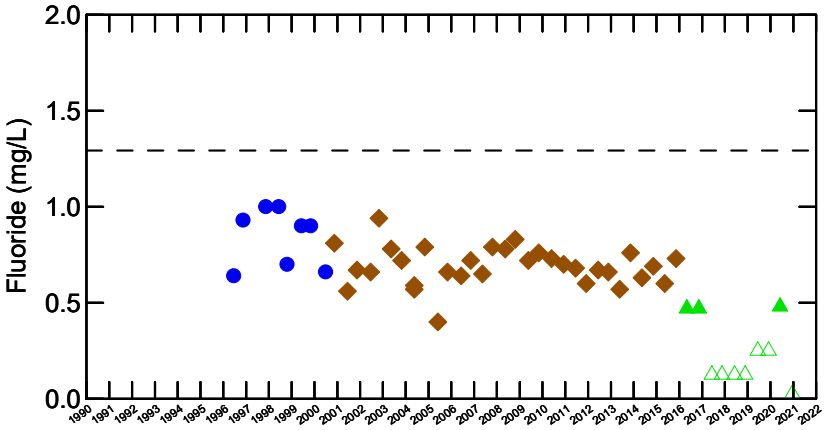
Lambton County, Ontario



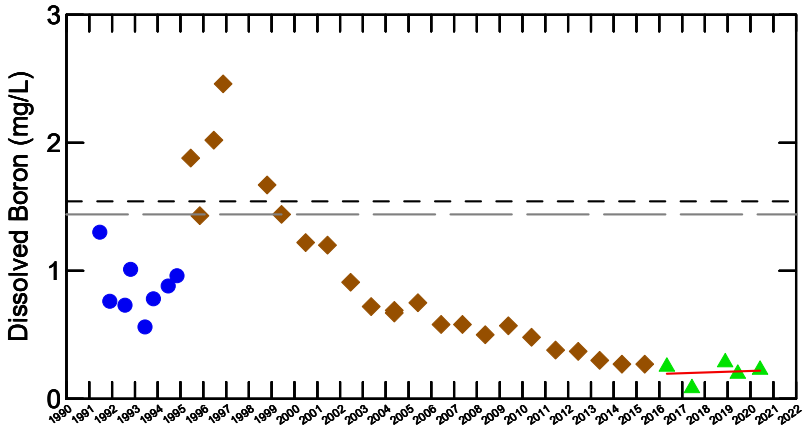
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
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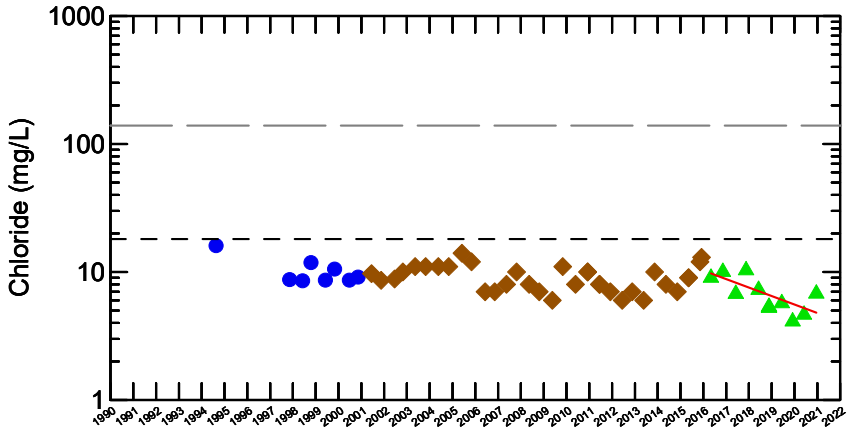
WELL OW35-90S

SHALLOW WELL (ACTIVE AQUITARD)

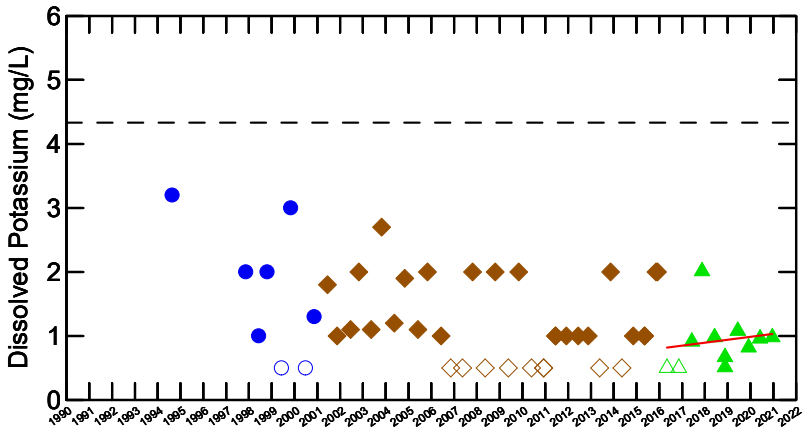
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

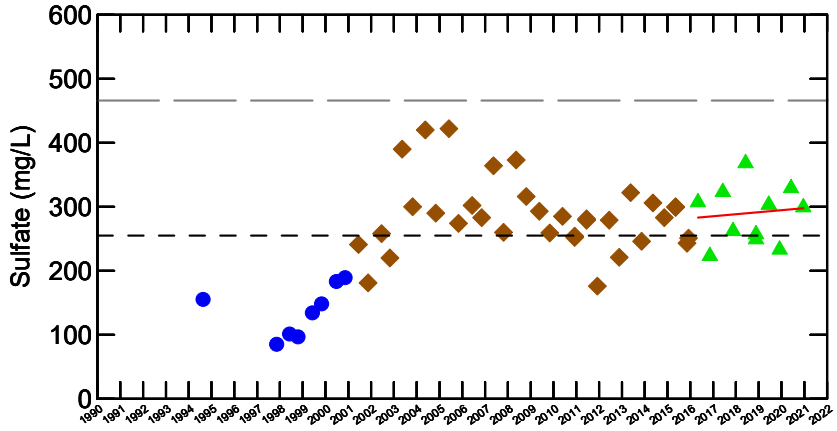
Lambton County, Ontario



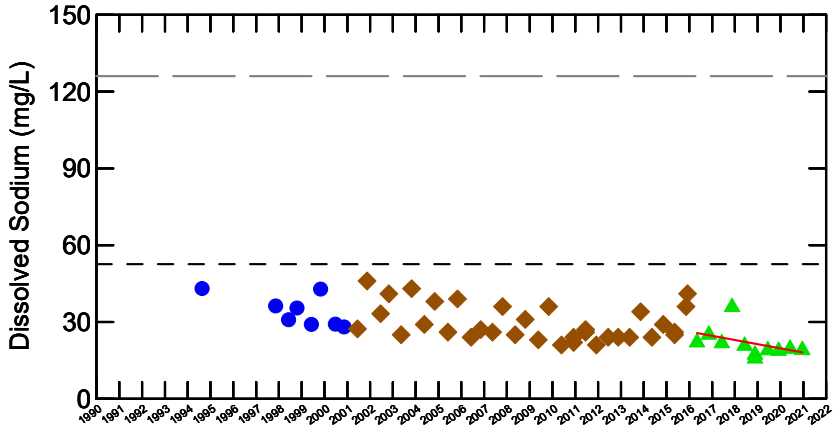
Decreasing trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

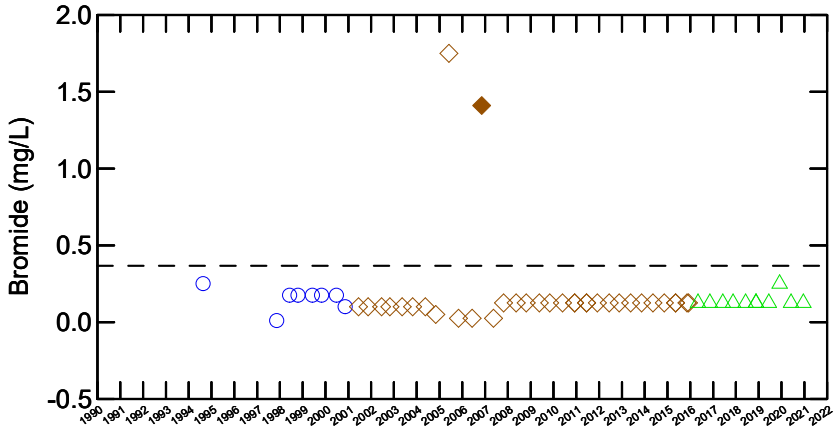
WELL TW21-94-II

SHALLOW WELL (ACTIVE AQUITARD)

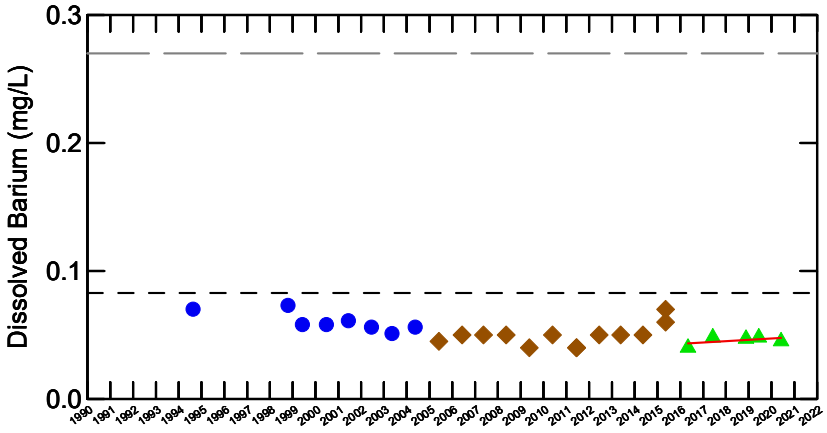
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

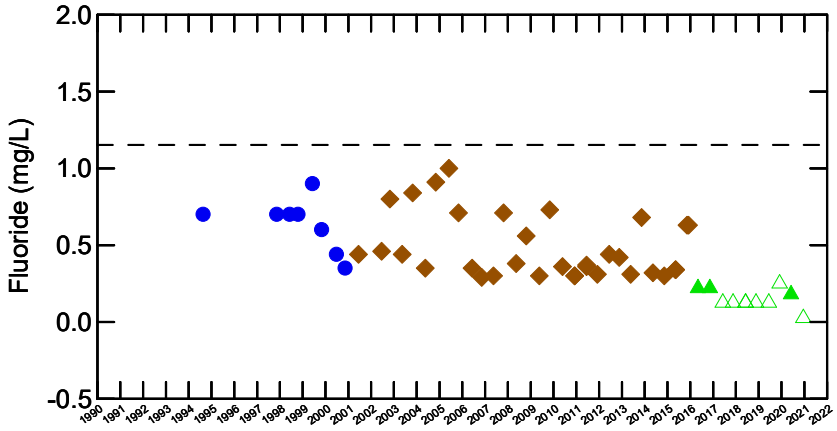
Lambton County, Ontario



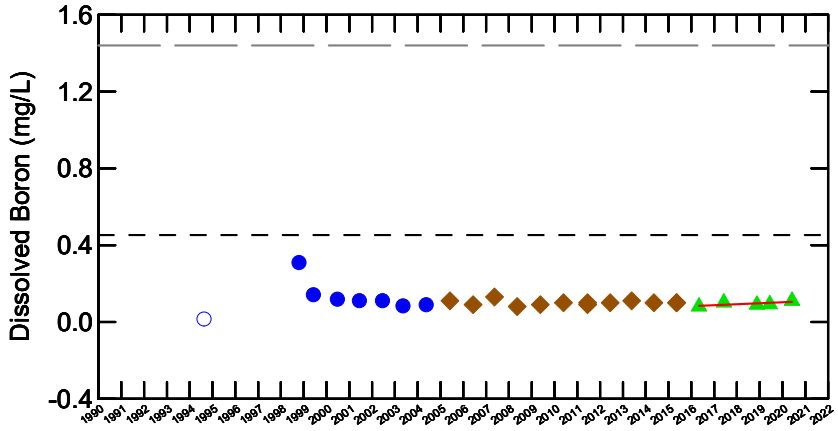
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

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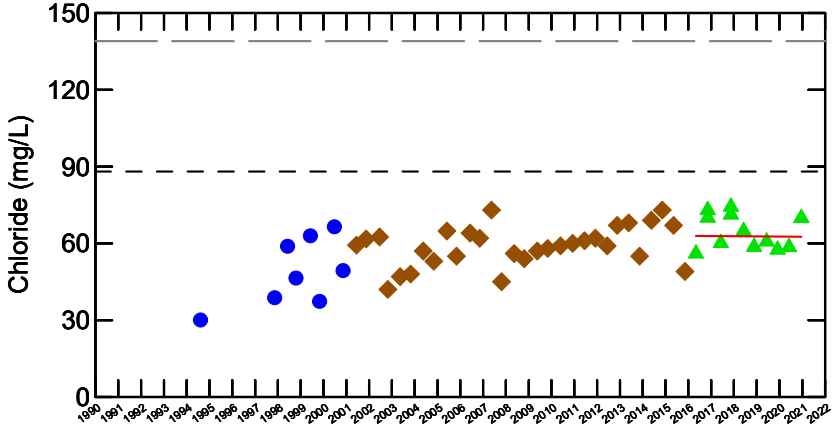
WELL TW21-94-II

SHALLOW WELL (ACTIVE AQUITARD)

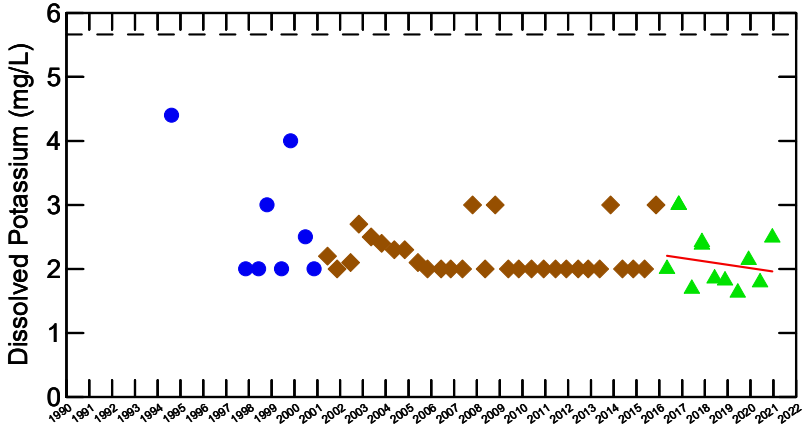
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

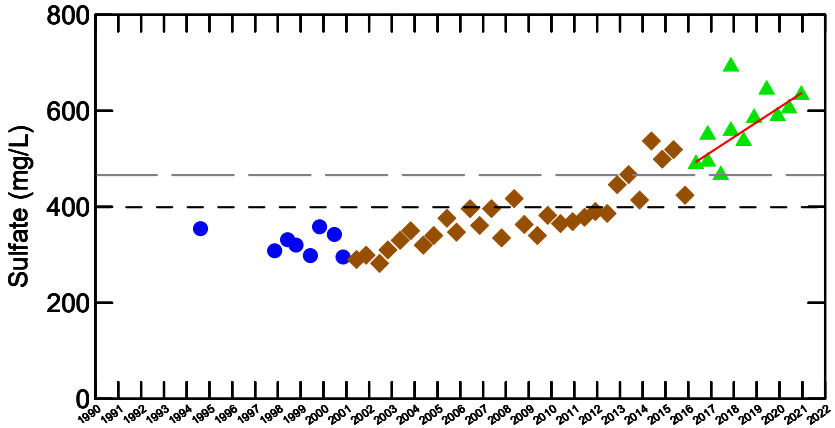
Lambton County, Ontario



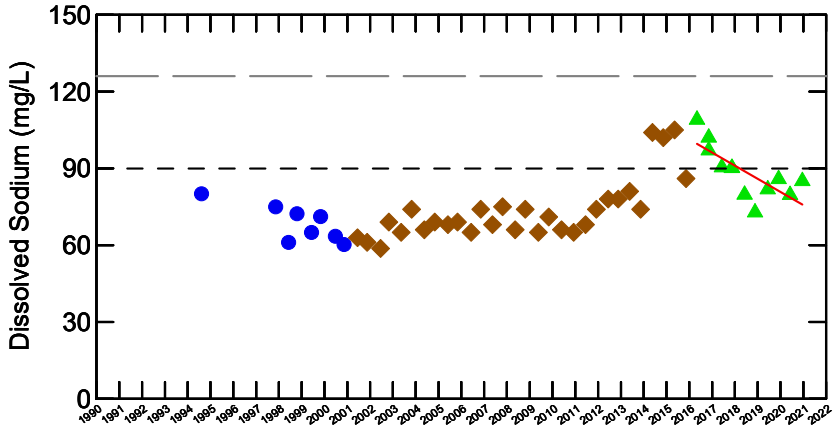
No trend



No trend



Increasing trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

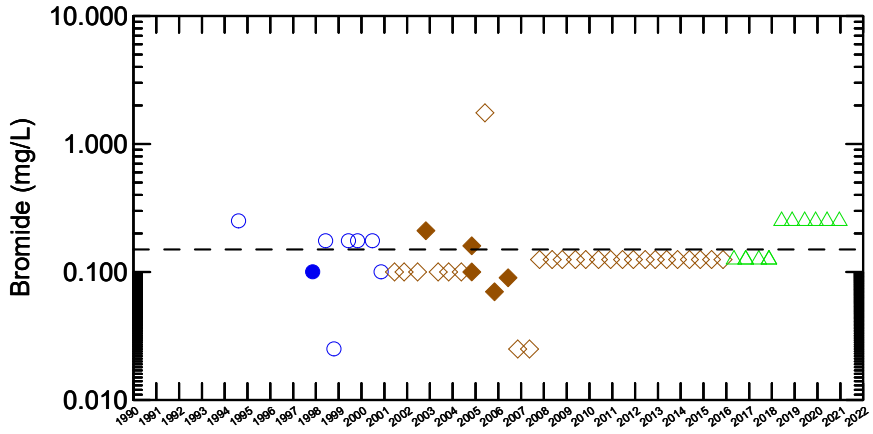
WELL TW22-94

SHALLOW WELL (ACTIVE AQUITARD)

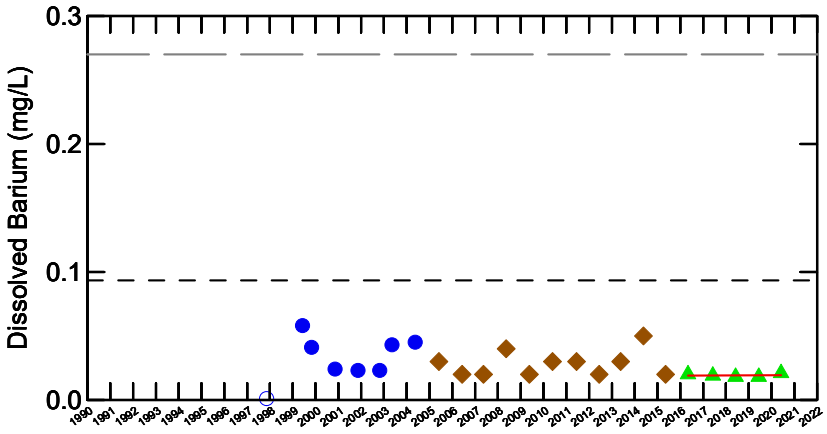
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

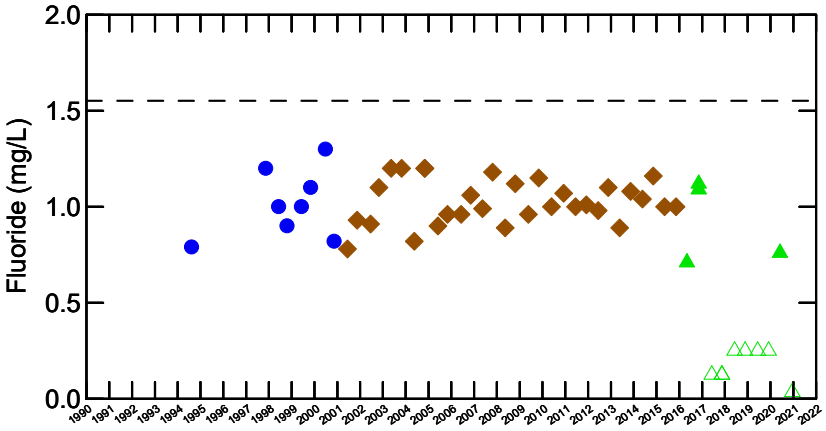
Lambton County, Ontario



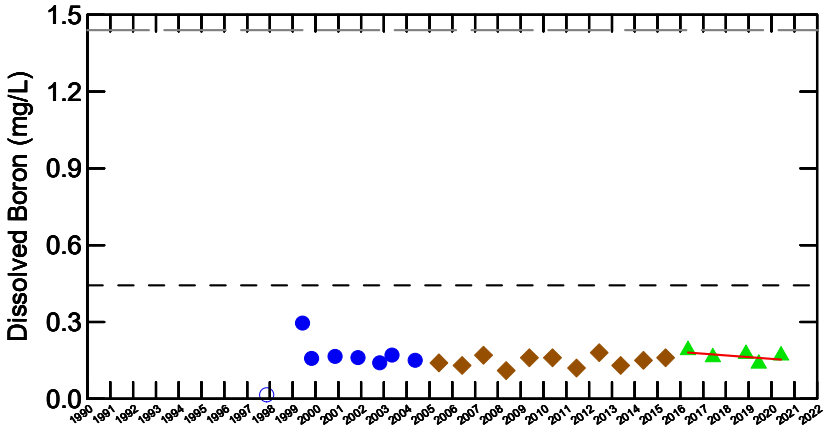
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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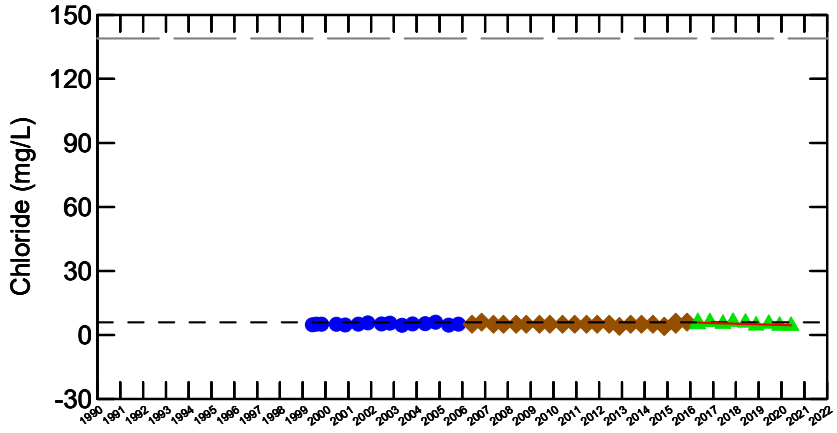
WELL TW22-94

SHALLOW WELL (ACTIVE AQUITARD)

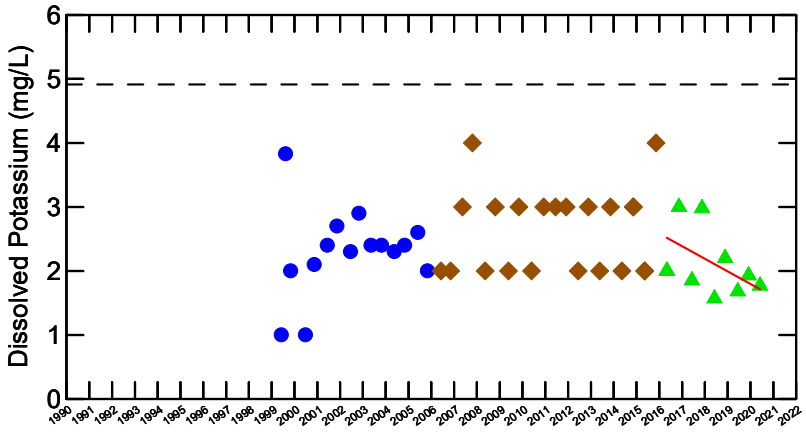
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

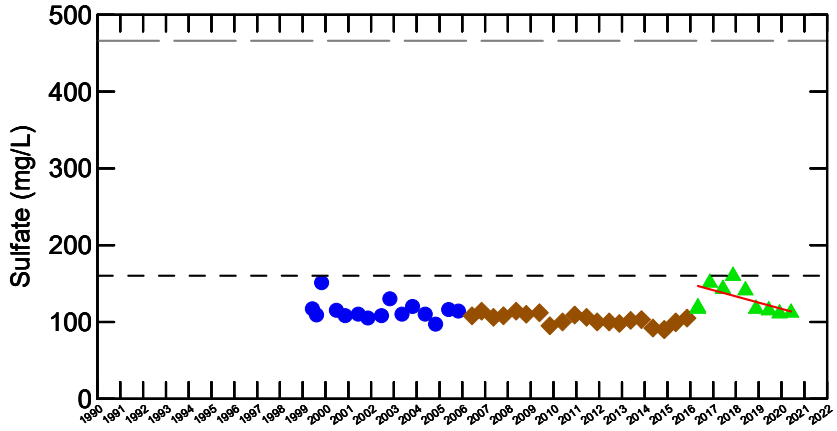
Lambton County, Ontario



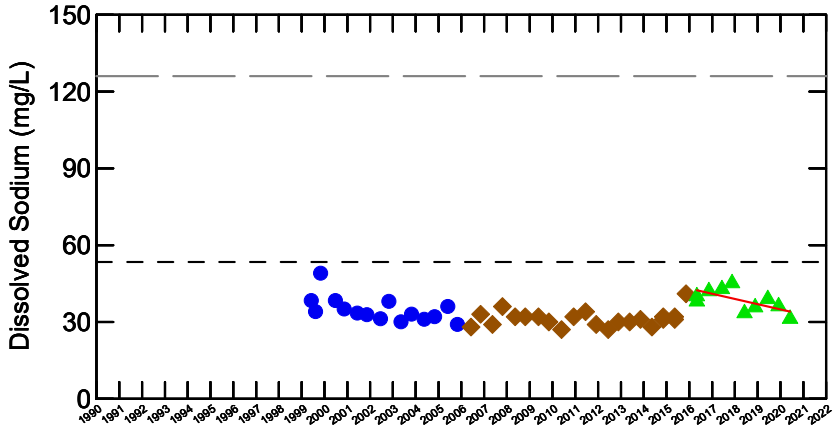
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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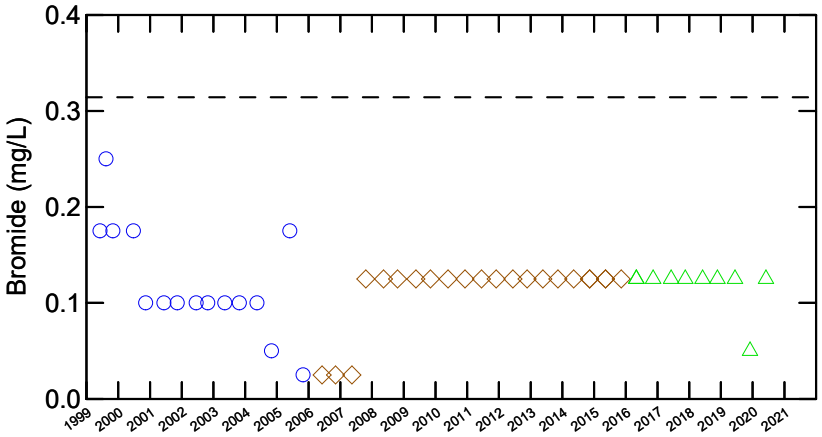
WELL TW30-94

SHALLOW WELL (ACTIVE AQUITARD)

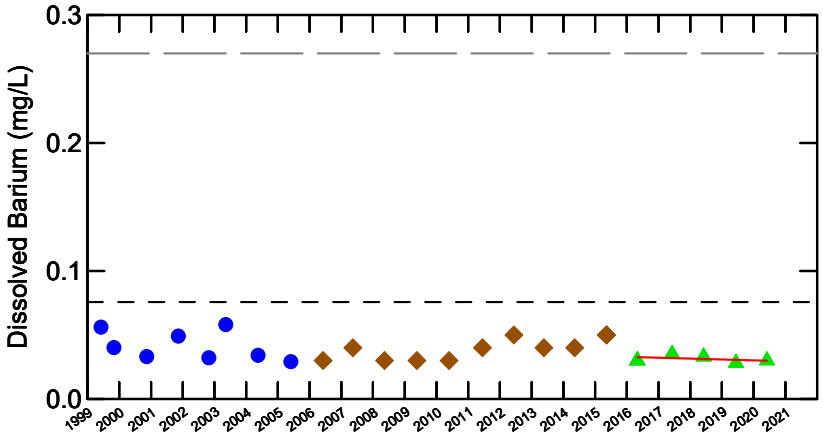
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

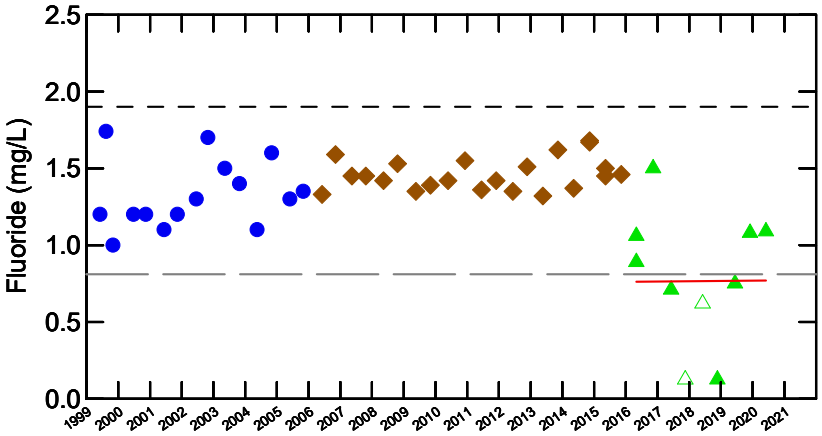
Lambton County, Ontario



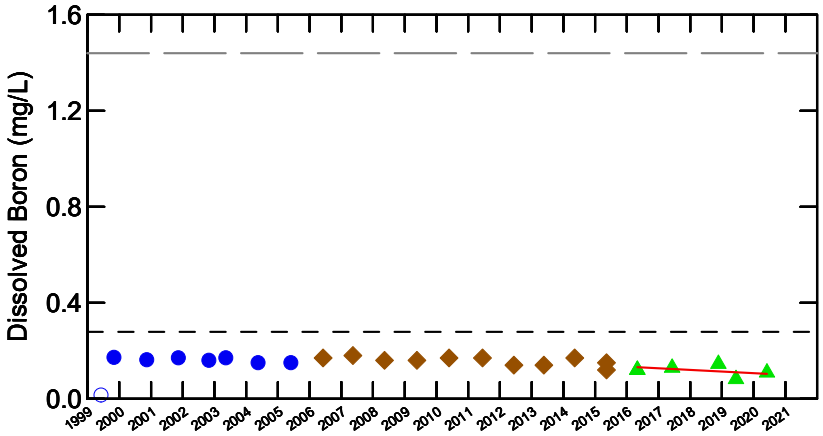
No detected results



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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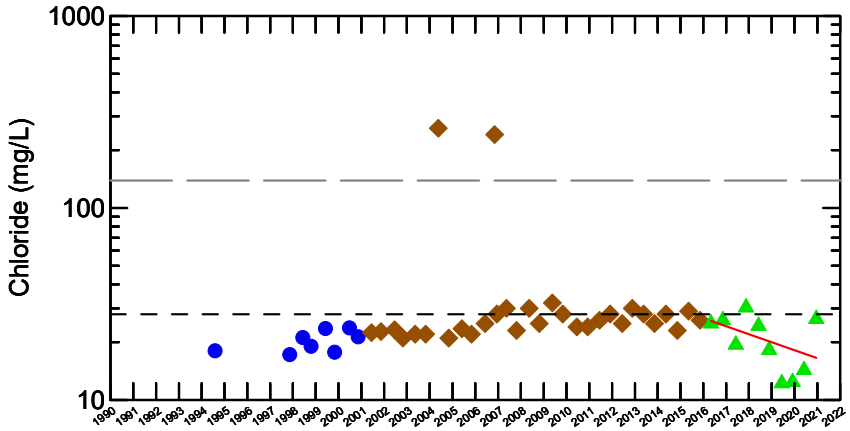
WELL TW30-94

SHALLOW WELL (ACTIVE AQUITARD)

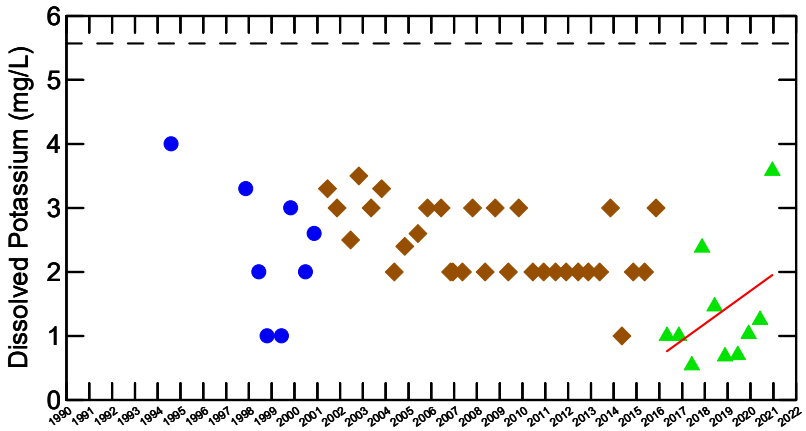
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

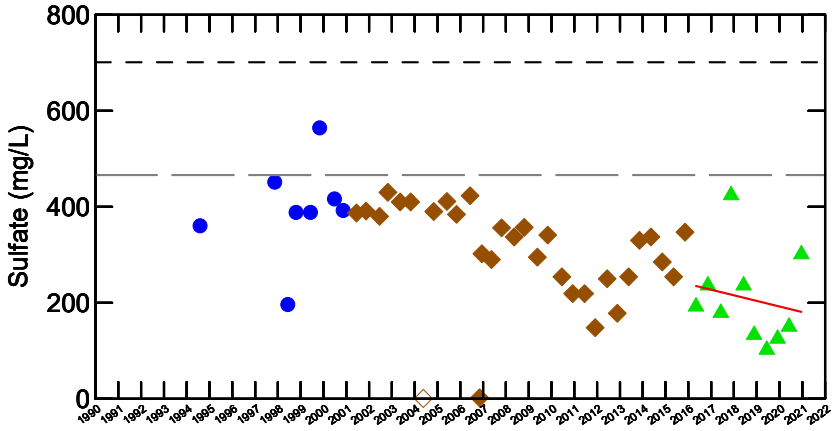
Lambton County, Ontario



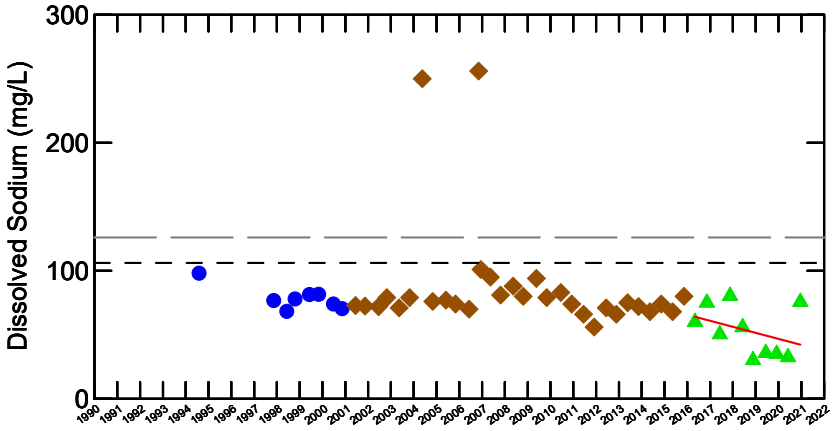
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

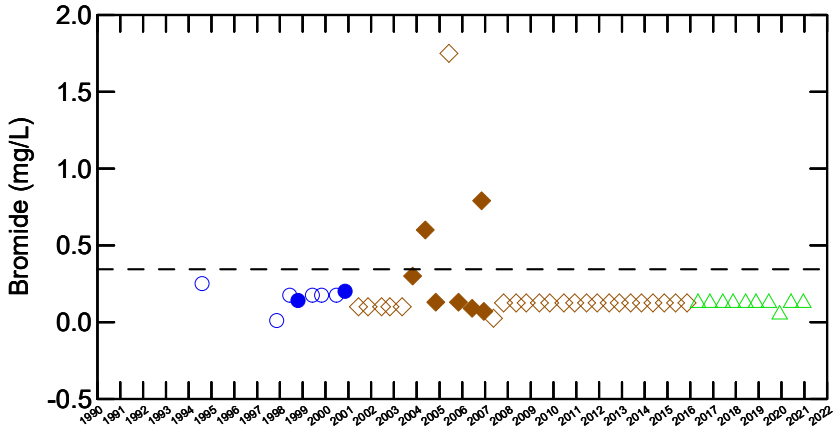
WELL TW32-94-IV

SHALLOW WELL (ACTIVE AQUITARD)

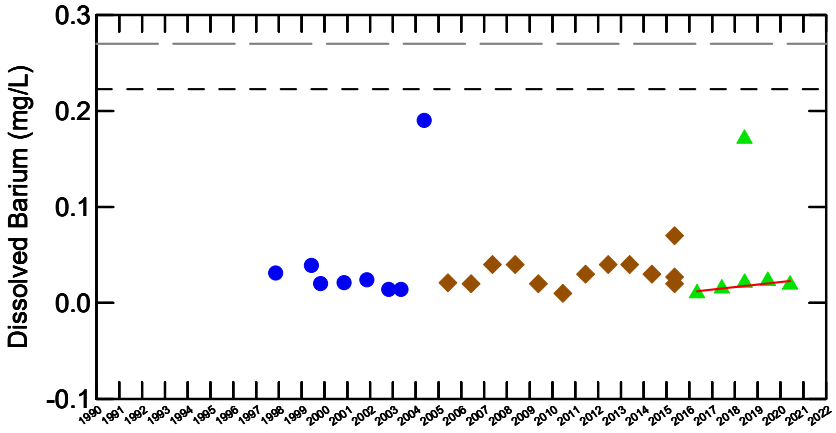
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

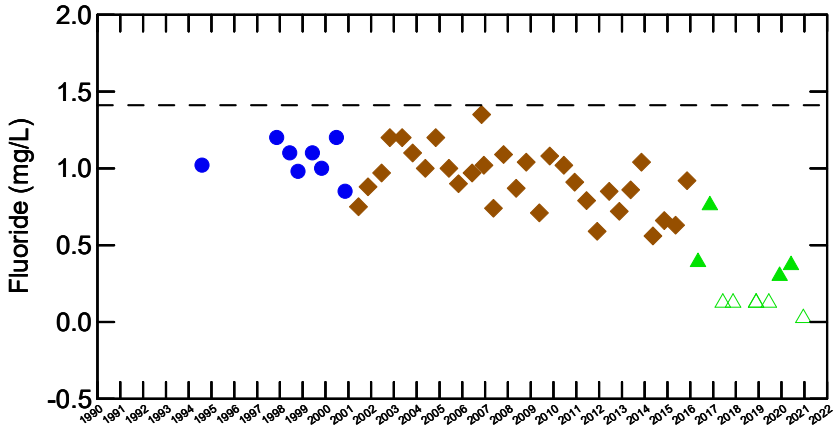
Lambton County, Ontario



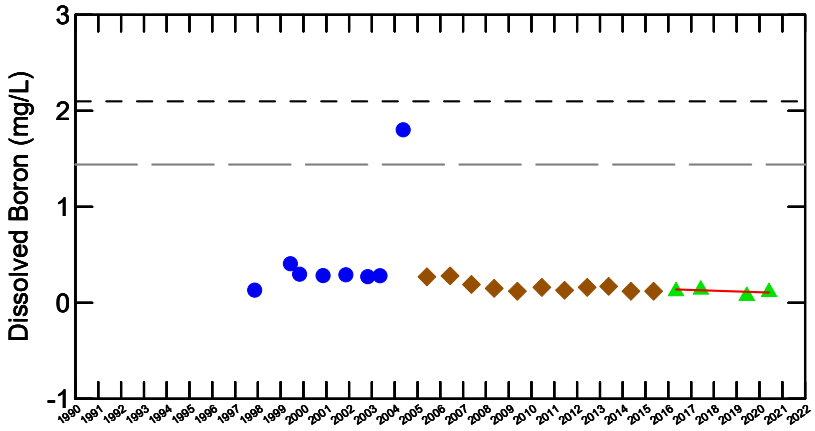
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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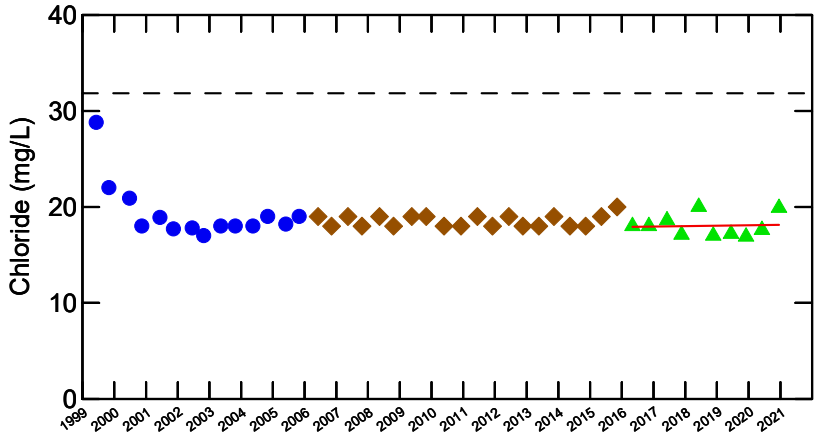
WELL TW32-94-IV

SHALLOW WELL (ACTIVE AQUITARD)

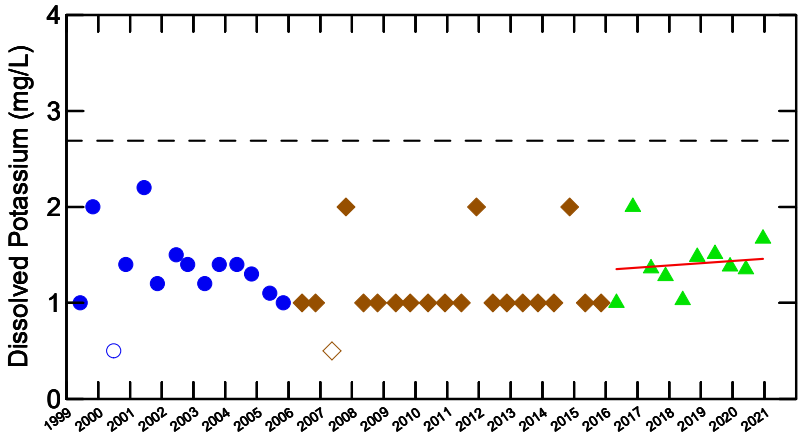
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

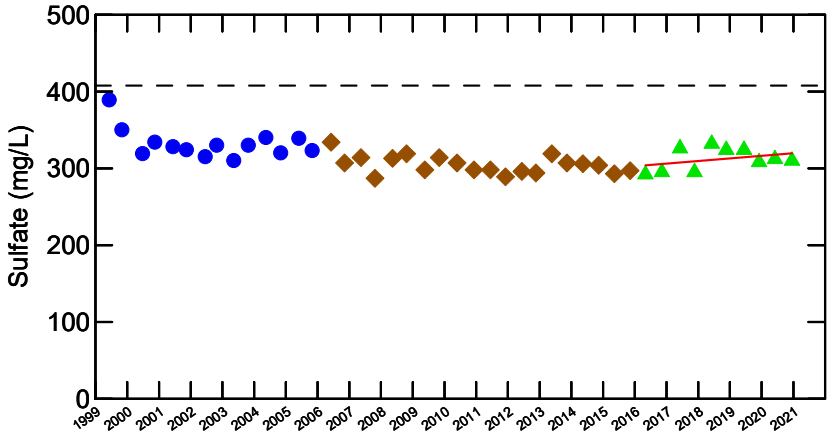
Lambton County, Ontario



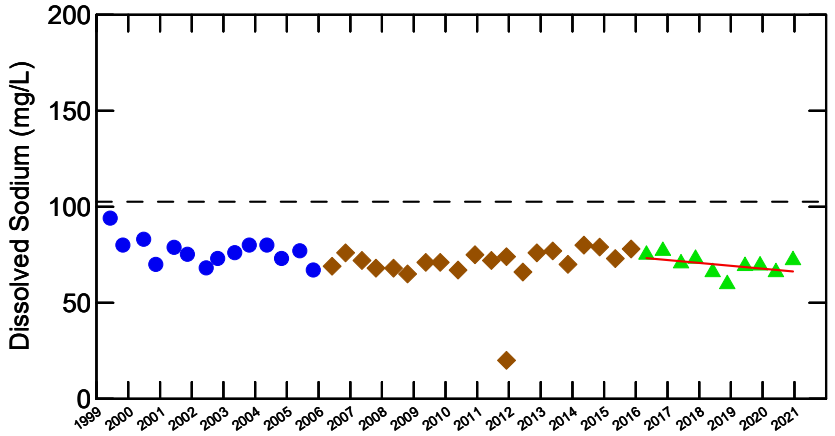
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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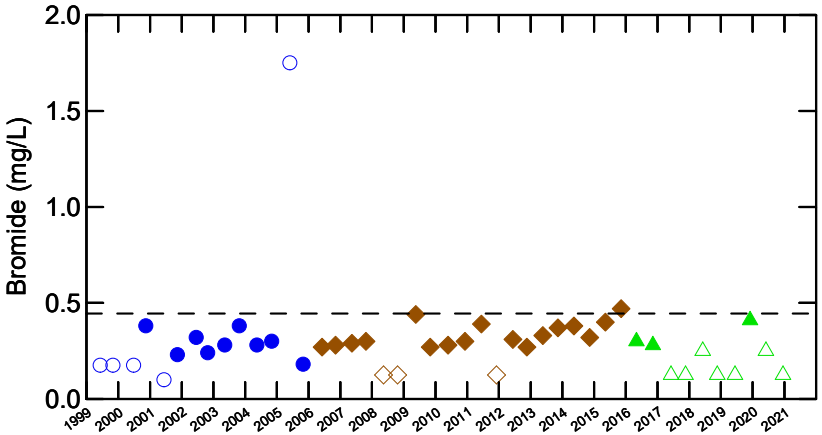
WELL TW39-99I

SHALLOW WELL (ACTIVE AQUITARD)

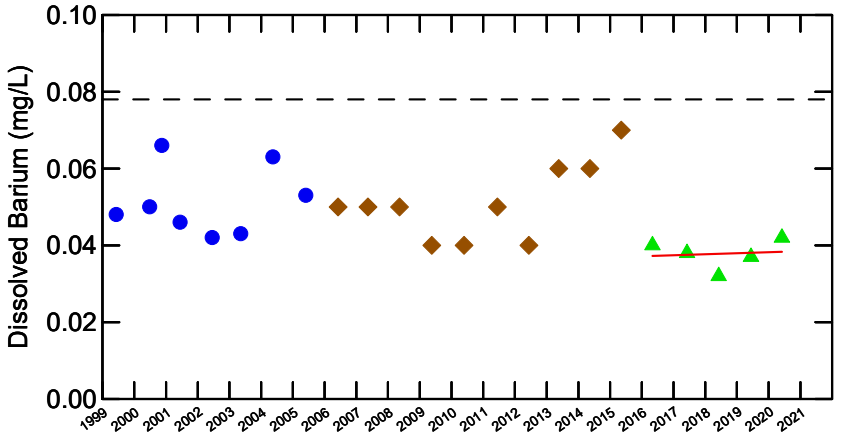
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

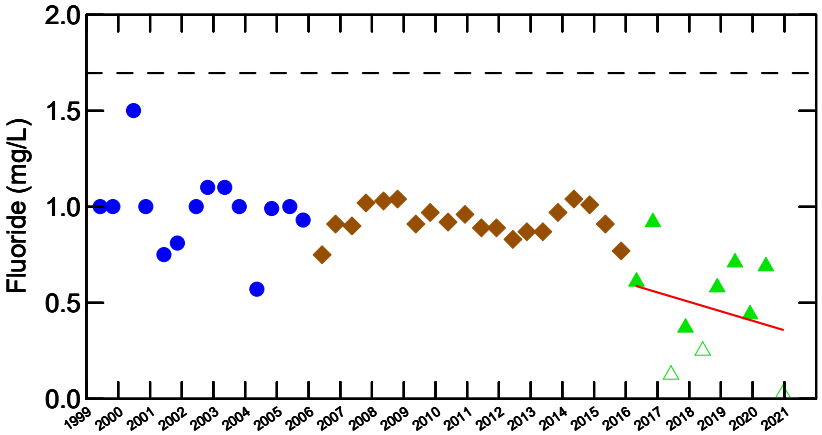
Lambton County, Ontario



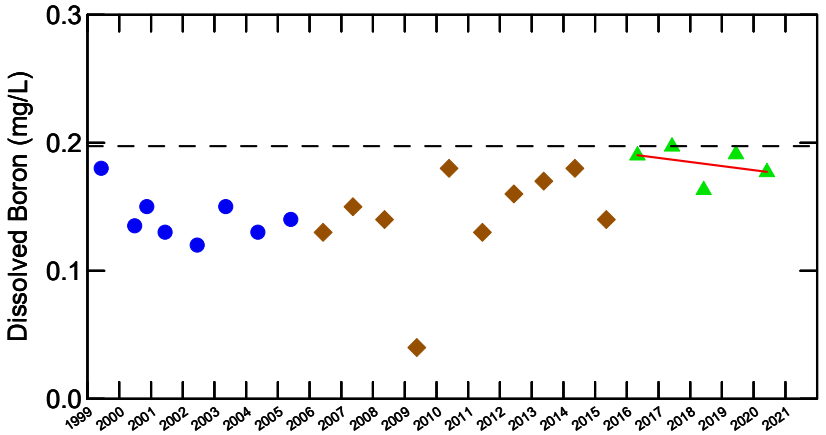
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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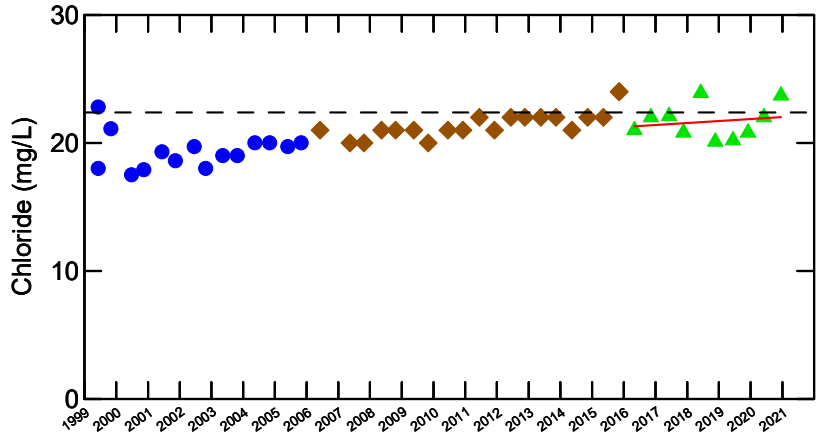
WELL TW39-99I

SHALLOW WELL (ACTIVE AQUITARD)

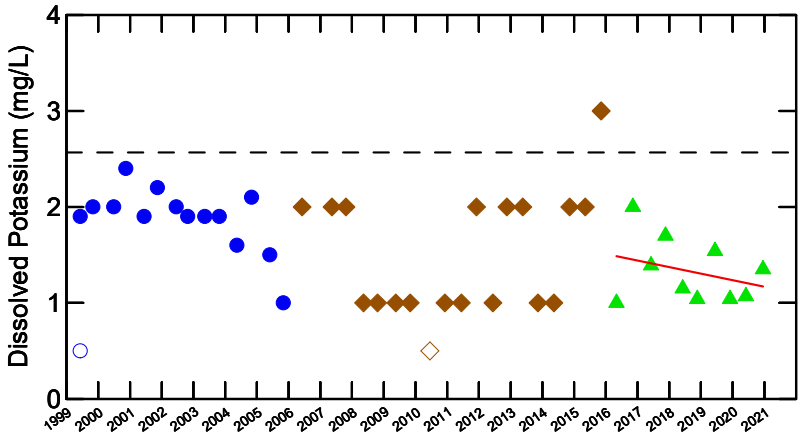
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

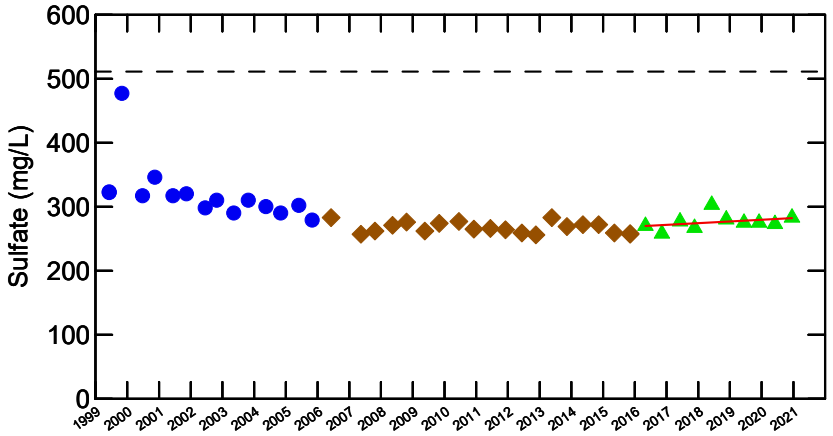
Lambton County, Ontario



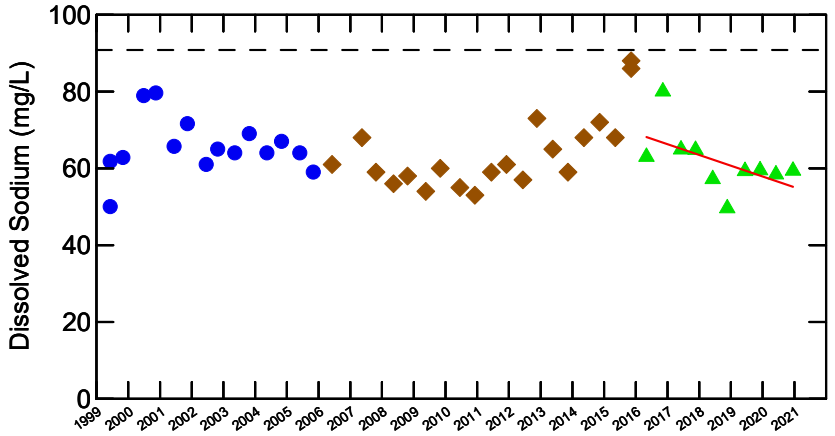
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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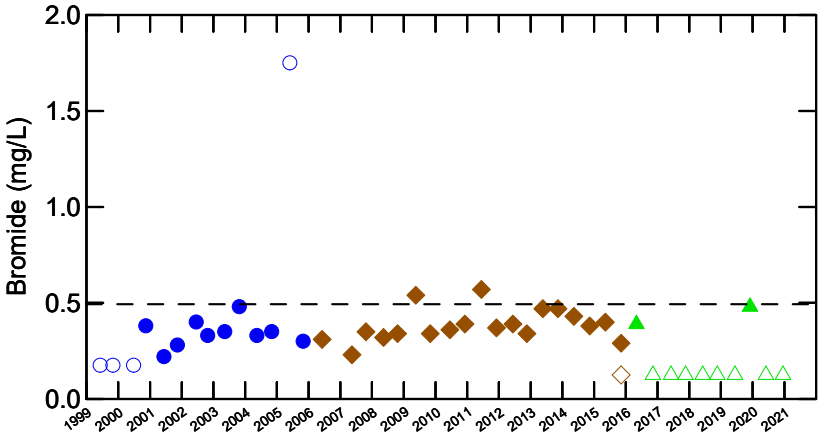
WELL TW39-99S

SHALLOW WELL (ACTIVE AQUITARD)

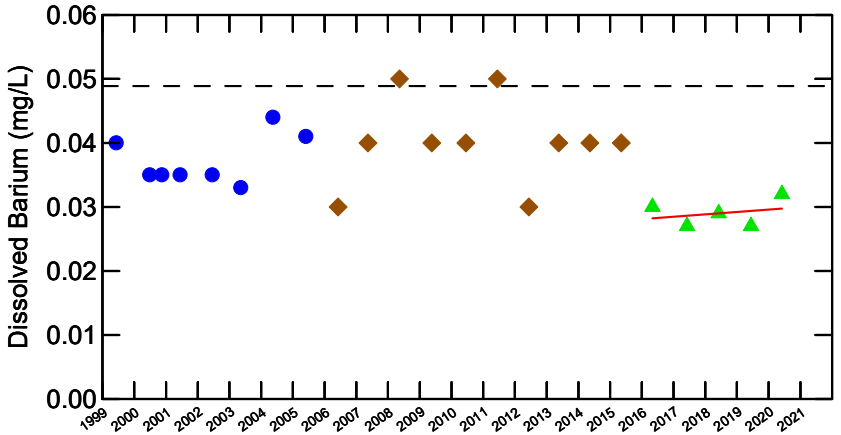
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

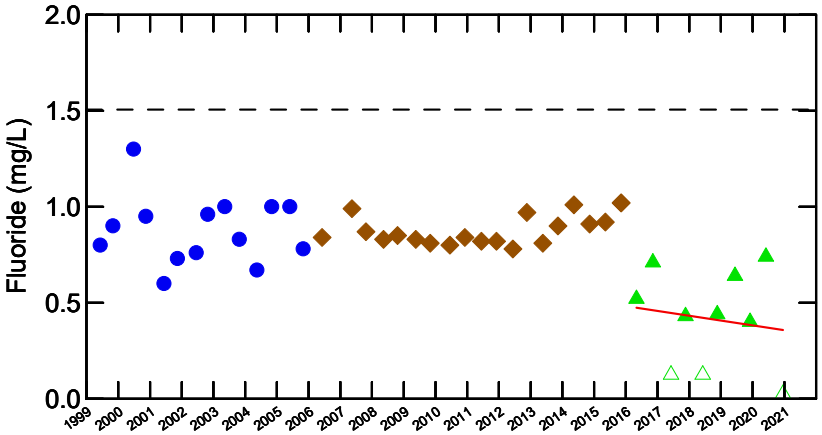
Lambton County, Ontario



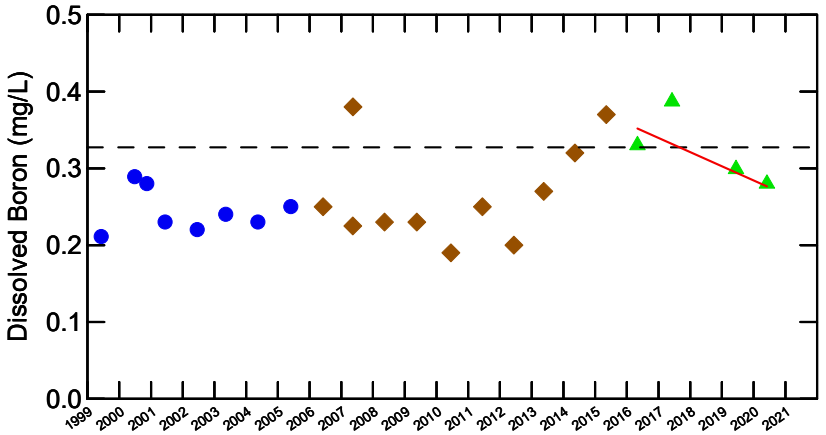
Over 50% non-detect



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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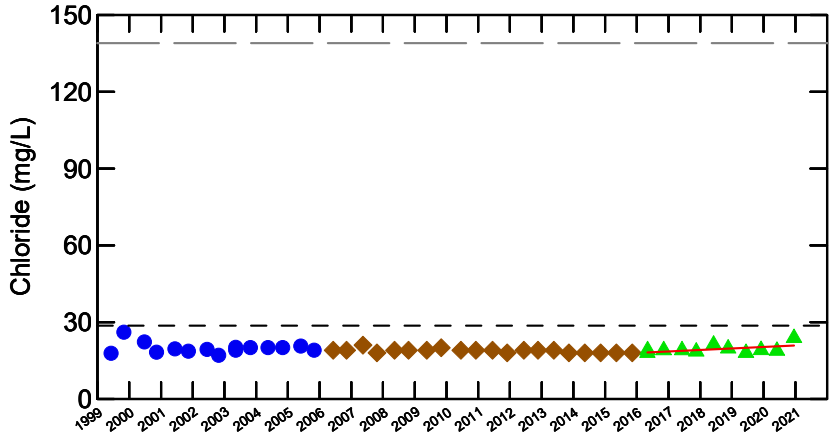
WELL TW39-99S

SHALLOW WELL (ACTIVE AQUITARD)

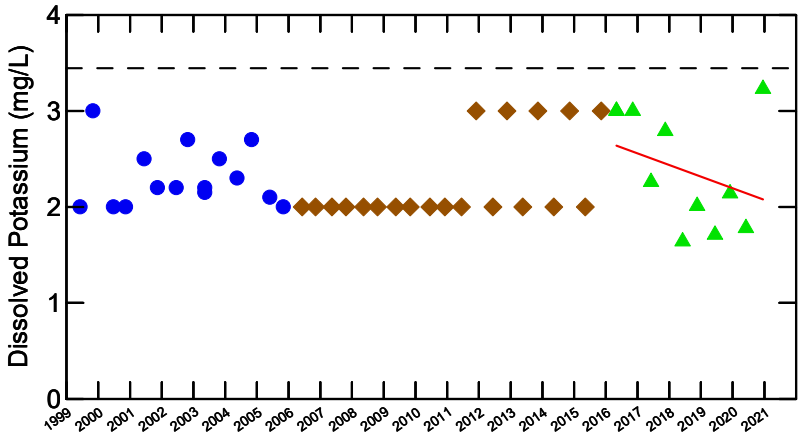
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

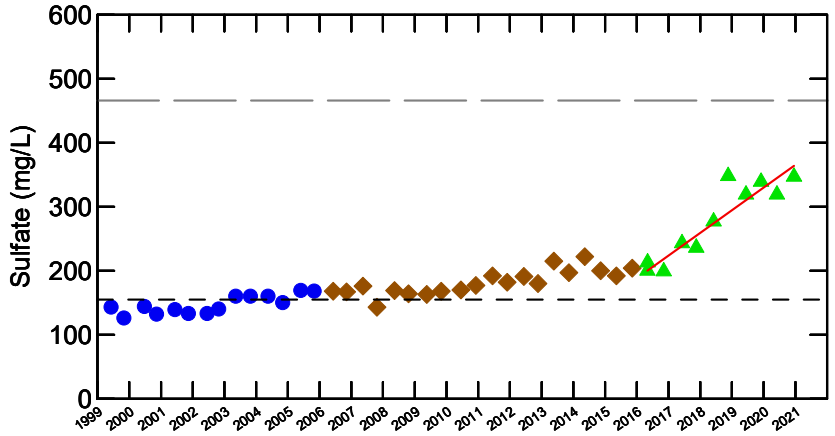
Lambton County, Ontario



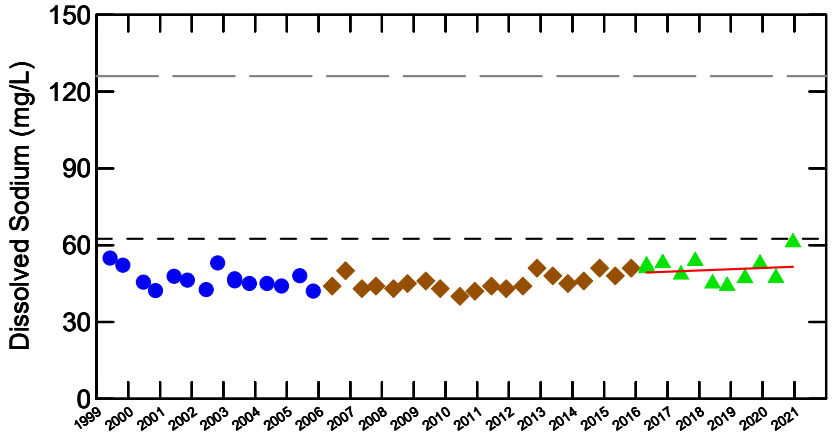
No trend



No trend



Increasing trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

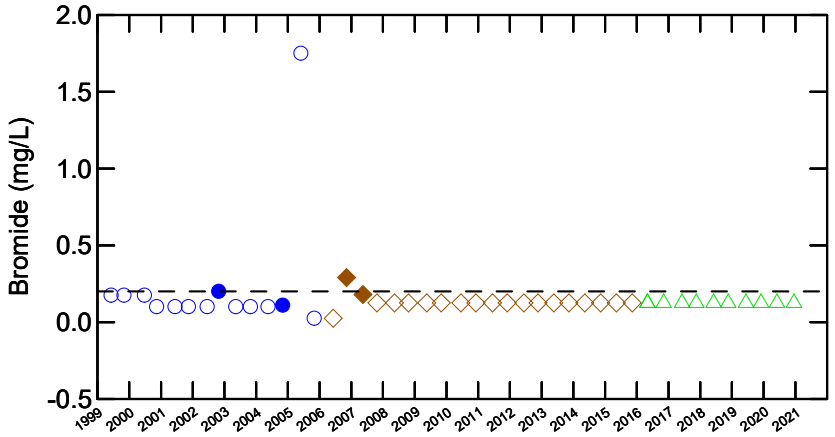
WELL TW40-99S

SHALLOW WELL (ACTIVE AQUITARD)

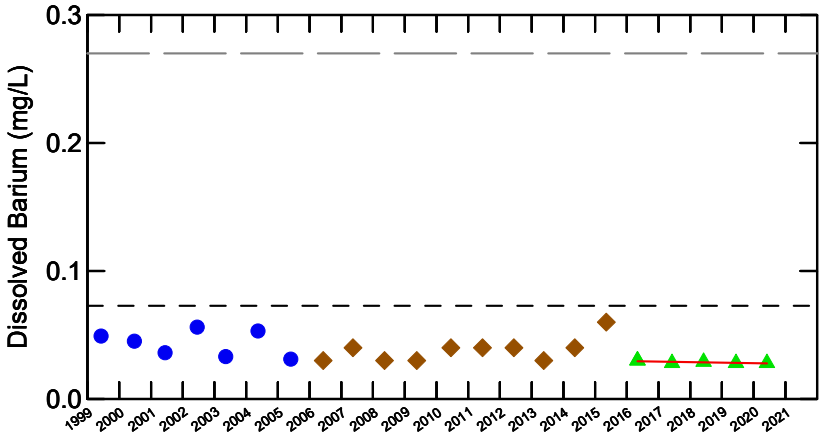
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

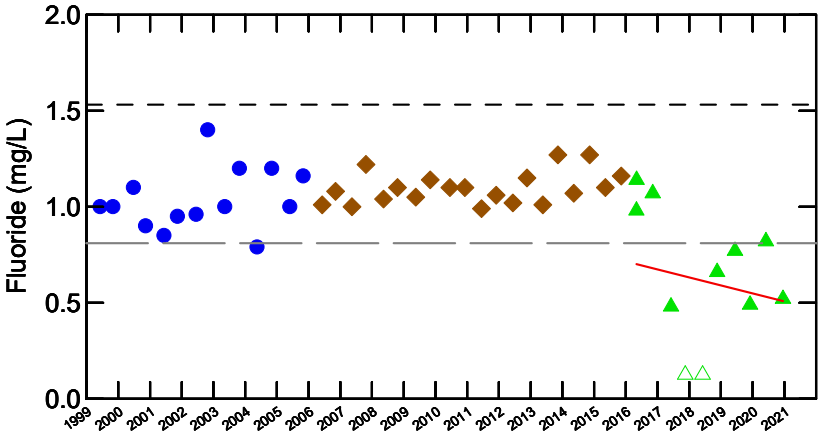
Lambton County, Ontario



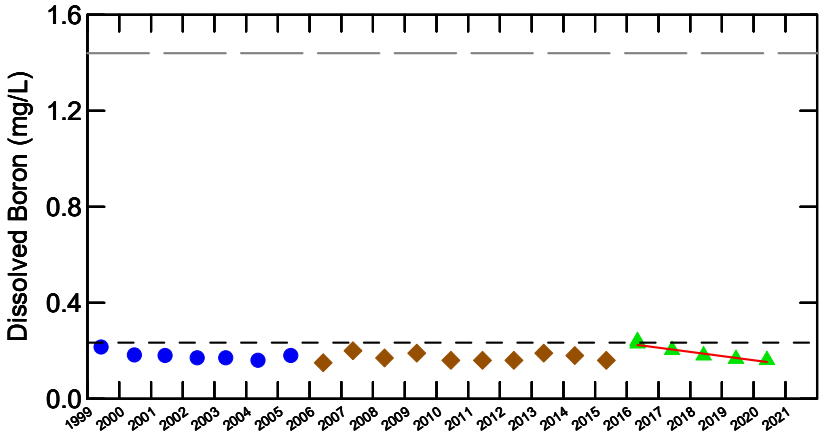
No detected results



No trend



No trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

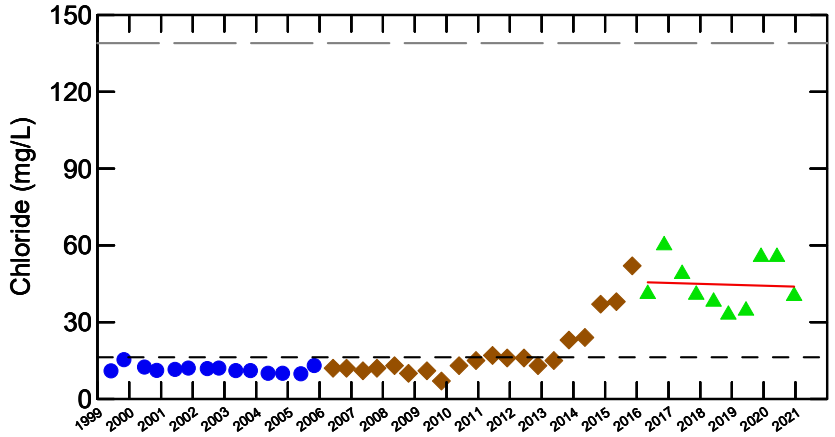
WELL TW40-99S

SHALLOW WELL (ACTIVE AQUITARD)

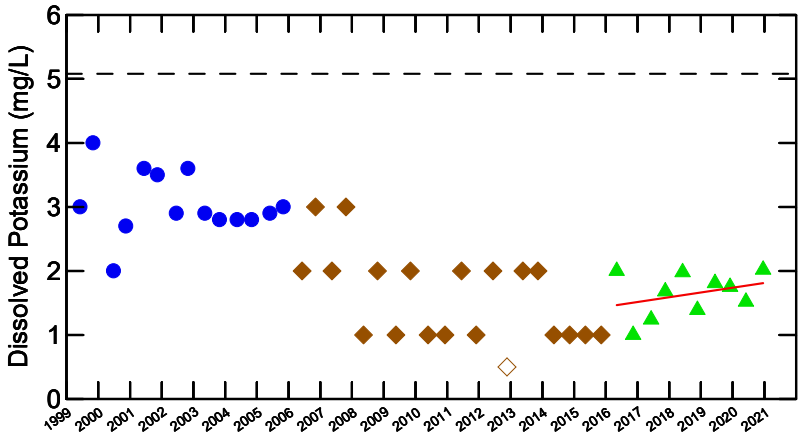
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

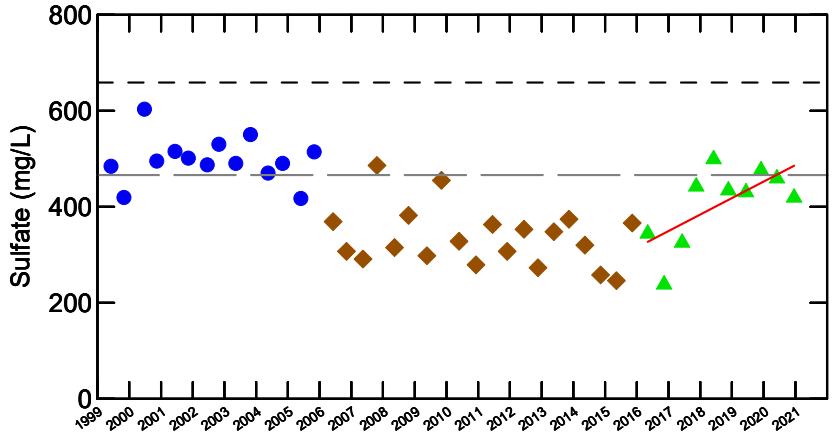
Lambton County, Ontario



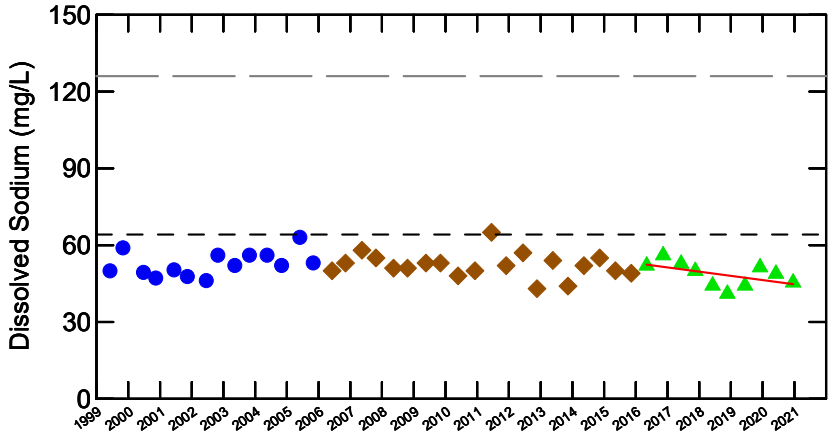
No trend



No trend



Increasing trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

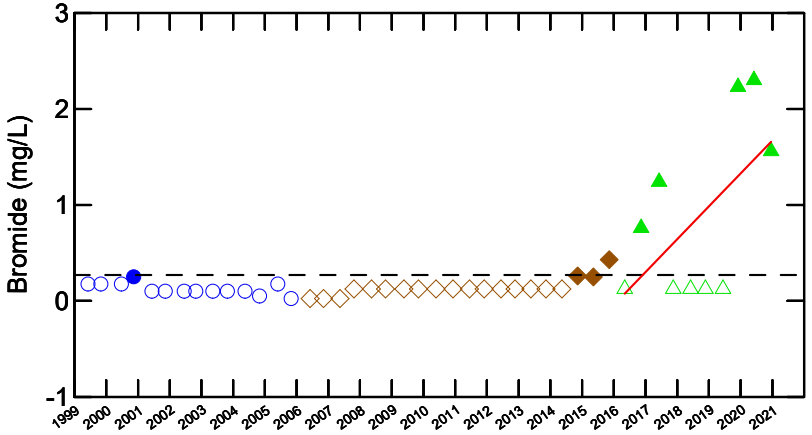
WELL TW41-99S

SHALLOW WELL (ACTIVE AQUITARD)

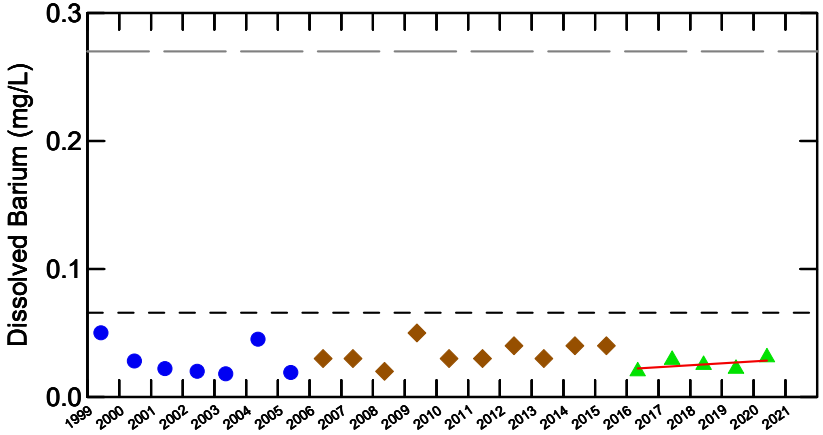
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

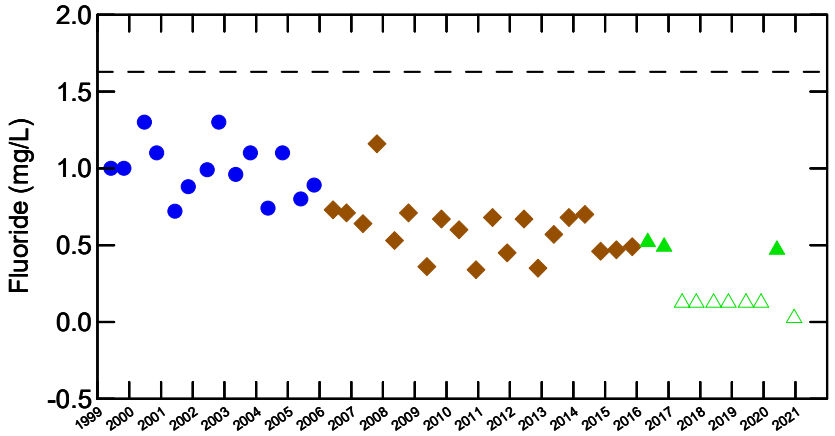
Lambton County, Ontario



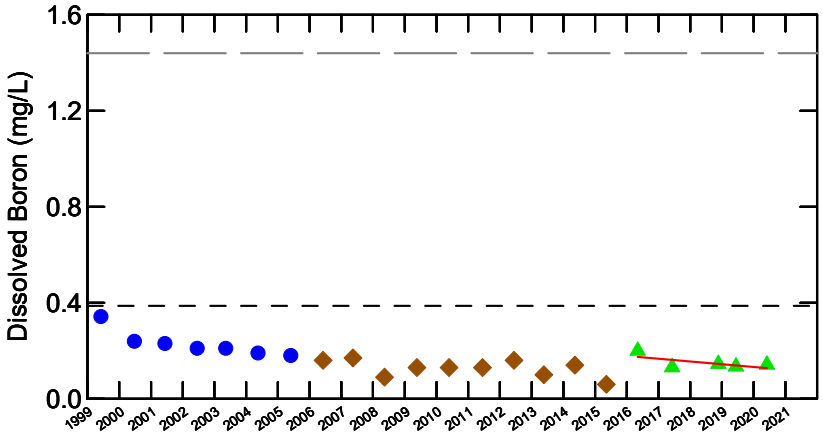
No trend



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

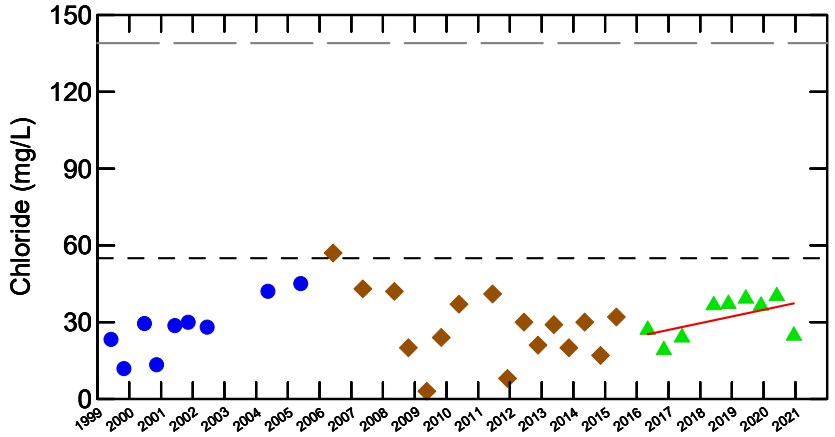
WELL TW41-99S

SHALLOW WELL (ACTIVE AQUITARD)

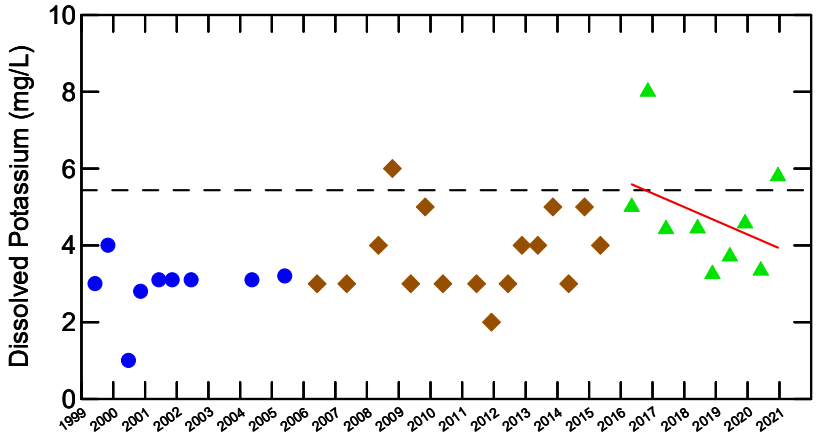
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

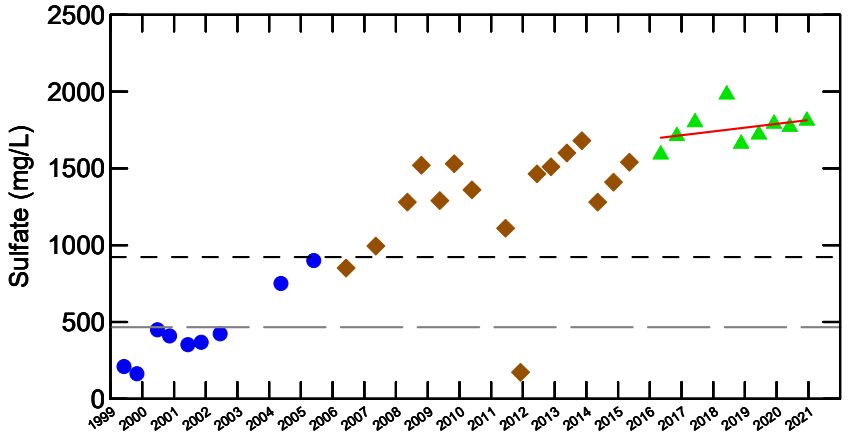
Lambton County, Ontario



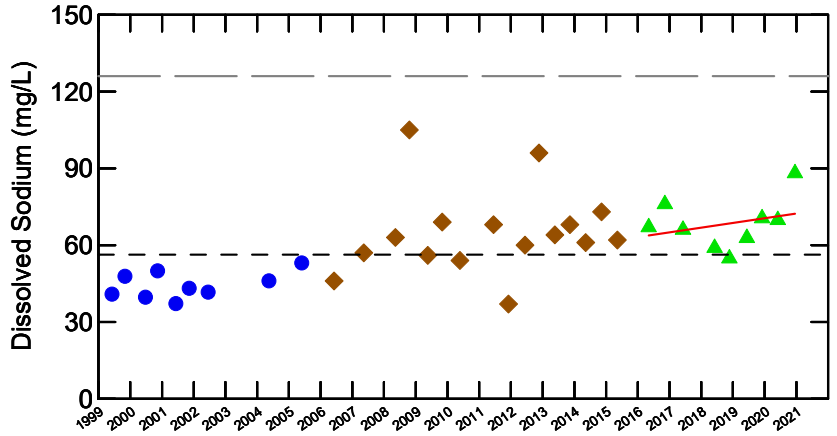
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

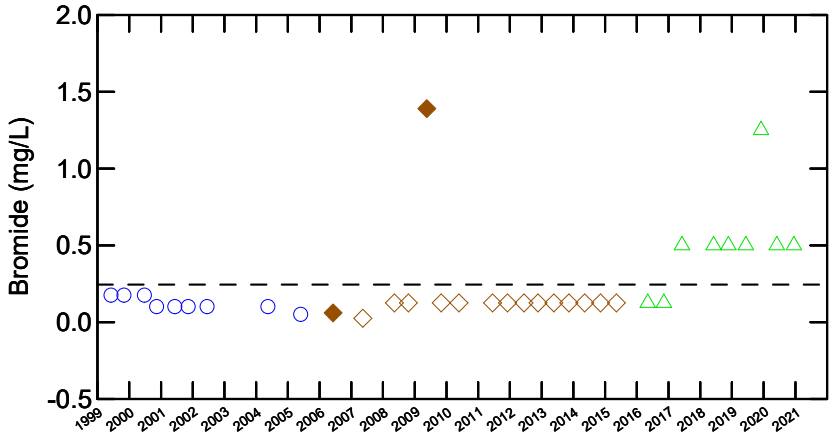
WELL TW42-99S

SHALLOW WELL (ACTIVE AQUITARD)

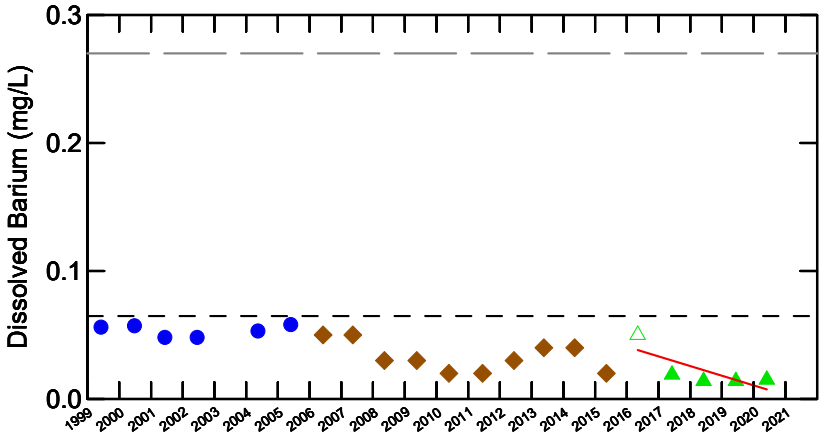
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

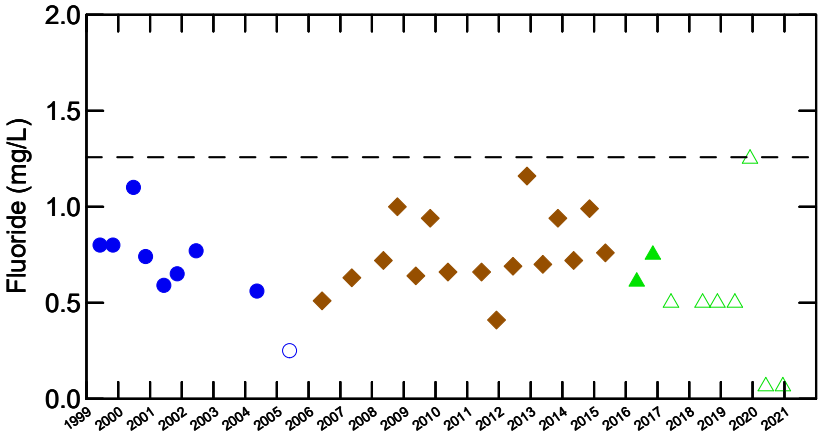
Lambton County, Ontario



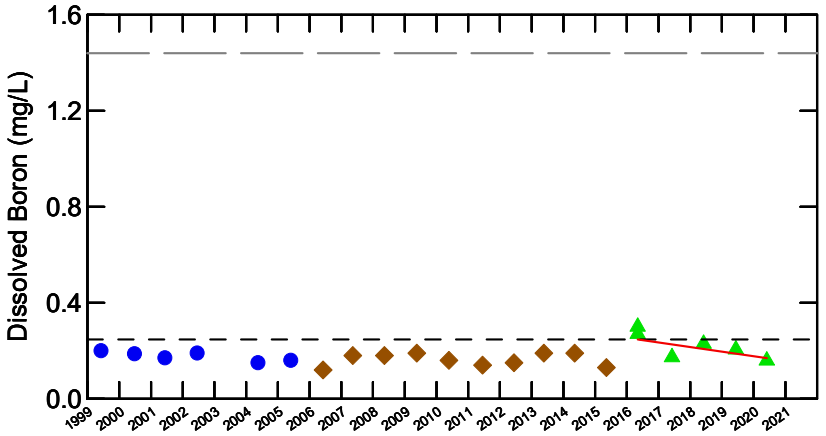
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

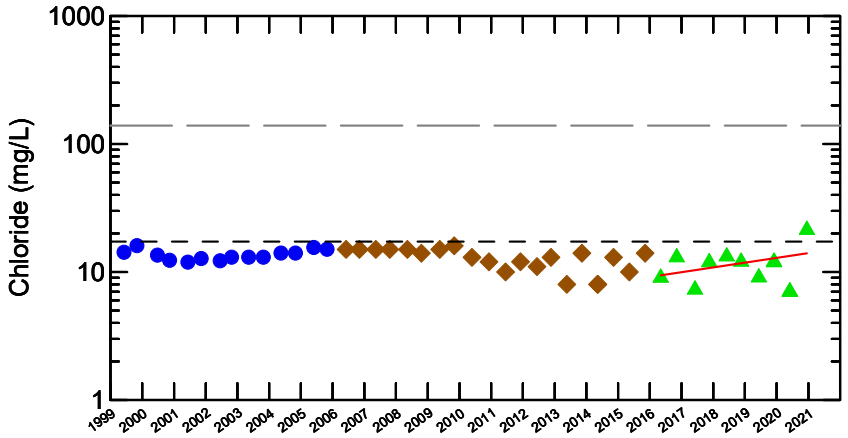
WELL TW42-99S

SHALLOW WELL (ACTIVE AQUITARD)

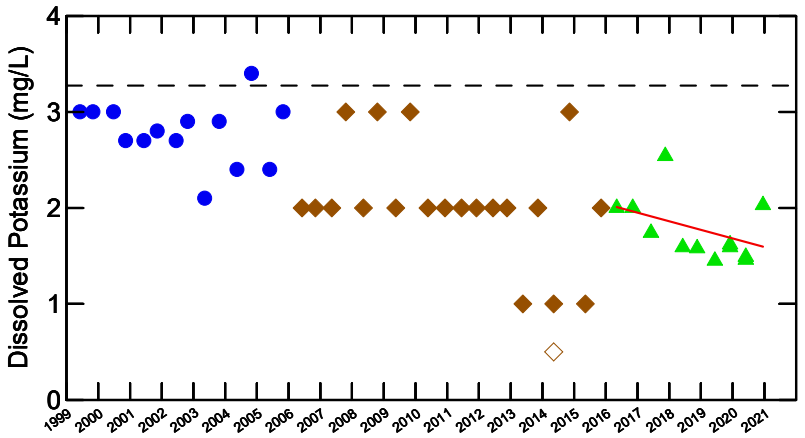
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

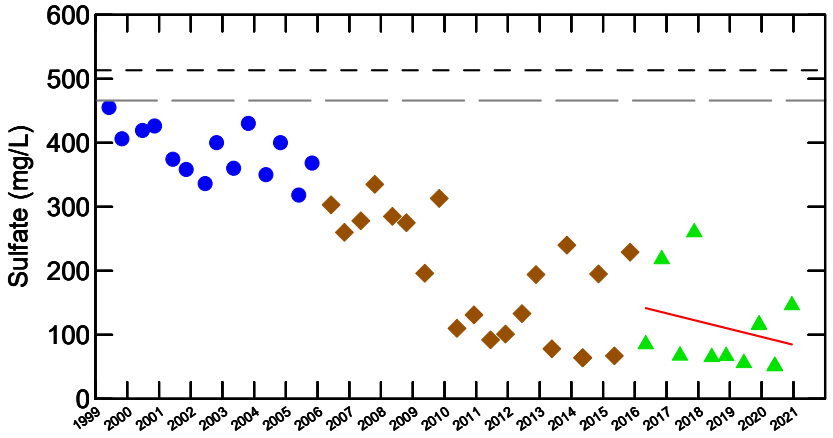
Lambton County, Ontario



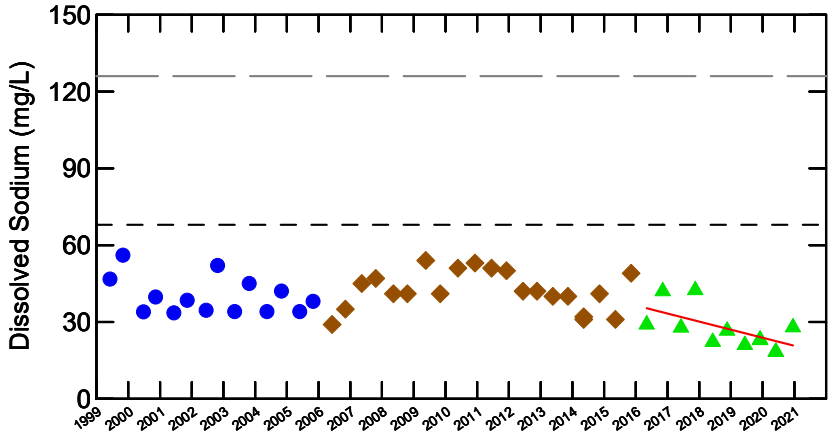
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

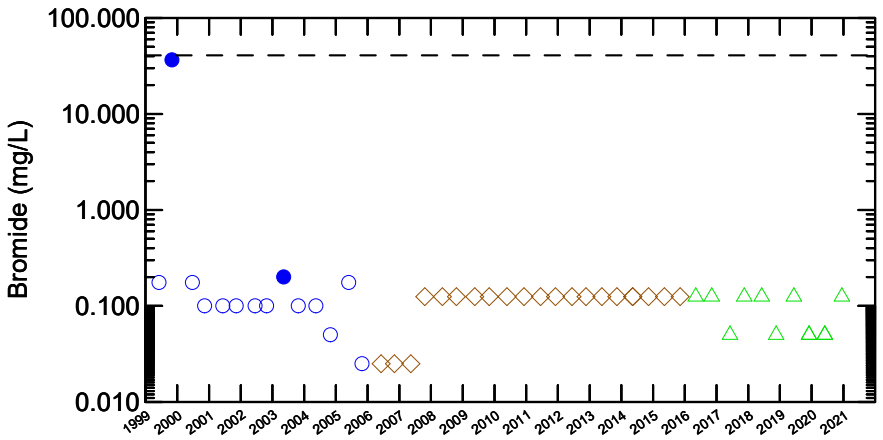
WELL TW43-99S

SHALLOW WELL (ACTIVE AQUITARD)

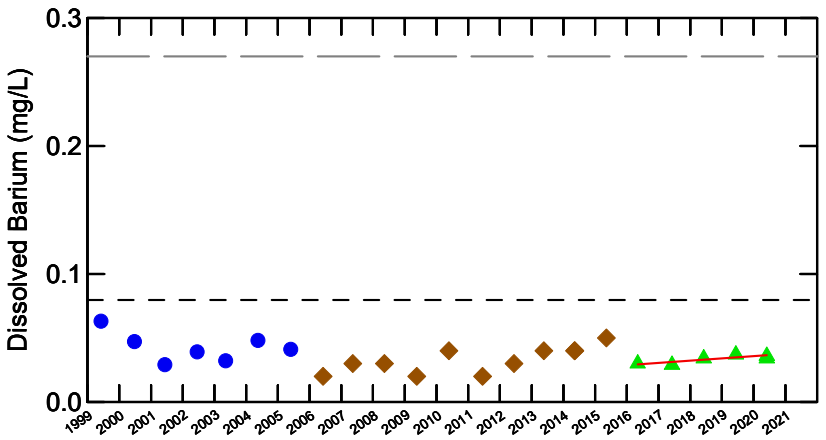
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

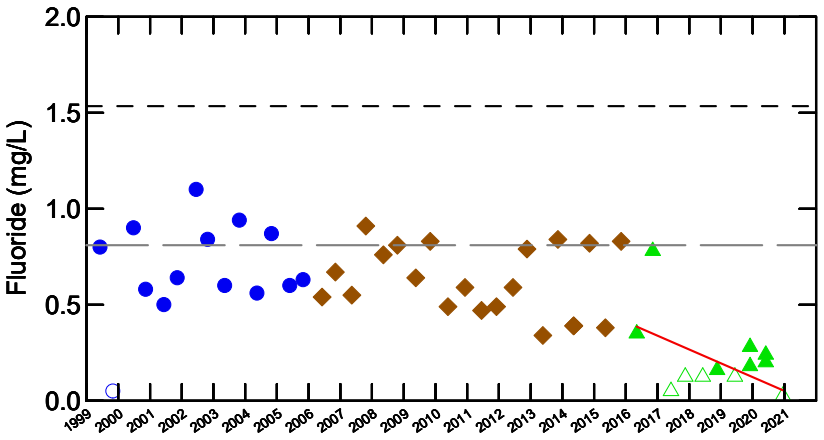
Lambton County, Ontario



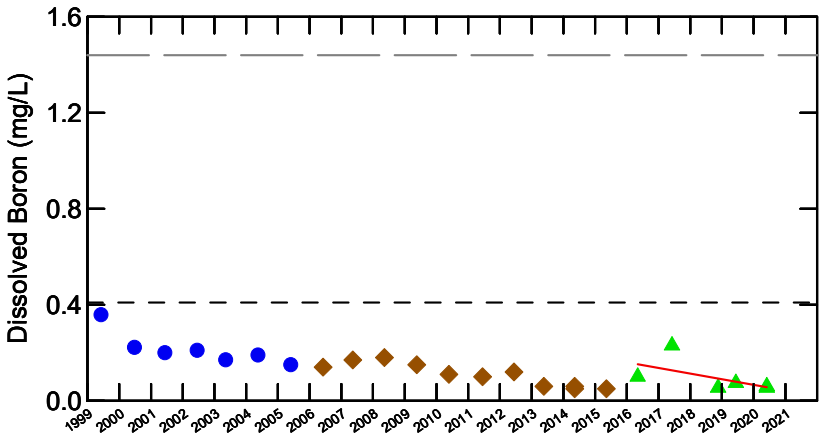
No detected results



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

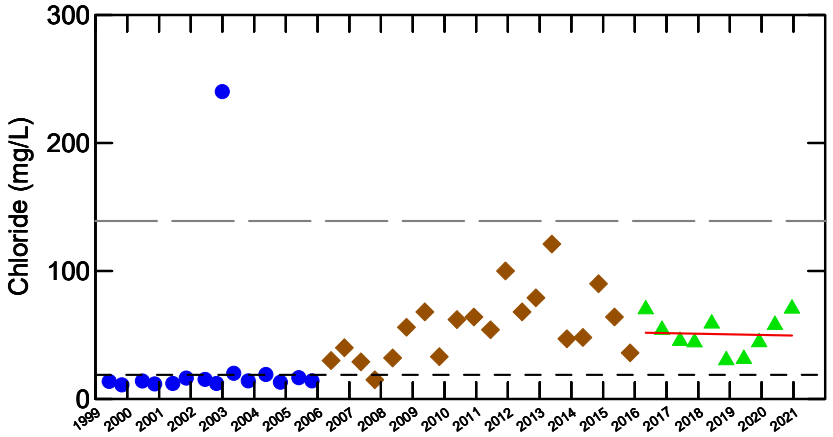
WELL TW43-99S

SHALLOW WELL (ACTIVE AQUITARD)

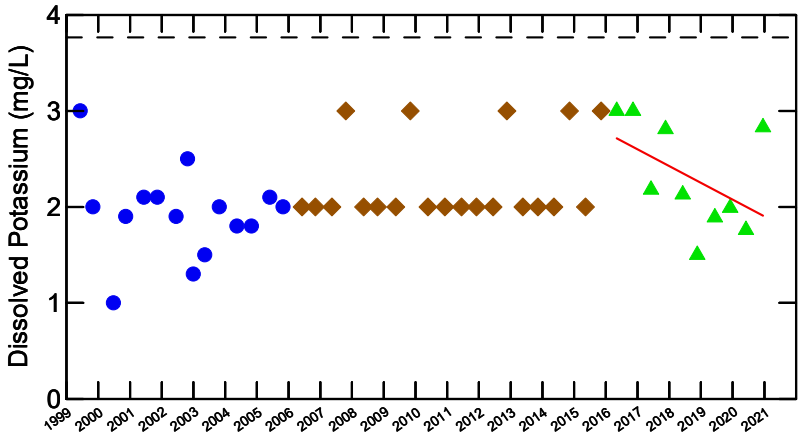
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

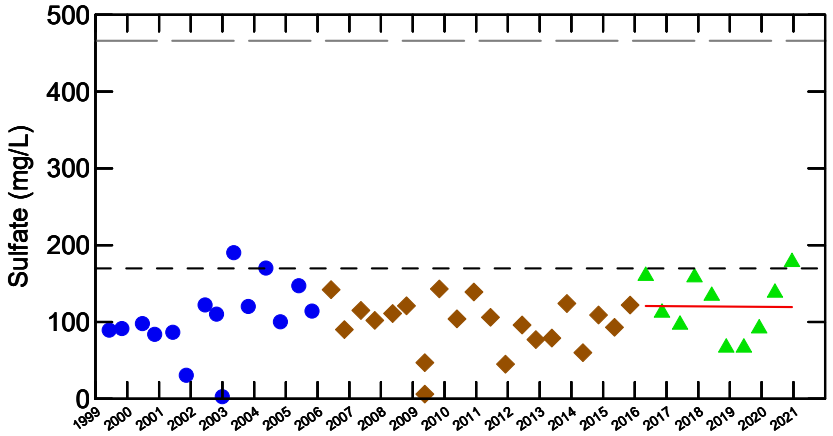
Lambton County, Ontario



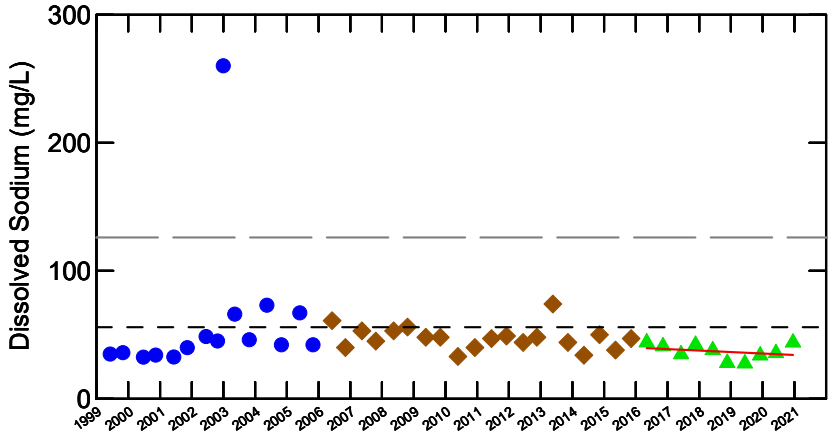
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

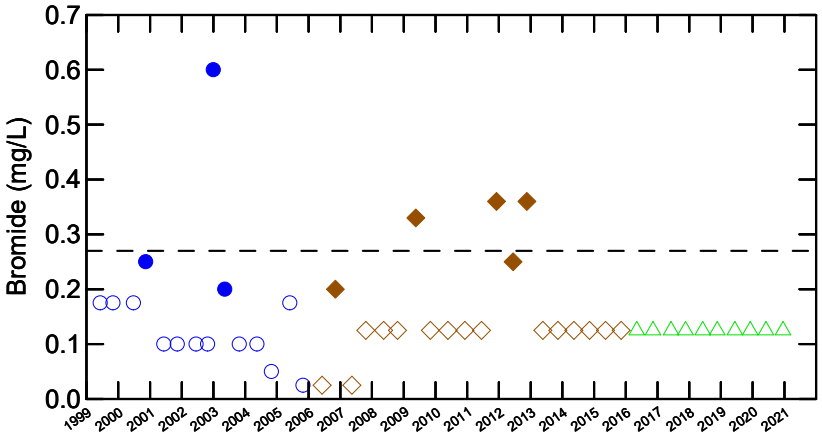
WELL TW45-99S

SHALLOW WELL (ACTIVE AQUITARD)

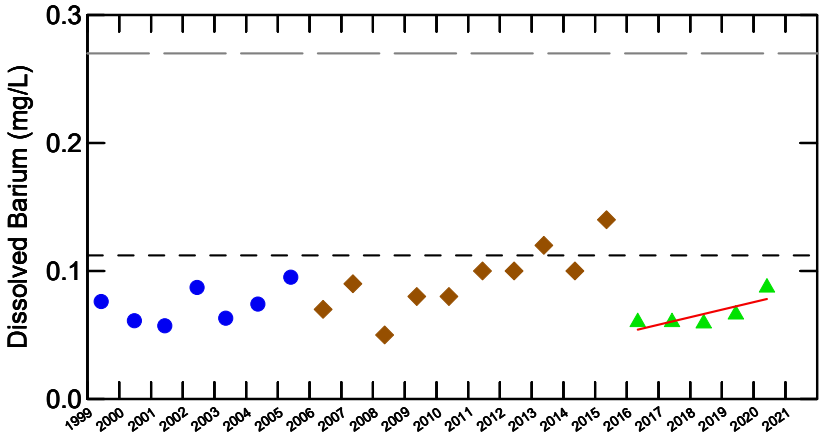
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

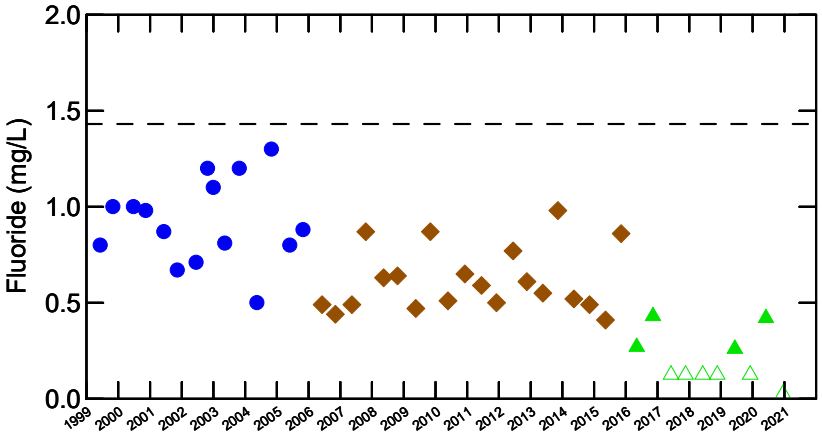
Lambton County, Ontario



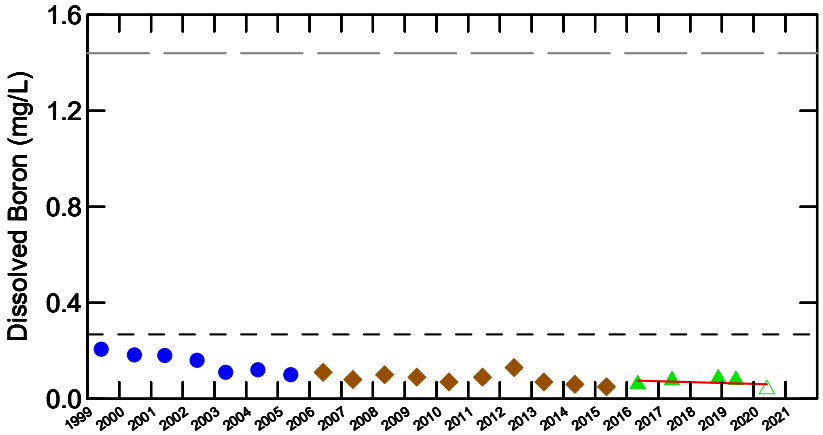
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

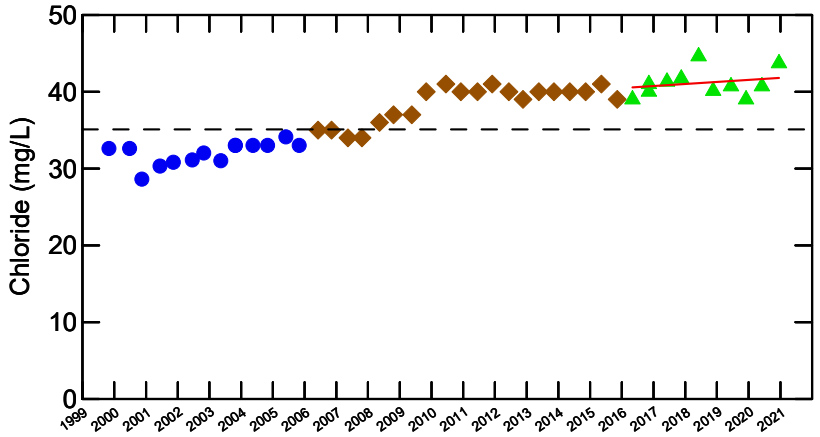
WELL TW45-99S

SHALLOW WELL (ACTIVE AQUITARD)

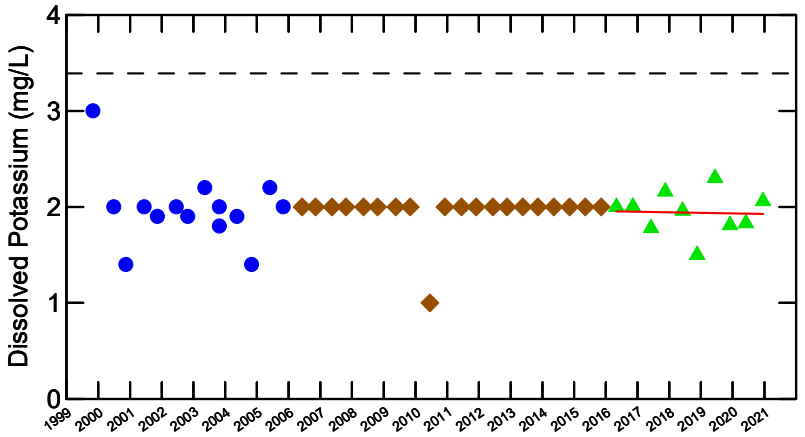
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

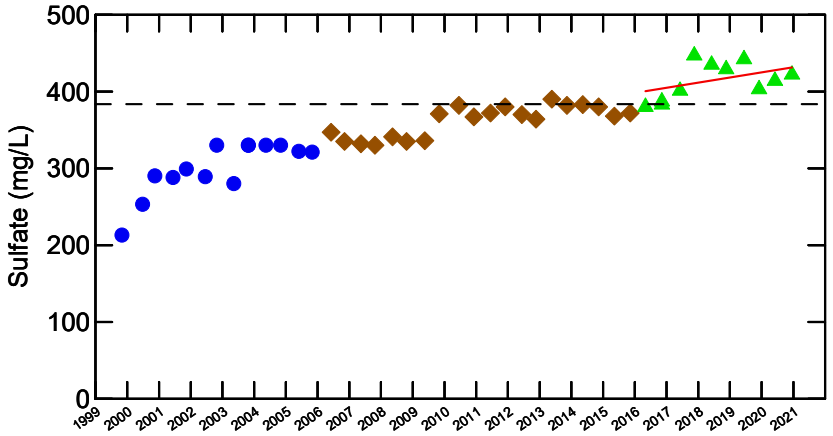
Lambton County, Ontario



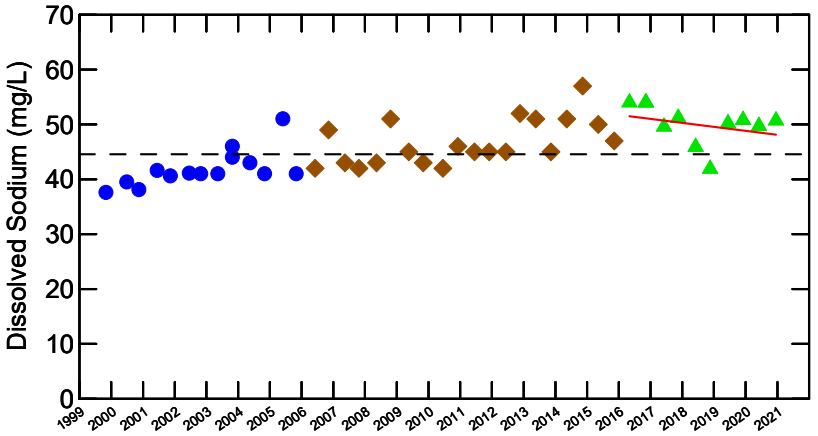
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

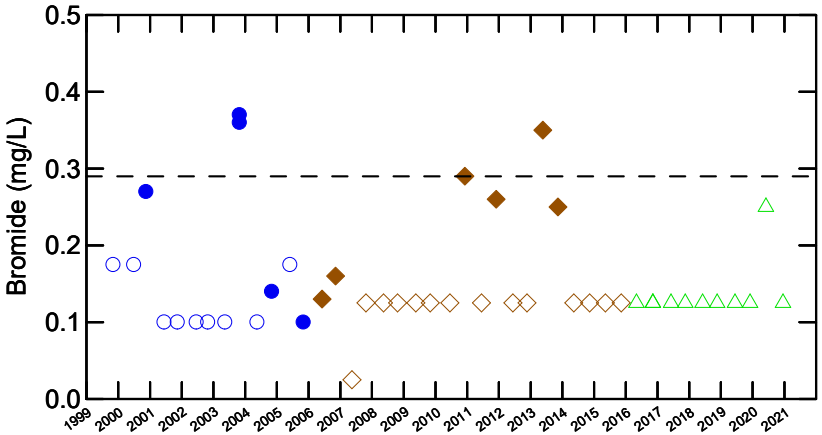
WELL TW46-99I

SHALLOW WELL (ACTIVE AQUITARD)

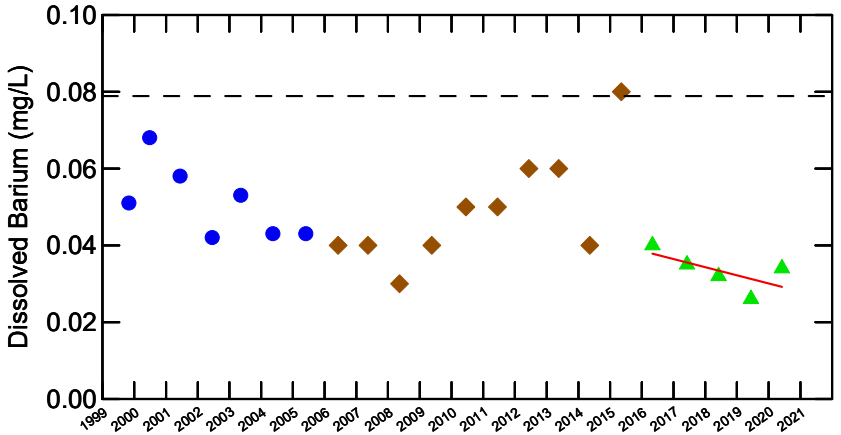
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

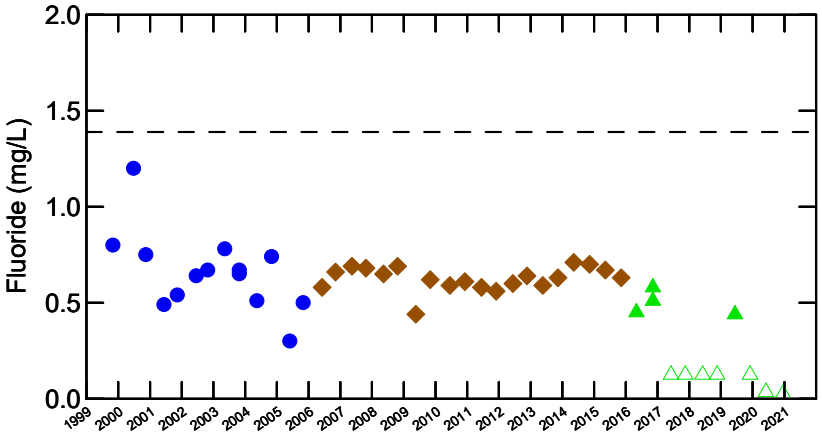
Lambton County, Ontario



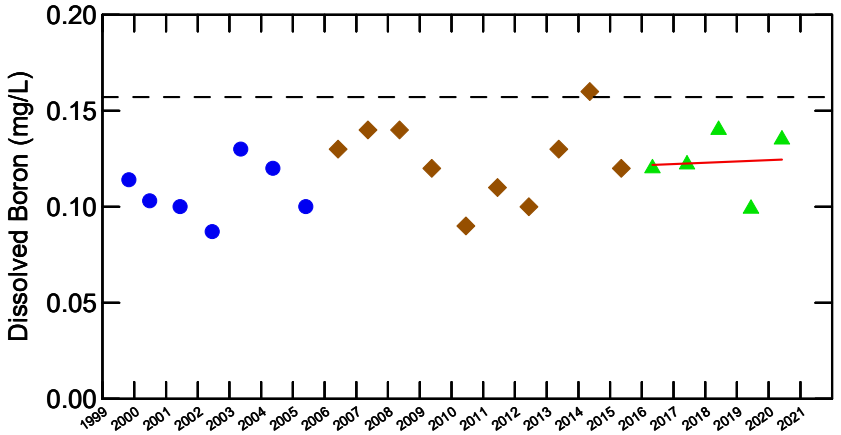
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

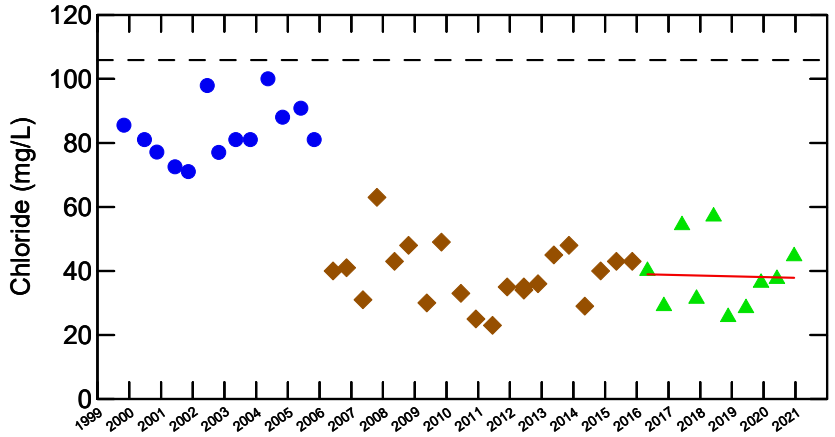
WELL TW46-99I

SHALLOW WELL (ACTIVE AQUITARD)

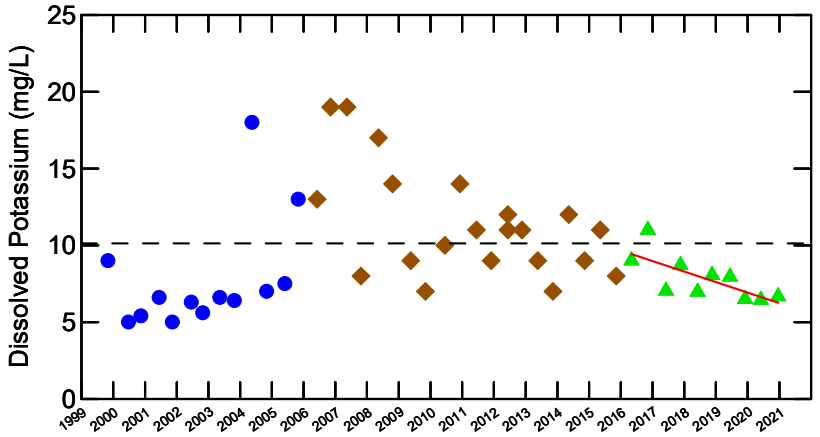
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

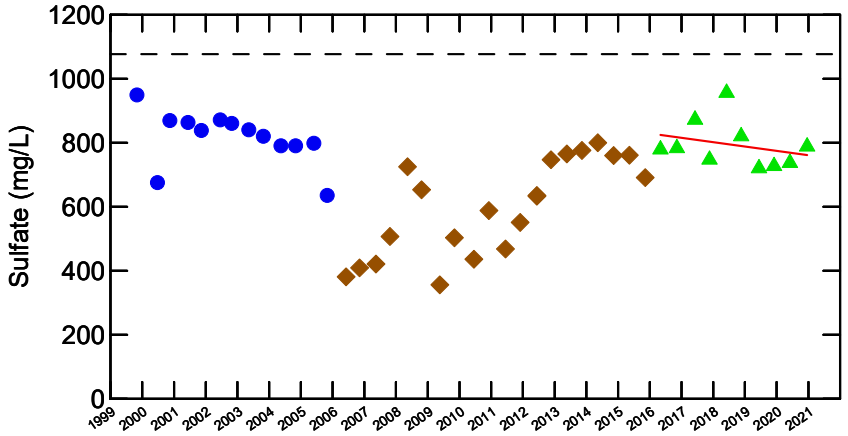
Lambton County, Ontario



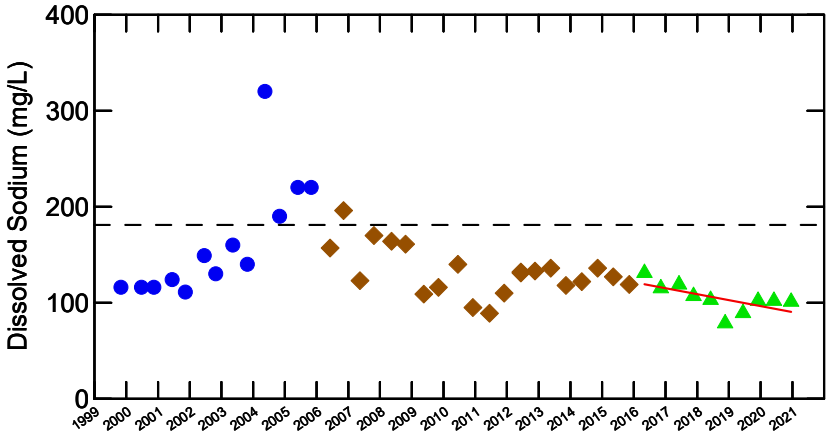
No trend



Decreasing trend



No trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

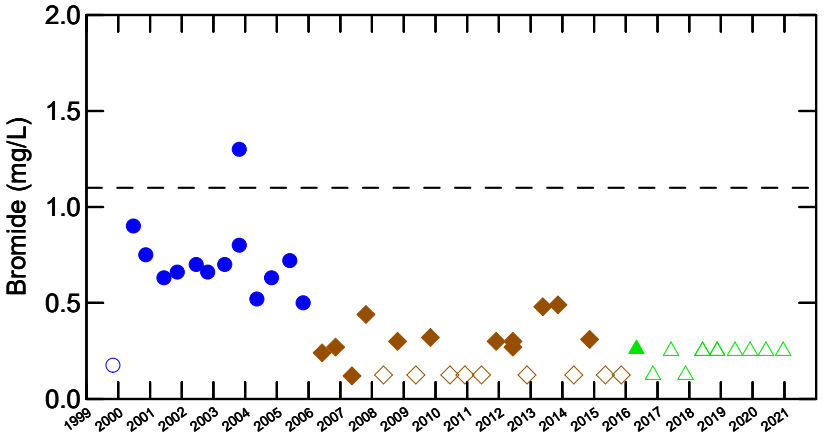
WELL TW46-99S

SHALLOW WELL (ACTIVE AQUITARD)

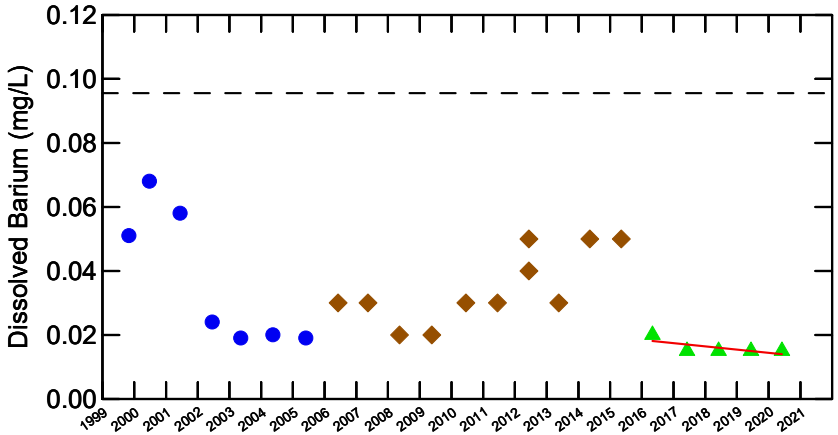
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

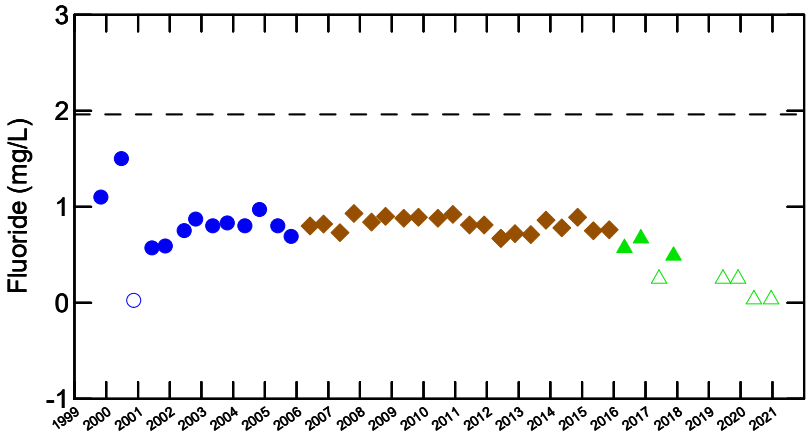
Lambton County, Ontario



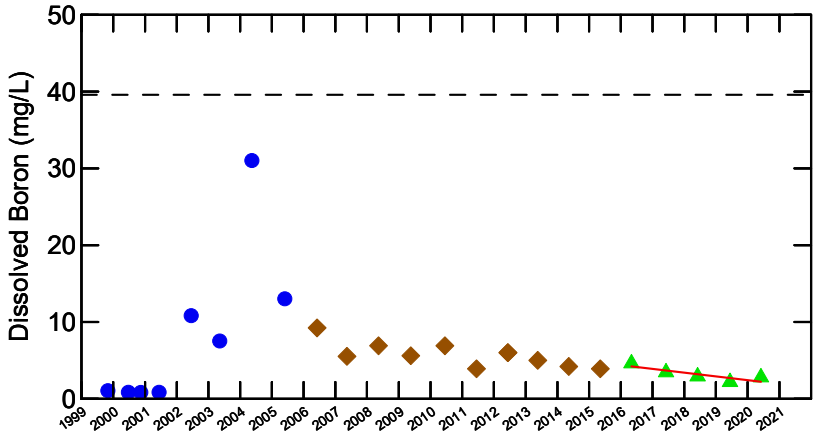
Over 50% non-detect



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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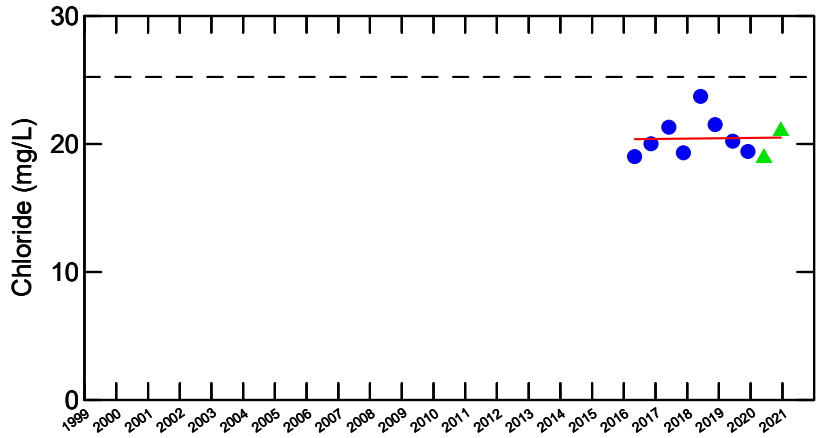
WELL TW46-99S

SHALLOW WELL (ACTIVE AQUITARD)

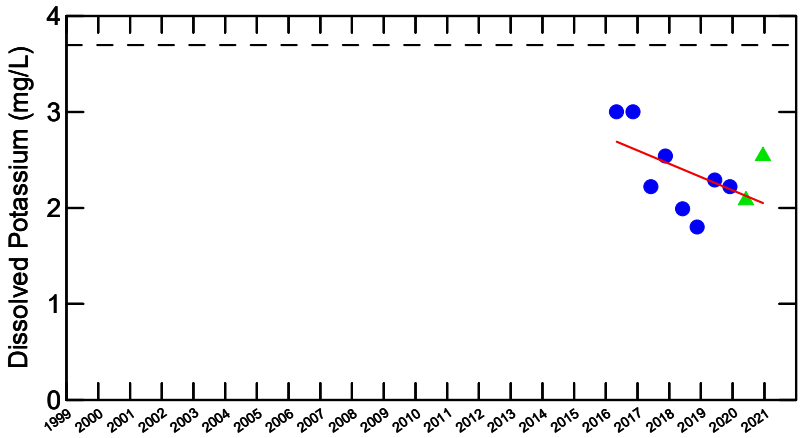
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

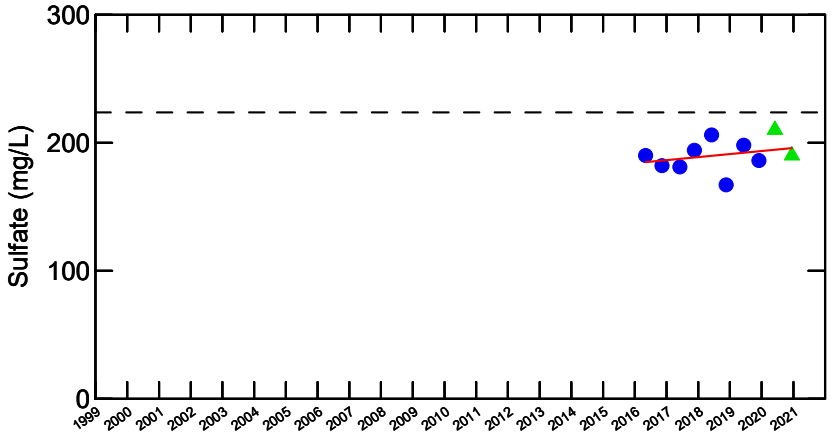
Lambton County, Ontario



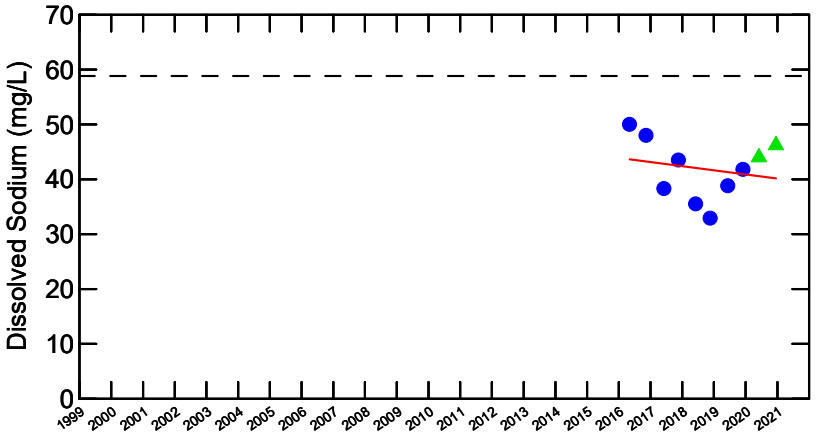
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

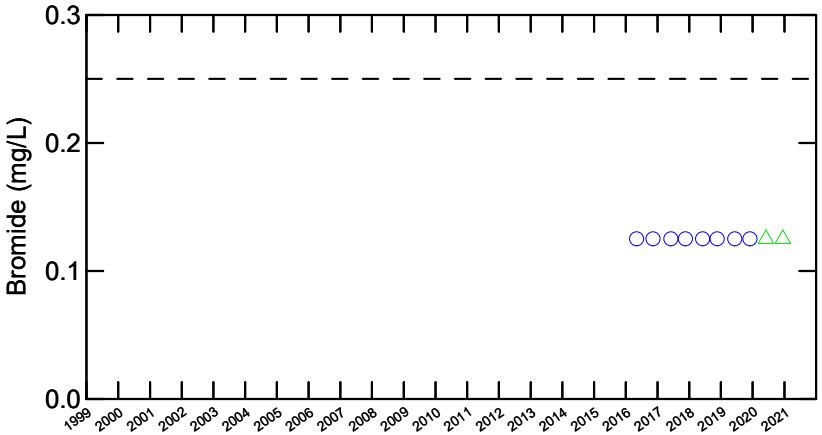
WELL TW48-16S

SHALLOW WELL (ACTIVE AQUITARD)

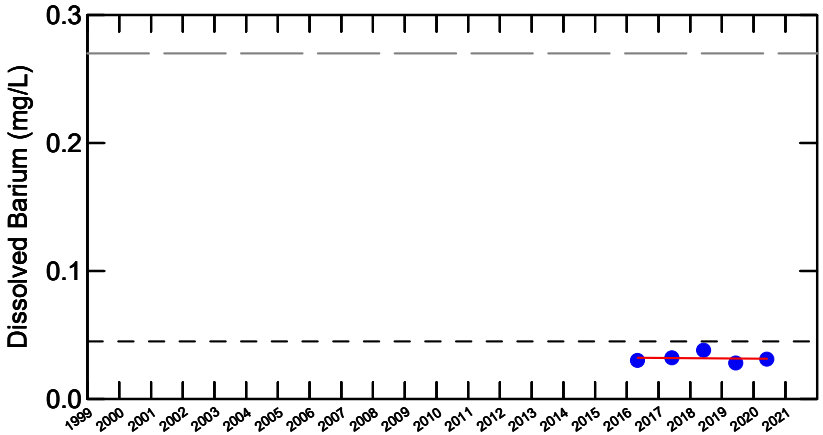
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

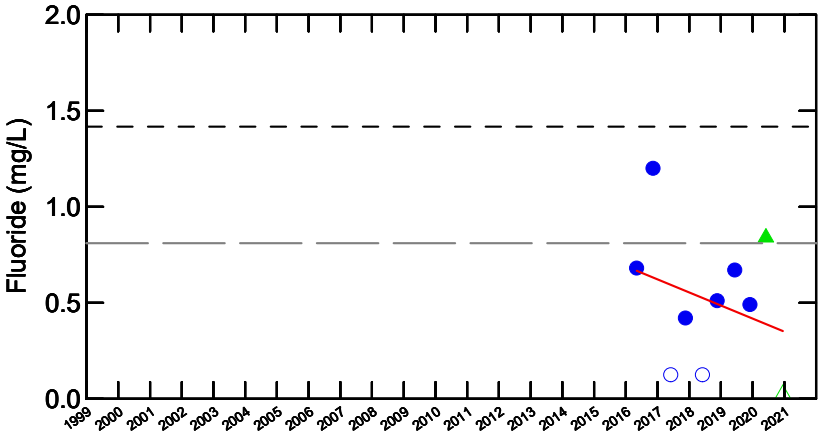
Lambton County, Ontario



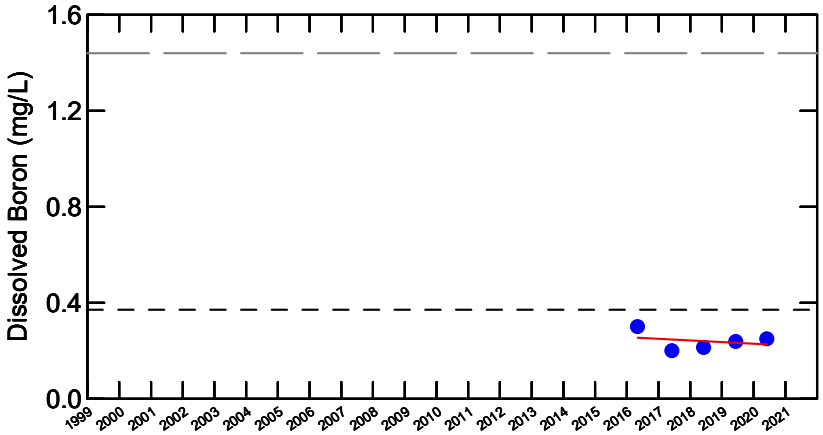
No detected results



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
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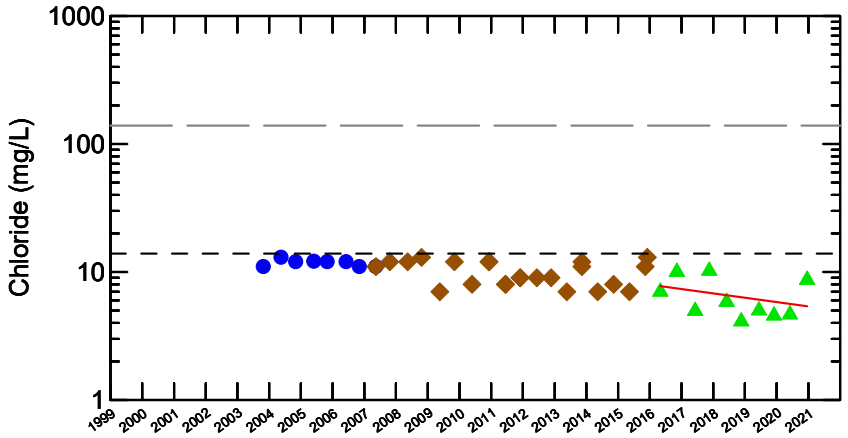
WELL TW48-16S

SHALLOW WELL (ACTIVE AQUITARD)

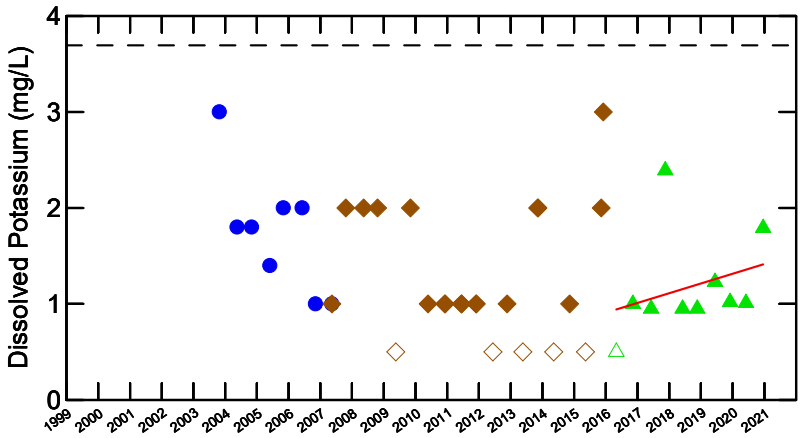
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

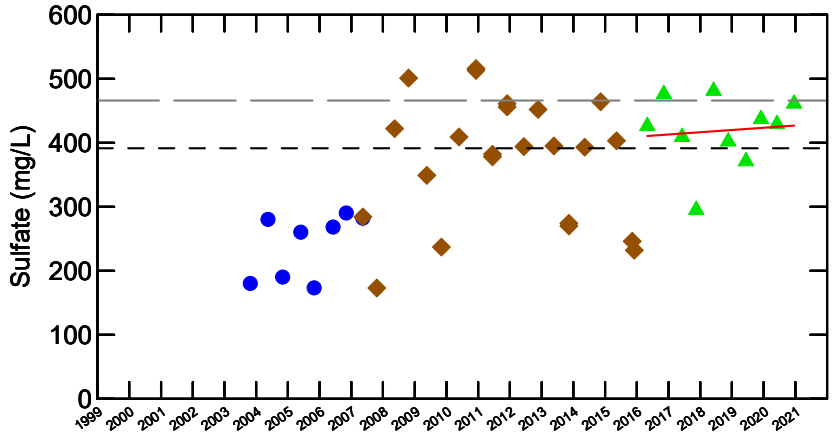
Lambton County, Ontario



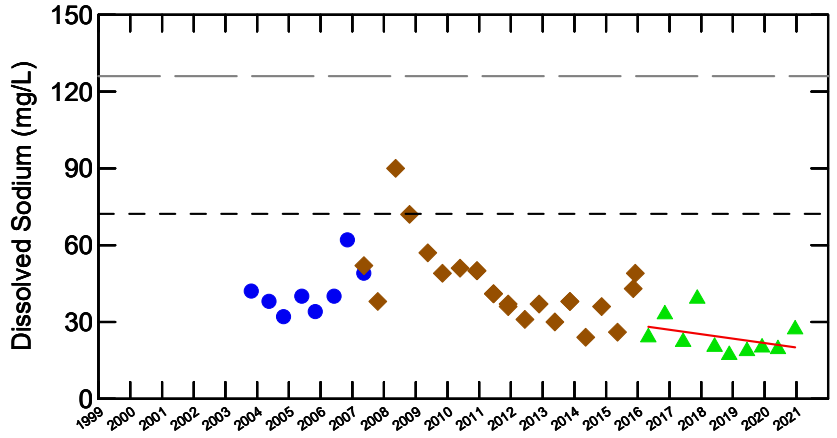
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

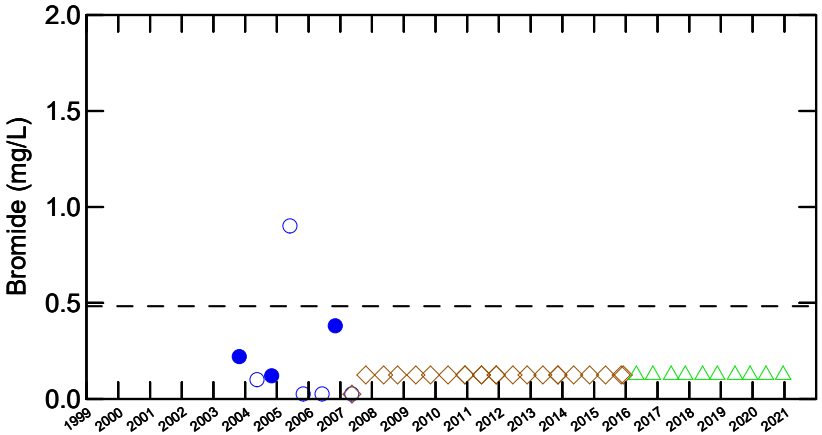
WELL TW53-03S

SHALLOW WELL (ACTIVE AQUITARD)

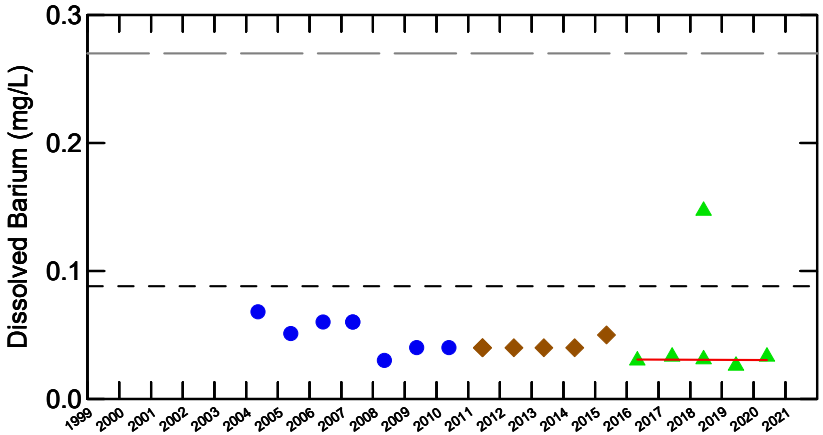
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

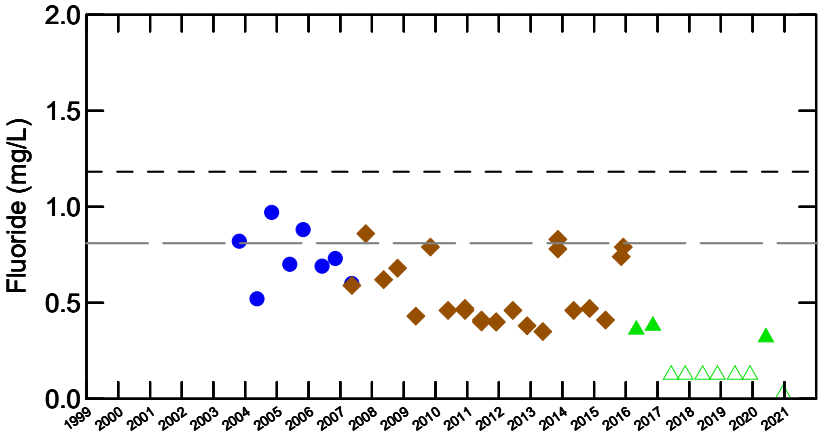
Lambton County, Ontario



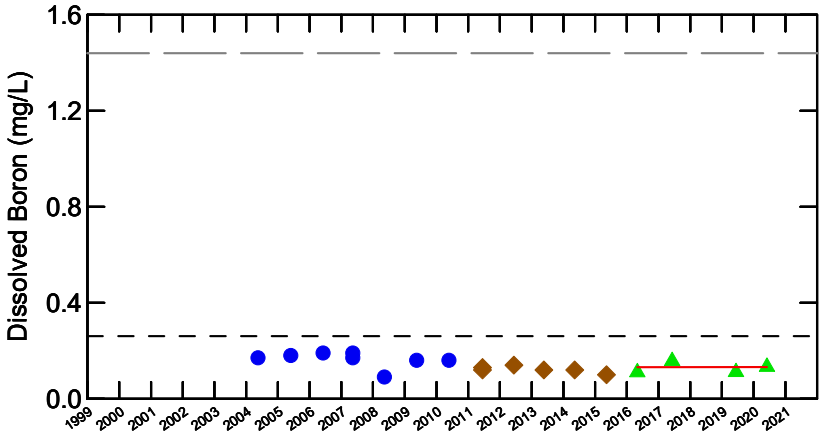
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

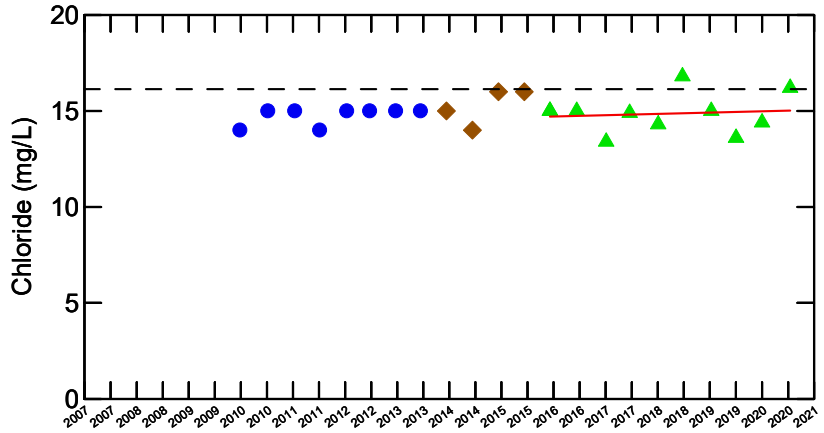
WELL TW53-03S

SHALLOW WELL (ACTIVE AQUITARD)

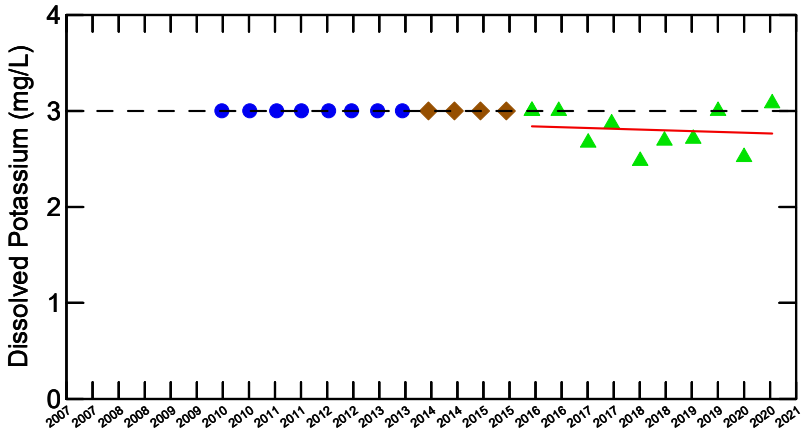
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

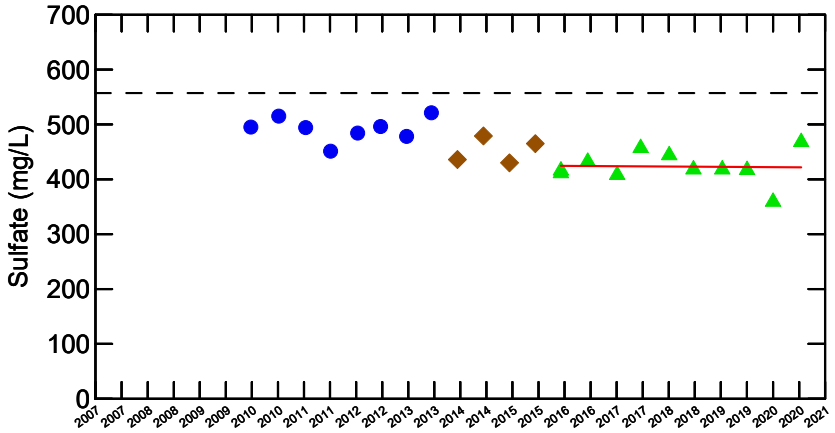
Lambton County, Ontario



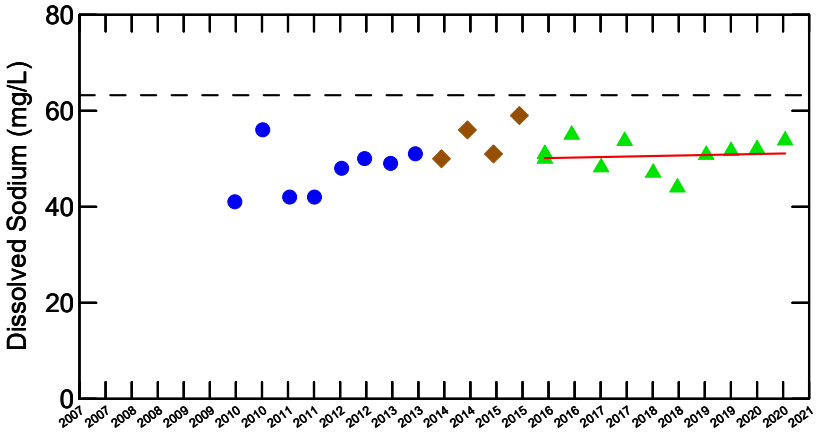
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

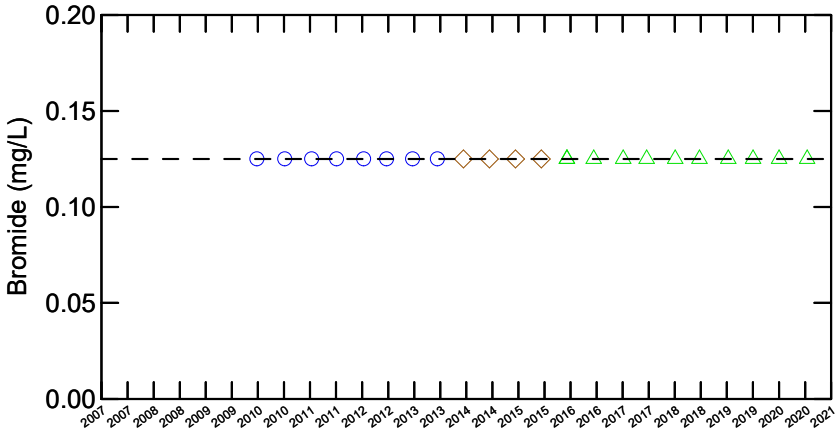
WELL TW55-09S

SHALLOW WELL (ACTIVE AQUITARD)

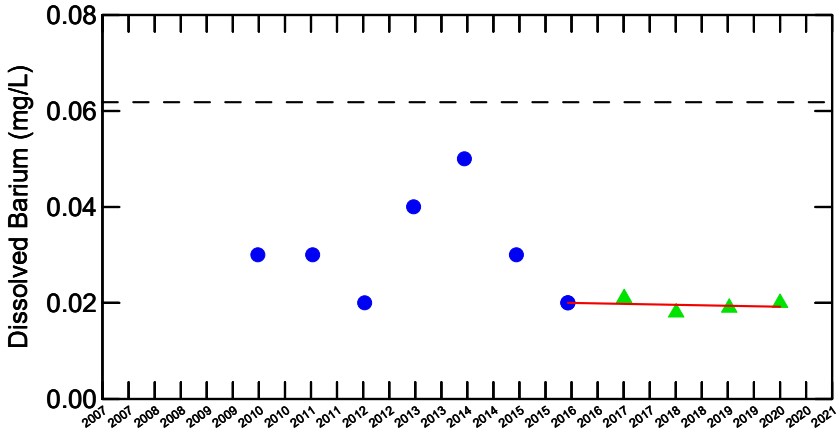
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

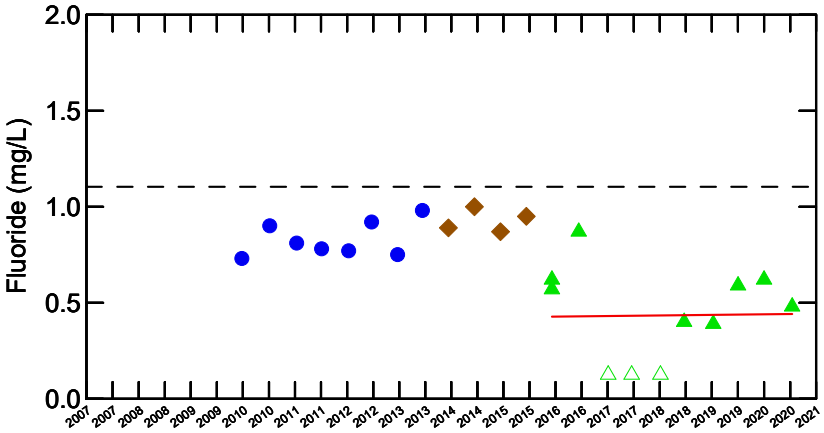
Lambton County, Ontario



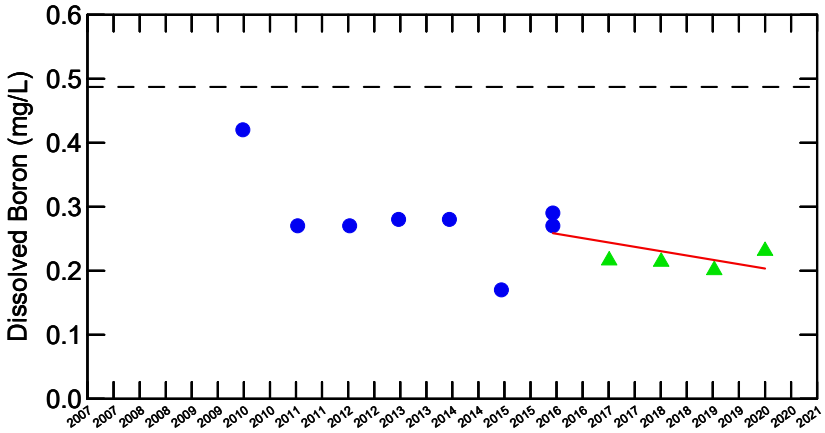
No detected results



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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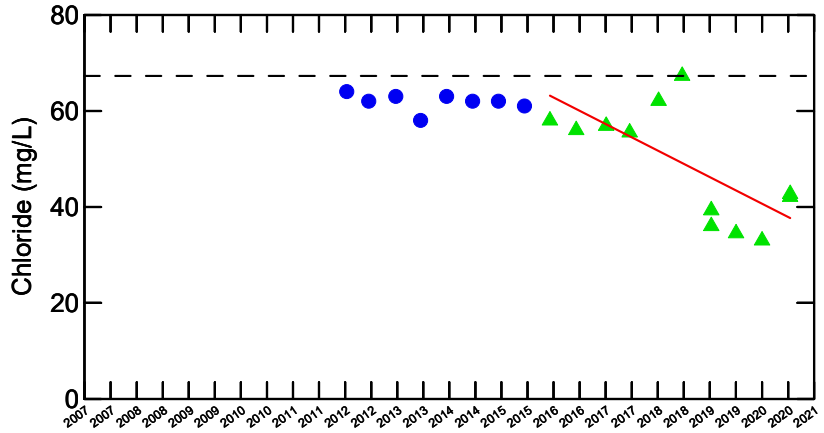
WELL TW55-09S

SHALLOW WELL (ACTIVE AQUITARD)

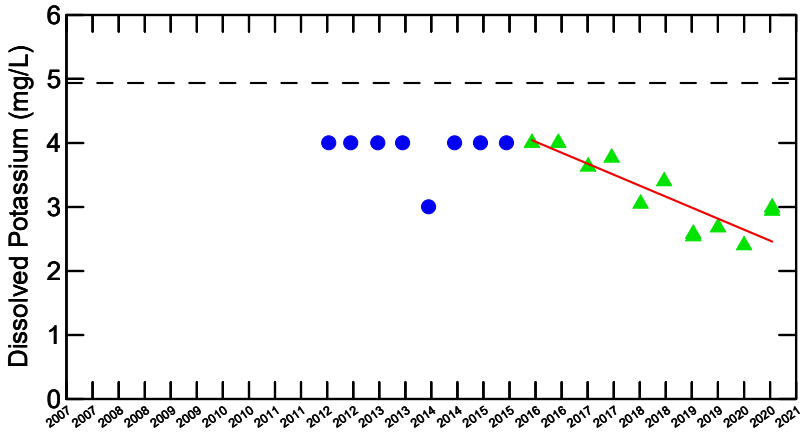
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

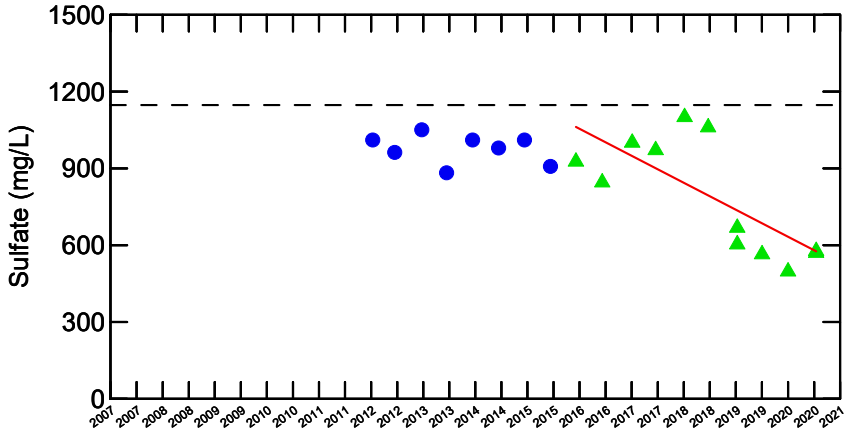
Lambton County, Ontario



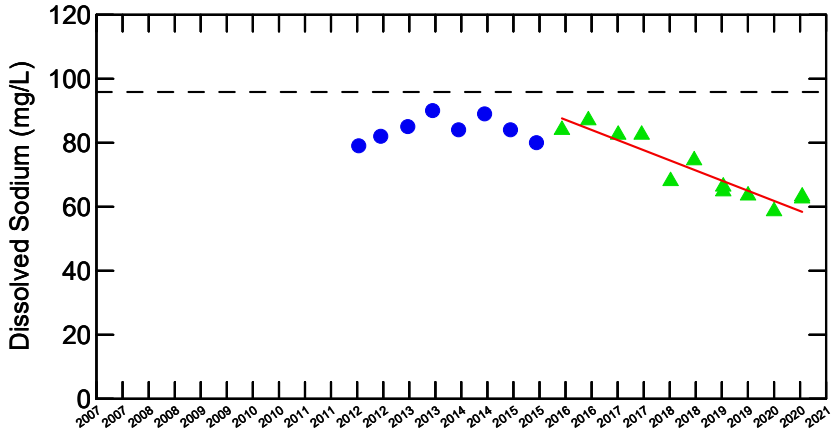
Decreasing trend



Decreasing trend



Decreasing trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
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(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

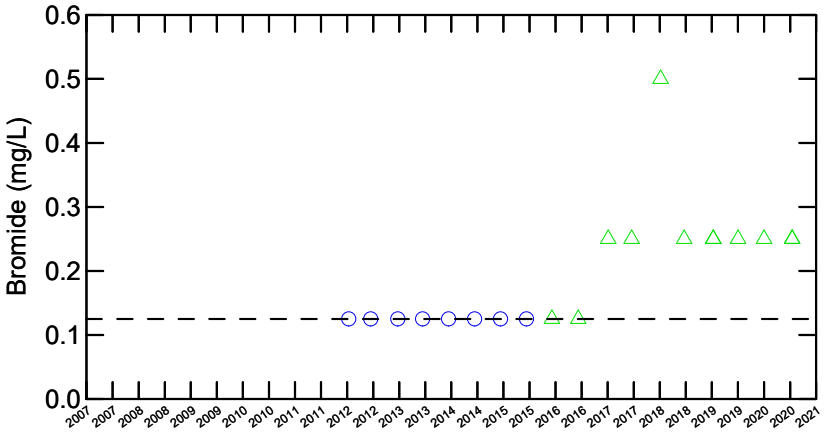
WELL TW56-11S

SHALLOW WELL (ACTIVE AQUITARD)

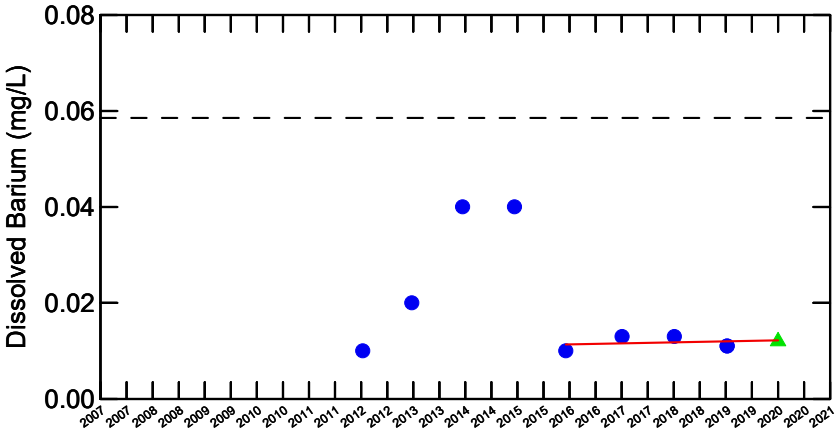
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

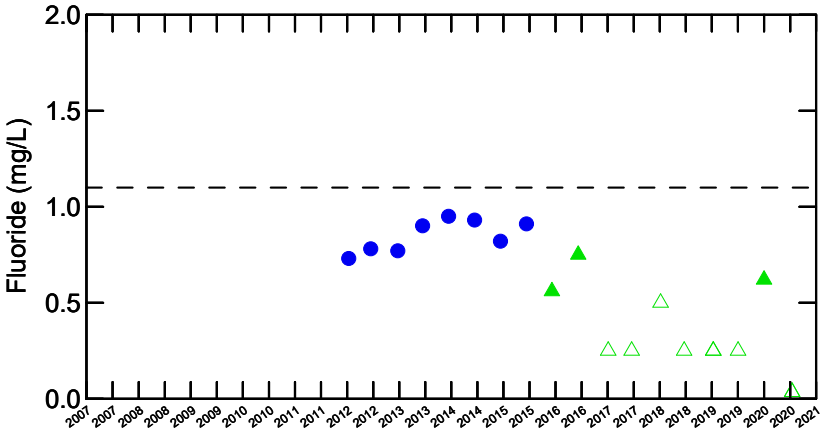
Lambton County, Ontario



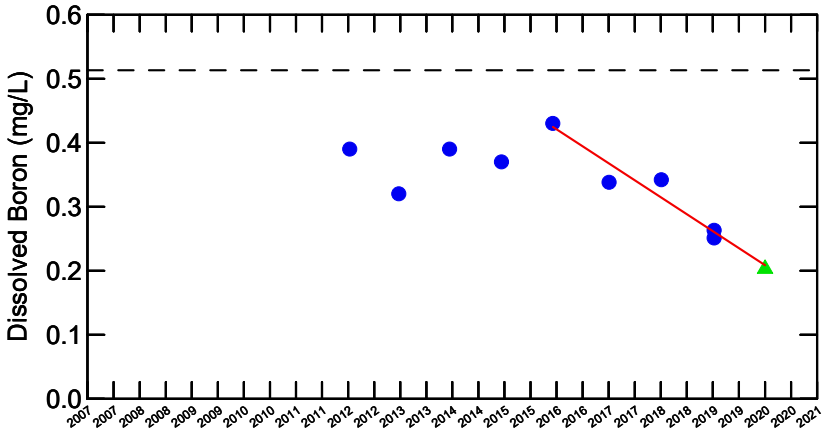
No detected results



No trend



Over 50% non-detect



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

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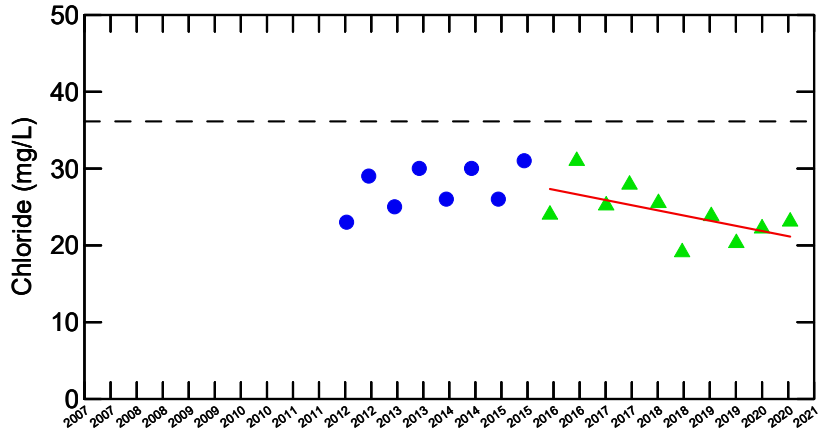
WELL TW56-11S

SHALLOW WELL (ACTIVE AQUITARD)

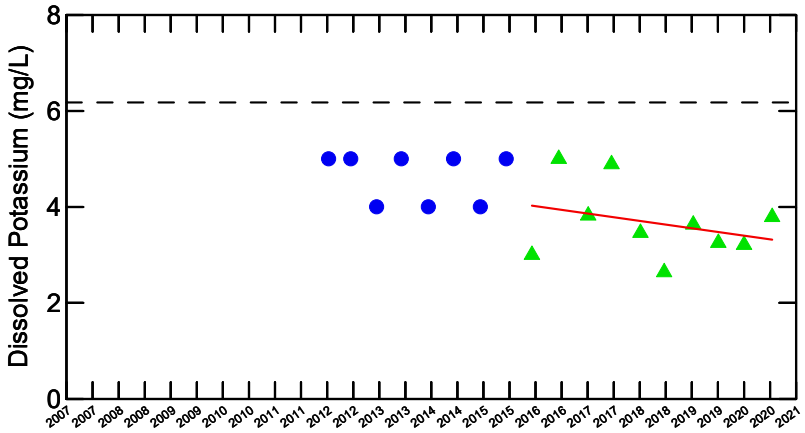
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

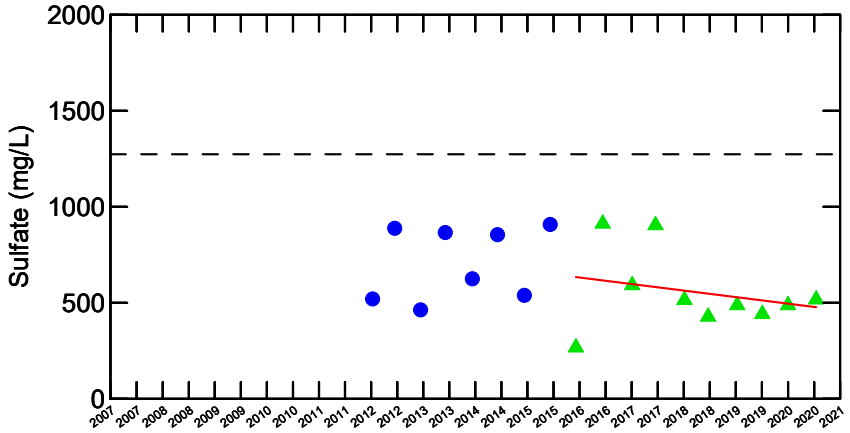
Lambton County, Ontario



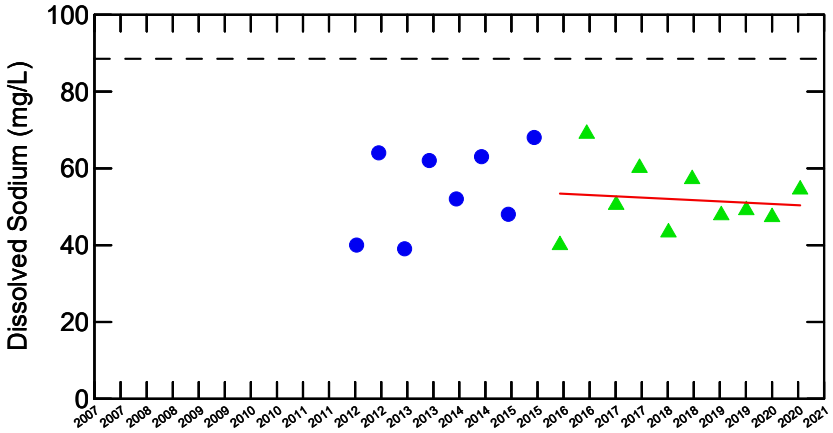
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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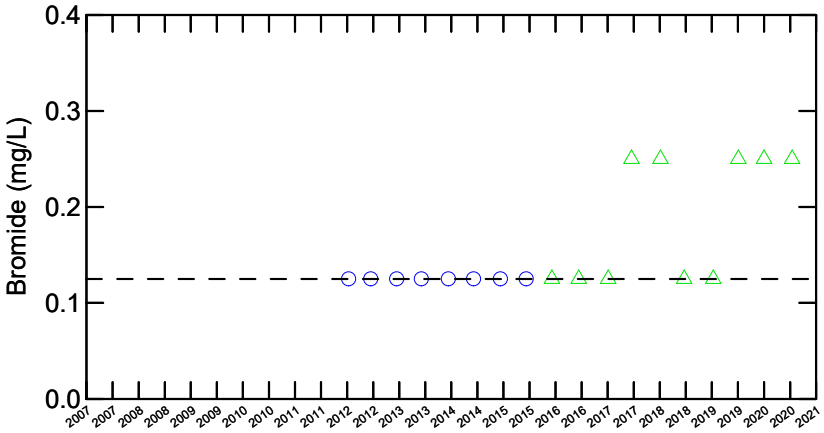
WELL TW57-11S

SHALLOW WELL (ACTIVE AQUITARD)

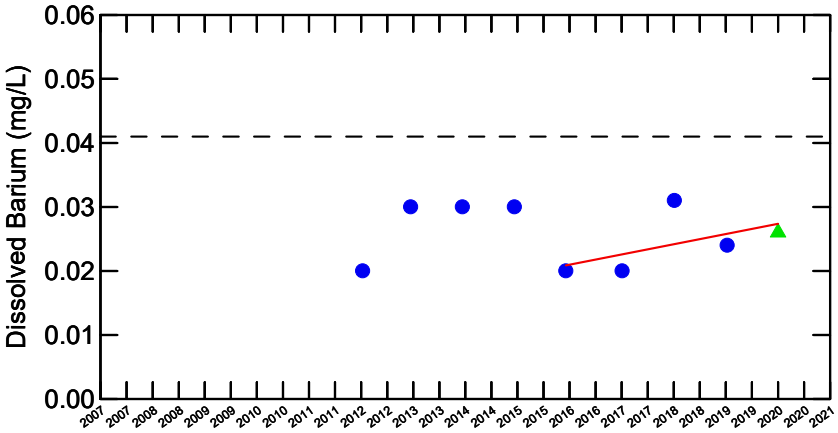
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

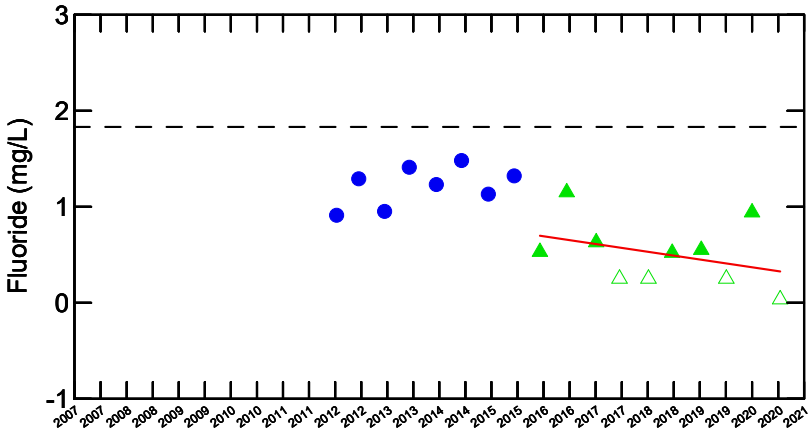
Lambton County, Ontario



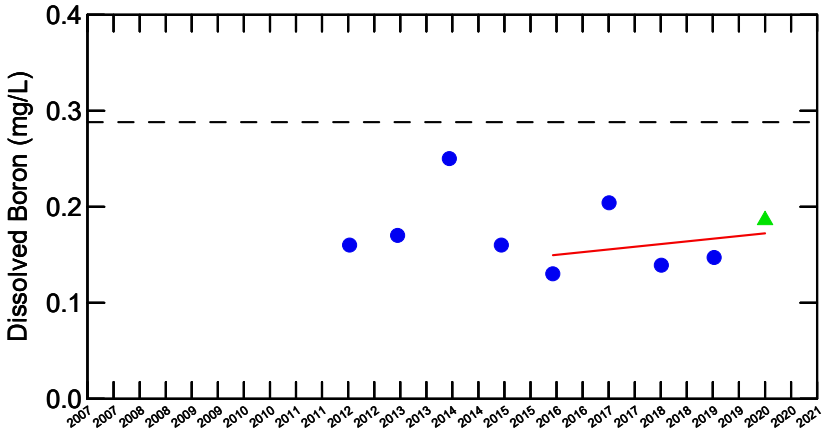
No detected results



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

(1) Non-detects (indicated by empty symbols) are plotted at full detection limit.
(2) Baseline UCLs were calculated using data from the initial 8 sampling events.
(3) Trends were evaluated considering linear regression on data from the last 5 years, using a 95 percent confidence level.

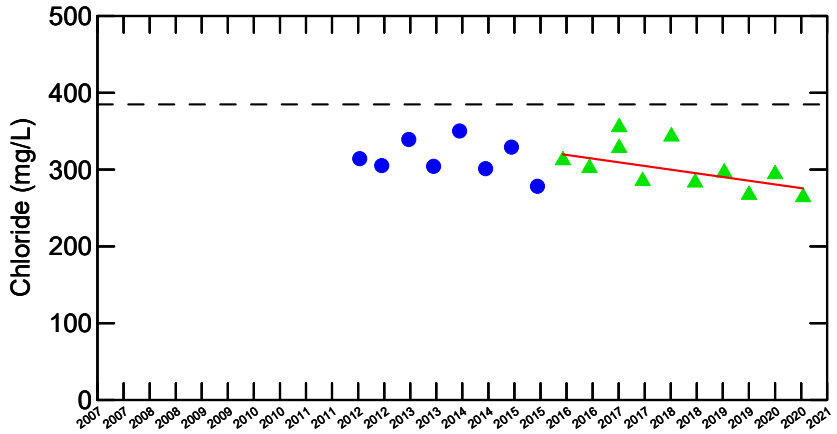
WELL TW57-11S

SHALLOW WELL (ACTIVE AQUITARD)

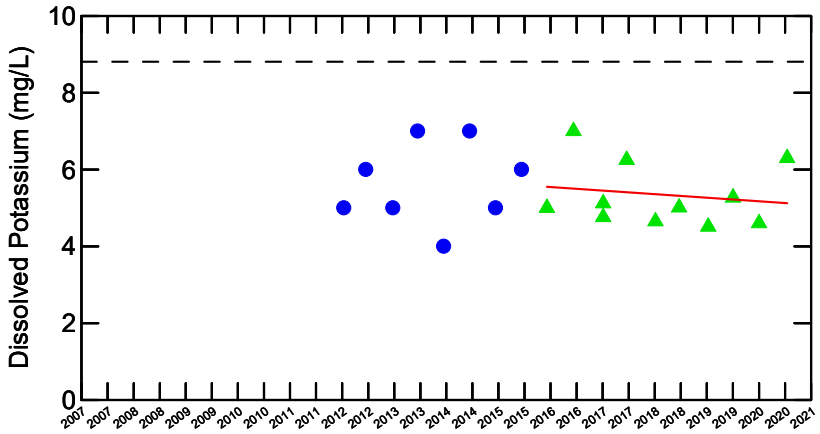
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

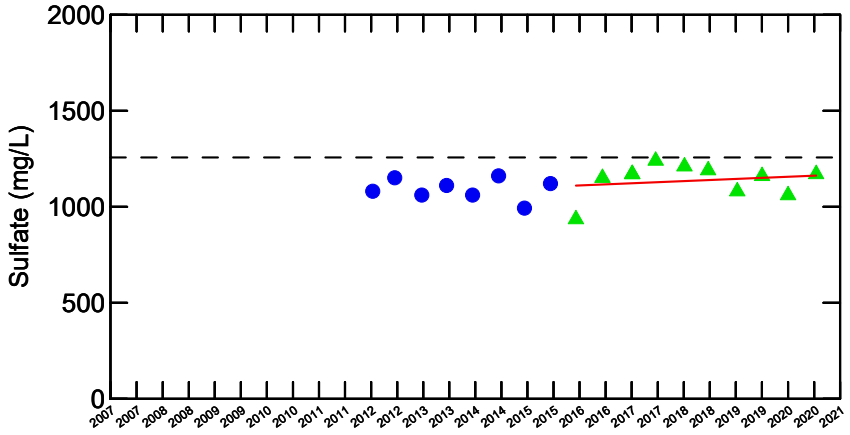
Lambton County, Ontario



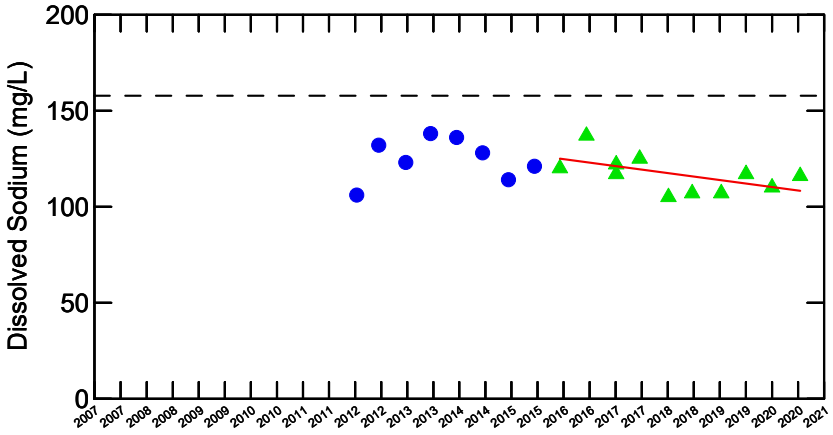
No trend



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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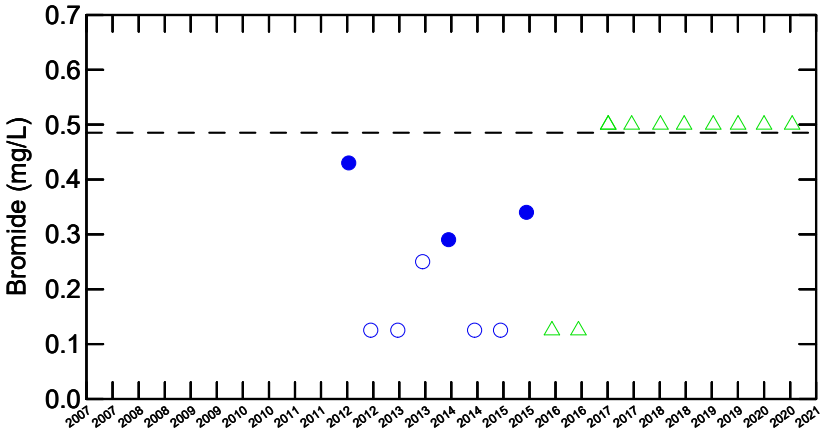
WELL TW58-11S

SHALLOW WELL (ACTIVE AQUITARD)

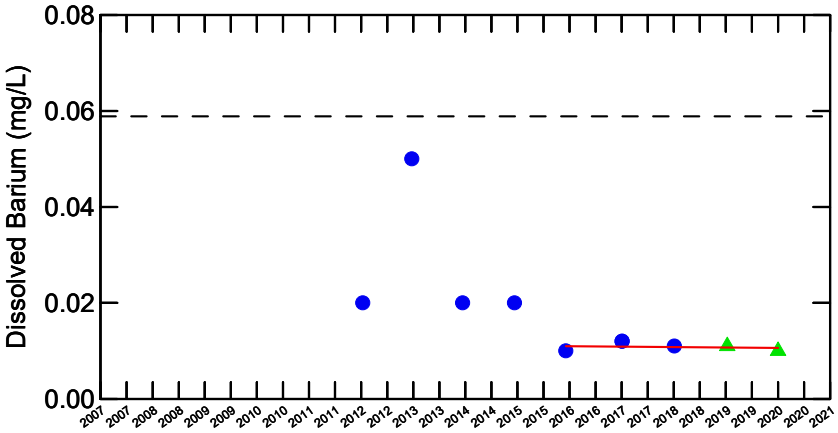
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

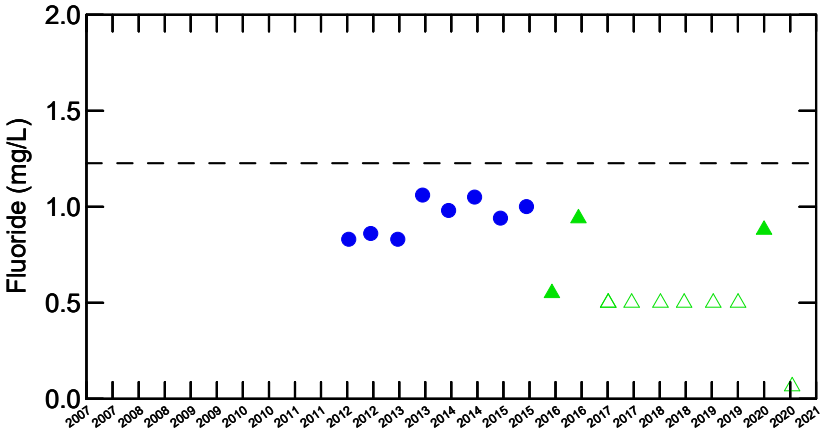
Lambton County, Ontario



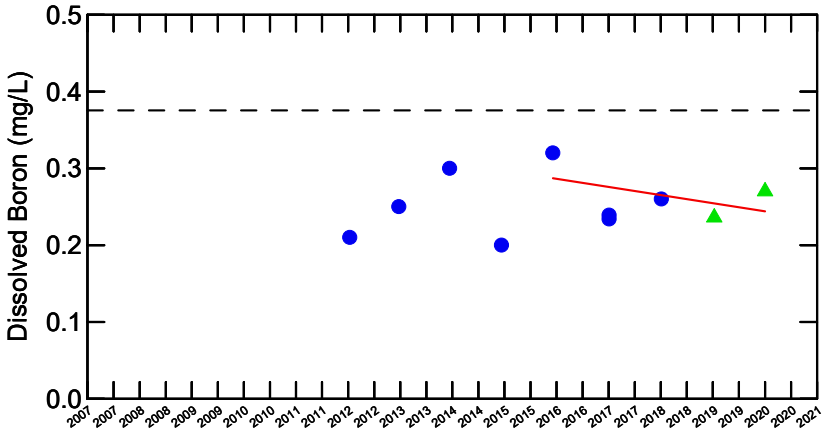
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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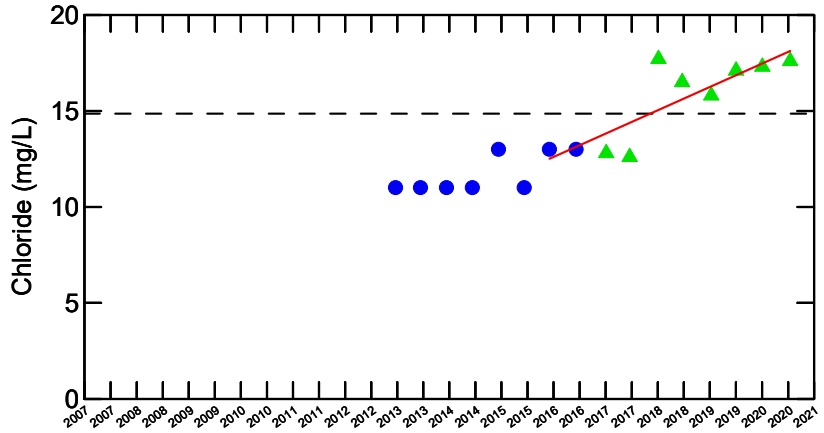
WELL TW58-11S

SHALLOW WELL (ACTIVE AQUITARD)

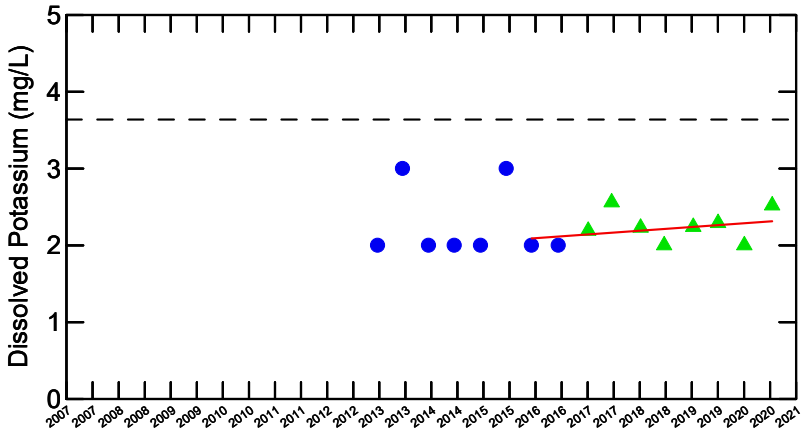
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

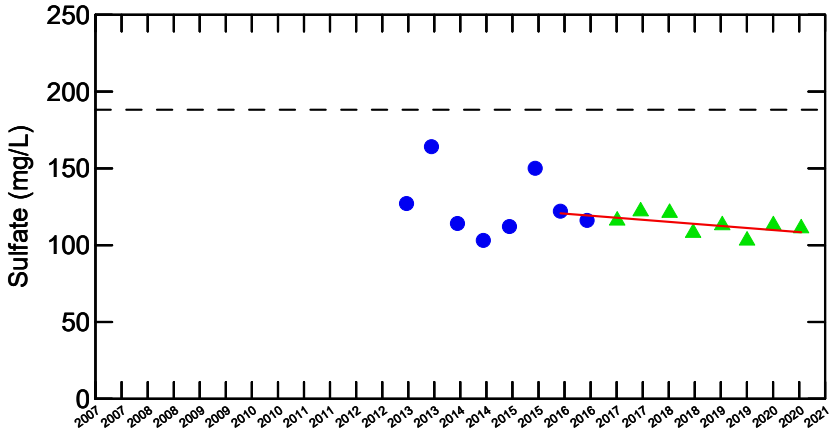
Lambton County, Ontario



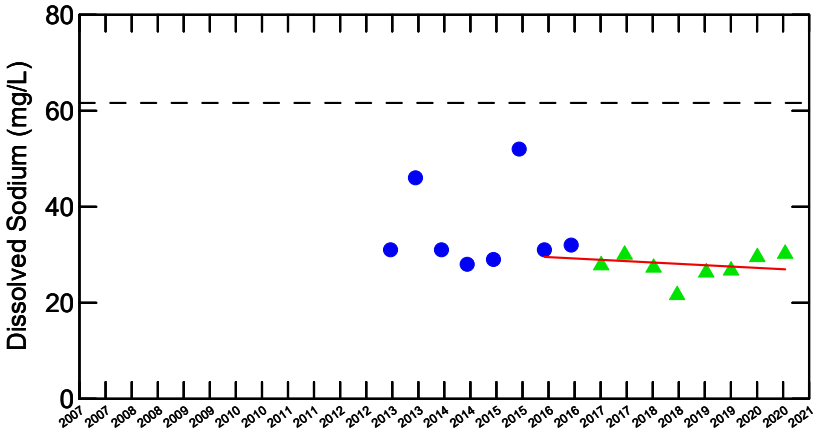
Increasing trend



No trend



Decreasing trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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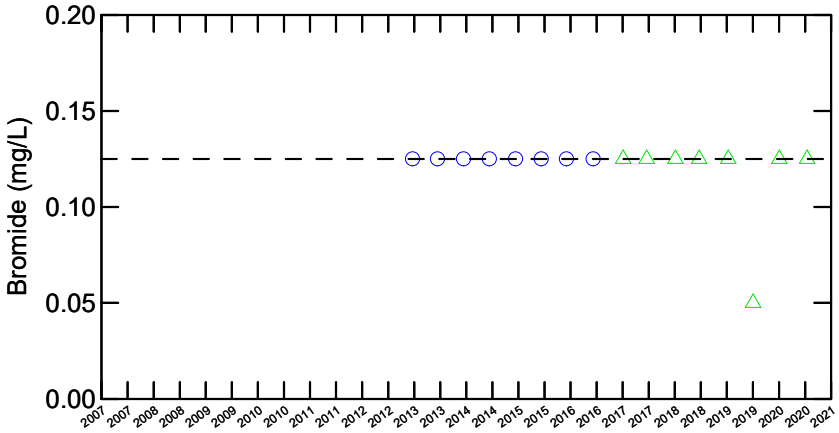
WELL TW59-13S

SHALLOW WELL (ACTIVE AQUITARD)

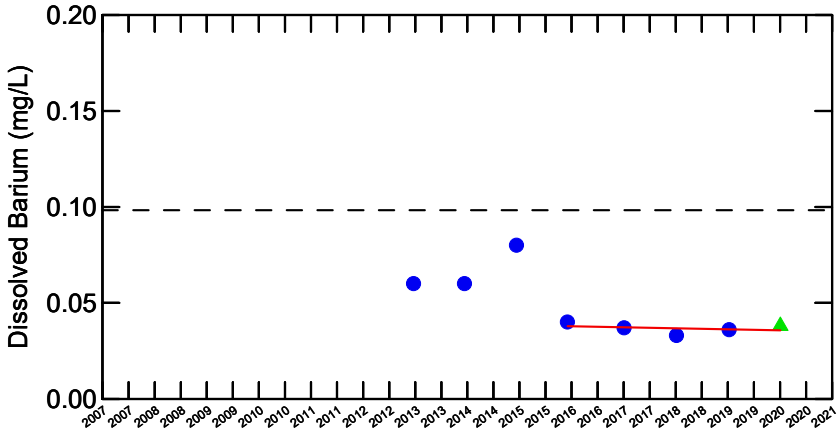
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

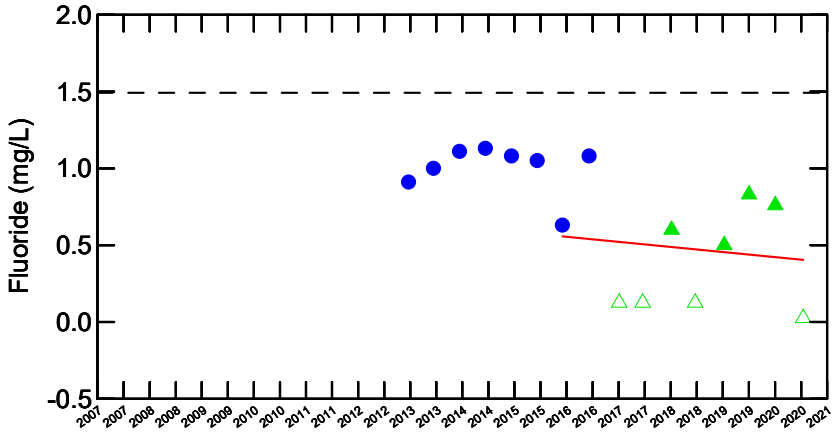
Lambton County, Ontario



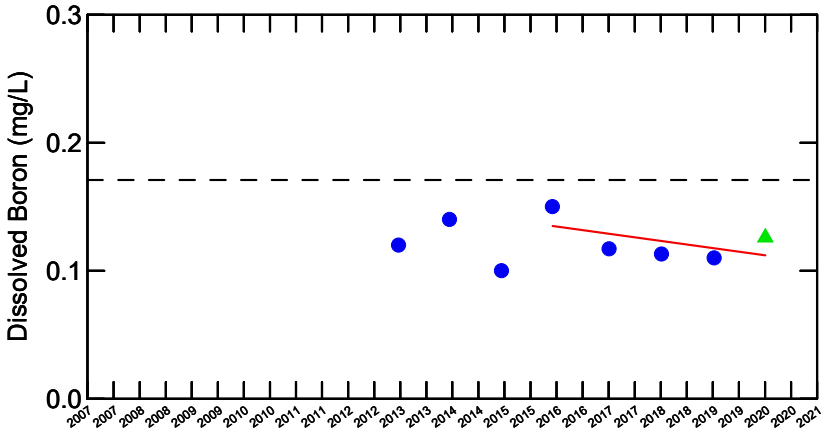
No detected results



No trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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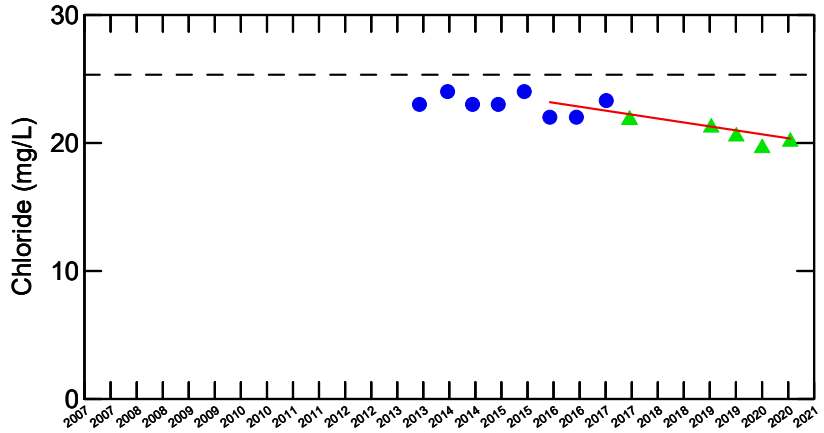
WELL TW59-13S

SHALLOW WELL (ACTIVE AQUITARD)

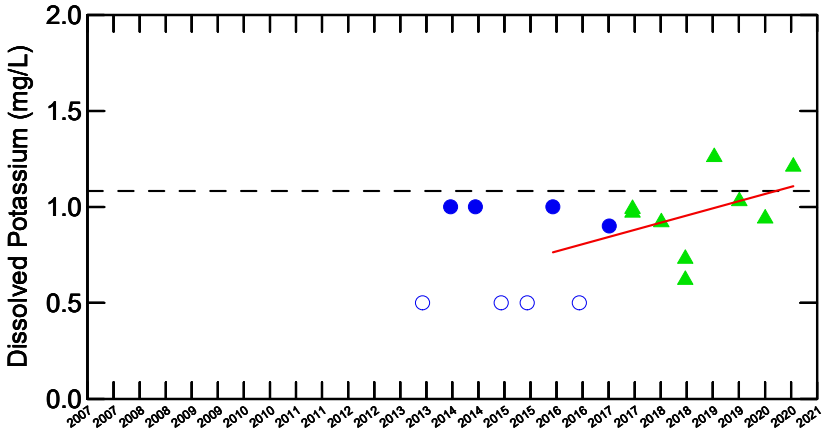
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

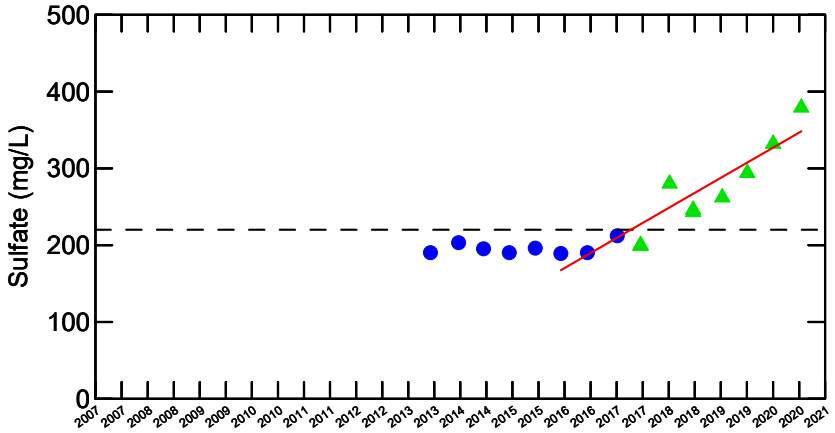
Lambton County, Ontario



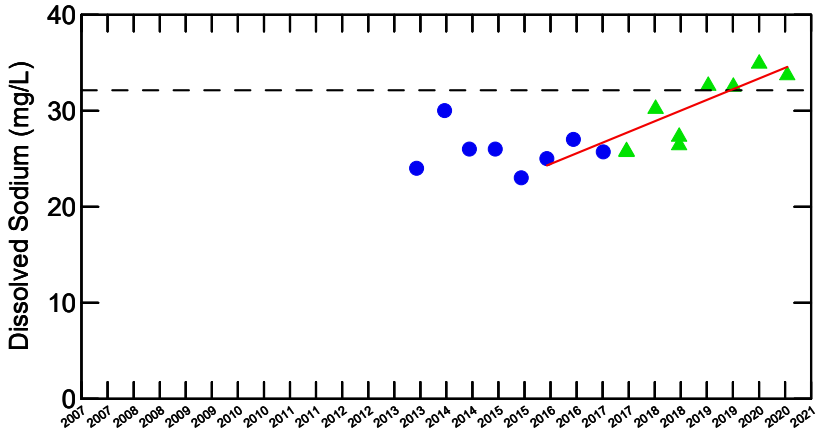
No trend



No trend



Increasing trend



Increasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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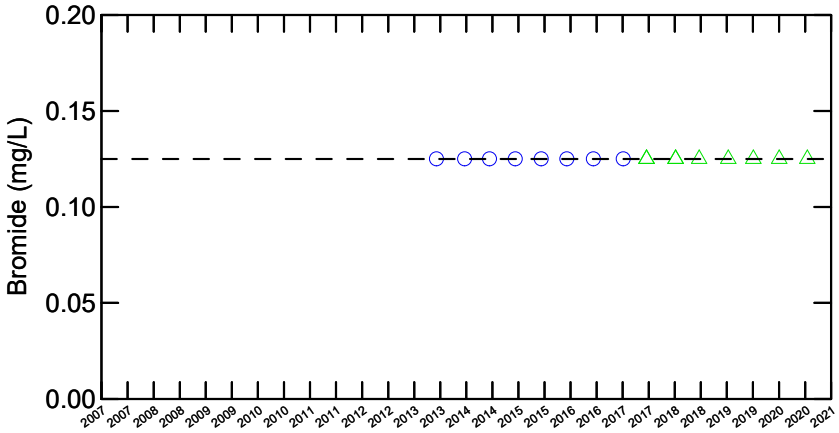
WELL TW61-13I

SHALLOW WELL (ACTIVE AQUITARD)

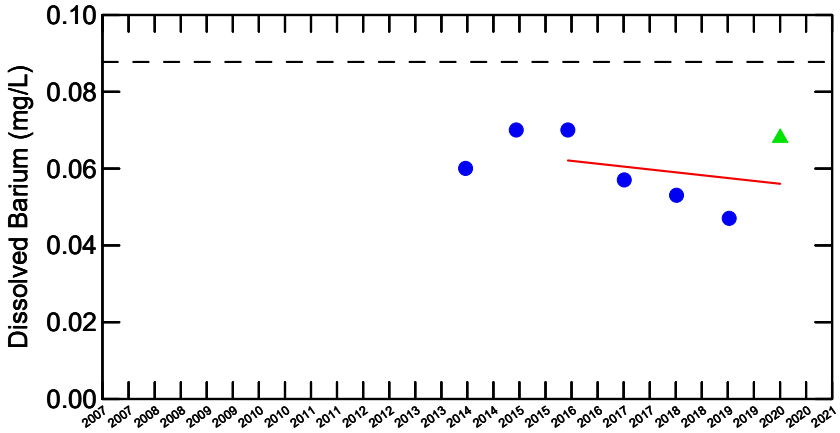
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

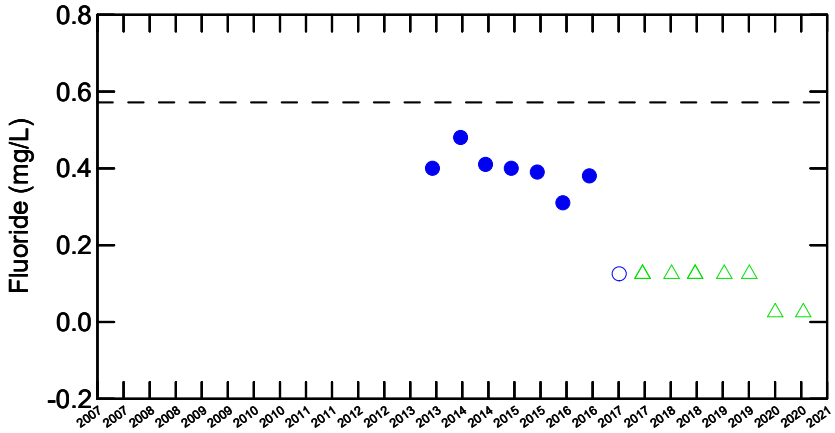
Lambton County, Ontario



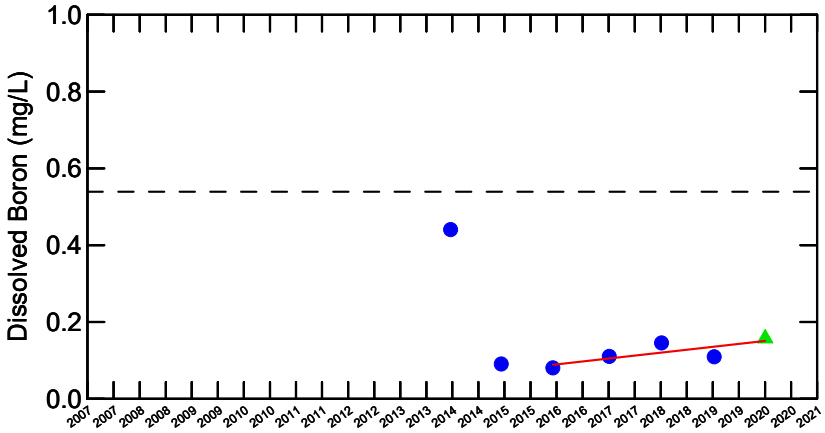
No detected results



No trend



Over 50% non-detect



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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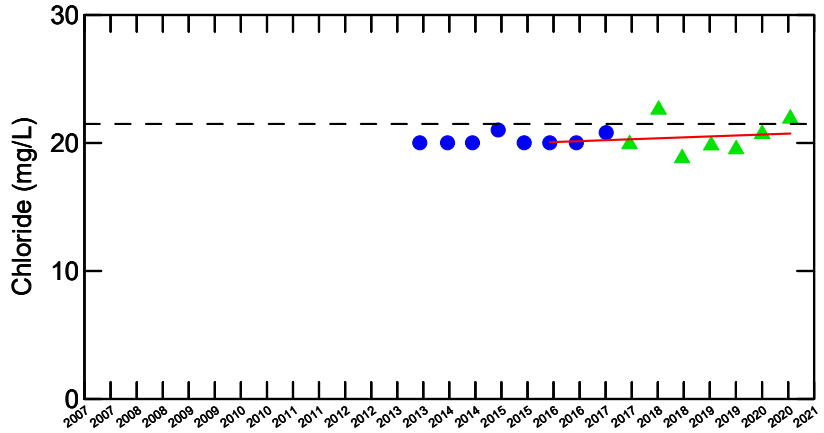
WELL TW61-13I

SHALLOW WELL (ACTIVE AQUITARD)

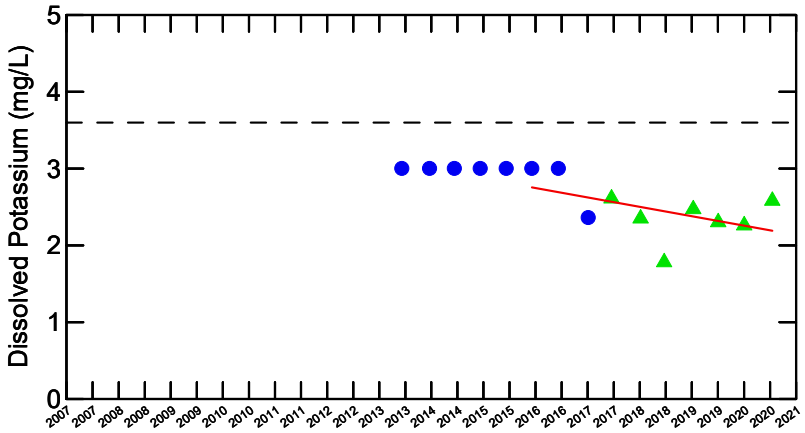
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

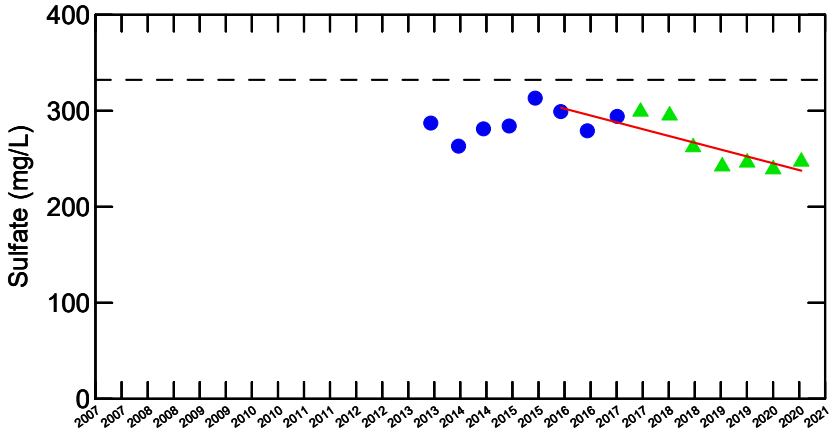
Lambton County, Ontario



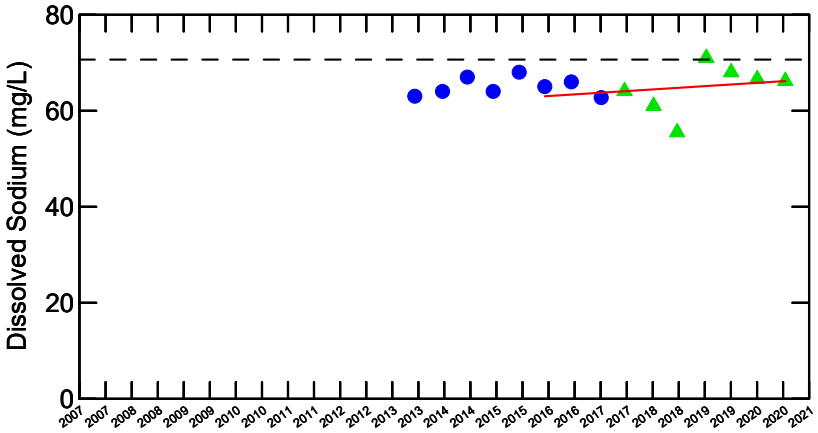
No trend



No trend



Decreasing trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

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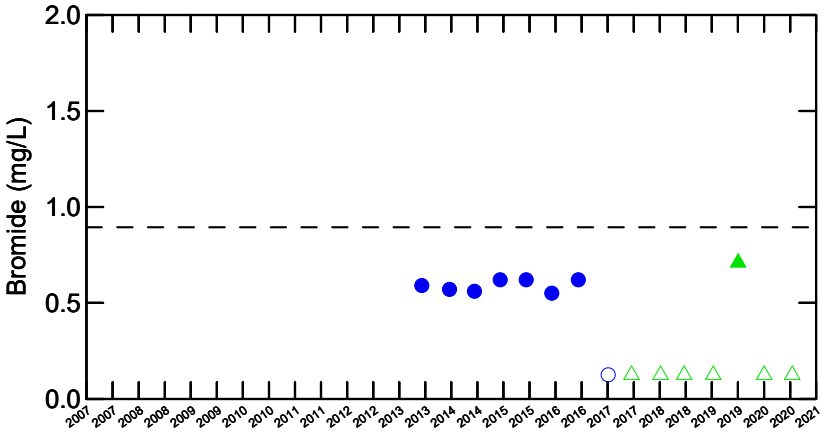
WELL TW61-13S

SHALLOW WELL (ACTIVE AQUITARD)

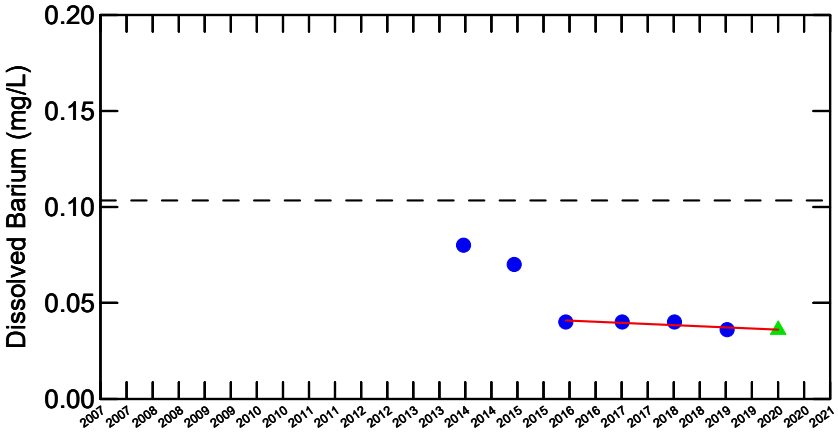
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

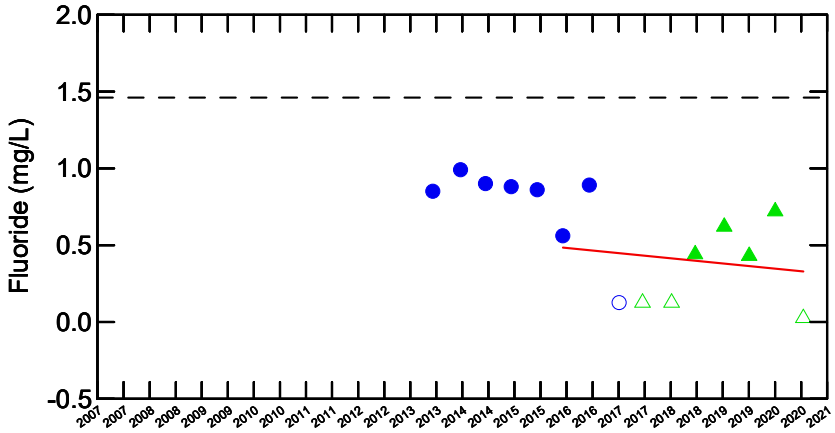
Lambton County, Ontario



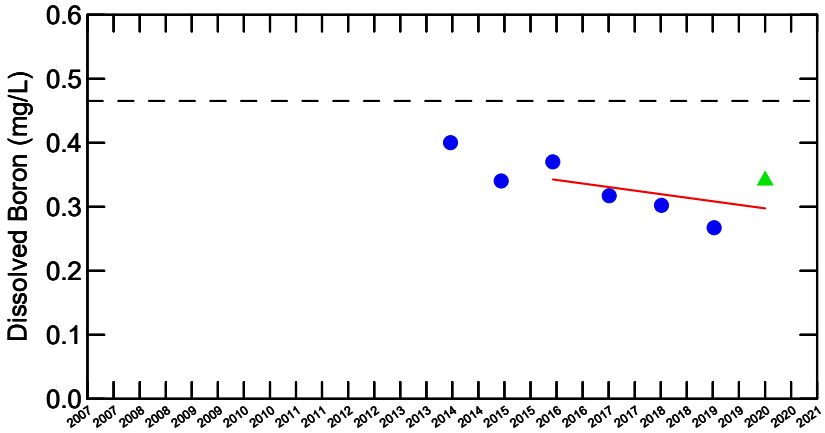
Over 50% non-detect



No trend



No trend



No trend

Legend:

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- Reasonable Use Criteria (RUC)
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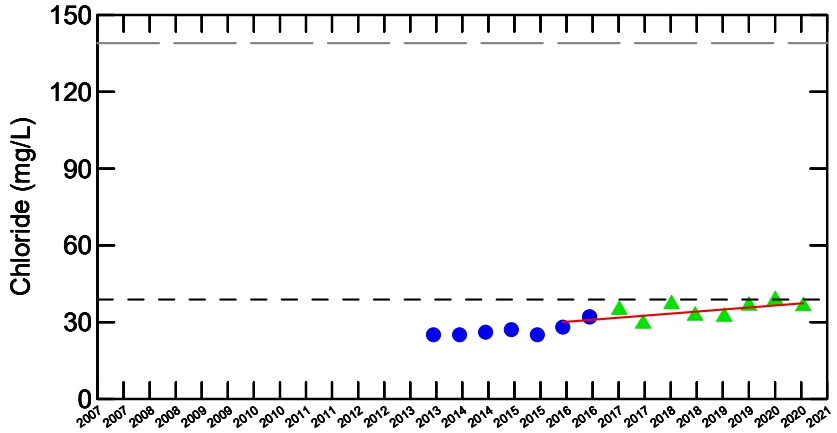
WELL TW61-13S

SHALLOW WELL (ACTIVE AQUITARD)

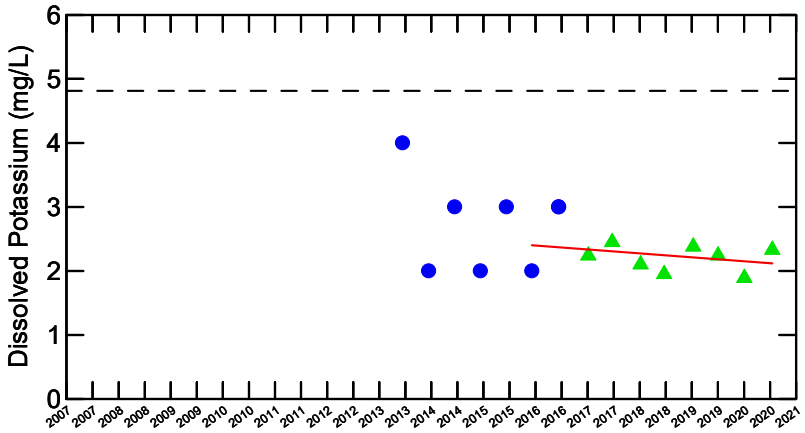
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

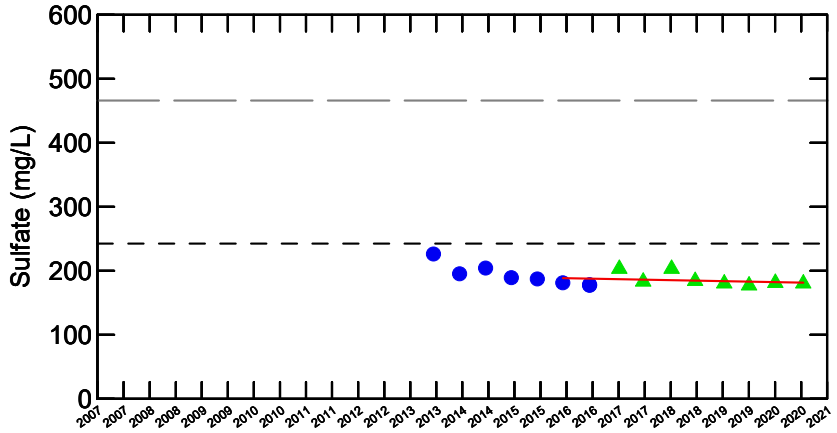
Lambton County, Ontario



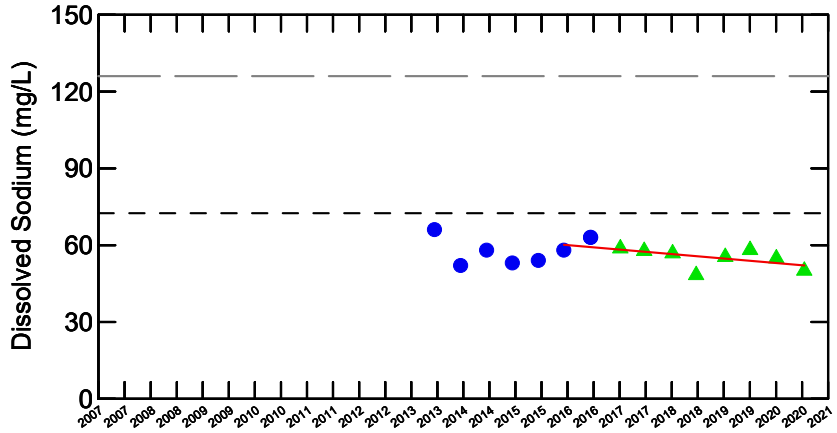
Increasing trend



No trend



No trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
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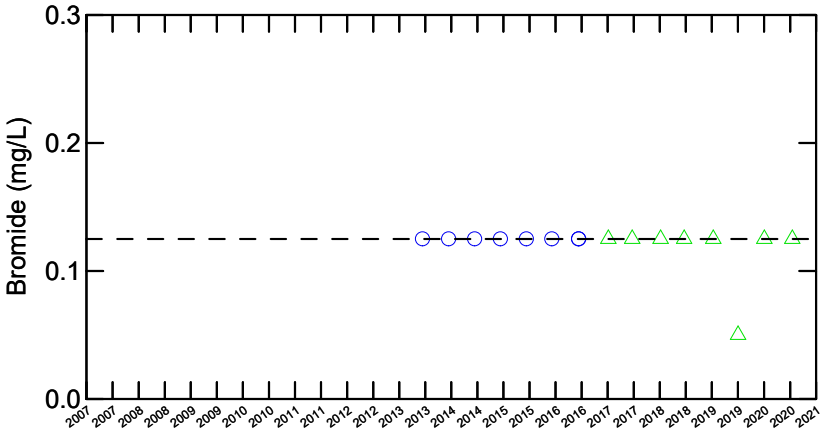
WELL TW62-13S

SHALLOW WELL (ACTIVE AQUITARD)

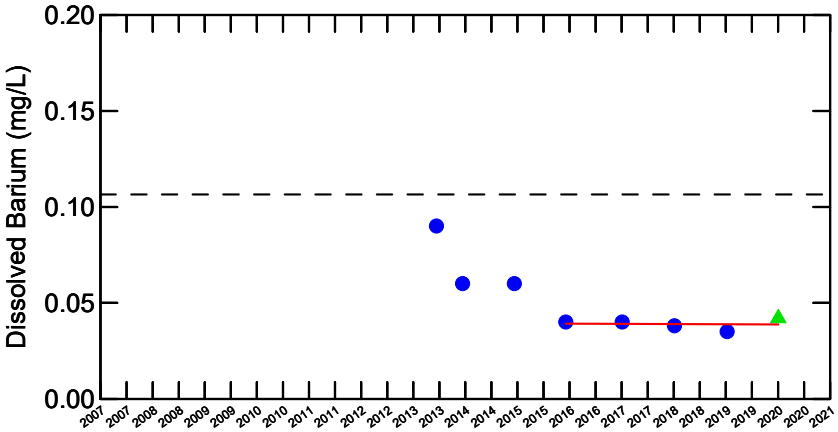
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

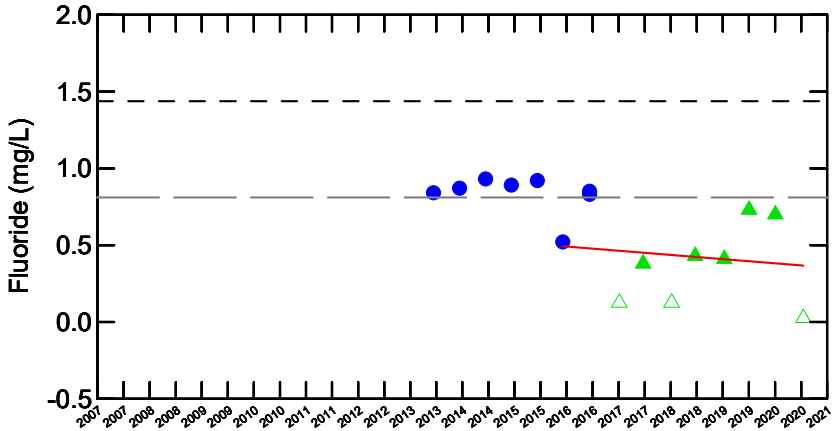
Lambton County, Ontario



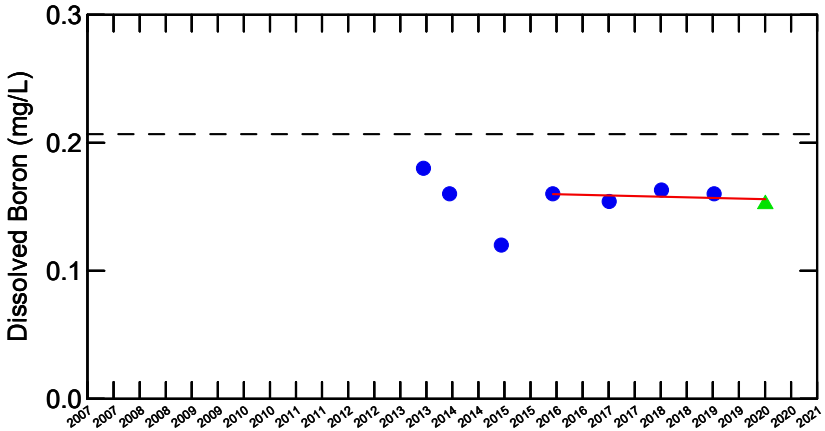
No detected results



No trend



No trend



No trend

Legend:

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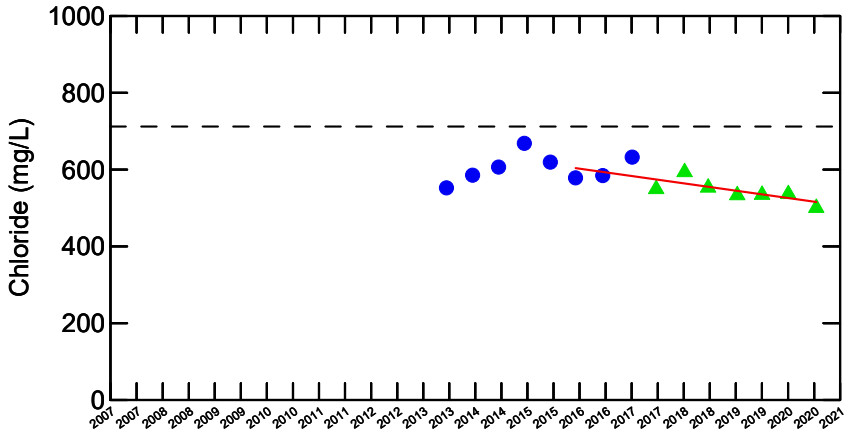
WELL TW62-13S

SHALLOW WELL (ACTIVE AQUITARD)

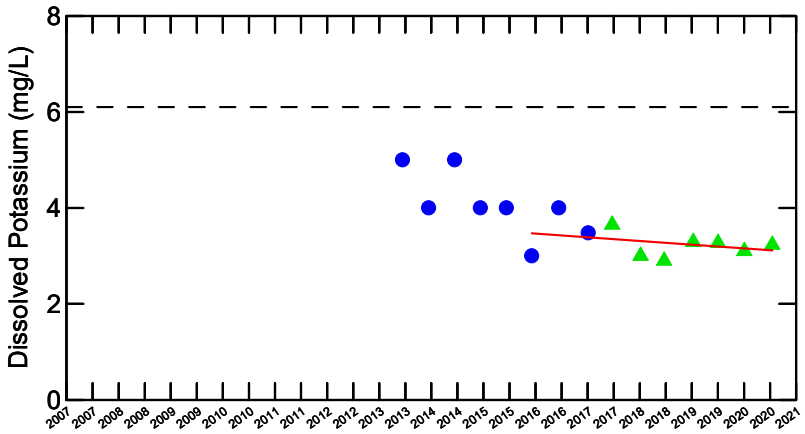
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

Lambton County, Ontario



Decreasing trend



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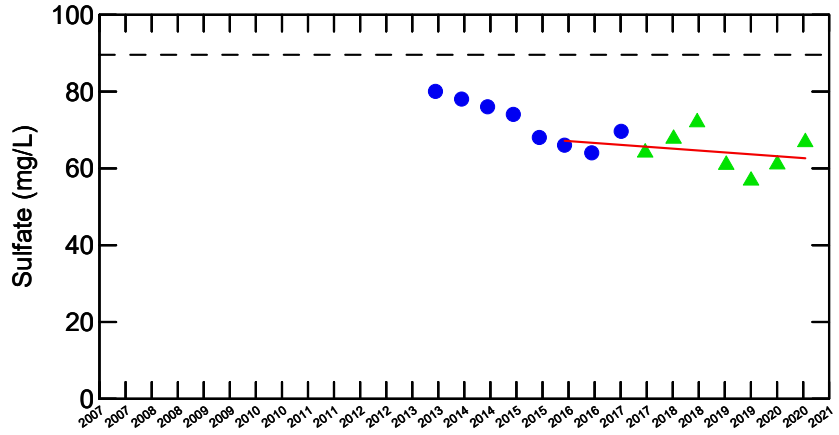
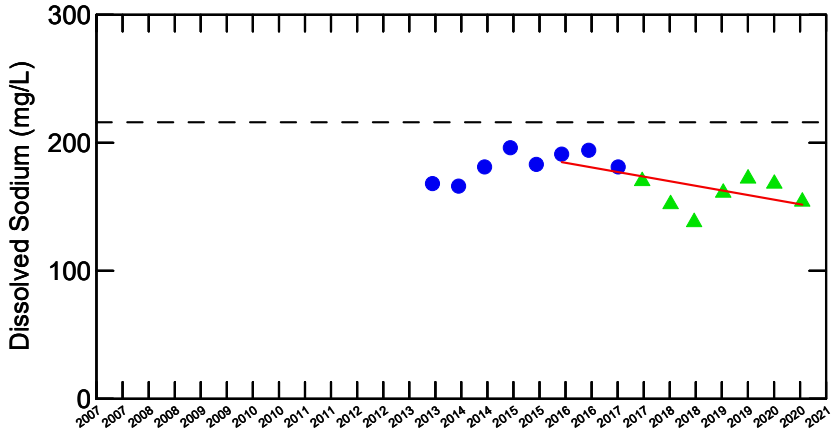


No trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

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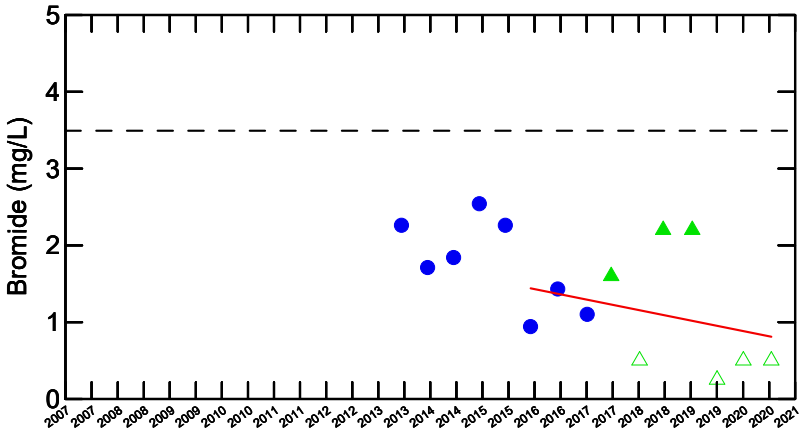
WELL TW63-13S

SHALLOW WELL (ACTIVE AQUITARD)

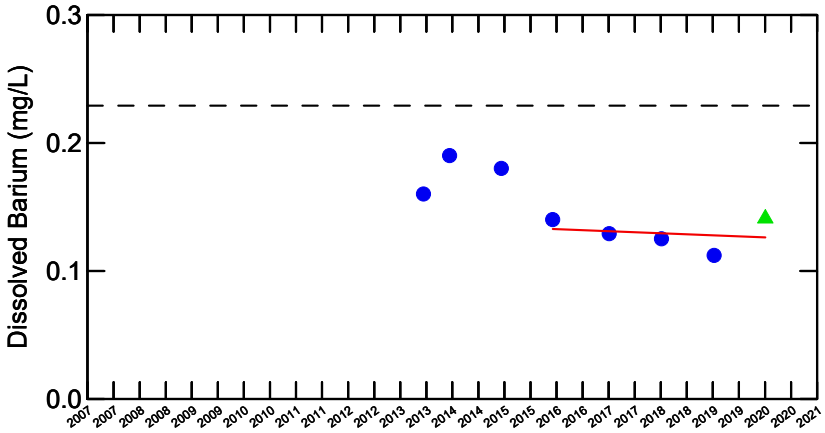
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

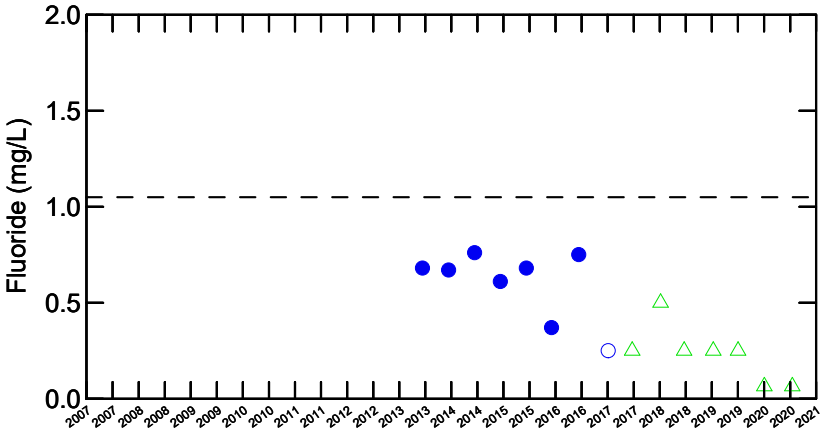
Lambton County, Ontario



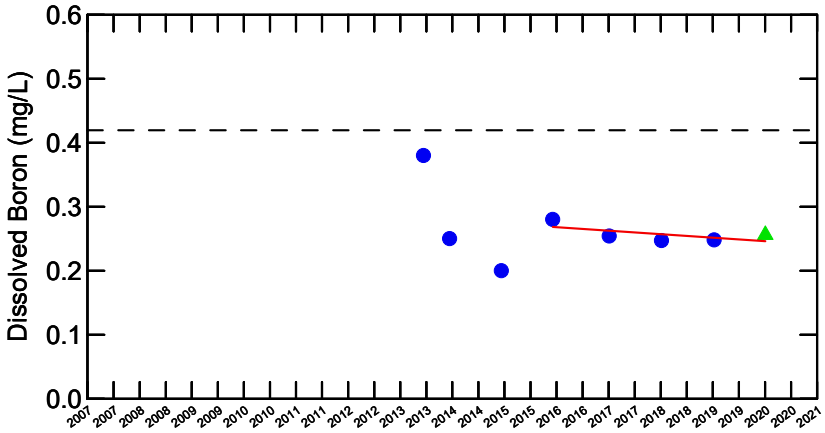
No trend



No trend



Over 50% non-detect



No trend

Legend:

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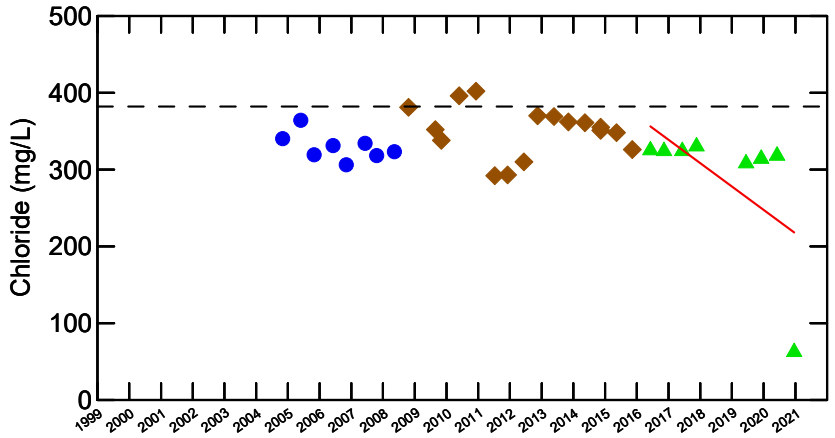
WELL TW63-13S

SHALLOW WELL (ACTIVE AQUITARD)

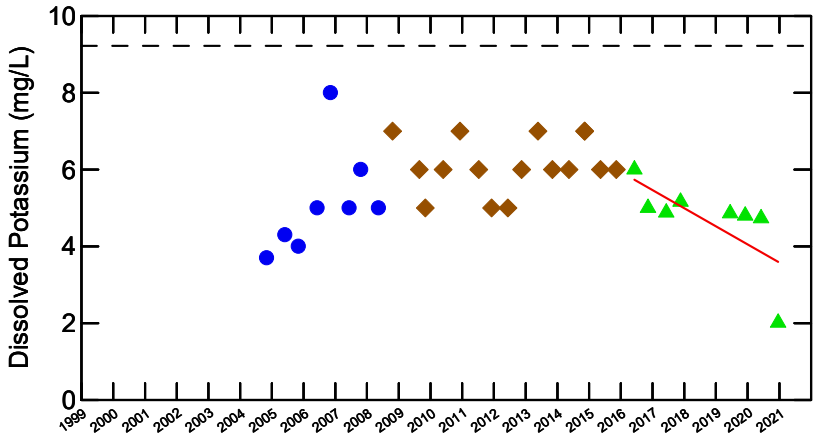
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

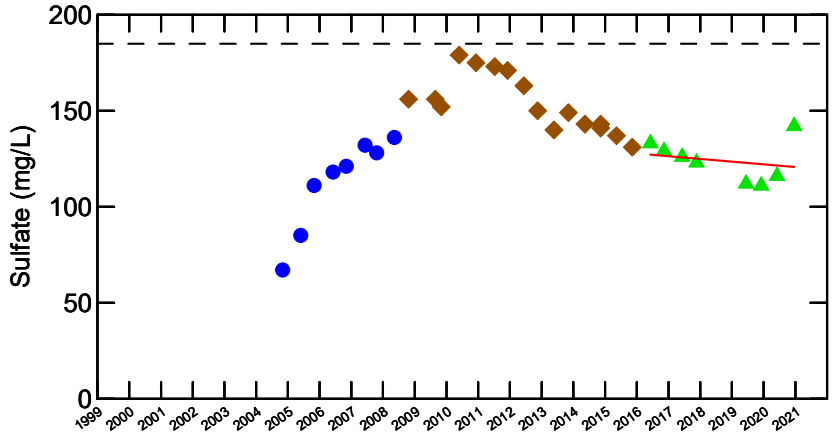
Lambton County, Ontario



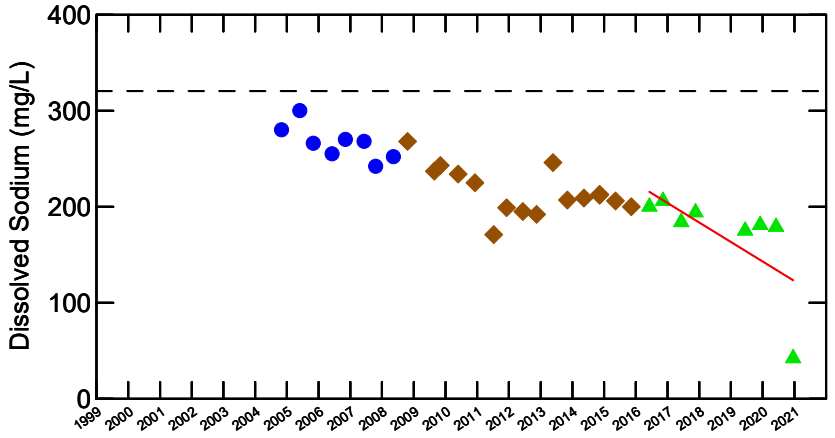
No trend



Decreasing trend



No trend



No trend

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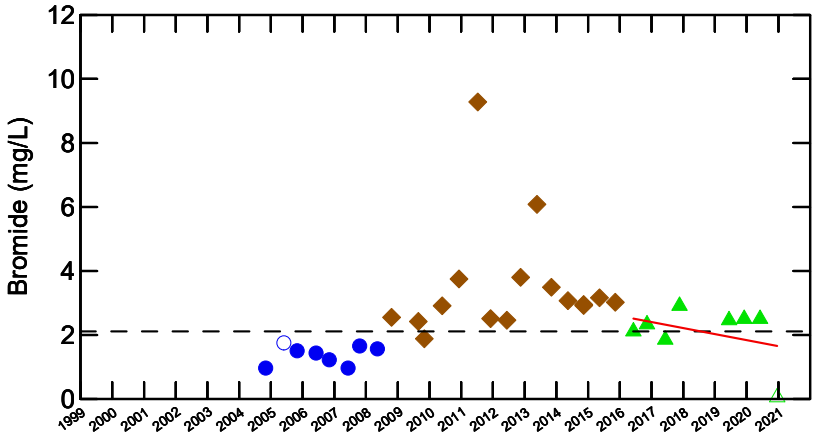
WELL EW1a-01

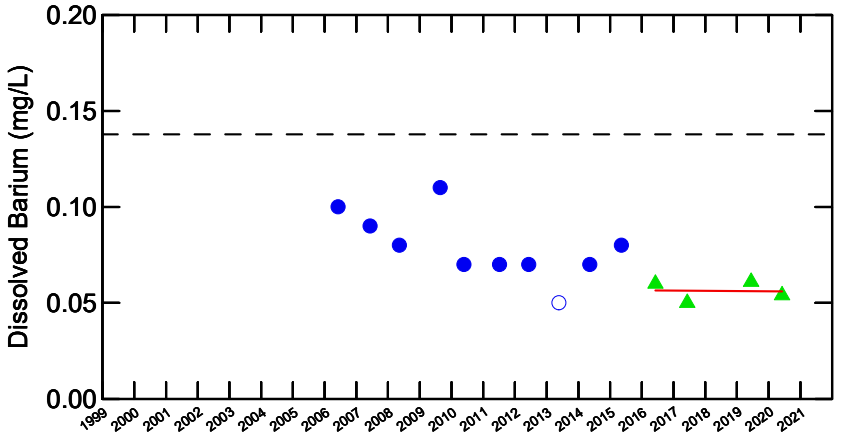
SUB-CELL 3

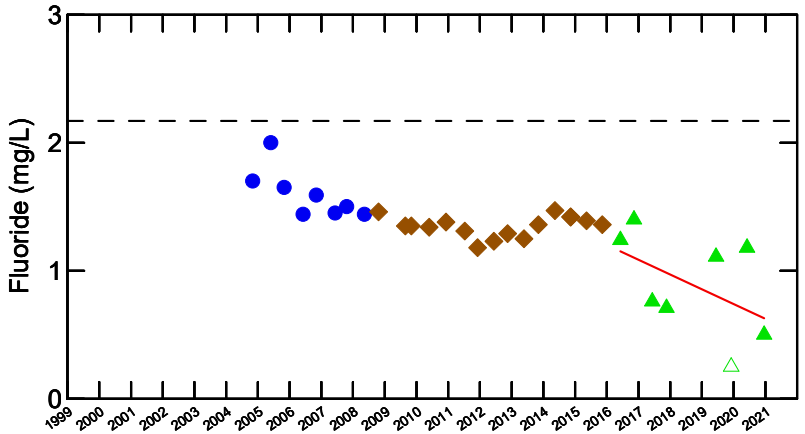
2020 GROUNDWATER MONITORING REPORT

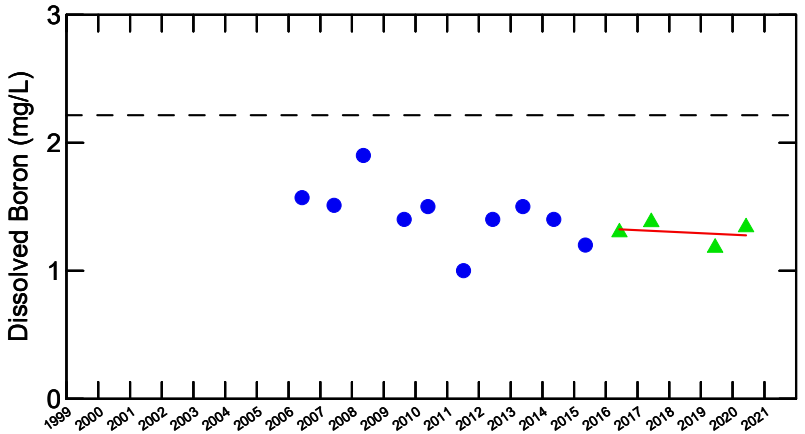
CLEAN HARBORS CANADA, INC.

Lambton County, Ontario









Legend:

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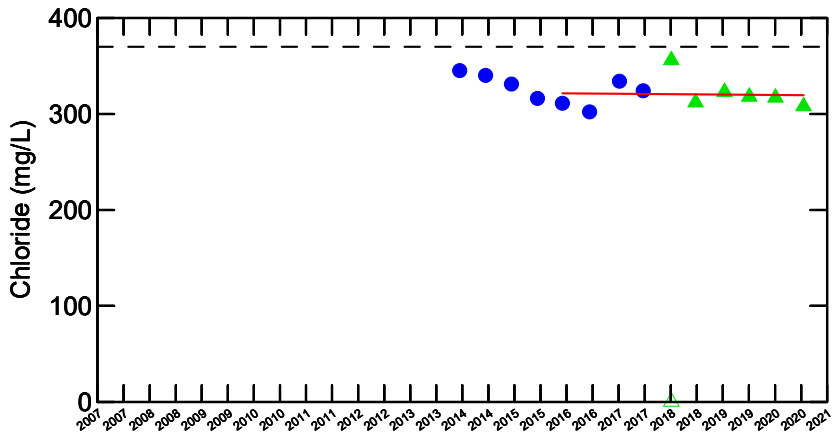
WELL EW1a-01

SUB-CELL 3

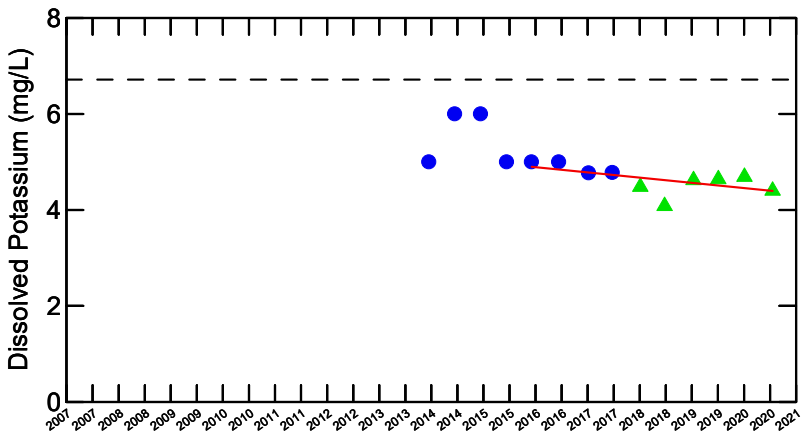
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

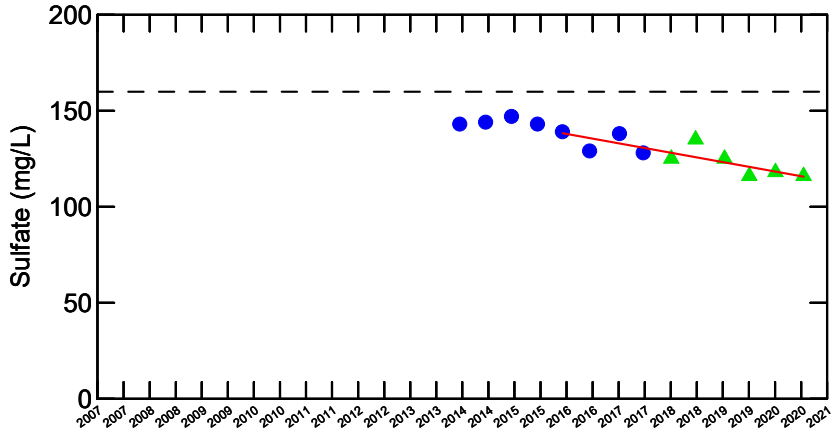
Lambton County, Ontario



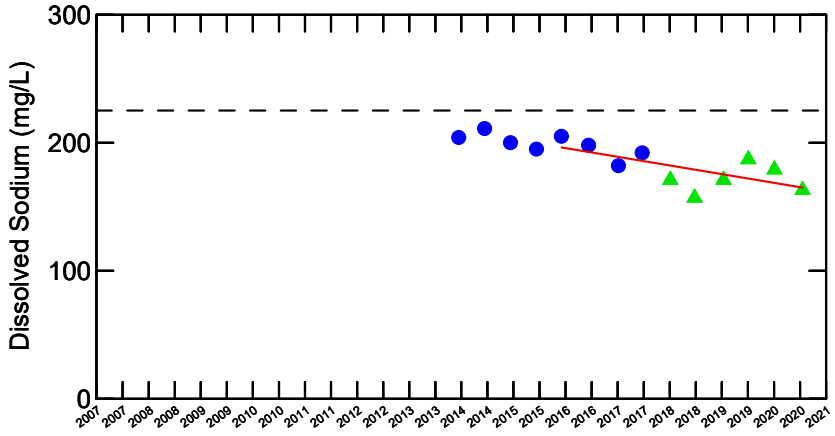
No trend



No trend



Decreasing trend



Decreasing trend

Legend:

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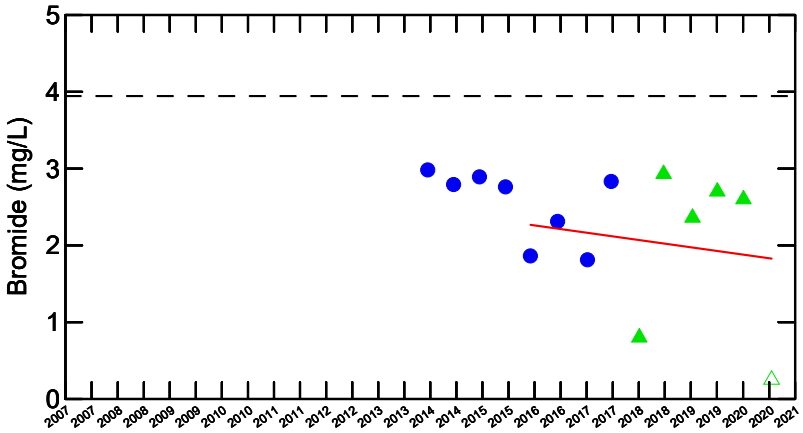
WELL EW1b-13

SUB-CELL 3

2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

Lambton County, Ontario



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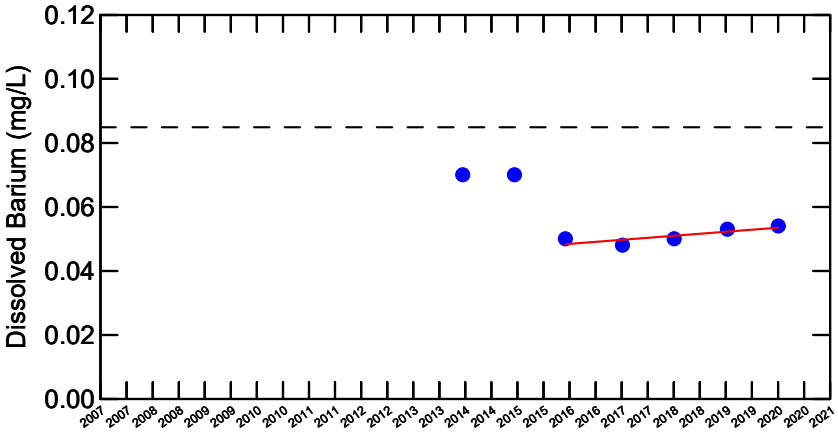
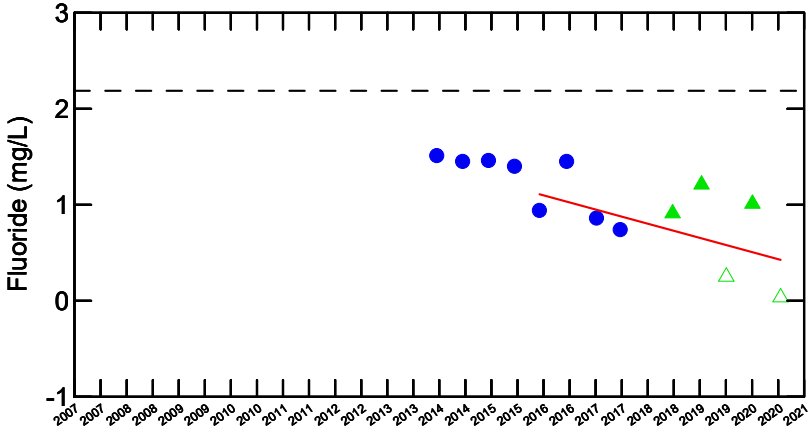
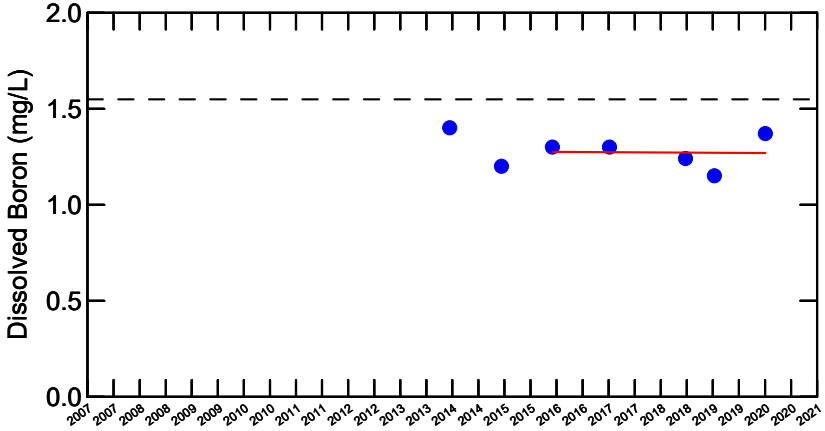


No trend



No trend



No trend

Legend:

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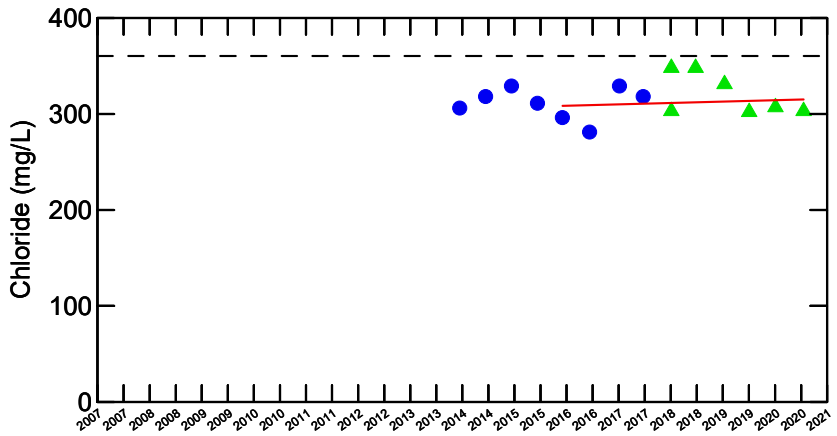
WELL EW1b-13

SUB-CELL 3

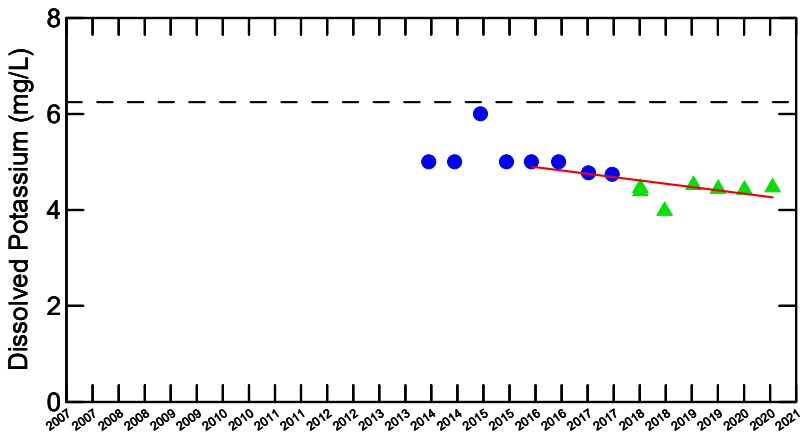
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

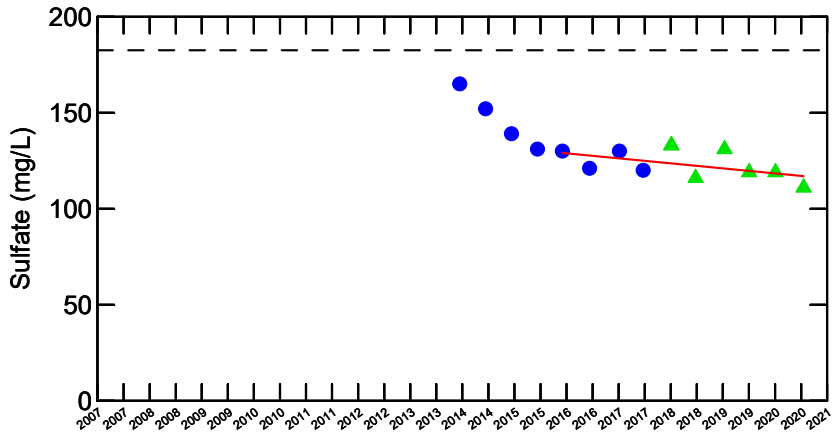
Lambton County, Ontario



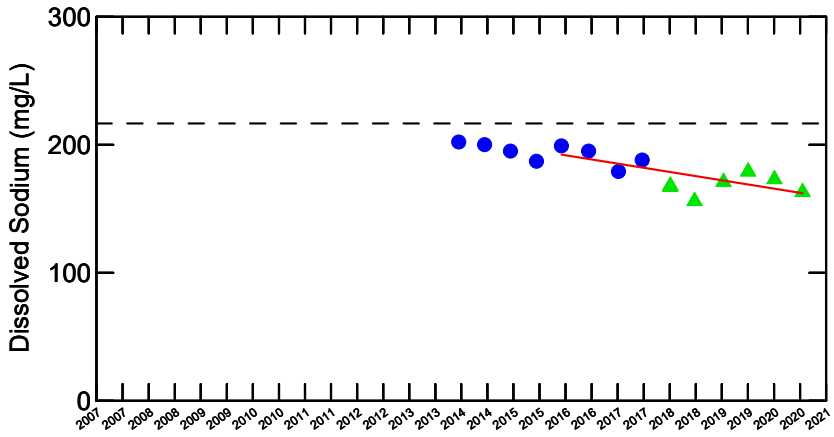
No trend



Decreasing trend



No trend



Decreasing trend

Legend:

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- Post-Baseline result
- Last 5 years (for trend)
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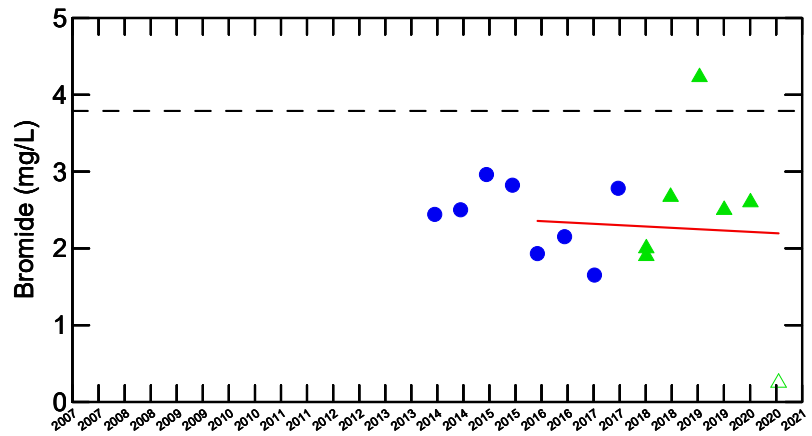
WELL EW1c-13

SUB-CELL 3

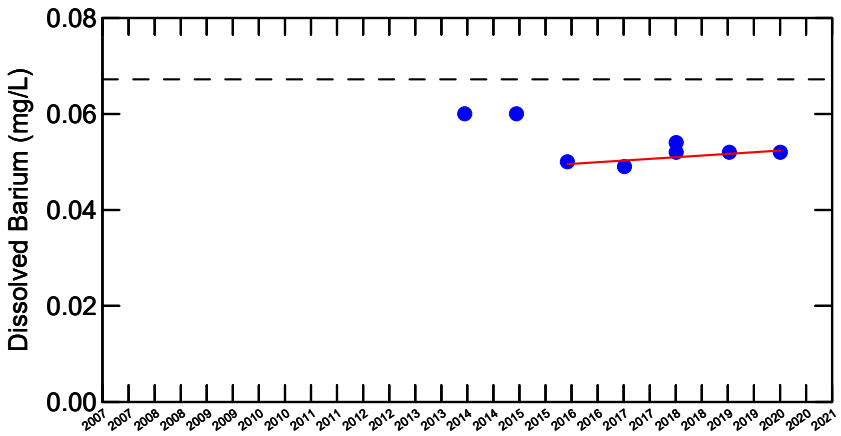
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

Lambton County, Ontario



No trend



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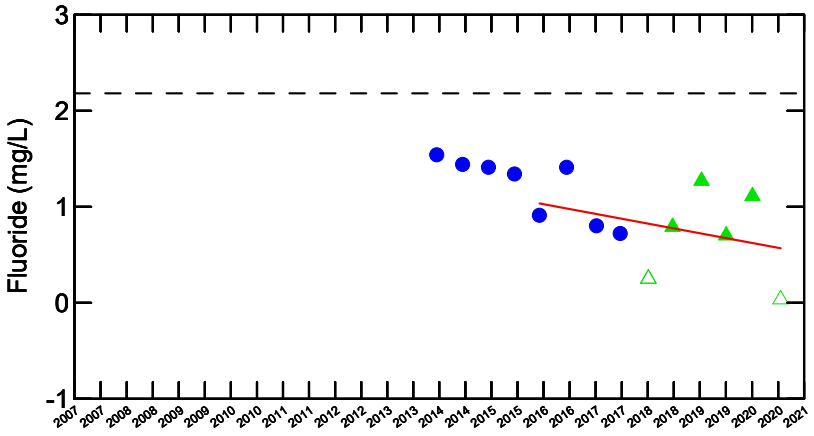
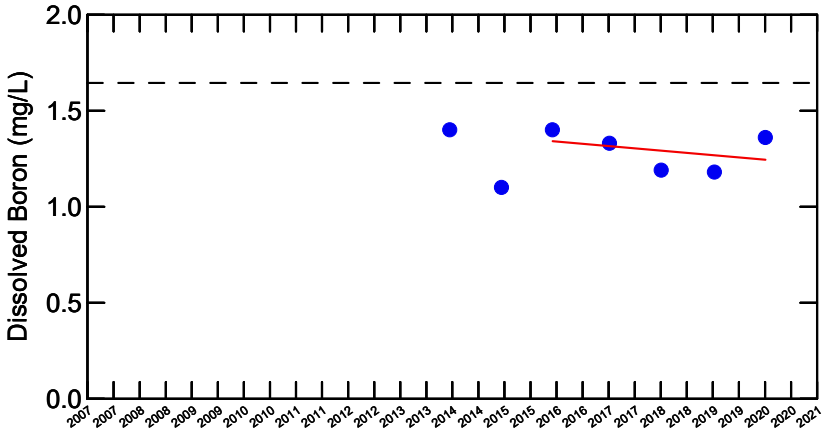


No trend



No trend

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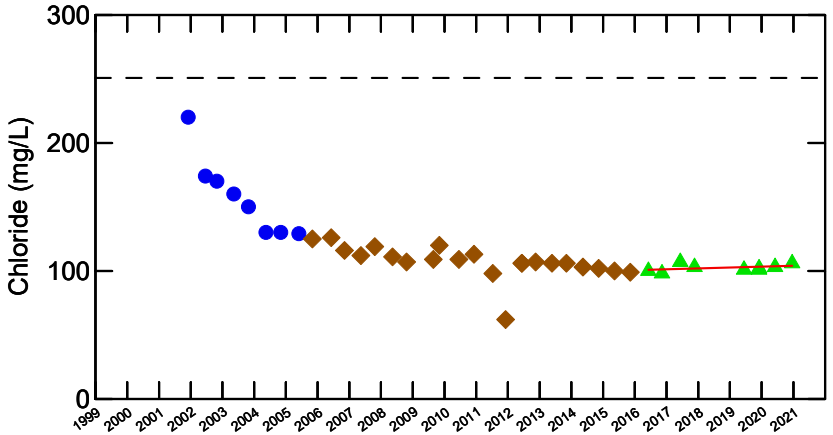
WELL EW1c-13

SUB-CELL 3

2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

Lambton County, Ontario



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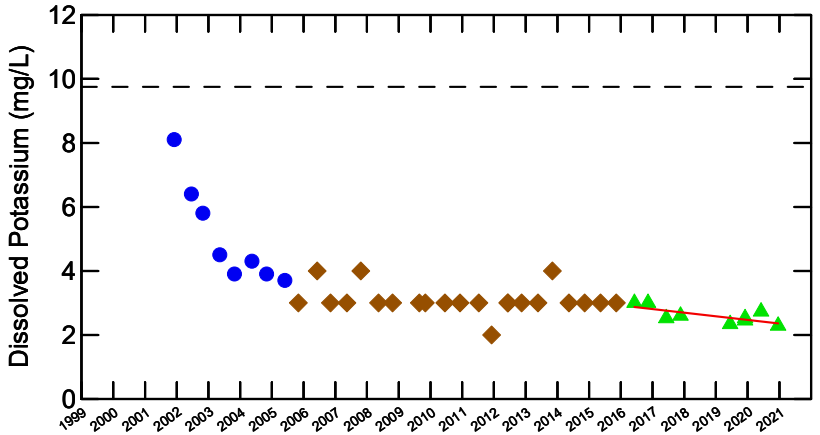
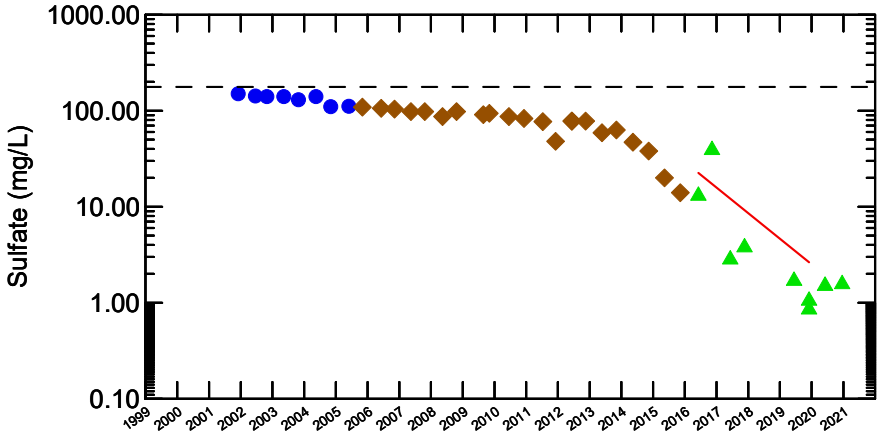
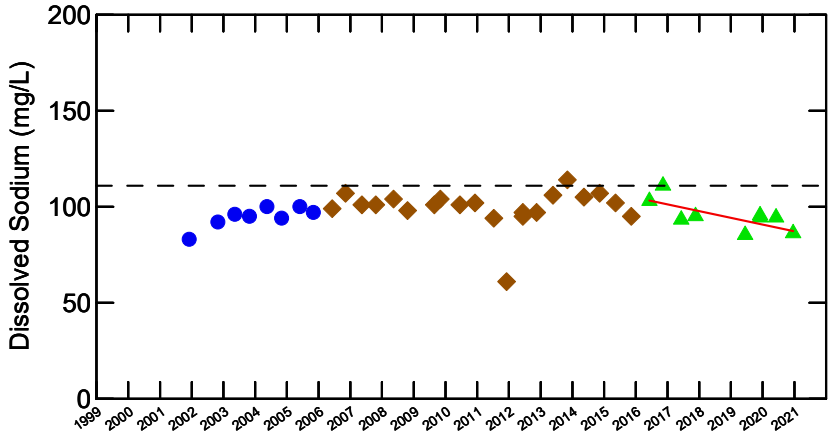


Decreasing trend



No trend



Decreasing trend

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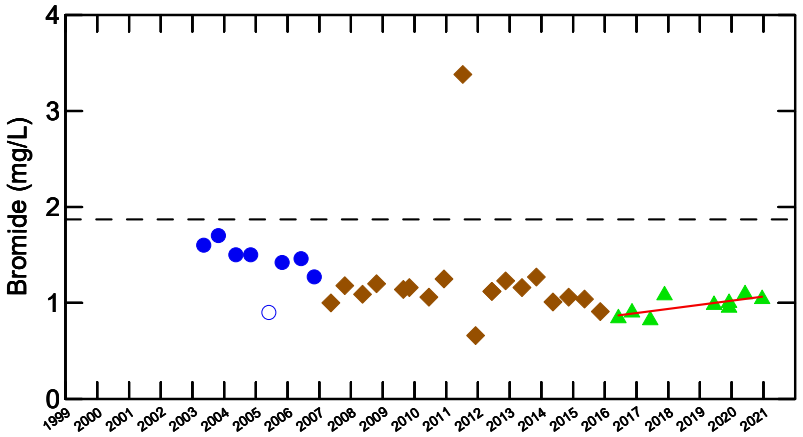
WELL EW2a-01

SUB-CELL 3

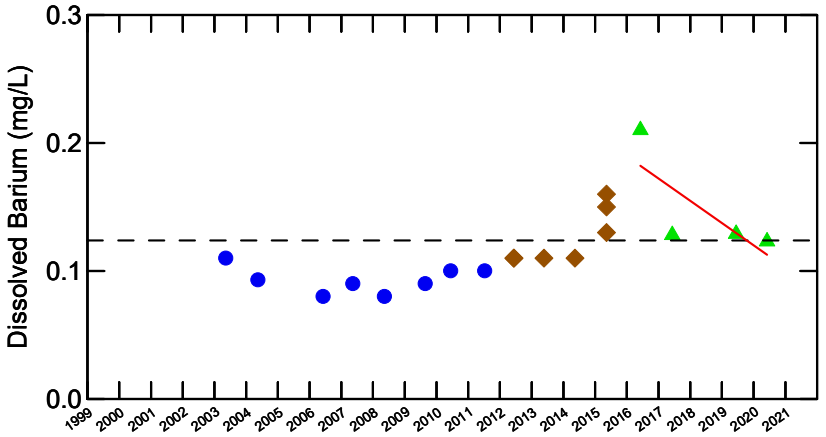
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

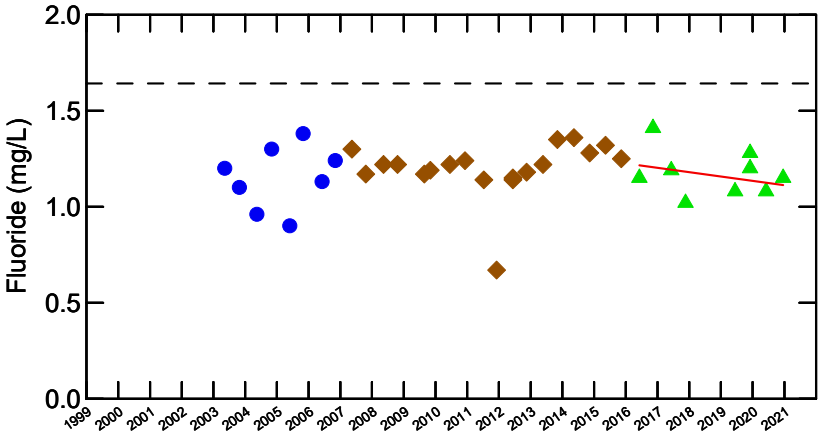
Lambton County, Ontario



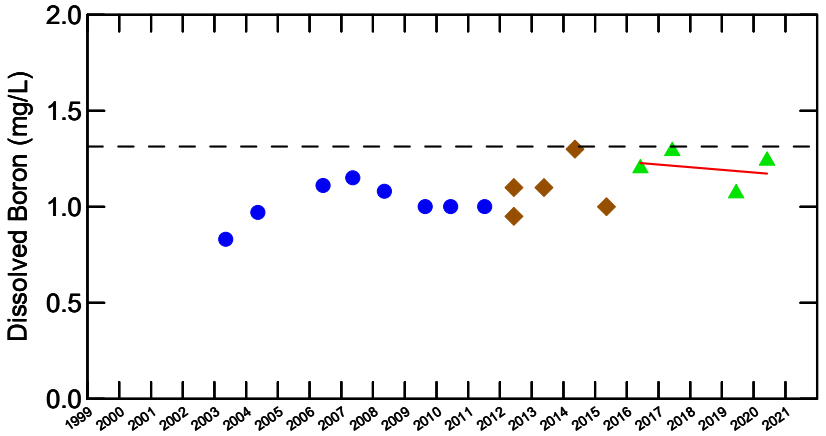
Increasing trend



No trend



No trend



No trend

Legend:

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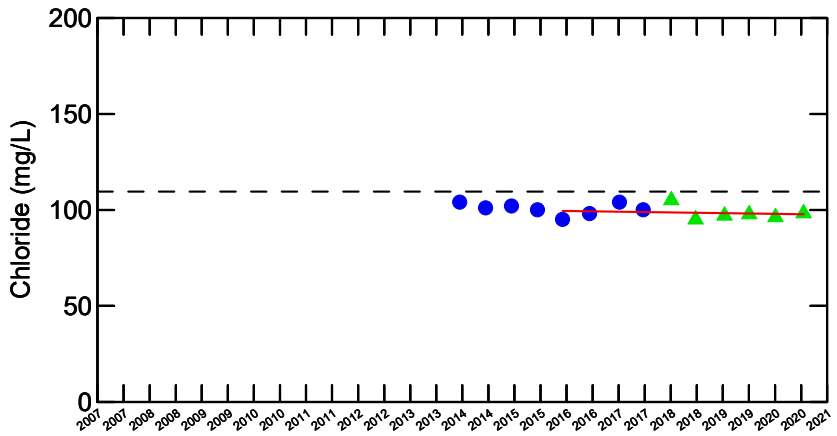
WELL EW2a-01

SUB-CELL 3

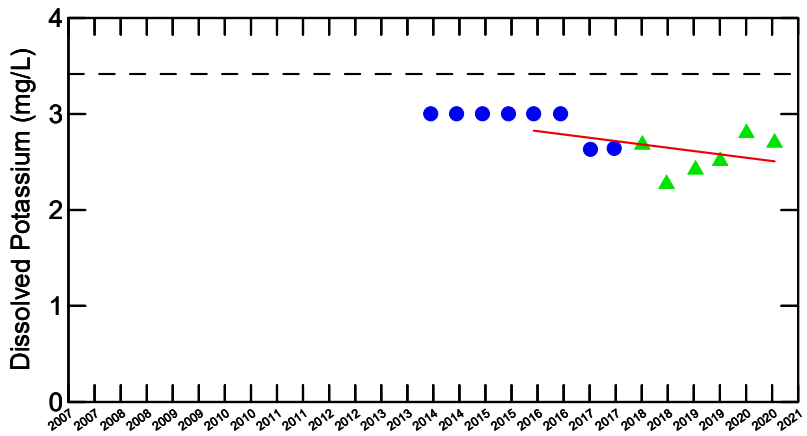
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

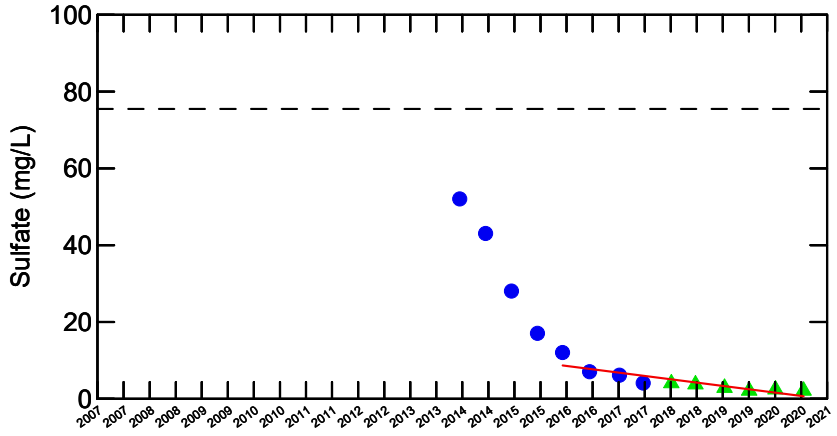
Lambton County, Ontario



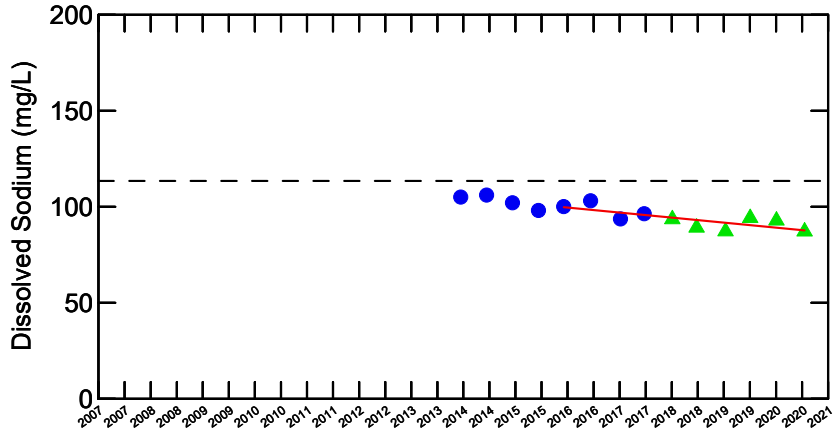
No trend



No trend



Decreasing trend



Decreasing trend

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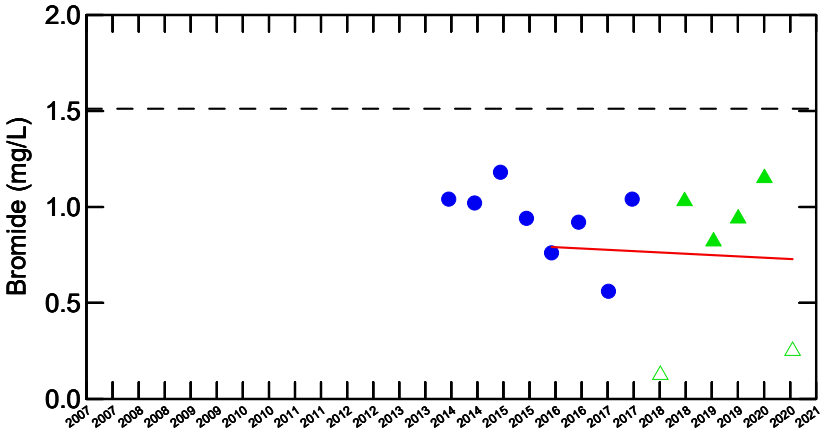
WELL EW2b-13

SUB-CELL 3

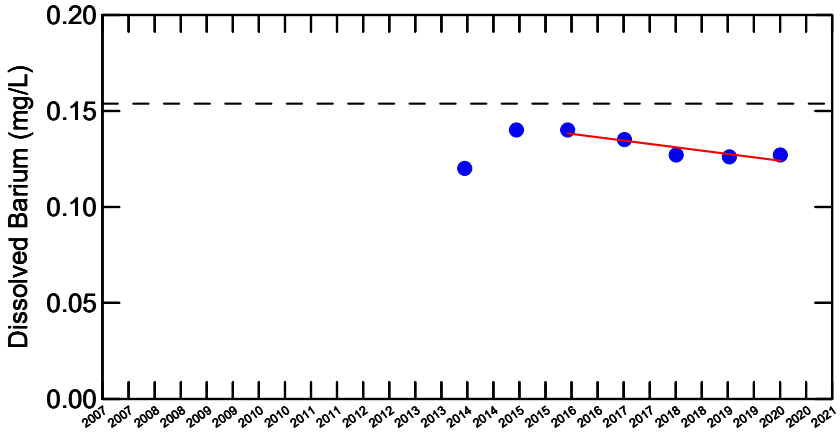
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

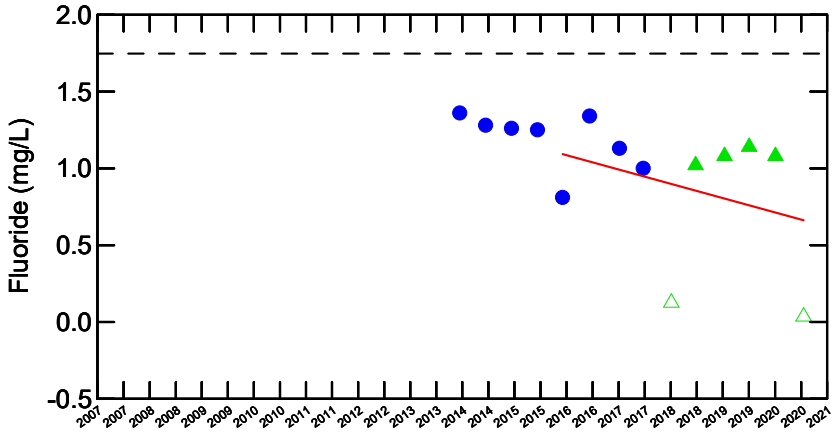
Lambton County, Ontario



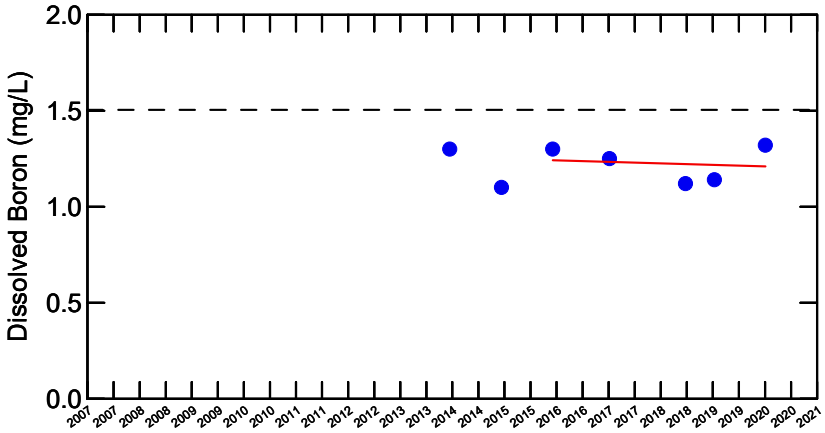
No trend



Decreasing trend



No trend



No trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

Notes:

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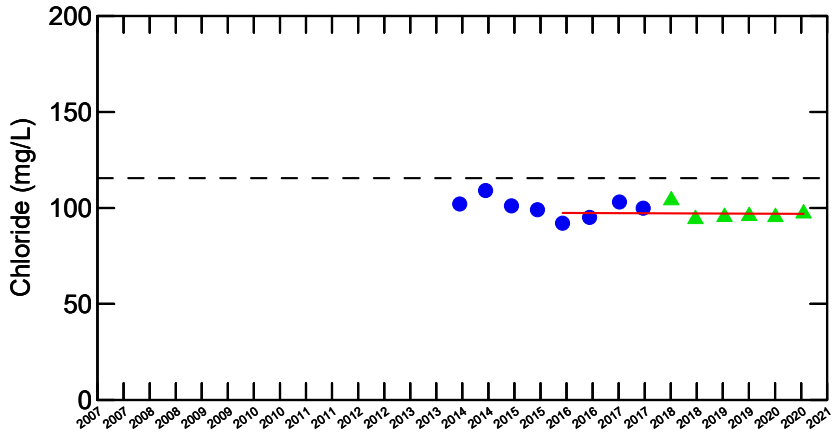
WELL EW2b-13

SUB-CELL 3

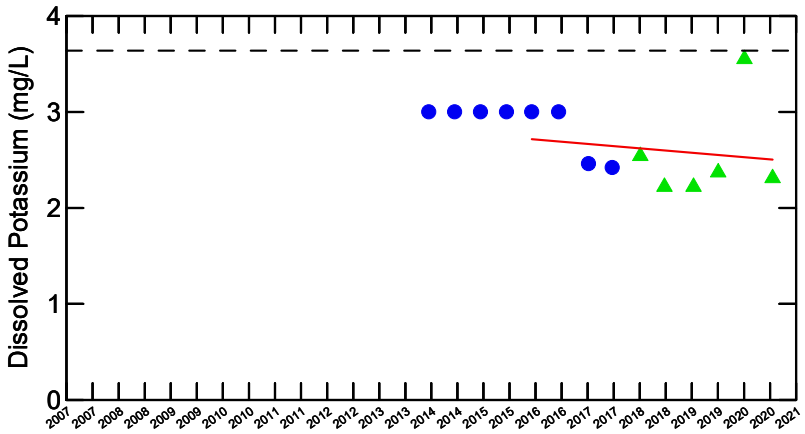
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

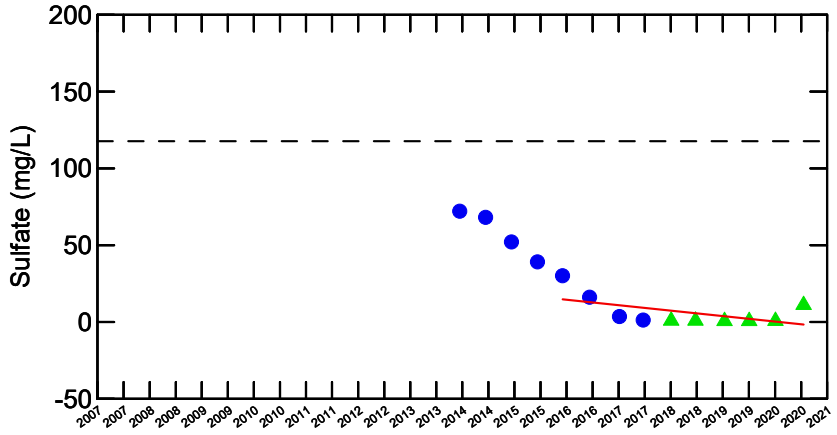
Lambton County, Ontario



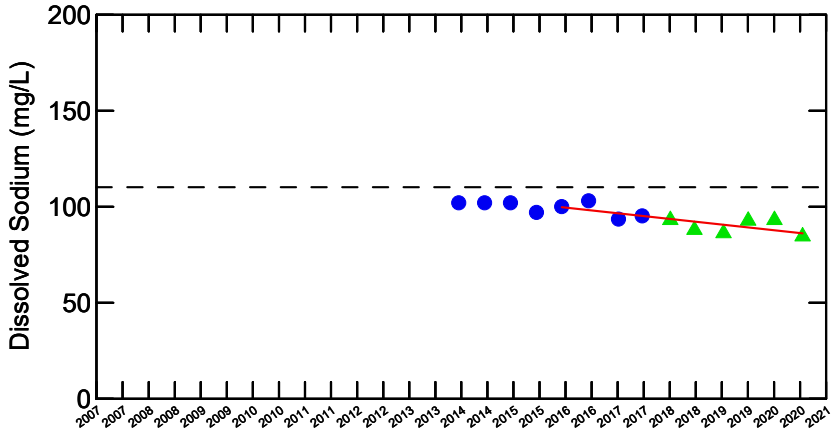
No trend



No trend



No trend



Decreasing trend

Legend:

- Baseline result
- Post-Baseline result
- Last 5 years (for trend)
- Reasonable Use Criteria (RUC)
- Baseline Upper Confidence Limit (UCL)
- Linear Regression line

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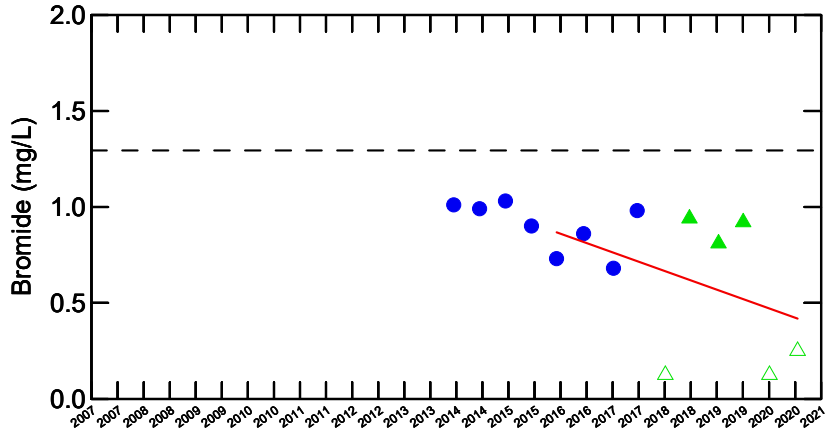
WELL EW2c-13

SUB-CELL 3

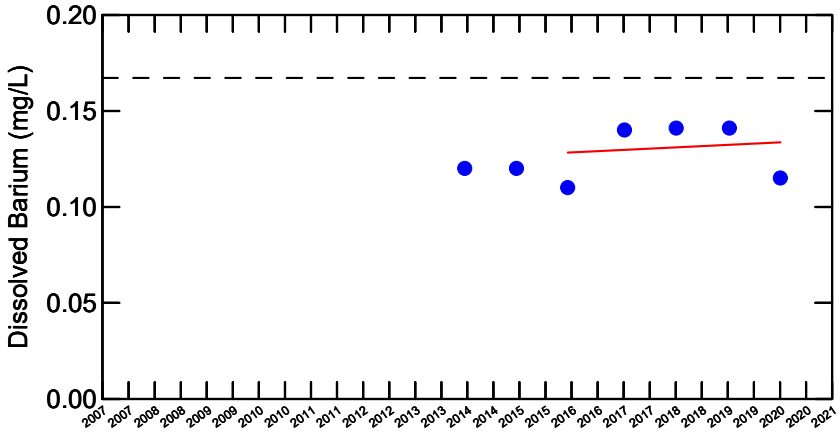
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

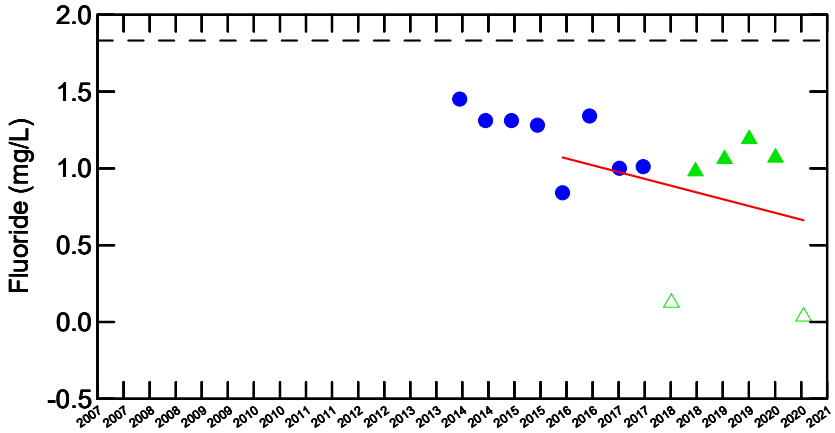
Lambton County, Ontario



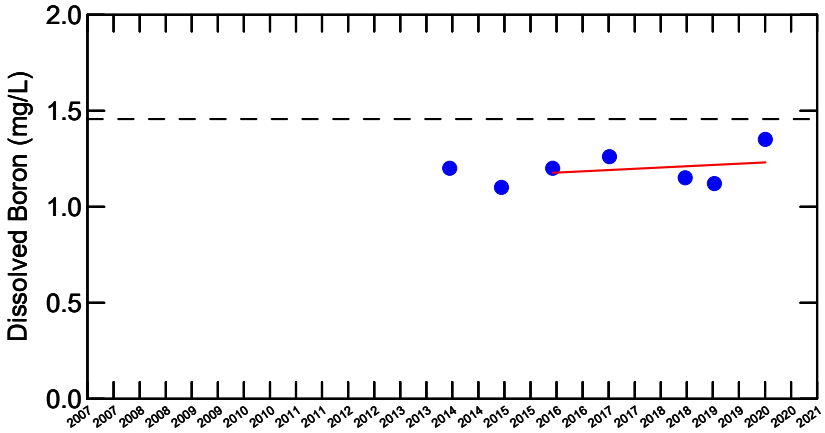
No trend



No trend



No trend



No trend

Legend:

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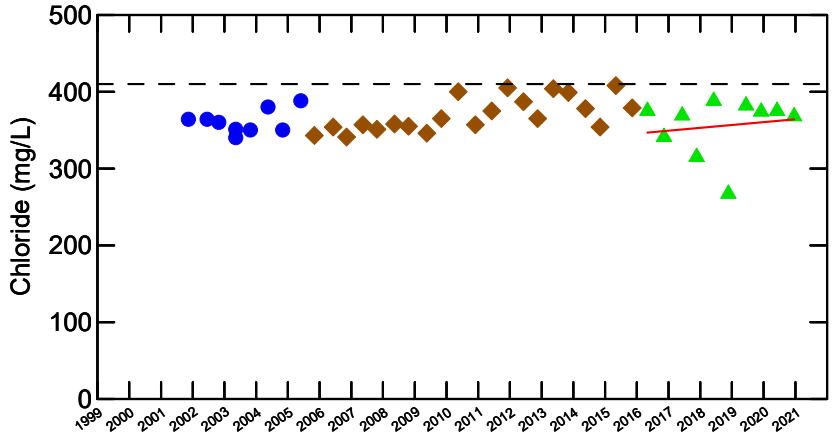
WELL EW2c-13

SUB-CELL 3

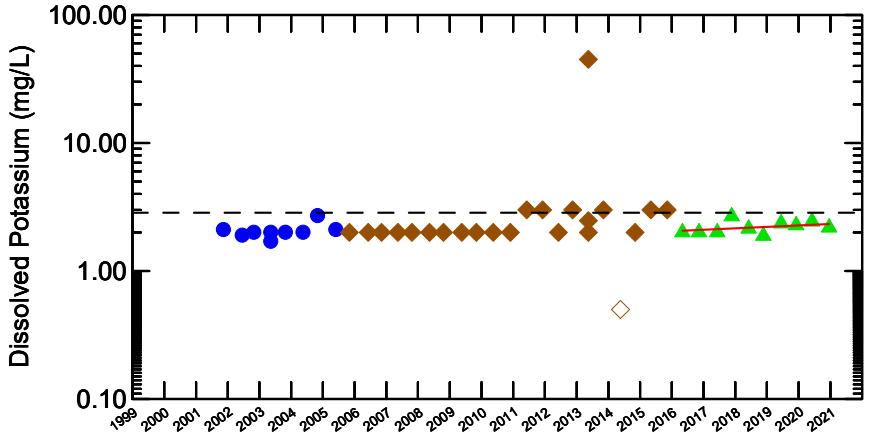
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

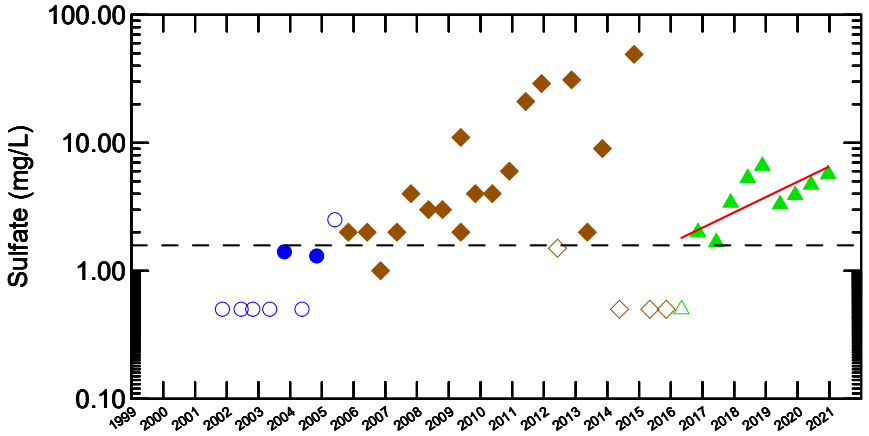
Lambton County, Ontario



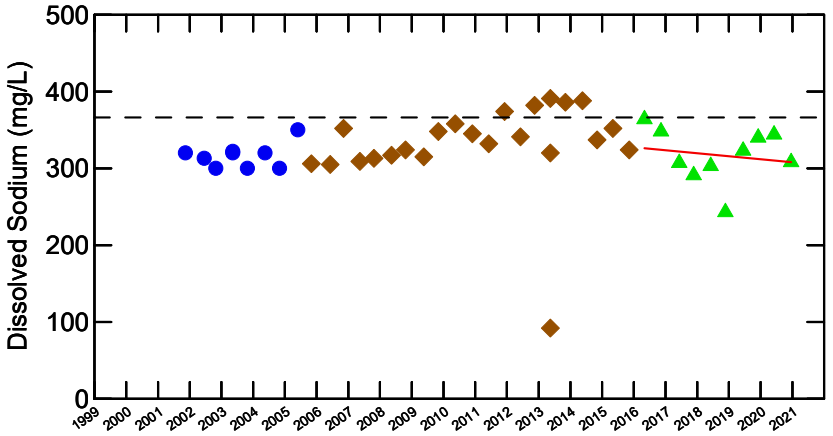
No trend



No trend



Increasing trend



No trend

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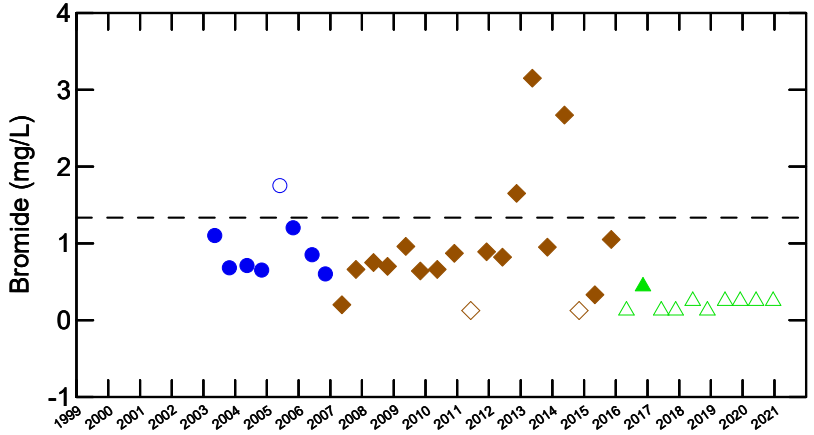
WELL PW1-N

SUB-CELL 3

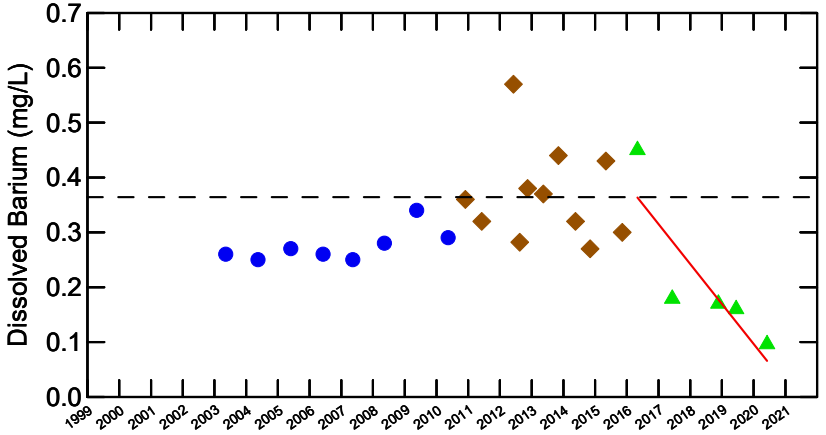
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

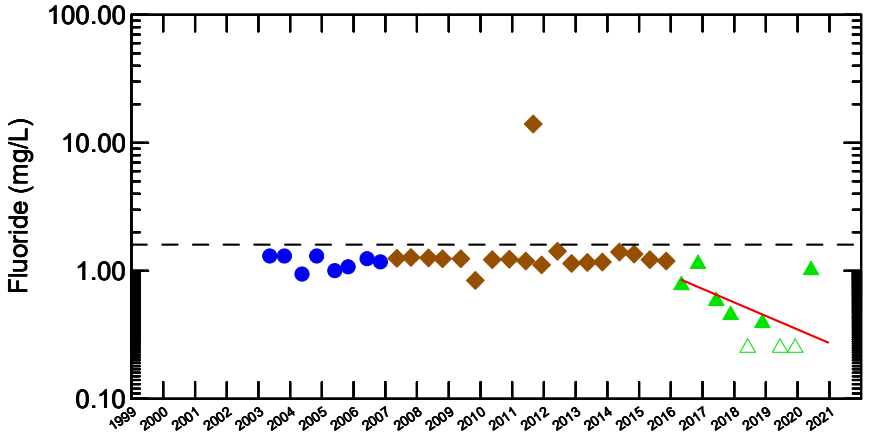
Lambton County, Ontario



Over 50% non-detect



No trend



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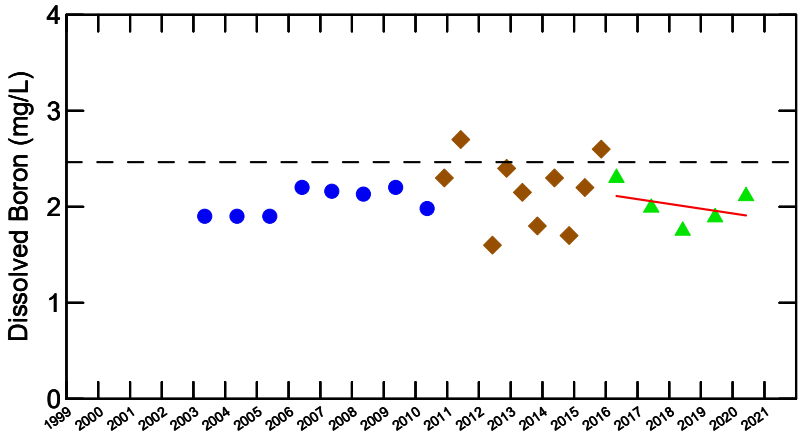

No trend

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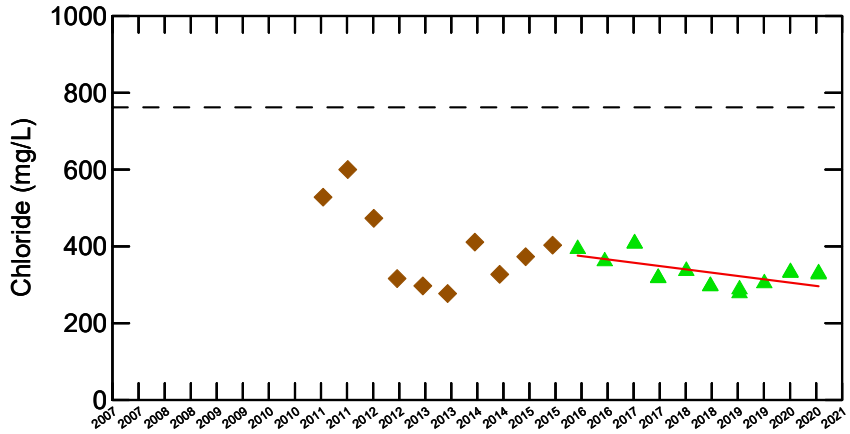
WELL PW1-N

SUB-CELL 3

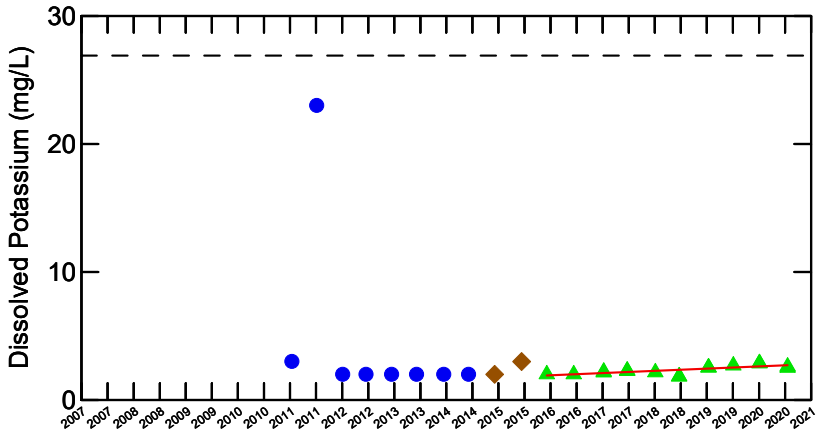
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

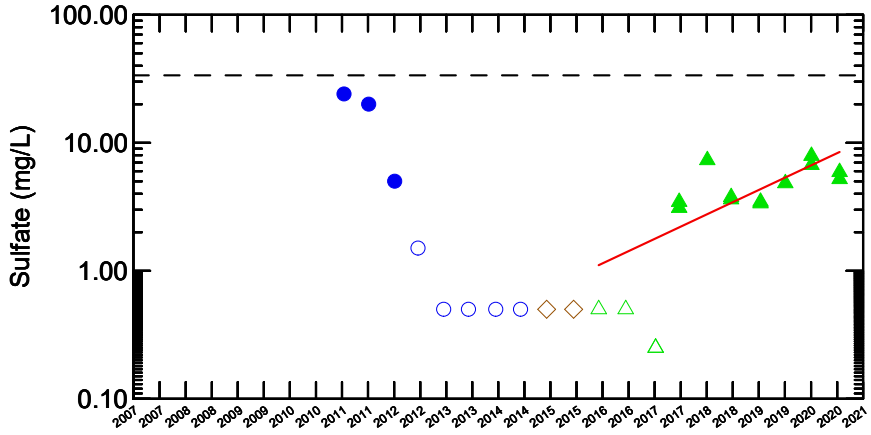
Lambton County, Ontario



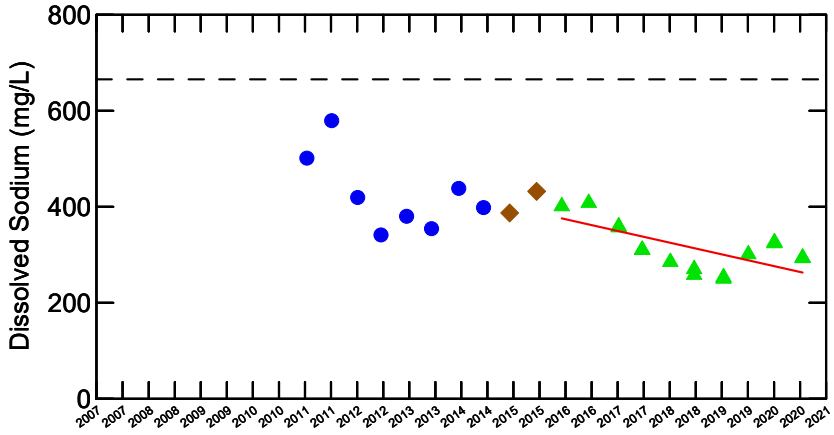
Decreasing trend



Increasing trend



Increasing trend



Decreasing trend

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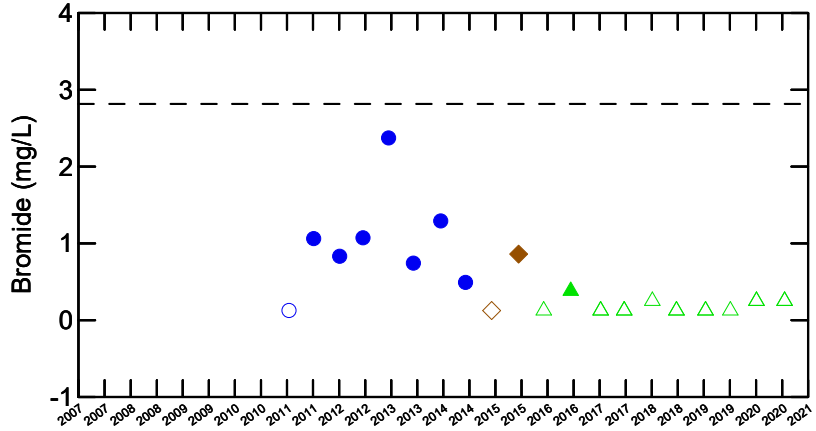
WELL PW2-S(R11)

SUB-CELL 3

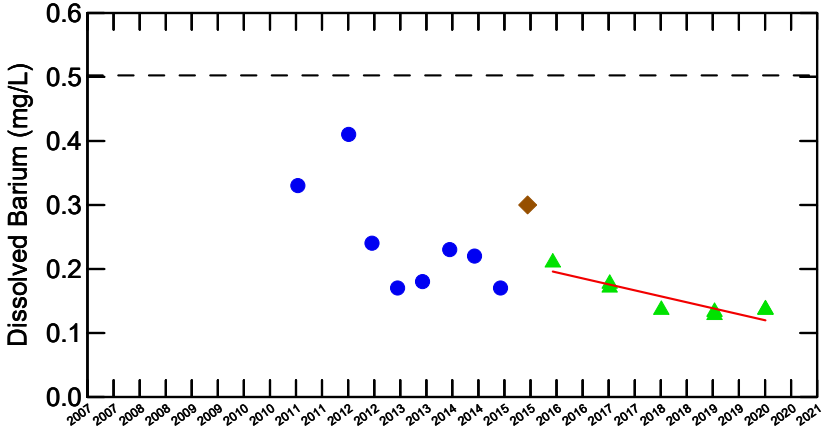
2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

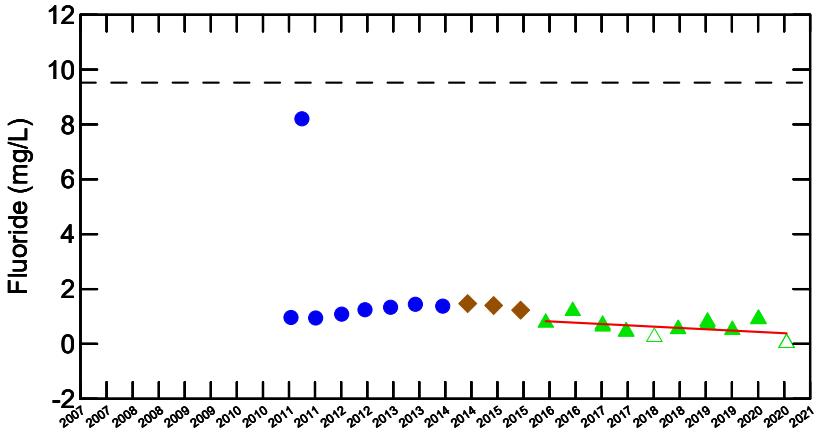
Lambton County, Ontario



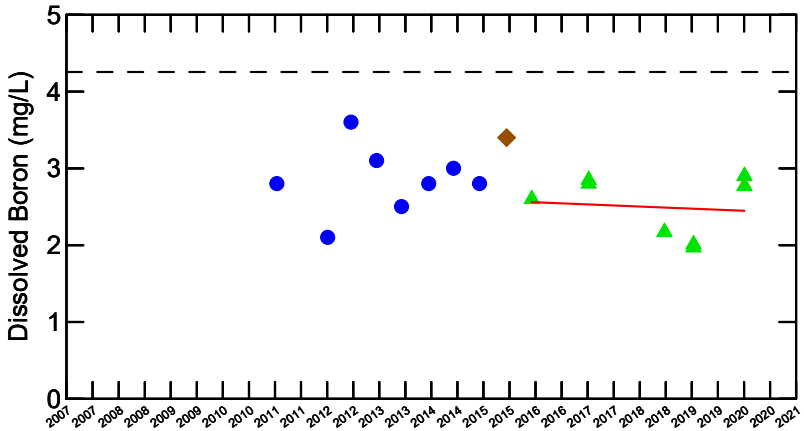
Over 50% non-detect



Decreasing trend



No trend



No trend

Legend:

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- Post-Baseline result
- Last 5 years (for trend)
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WELL PW2-S(R11)

SUB-CELL 3

2020 GROUNDWATER MONITORING REPORT

CLEAN HARBORS CANADA, INC.

Lambton County, Ontario

Appendix E
Laboratory Analytical Reports

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: **GHD LIMITED**
455 Phillip St
WATERLOO, ON N2V1C2
(519) 884-0510

ATTENTION TO: **Laura Ermeta**

PROJECT: **44985 (PO#73519831)**

AGAT WORK ORDER: **20T609989**

TRACE ORGANICS REVIEWED BY: **Oksana Gushyla, Trace Organics Lab Supervisor**

WATER ANALYSIS REVIEWED BY: **Amanjot Bhela, Inorganic Lab Manager**

DATE REPORTED: **Jun 16, 2020**

PAGES (INCLUDING COVER): **53**

VERSION*: **2**

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

VERSION 2:Revised report with corrected sampling dates issued June 16, 2020.

AGAT Laboratories
5835 COOPERS AVENUE
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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	GW-44985-060120-DD-43D Water 2020-06-01 1177347	GW-44985-060120-DD-49D Water 2020-06-01 1177383	GW-44985-060120-DD-55D Water 2020-06-01 1177385	GW-44985-060120-DD-57D Water 2020-06-01 1177387	GW-44985-060120-DD-56D Water 2020-06-01 1177391	GW-44985-060220-DD-61D Water 2020-06-02 1177393
Dichlorodifluoromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L		0.17	2020-06-10	2020-06-12	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	2020-06-10	2020-06-12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L		0.20	2020-06-10	2020-06-12	0.28	<0.20	<0.20	4.5	<0.20	0.25
1,2-Dichloropropane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

						GW-44985-060120-DD-43D	GW-44985-060120-DD-49D	GW-44985-060120-DD-55D	GW-44985-060120-DD-57D	GW-44985-060120-DD-56D	GW-44985-060220-DD-61D
					SAMPLE DESCRIPTION:						
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-01	2020-06-01	2020-06-01	2020-06-01	2020-06-01	2020-06-02
Parameter	**Unit**	**G / S**	**RDL**	**Date Prepared**	**Date Analyzed**	**1177347**	**1177383**	**1177385**	**1177387**	**1177391**	**1177393**
Ethylene Dibromide	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	2020-06-12	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	2020-06-12	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		2020-06-10	2020-06-12	104	105	103	103	104	106
4-Bromofluorobenzene	% Recovery	50-140		2020-06-10	2020-06-12	88	87	85	87	86	88

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	GW-44985-060220-DD-39D Water 2020-06-02 1177397	GW-44985-060220-DD-46D Water 2020-06-02 1177398	GW-44985-060220-DD-32II Water 2020-06-02 1177404	GW-44985-060220-DD-40D Water 2020-06-02 1177407	GW-44985-060220-DD-47D Water 2020-06-02 1177408	GW-44985-060220-DD-60D Water 2020-06-02 1177413
Dichlorodifluoromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L		0.17	2020-06-10	2020-06-12	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	2020-06-10	2020-06-12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L		0.20	2020-06-10	2020-06-12	<0.20	0.25	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	0.40
1,2-Dichloropropane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

						GW-44985-060220-DD-39D	GW-44985-060220-DD-46D	GW-44985-060220-DD-32II	GW-44985-060220-DD-40D	GW-44985-060220-DD-47D	GW-44985-060220-DD-60D
					SAMPLE DESCRIPTION:						
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-02	2020-06-02	2020-06-02	2020-06-02	2020-06-02	2020-06-02
Parameter	**Unit**	**G / S**	**RDL**	**Date Prepared**	**Date Analyzed**	**1177397**	**1177398**	**1177404**	**1177407**	**1177408**	**1177413**
Ethylene Dibromide	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L		0.10	2020-06-10	2020-06-12	<0.10	3.2	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	2020-06-12	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	2020-06-12	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		2020-06-10	2020-06-12	106	107	103	104	105	98
4-Bromofluorobenzene	% Recovery	50-140		2020-06-10	2020-06-12	92	91	87	90	89	85

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	GW-44985-060220-DD-48D Water 2020-06-02 1177426	GW-44985-060320-DD-59D Water 2020-06-03 1177430	GW-44985-060320-DD-45D Water 2020-06-03 1177436	GW-44985-060320-DD-54D Water 2020-06-03 1177437	GW-44985-060320-DD-41D Water 2020-06-03 1177443	GW-44985-060320-DD-30D Water 2020-06-03 1177447
Dichlorodifluoromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L		0.17	2020-06-10	2020-06-12	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	2020-06-10	2020-06-12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	3.3	1.9	0.36	<0.20	<0.20
1,2-Dichloropropane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

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Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

						GW-44985-060220-DD-48D	GW-44985-060320-DD-59D	GW-44985-060320-DD-45D	GW-44985-060320-DD-54D	GW-44985-060320-DD-41D	GW-44985-060320-DD-30D
					SAMPLE DESCRIPTION:						
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-02	2020-06-03	2020-06-03	2020-06-03	2020-06-03	2020-06-03
Parameter	**Unit**	**G / S**	**RDL**	**Date Prepared**	**Date Analyzed**	**1177426**	**1177430**	**1177436**	**1177437**	**1177443**	**1177447**
Ethylene Dibromide	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	2020-06-12	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	2020-06-12	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		2020-06-10	2020-06-12	97	103	79	97	106	105
4-Bromofluorobenzene	% Recovery	50-140		2020-06-10	2020-06-12	85	86	118	85	91	91

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-060320-DD-32D SAMPLE TYPE: Water DATE SAMPLED: 2020-06-03 1177448	GW-44985-060320-DD-53D Water 2020-06-03 1177450	GW-44985-060320-DD-35D Water 2020-06-03 1177452	GW-44985-060420-DD-PW2 Water 2020-06-04 1177453	GW-44985-060420-DD-EW2A Water 2020-06-04 1177454	GW-44985-060420-DD-EW1A Water 2020-06-04 1177455
Dichlorodifluoromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L		0.17	2020-06-10	2020-06-12	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	2020-06-10	2020-06-12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	0.26	<0.20	<0.20
1,2-Dichloropropane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	0.25	<0.20	<0.20
2-Hexanone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

SAMPLE DESCRIPTION:						GW-44985-060320-DD-32D	GW-44985-060320-DD-53D	GW-44985-060320-DD-35D	GW-44985-060420-DD-PW2	GW-44985-060420-DD-EW2A	GW-44985-060420-DD-EW1A
SAMPLE TYPE:						Water	Water	Water	Water	Water	Water
DATE SAMPLED:						2020-06-03	2020-06-03	2020-06-03	2020-06-04	2020-06-04	2020-06-04
Parameter	**Unit**	**G / S**	**RDL**	**Date Prepared**	**Date Analyzed**	**1177448**	**1177450**	**1177452**	**1177453**	**1177454**	**1177455**
Dibromochloromethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	2020-06-12	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	2020-06-12	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		2020-06-10	2020-06-12	104	106	105	117	102	103
4-Bromofluorobenzene	% Recovery	50-140		2020-06-10	2020-06-12	86	89	89	79	85	85

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

SAMPLE DESCRIPTION:						GW-44985-060420-DD-PW2-98	GW-44985-060420-DD-PW1	GW-44985-060420-DD-EW2C	GW-44985-060420-DD-EW2B	GW-44985-060420-DD-EW1C	GW-44985-060420-DD-EW1B
SAMPLE TYPE:						Water	Water	Water	Water	Water	Water
DATE SAMPLED:						2020-06-04	2020-06-04	2020-06-04	2020-06-04	2020-06-04	2020-06-04
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177456	1177457	1177458	1177459	1177460	1177461
Dichlorodifluoromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L		0.17	2020-06-10	2020-06-12	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	2020-06-10	2020-06-12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	0.64	<0.20	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

						GW-44985-060420-DD-PW2	GW-44985-060420-DD-PW1	GW-44985-060420-DD-EW2C	GW-44985-060420-DD-EW2B	GW-44985-060420-DD-EW1C	GW-44985-060420-DD-EW1B
					SAMPLE DESCRIPTION:	-98					
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-04	2020-06-04	2020-06-04	2020-06-04	2020-06-04	2020-06-04
Parameter	**Unit**	**G / S**	**RDL**	**Date Prepared**	**Date Analyzed**	1177456	1177457	1177458	1177459	1177460	1177461
Dibromochloromethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	2020-06-12	2020-06-12	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	2020-06-12	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		2020-06-10	2020-06-12	101	97	103	105	102	102
4-Bromofluorobenzene	% Recovery	50-140		2020-06-10	2020-06-12	88	106	83	85	83	84

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060420-DD-B3	Trip Blank	GW-44985-060220-DD-32II-98
					SAMPLE TYPE:	Water	Water	Water
					DATE SAMPLED:	2020-06-04	2020-06-02	2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177464	1177478	1177696
Dichlorodifluoromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Chloromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L		0.17	2020-06-10	2020-06-12	<0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Chloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	2020-06-10	2020-06-12	<0.40	<0.40	<0.40
Acetone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.2	2020-06-10	2020-06-12	<0.2	<0.2	<0.2
Methylene Chloride	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30
trans- 1,2-dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Chloroform	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Benzene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30
1,1,2-Trichloroethane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Toluene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
2-Hexanone	µg/L		1.0	2020-06-10	2020-06-12	<1.0	<1.0	<1.0

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water (ug/L)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

SAMPLE DESCRIPTION:						GW-44985-060420-DD-B3	Trip Blank	GW-44985-060220-DD-32II-98
SAMPLE TYPE:						Water	Water	Water
DATE SAMPLED:						2020-06-04	2020-06-02	2020-06-02
Parameter	**Unit**	**G / S**	**RDL**	**Date Prepared**	**Date Analyzed**	**1177464**	**1177478**	**1177696**
Dibromochloromethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Bromoform	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
Styrene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	2020-06-10	2020-06-12	<0.10	<0.10	<0.10
1,2,4-Trichlorobenzene	µg/L		0.30	2020-06-10	2020-06-12	<0.30	<0.30	<0.30
1,3-Dichloropropene (Cis + Trans)	µg/L		0.30	2020-06-12	2020-06-12	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L		0.20	2020-06-12	2020-06-12	<0.20	<0.20	<0.20
n-Hexane	µg/L		0.20	2020-06-10	2020-06-12	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	% Recovery	50-140		2020-06-10	2020-06-12	104	107	102
4-Bromofluorobenzene	% Recovery	50-140		2020-06-10	2020-06-12	84	84	86

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1177347-1177696 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Ammonia (Water)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-060120-DD-43S	GW-44985-060120-DD-42S	GW-44985-060120-DD-55S	GW-44985-060120-DD-57S	GW-44985-060120-DD-58S	GW-44985-060120-DD-56S
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-01	2020-06-01	2020-06-01	2020-06-01	2020-06-01	2020-06-01
						1177284	1177384	1177386	1177388	1177389	1177390
Ammonia as N	mg/L		0.02	2020-06-09	2020-06-09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-060220-DD-61I	GW-44985-060220-DD-61S	GW-44985-060220-DD-39S	GW-44985-060220-DD-39I	GW-44985-060220-DD-46I	GW-44985-060220-DD-46S
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-02	2020-06-02	2020-06-02	2020-06-02	2020-06-02	2020-06-02
						1177392	1177394	1177395	1177396	1177400	1177401
Ammonia as N	mg/L		0.02	2020-06-09	2020-06-09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-060220-DD-32IV	GW-44985-060220-DD-40S	GW-44985-060220-DD-21II	GW-44985-060220-DD-22	GW-44985-060220-DD-22D	GW-44985-060220-DD-48S
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-02	2020-06-02	2020-06-02	2020-06-02	2020-06-02	2020-06-02
						1177402	1177405	1177411	1177412	1177418	1177427
Ammonia as N	mg/L		0.02	2020-06-09	2020-06-09	<0.02	<0.02	<0.02	<0.02	0.21	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-060320-DD-59S	GW-44985-060320-DD-63S	GW-44985-060320-DD-62S	GW-44985-060320-DD-45S	GW-44985-060320-DD-41S	GW-44985-060320-DD-30
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-03	2020-06-03	2020-06-03	2020-06-03	2020-06-03	2020-06-03
						1177428	1177433	1177434	1177435	1177442	1177445
Ammonia as N	mg/L		0.02	2020-06-09	2020-06-09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-060320-DD-32S	GW-44985-060320-DD-53S	GW-44985-060320-DD-35S	GW-44985-060420-DD-B1	GW-44985-060420-DD-B2	GW-44985-060420-DD-B3
					SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
					DATE SAMPLED:	2020-06-03	2020-06-03	2020-06-03	2020-06-04	2020-06-04	2020-06-04
						1177446	1177449	1177451	1177462	1177463	1177464
Ammonia as N	mg/L		0.02	2020-06-09	2020-06-09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Ammonia (Water)

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060120-DD-43S-98
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2020-06-01
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177479
Ammonia as N	mg/L		0.02	2020-06-09	2020-06-09	<0.02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1177418 As per client's request, ammonia analysis was performed beyond recommended hold time.
Note: The sample was received unpreserved and lab preserved that upon Client's instructions For ammonia analysis.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Amanjot Bhela

CHARTERED AMANJOT BHELA CHEMIST — ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060120-DD-43S		GW-44985-060120-DD-43D		GW-44985-060120-DD-49D
					SAMPLE TYPE:	Water		Water		Water
					DATE SAMPLED:	2020-06-01		2020-06-01		2020-06-01
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177284	RDL	1177347	RDL	1177383
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	752	2	1430	2	875
pH	pH Units		NA	2020-06-06	2020-06-06	7.40	NA	7.74	NA	7.89
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	362	20	618	20	382
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	278	5	253	5	233
Fluoride	mg/L		0.05	2020-06-09	2020-06-09	0.24	0.05	1.03	0.05	1.19
Chloride	mg/L		0.20	2020-06-09	2020-06-09	7.04	0.50	235	0.50	91.6
Nitrate as N	mg/L		0.10	2020-06-09	2020-06-09	<0.10	0.25	<0.25	0.25	<0.25
Nitrite as N	mg/L		0.10	2020-06-09	2020-06-09	<0.10	0.25	<0.25	0.25	<0.25
Bromide	mg/L		0.10	2020-06-09	2020-06-09	<0.10	0.25	<0.25	0.25	<0.25
Sulphate	mg/L		0.20	2020-06-09	2020-06-09	50.7	0.50	<0.50	0.50	<0.50
Cyanide, Free	mg/L		0.002	2020-06-08	2020-06-08	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.05	2020-06-12	2020-06-12	87.1	0.25	24.0	0.05	18.7
Dissolved Magnesium	mg/L		0.05	2020-06-12	2020-06-12	25.6	0.25	8.91	0.05	5.43
Dissolved Potassium	mg/L		0.05	2020-06-12	2020-06-12	1.49	0.25	1.83	0.05	1.55
Dissolved Sodium	mg/L		0.05	2020-06-12	2020-06-12	18.3	0.25	206	0.05	133
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	<0.001	0.001	0.007
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.036	0.002	0.18	0.002	0.097
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.060	0.10	1.37	0.10	1.19
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.013	0.010	0.515	0.010	0.183
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	0.009	0.003	<0.003	0.003	0.008
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060120-DD-42S		GW-44985-060120-DD-55D		GW-44985-060120-DD-55S
					SAMPLE TYPE:	Water		Water		Water
					DATE SAMPLED:	2020-06-01		2020-06-01		2020-06-01
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177384	RDL	1177385	RDL	1177386
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	3670	2	2220	2	1420
pH	pH Units		NA	2020-06-06	2020-06-06	7.44	NA	7.88	NA	7.44
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	2900	20	980	20	838
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	358	5	279	5	300
Fluoride	mg/L		0.13	2020-06-09	2020-06-09	<0.13	0.07	1.41	0.05	0.62
Chloride	mg/L		2.0	2020-06-09	2020-06-09	40.1	1.0	445	0.50	14.4
Nitrate as N	mg/L		1.0	2020-06-09	2020-06-09	<1.0	0.5	<0.5	0.25	<0.25
Nitrite as N	mg/L		1.0	2020-06-09	2020-06-09	<1.0	0.5	<0.5	0.25	<0.25
Bromide	mg/L		1.0	2020-06-09	2020-06-09	<1.0	0.5	<0.5	0.25	<0.25
Sulphate	mg/L		2.0	2020-06-09	2020-06-09	1770	1.0	<1.0	0.50	359
Cyanide, Free	mg/L		0.002	2020-06-08	2020-06-08	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	388	0.25	20.2	0.25	124
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	182	0.25	7.07	0.25	59.5
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	3.34	0.25	3.73	0.25	2.52
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	69.8	0.25	345	0.25	52.0
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	0.001	0.001	<0.001
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.015	0.002	0.238	0.002	0.020
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.159	0.10	1.95	0.010	0.231
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	<0.010	0.010	0.295	0.010	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060120-DD-57D		GW-44985-060120-DD-57S		GW-44985-060120-DD-58S
					SAMPLE TYPE:	Water		Water		Water
					DATE SAMPLED:	2020-06-01		2020-06-01		2020-06-01
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177387	RDL	1177388	RDL	1177389
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	2220	2	1970	2	3620
pH	pH Units		NA	2020-06-06	2020-06-06	7.89	NA	7.23	NA	7.46
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	1000	20	1130	20	2760
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	338	5	488	5	475
Fluoride	mg/L		0.07	2020-06-09	2020-06-09	1.20	0.07	0.94	0.13	0.88
Chloride	mg/L		1.0	2020-06-09	2020-06-09	411	1.0	22.2	2.0	294
Nitrate as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.5	<0.5	1.0	<1.0
Nitrite as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.5	<0.5	1.0	<1.0
Bromide	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.5	<0.5	1.0	<1.0
Sulphate	mg/L		1.0	2020-06-09	2020-06-09	<1.0	1.0	487	2.0	1060
Cyanide, Free	mg/L		0.002	2020-06-08	2020-06-08	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	17.2	0.25	178	0.25	290
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	6.27	0.25	104	0.25	231
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	1.96	0.25	3.21	0.25	4.60
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	321	0.25	47.3	0.25	110
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	<0.001	0.001	0.002
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.087	0.002	0.026	0.002	0.010
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	1.96	0.010	0.186	0.010	0.270
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	2.11	0.010	0.015	0.010	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060120-DD-56S				GW-44985-060120-DD-56D
					SAMPLE TYPE:	Water				Water
					DATE SAMPLED:	2020-06-01				2020-06-01
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177390	RDL	Date Prepared	Date Analyzed	1177391
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1880	2	2020-06-06	2020-06-06	1840
pH	pH Units		NA	2020-06-06	2020-06-06	7.65	NA	2020-06-06	2020-06-06	7.89
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	1160	20	2020-06-06	2020-06-08	804
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	407	5	2020-06-06	2020-06-06	319
Fluoride	mg/L		0.07	2020-06-09	2020-06-09	0.62	0.07	2020-06-09	2020-06-09	1.02
Chloride	mg/L		1.0	2020-06-09	2020-06-09	33.0	1.0	2020-06-09	2020-06-09	308
Nitrate as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.5	2020-06-09	2020-06-09	<0.5
Nitrite as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.5	2020-06-09	2020-06-09	<0.5
Bromide	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.5	2020-06-09	2020-06-09	<0.5
Sulphate	mg/L		1.0	2020-06-09	2020-06-09	497	1.0	2020-06-09	2020-06-09	<1.0
Cyanide, Free	mg/L		0.002	2020-06-08	2020-06-08	<0.002	0.002	2020-06-09	2020-06-09	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	189	0.25	2020-06-12	2020-06-12	21.7
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	87.0	0.25	2020-06-12	2020-06-12	8.19
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	2.40	0.25	2020-06-12	2020-06-12	2.50
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	58.6	0.25	2020-06-12	2020-06-12	279
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	2020-06-09	2020-06-09	0.009
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.012	0.002	2020-06-09	2020-06-09	0.135
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.203	0.10	2020-06-09	2020-06-09	2.42
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	2020-06-09	2020-06-09	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	2020-06-09	2020-06-09	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.021	0.010	2020-06-09	2020-06-09	1.21
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	2020-06-09	2020-06-09	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	2020-06-09	2020-06-09	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	2020-06-09	2020-06-09	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	2020-06-09	2020-06-09	<0.005

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060220-DD-61I		GW-44985-060220-DD-61D		GW-44985-060220-DD-61S	GW-44985-060220-DD-39S
					SAMPLE TYPE:	Water		Water		Water	Water
					DATE SAMPLED:	2020-06-02		2020-06-02		2020-06-02	2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177392	RDL	1177393	RDL	1177394	1177395
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1430	2	1270	2	1500	1520
pH	pH Units		NA	2020-06-06	2020-06-06	7.70	NA	7.87	NA	7.66	7.70
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	806	20	586	20	770	752
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	327	5	240	5	449	424
Fluoride	mg/L		0.05	2020-06-09	2020-06-09	<0.05	0.05	1.20	0.05	0.72	0.74
Chloride	mg/L		0.50	2020-06-09	2020-06-09	19.6	0.50	146	0.50	20.7	22.0
Nitrate as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	0.25	<0.25	<0.25
Nitrite as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	0.25	<0.25	<0.25
Bromide	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	0.25	<0.25	<0.25
Sulphate	mg/L		0.50	2020-06-09	2020-06-09	332	0.50	79.4	0.50	239	273
Cyanide, Free	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	132	0.25	29.3	0.25	118	109
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	64.7	0.25	12.0	0.25	62.3	80.8
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	0.94	0.25	1.65	0.25	2.26	1.07
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	34.9	0.25	175	0.25	66.6	58.4
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.001	0.001	0.005	0.001	0.005	0.003
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.068	0.002	0.051	0.002	0.036	0.032
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.157	0.10	1.63	0.010	0.341	0.280
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	<0.010	0.010	0.028	0.010	0.053	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.003	<0.003	0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005	<0.005

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AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060220-DD-39I		GW-44985-060220-DD-39D	GW-44985-060220-DD-46D		GW-44985-060220-DD-46I
					SAMPLE TYPE:	Water		Water	Water		Water
					DATE SAMPLED:	2020-06-02		2020-06-02	2020-06-02		2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177396	RDL	1177397	1177398	RDL	1177400
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1710	2	1490	1480	2	1740
pH	pH Units		NA	2020-06-06	2020-06-06	7.66	NA	7.72	7.79	NA	7.60
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	898	20	640	648	20	988
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	504	5	310	319	5	383
Fluoride	mg/L		0.07	2020-06-09	2020-06-09	0.69	0.05	1.36	1.20	0.07	<0.07
Chloride	mg/L		1.0	2020-06-09	2020-06-09	17.6	0.50	227	211	1.0	40.7
Nitrate as N	mg/L		0.5	2020-06-09	2020-06-09	0.6	0.25	<0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	<0.25	0.5	<0.5
Bromide	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	<0.25	0.5	<0.5
Sulphate	mg/L		1.0	2020-06-09	2020-06-09	312	0.50	<0.50	<0.50	1.0	414
Cyanide, Free	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	94.2	0.25	22.3	15.9	0.25	152
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	103	0.25	6.51	5.01	0.25	85.7
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	1.35	0.25	1.62	1.87	0.25	1.83
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	65.9	0.25	230	235	0.25	49.7
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.003	0.001	0.005	0.006	0.001	<0.001
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.042	0.002	0.126	0.099	0.002	0.034
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.177	0.10	1.77	1.86	0.010	0.135
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.012	0.010	0.412	0.490	0.010	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.024	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	<0.005	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060220-DD-46S		GW-44985-060220-DD-32IV		GW-44985-060220-DD-32II
					SAMPLE TYPE:	Water		Water		Water
					DATE SAMPLED:	2020-06-02		2020-06-02		2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177401	RDL	1177402	RDL	1177404
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	2190	2	1130	2	2600
pH	pH Units		NA	2020-06-06	2020-06-06	7.62	NA	7.73	NA	8.27
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	1450	20	570	20	1580
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	323	5	378	5	257
Fluoride	mg/L		0.07	2020-06-09	2020-06-09	<0.07	0.05	0.37	0.13	<0.13
Chloride	mg/L		1.0	2020-06-09	2020-06-09	37.5	0.50	14.3	2.0	562
Nitrate as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	1.0	<1.0
Nitrite as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	1.0	<1.0
Bromide	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	1.0	<1.0
Sulphate	mg/L		1.0	2020-06-09	2020-06-09	737	0.50	150	2.0	<2.0
Cyanide, Free	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	206	0.25	83.4	0.25	15.0
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	86.6	0.25	42.8	0.25	11.1
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	6.44	0.25	1.25	0.25	2.89
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	102	0.25	32.4	0.25	369
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.002	0.001	<0.001	0.001	<0.001
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.015	0.002	0.019	0.002	0.253
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	2.78	0.010	0.112	0.10	2.45
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	<0.010	0.010	0.022	0.010	0.043
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	0.006	0.005	0.011	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060220-DD-40S		GW-44985-060220-DD-40D		GW-44985-060220-DD-47D
					SAMPLE TYPE:	Water		Water		Water
					DATE SAMPLED:	2020-06-02		2020-06-02		2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177405	RDL	1177407	RDL	1177408
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1520	2	1680	2	10700
pH	pH Units		NA	2020-06-06	2020-06-06	7.75	NA	7.96	NA	7.97
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	828	20	688	20	3960
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	384	5	230	5	1030
Fluoride	mg/L		0.05	2020-06-09	2020-06-09	0.82	0.05	1.10	0.7	<0.7
Chloride	mg/L		0.50	2020-06-09	2020-06-09	18.8	0.50	310	10	2600
Nitrate as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	5	<5
Nitrite as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	5	<5
Bromide	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	5	<5
Sulphate	mg/L		0.50	2020-06-09	2020-06-09	319	0.50	<0.50	10	<10
Cyanide, Free	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	113	0.25	27.8	5	43
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	80.9	0.25	10.5	5	20
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	1.78	0.25	2.59	5	5
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	47.2	0.25	239	5	1070
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	0.004	0.001	0.008
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.028	0.002	0.214	0.02	1.70
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.161	0.10	1.74	0.10	3.41
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.010	0.010	1.08	0.010	2.94
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060220-DD-21II		GW-44985-060220-DD-22		GW-44985-060220-DD-60D	GW-44985-060220-DD-22D
					SAMPLE TYPE:	Water		Water		Water	Water
					DATE SAMPLED:	2020-06-02		2020-06-02		2020-06-02	2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177411	RDL	1177412	RDL	1177413	1177418
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1530	2	2190	2	4750	5530
pH	pH Units		NA	2020-06-06	2020-06-06	7.66	NA	7.67	NA	8.00	7.96
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	902	20	1310	20	2110	2450
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	421	5	443	5	594	680
Fluoride	mg/L		0.05	2020-06-09	2020-06-09	0.18	0.07	0.76	0.33	<0.33	<0.33
Chloride	mg/L		0.50	2020-06-09	2020-06-09	4.63	1.0	58.5	5.0	976	1180
Nitrate as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.5	<0.5	2.5	<2.5	<2.5
Nitrite as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.5	<0.5	2.5	<2.5	<2.5
Bromide	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.5	<0.5	2.5	<2.5	<2.5
Sulphate	mg/L		0.50	2020-06-09	2020-06-09	329	1.0	605	5.0	<5.0	<5.0
Cyanide, Free	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	178	0.25	180	0.5	28.2	34.8
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	57.3	0.25	113	0.5	11.4	14.1
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	0.96	0.25	1.79	0.5	3.1	3.5
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	19.5	0.25	79.6	0.5	836	985
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.001	0.001	<0.001	0.001	0.007	0.010
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.045	0.002	0.021	0.002	0.370	0.435
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.110	0.010	0.169	0.10	4.37	4.94
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	<0.010	0.010	<0.010	0.010	0.136	0.043
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	0.008	0.003	0.005	0.003	<0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060220-DD-48D		GW-44985-060220-DD-48S	GW-44985-060320-DD-59S	
					SAMPLE TYPE:	Water		Water	Water	
					DATE SAMPLED:	2020-06-02		2020-06-02	2020-06-03	
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177426	RDL	1177427	1177428	RDL
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	2000	2	1330	1160	2
pH	pH Units		NA	2020-06-06	2020-06-06	8.04	NA	7.76	7.80	NA
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	878	20	656	552	20
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	324	5	396	414	5
Fluoride	mg/L		0.07	2020-06-09	2020-06-09	1.34	0.05	0.84	0.76	0.05
Chloride	mg/L		1.0	2020-06-09	2020-06-09	361	0.50	18.9	17.3	0.50
Nitrate as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	<0.25	0.25
Nitrite as N	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	<0.25	0.25
Bromide	mg/L		0.5	2020-06-09	2020-06-09	<0.5	0.25	<0.25	<0.25	0.25
Sulphate	mg/L		1.0	2020-06-09	2020-06-09	<1.0	0.50	210	113	0.50
Cyanide, Free	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	26.6	0.25	102	96.1	0.25
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	9.61	0.25	60.2	55.4	0.25
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	2.80	0.25	2.08	2.00	0.25
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	313	0.25	44.0	29.5	0.25
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.005	0.001	0.005	0.002	0.001
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.222	0.002	0.031	0.038	0.002
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	2.41	0.010	0.249	0.126	0.10
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.514	0.010	<0.010	<0.010	0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	<0.0005	0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	0.005	0.004	0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	<0.005	0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060320-DD-59D		GW-44985-060320-DD-63S		GW-44985-060320-DD-62S	GW-44985-060320-DD-45S
					SAMPLE TYPE:	Water		Water		Water	Water
					DATE SAMPLED:	2020-06-03		2020-06-03		2020-06-03	2020-06-03
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177430	RDL	1177433	RDL	1177434	1177435
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1070	2	2850	2	1180	1320
pH	pH Units		NA	2020-06-06	2020-06-06	8.10	NA	7.66	NA	7.86	7.68
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	458	20	1480	20	596	694
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	253	5	412	5	298	390
Fluoride	mg/L		0.05	2020-06-09	2020-06-09	1.32	0.13	<0.13	0.05	0.70	0.42
Chloride	mg/L		0.50	2020-06-09	2020-06-09	136	2.0	536	0.50	38.6	57.8
Nitrate as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	1.0	<1.0	0.25	<0.25	<0.25
Nitrite as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	1.0	<1.0	0.25	<0.25	<0.25
Bromide	mg/L		0.25	2020-06-09	2020-06-09	<0.25	1.0	<1.0	0.25	<0.25	<0.25
Sulphate	mg/L		0.50	2020-06-09	2020-06-09	<0.50	2.0	61.0	0.50	181	138
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	15.2	0.25	185	0.25	94.9	131
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	4.93	0.25	81.2	0.25	40.6	48.1
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	1.79	0.25	3.10	0.25	1.89	1.76
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	158	0.25	168	0.25	54.8	35.7
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.007	0.001	0.008	0.001	0.010	0.007
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.109	0.002	0.141	0.002	0.042	0.087
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	1.33	0.010	0.256	0.010	0.152	0.079
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.453	0.010	0.015	0.010	<0.010	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	0.081	0.003	<0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060320-DD-45D		GW-44985-060320-DD-54D		GW-44985-060320-DD-41S
					SAMPLE TYPE:	Water		Water		Water
					DATE SAMPLED:	2020-06-03		2020-06-03		2020-06-03
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177436	RDL	1177437	RDL	1177442
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	4430	2	1130	2	2000
pH	pH Units		NA	2020-06-06	2020-06-06	8.01	NA	8.03	NA	7.61
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	1870	20	492	20	1200
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	937	5	254	5	456
Fluoride	mg/L		0.33	2020-06-09	2020-06-09	<0.33	0.05	1.26	0.07	0.47
Chloride	mg/L		5.0	2020-06-09	2020-06-09	680	0.50	150	1.0	55.5
Nitrate as N	mg/L		2.5	2020-06-09	2020-06-09	<2.5	0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		2.5	2020-06-09	2020-06-09	<2.5	0.25	<0.25	0.5	<0.5
Bromide	mg/L		2.5	2020-06-09	2020-06-09	<2.5	0.25	<0.25	0.5	2.3
Sulphate	mg/L		5.0	2020-06-09	2020-06-09	<5.0	0.50	<0.50	1.0	459
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.5	2020-06-12	2020-06-12	7.5	0.25	17.0	0.25	225
Dissolved Magnesium	mg/L		0.5	2020-06-12	2020-06-12	4.2	0.25	5.49	0.25	79.2
Dissolved Potassium	mg/L		0.5	2020-06-12	2020-06-12	2.6	0.25	1.72	0.25	1.52
Dissolved Sodium	mg/L		0.5	2020-06-12	2020-06-12	853	0.25	175	0.25	48.8
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.025	0.001	0.007	0.001	0.006
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.304	0.002	0.124	0.002	0.031
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	3.50	0.10	1.92	0.010	0.142
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	4.65	0.010	0.128	0.010	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060320-DD-41D		GW-44985-060320-DD-30	GW-44985-060320-DD-32S	
					SAMPLE TYPE:	Water		Water	Water	
					DATE SAMPLED:	2020-06-03		2020-06-03	2020-06-03	
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177443	RDL	1177445	1177446	RDL
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1350	2	1050	1660	2
pH	pH Units		NA	2020-06-06	2020-06-06	8.04	NA	7.84	7.77	NA
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	580	20	504	1000	20
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	273	5	387	354	5
Fluoride	mg/L		0.05	2020-06-09	2020-06-09	1.12	0.05	1.09	0.28	0.05
Chloride	mg/L		0.50	2020-06-09	2020-06-09	200	0.50	4.24	8.73	0.50
Nitrate as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	<0.25	0.25
Nitrite as N	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	<0.25	0.25
Bromide	mg/L		0.25	2020-06-09	2020-06-09	<0.25	0.25	<0.25	<0.25	0.25
Sulphate	mg/L		0.50	2020-06-09	2020-06-09	<0.50	0.50	112	456	0.50
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	<0.002	0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	16.1	0.25	81.4	196	0.25
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	5.56	0.25	52.6	67.4	0.25
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	1.76	0.25	1.77	1.69	0.25
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	216	0.25	31.2	21.7	0.25
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.006	0.001	0.002	<0.001	0.001
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.089	0.002	0.030	0.031	0.002
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	1.91	0.010	0.109	0.168	0.10
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.066	0.010	<0.010	0.010	0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	<0.0005	0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	0.008	0.003	<0.003	0.016	0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	<0.005	0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060320-DD-30D	GW-44985-060320-DD-32D		GW-44985-060320-DD-53S		GW-44985-060320-DD-53D
					SAMPLE TYPE:	Water	Water		Water		Water
					DATE SAMPLED:	2020-06-03	2020-06-03		2020-06-03		2020-06-03
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177447	1177448	RDL	1177449	RDL	1177450
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1450	1660	2	1620	2	2010
pH	pH Units		NA	2020-06-06	2020-06-06	8.04	7.87	NA	7.66	NA	7.99
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	620	702	20	944	20	898
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	237	236	5	367	5	273
Fluoride	mg/L		0.05	2020-06-10	2020-06-10	1.15	1.22	0.05	0.32	0.07	1.16
Chloride	mg/L		0.50	2020-06-10	2020-06-10	246	297	0.50	4.65	1.0	385
Nitrate as N	mg/L		0.25	2020-06-10	2020-06-10	<0.25	<0.25	0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		0.25	2020-06-10	2020-06-10	<0.25	<0.25	0.25	<0.25	0.5	<0.5
Bromide	mg/L		0.25	2020-06-10	2020-06-10	<0.25	<0.25	0.25	<0.25	0.5	<0.5
Sulphate	mg/L		0.50	2020-06-10	2020-06-10	<0.50	<0.50	0.50	429	1.0	<1.0
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	21.2	21.5	0.25	192	0.25	27.0
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	7.95	7.39	0.25	68.9	0.25	9.99
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	2.52	2.76	0.25	1.01	0.25	2.37
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	213	252	0.25	19.4	0.25	299
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.004	0.008	0.001	<0.001	0.001	0.003
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.352	0.070	0.002	0.033	0.002	0.205
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	1.71	1.61	0.010	0.133	0.10	1.93
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.352	3.66	0.010	0.011	0.010	0.537
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	<0.003	0.003	<0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	<0.005	0.005	<0.005	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060320-DD-35S		GW-44985-060320-DD-35D		
					SAMPLE TYPE:	Water		Water		
					DATE SAMPLED:	2020-06-03		2020-06-03		
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177451	RDL	1177452	RDL	Date Prepared
Electrical Conductivity	µS/cm		2	2020-06-06	2020-06-06	1940	2	1690	2	2020-06-07
pH	pH Units		NA	2020-06-06	2020-06-06	7.77	NA	8.04	NA	2020-06-07
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	1230	20	686	20	2020-06-06
Alkalinity (as CaCO3)	mg/L		5	2020-06-06	2020-06-06	320	5	253	5	2020-06-07
Fluoride	mg/L		0.07	2020-06-10	2020-06-10	0.48	0.05	1.04	0.07	2020-06-10
Chloride	mg/L		1.0	2020-06-10	2020-06-10	8.1	0.50	299	1.0	2020-06-10
Nitrate as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	0.5	2020-06-10
Nitrite as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	0.5	2020-06-10
Bromide	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	0.5	2020-06-10
Sulphate	mg/L		1.0	2020-06-10	2020-06-10	668	0.50	<0.50	1.0	2020-06-10
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	0.002	2020-06-12
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	210	0.25	21.3	0.25	2020-06-12
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	87.4	0.25	7.68	0.25	2020-06-12
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	3.01	0.25	2.01	0.25	2020-06-12
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	32.8	0.25	242	0.25	2020-06-12
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.001	0.001	0.002	0.001	2020-06-09
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.036	0.002	0.145	0.002	2020-06-09
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.226	0.10	1.69	0.10	2020-06-09
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	0.0001	0.0001	2020-06-09
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	0.008	0.002	<0.002	0.002	2020-06-09
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.113	0.010	0.671	0.010	2020-06-09
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	2020-06-09
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	2020-06-09
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	0.003	2020-06-09
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	0.005	2020-06-09

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

SAMPLE DESCRIPTION:						GW-44985-060420-DD-PW2		GW-44985-060420-DD-EW2A		GW-44985-060420-DD-EW1A	GW-44985-060420-DD-PW2-98
SAMPLE TYPE:						Water		Water		Water	Water
DATE SAMPLED:						2020-06-04		2020-06-04		2020-06-04	2020-06-04
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177453	RDL	1177454	RDL	1177455	1177456
Electrical Conductivity	µS/cm		2	2020-06-07	2020-06-07	1960	2	870	2	1990	1960
pH	pH Units		NA	2020-06-07	2020-06-07	8.15	NA	7.97	NA	7.90	8.21
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	844	20	386	20	962	834
Alkalinity (as CaCO3)	mg/L		5	2020-06-07	2020-06-07	328	5	250	5	267	328
Fluoride	mg/L		0.07	2020-06-10	2020-06-10	0.90	0.05	1.08	0.07	1.18	0.92
Chloride	mg/L		1.0	2020-06-10	2020-06-10	333	0.50	103	1.0	318	331
Nitrate as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	0.5	<0.5	<0.5
Nitrite as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	0.5	<0.5	<0.5
Bromide	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	1.09	0.5	2.5	<0.5
Sulphate	mg/L		1.0	2020-06-10	2020-06-10	7.9	0.50	1.50	1.0	116	6.7
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	9.74	0.05	33.3	0.25	84.2	9.85
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	7.61	0.05	14.8	0.25	46.4	7.71
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	2.85	0.05	2.73	0.25	4.73	2.87
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	326	0.05	94.4	0.25	179	324
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	0.001	0.001	<0.001	0.008
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.136	0.002	0.123	0.002	0.054	0.137
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	2.90	0.10	1.24	0.10	1.34	2.77
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	0.0002	0.0001	<0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.103	0.010	0.032	0.010	0.029	0.111
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	0.007	0.003	<0.003	0.003	<0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	0.006	0.005	0.013	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	GW-44985-060420-DD-PW1 Water 2020-06-04 1177457	RDL	GW-44985-060420-DD-EW2C Water 2020-06-04 1177458	GW-44985-060420-DD-EW2B Water 2020-06-04 1177459	RDL	GW-44985-060420-DD-EW1C Water 2020-06-04 1177460
Electrical Conductivity	µS/cm		2	2020-06-07	2020-06-07	2040	2	843	872	2	1960
pH	pH Units		NA	2020-06-07	2020-06-07	8.23	NA	8.01	8.02	NA	7.88
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	896	20	350	372	20	924
Alkalinity (as CaCO3)	mg/L		5	2020-06-07	2020-06-07	296	5	204	215	5	260
Fluoride	mg/L		0.07	2020-06-10	2020-06-10	1.01	0.05	1.07	1.08	0.07	1.11
Chloride	mg/L		1.0	2020-06-10	2020-06-10	375	0.50	95.2	96.2	1.0	307
Nitrate as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	<0.25	0.5	<0.5
Bromide	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.25	<0.25	1.15	0.5	2.6
Sulphate	mg/L		1.0	2020-06-10	2020-06-10	4.7	0.50	0.60	2.42	1.0	119
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	10.6	0.05	31.3	34.4	0.25	84.6
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	6.60	0.05	14.0	14.9	0.25	44.6
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	2.43	0.05	3.55	2.80	0.25	4.42
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	344	0.05	93.1	92.8	0.25	173
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.005	0.001	0.006	0.006	0.001	0.007
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.096	0.002	0.115	0.127	0.002	0.052
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	2.11	0.10	1.35	1.32	0.10	1.36
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001	0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	0.002	0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	<0.010	0.010	0.019	0.121	0.010	0.710
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	<0.0005	0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	<0.003	<0.003	0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	<0.005	0.005	<0.005

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	GW-44985-060420-DD-EW1B Water 2020-06-04 1177461	RDL	GW-44985-060420-DD-B1 Water 2020-06-04 1177462	GW-44985-060420-DD-B2 Water 2020-06-04 1177463	GW-44985-060420-DD-B3 Water 2020-06-04 1177464
Electrical Conductivity	µS/cm		2	2020-06-07	2020-06-07	1990	2	<2	<2	<2
pH	pH Units		NA	2020-06-07	2020-06-07	7.90	NA	6.03	5.63	5.39
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	938	20	<20	<20	<20
Alkalinity (as CaCO3)	mg/L		5	2020-06-07	2020-06-07	266	5	<5	<5	<5
Fluoride	mg/L		0.07	2020-06-10	2020-06-10	1.01	0.05	<0.05	<0.05	<0.05
Chloride	mg/L		1.0	2020-06-10	2020-06-10	317	0.10	<0.10	<0.10	<0.10
Nitrate as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L		0.5	2020-06-10	2020-06-10	<0.5	0.05	<0.05	<0.05	<0.05
Bromide	mg/L		0.5	2020-06-10	2020-06-10	2.6	0.05	<0.05	<0.05	<0.05
Sulphate	mg/L		1.0	2020-06-10	2020-06-10	118	0.10	<0.10	<0.10	<0.10
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	<0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-06-12	2020-06-12	87.0	0.05	<0.05	<0.05	0.07
Dissolved Magnesium	mg/L		0.25	2020-06-12	2020-06-12	46.9	0.05	<0.05	<0.05	<0.05
Dissolved Potassium	mg/L		0.25	2020-06-12	2020-06-12	4.69	0.05	<0.05	<0.05	<0.05
Dissolved Sodium	mg/L		0.25	2020-06-12	2020-06-12	179	0.05	<0.05	<0.05	<0.05
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	0.004	0.001	0.009	0.007	0.007
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.054	0.002	<0.002	<0.002	<0.002
Dissolved Boron	mg/L		0.10	2020-06-09	2020-06-09	1.37	0.010	0.020	0.016	0.013
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	<0.002	<0.002	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	0.566	0.010	<0.010	<0.010	<0.010
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	<0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	<0.0001	<0.0001	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	0.004	0.003	0.003	<0.003	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	<0.005	<0.005	<0.005

Certified By:

Amanjot Bhela

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
AMANJOT BHELA
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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

					SAMPLE DESCRIPTION:	GW-44985-060120-DD-43S-98				GW-44985-060220-DD-32II-98
					SAMPLE TYPE:	Water				Water
					DATE SAMPLED:	2020-06-01				2020-06-02
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1177479	RDL	Date Prepared	Date Analyzed	1177696
Electrical Conductivity	µS/cm		2	2020-06-07	2020-06-07	762	2	2020-06-07	2020-06-07	2230
pH	pH Units		NA	2020-06-07	2020-06-07	7.72	NA	2020-06-07	2020-06-07	8.12
Total Dissolved Solids	mg/L		20	2020-06-06	2020-06-08	364	20	2020-06-06	2020-06-08	1210
Alkalinity (as CaCO3)	mg/L		5	2020-06-07	2020-06-07	268	5	2020-06-07	2020-06-07	258
Fluoride	mg/L		0.05	2020-06-10	2020-06-10	0.20	0.07	2020-06-10	2020-06-10	1.10
Chloride	mg/L		0.20	2020-06-10	2020-06-10	6.98	1.0	2020-06-10	2020-06-10	447
Nitrate as N	mg/L		0.10	2020-06-10	2020-06-10	<0.10	0.5	2020-06-10	2020-06-10	<0.5
Nitrite as N	mg/L		0.10	2020-06-10	2020-06-10	<0.10	0.5	2020-06-10	2020-06-10	<0.5
Bromide	mg/L		0.10	2020-06-10	2020-06-10	<0.10	0.5	2020-06-10	2020-06-10	<0.5
Sulphate	mg/L		0.20	2020-06-10	2020-06-10	51.4	1.0	2020-06-10	2020-06-10	<1.0
Cyanide, Free	mg/L		0.002	2020-06-12	2020-06-12	<0.002	0.002	2020-06-12	2020-06-12	<0.002
Dissolved Calcium	mg/L		0.05	2020-06-12	2020-06-12	88.1	0.25	2020-06-12	2020-06-12	15.1
Dissolved Magnesium	mg/L		0.05	2020-06-12	2020-06-12	25.6	0.25	2020-06-12	2020-06-12	11.1
Dissolved Potassium	mg/L		0.05	2020-06-12	2020-06-12	1.46	0.25	2020-06-12	2020-06-12	2.77
Dissolved Sodium	mg/L		0.05	2020-06-12	2020-06-12	18.2	0.25	2020-06-12	2020-06-12	369
Dissolved Arsenic	mg/L		0.001	2020-06-09	2020-06-09	<0.001	0.001	2020-06-09	2020-06-09	<0.001
Dissolved Barium	mg/L		0.002	2020-06-09	2020-06-09	0.034	0.002	2020-06-09	2020-06-09	0.243
Dissolved Boron	mg/L		0.010	2020-06-09	2020-06-09	0.054	0.1	2020-06-09	2020-06-09	2.52
Dissolved Cadmium	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	2020-06-09	2020-06-09	<0.0001
Dissolved Chromium	mg/L		0.002	2020-06-09	2020-06-09	<0.002	0.002	2020-06-09	2020-06-09	<0.002
Dissolved Iron	mg/L		0.010	2020-06-09	2020-06-09	<0.010	0.010	2020-06-09	2020-06-09	0.040
Dissolved Lead	mg/L		0.0005	2020-06-09	2020-06-09	<0.0005	0.0005	2020-06-09	2020-06-09	<0.0005
Dissolved Mercury	mg/L		0.0001	2020-06-09	2020-06-09	<0.0001	0.0001	2020-06-10	2020-06-10	<0.0001
Dissolved Nickel	mg/L		0.003	2020-06-09	2020-06-09	<0.003	0.003	2020-06-09	2020-06-09	<0.003
Dissolved Zinc	mg/L		0.005	2020-06-09	2020-06-09	<0.005	0.005	2020-06-09	2020-06-09	<0.005

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-06-05

DATE REPORTED: 2020-06-16

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1177284-1177696 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range or reduce matrix interference.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Volatile Organic Compounds in Water (ug/L)															
Dichlorodifluoromethane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	100%	50%	140%	84%	50%	140%
Chloromethane	1177437	1177437	< 0.40	< 0.40	NA	< 0.40	100%	50%	140%	110%	50%	140%	86%	50%	140%
Vinyl Chloride	1177437	1177437	< 0.17	< 0.17	NA	< 0.17	111%	50%	140%	120%	50%	140%	93%	50%	140%
Bromomethane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	114%	50%	140%	110%	50%	140%
Chloroethane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	117%	50%	140%	94%	50%	140%
Trichlorofluoromethane	1177437	1177437	< 0.40	< 0.40	NA	< 0.40	102%	50%	140%	98%	50%	140%	81%	50%	140%
Acetone	1177437	1177437	< 1.0	< 1.0	NA	< 1.0	101%	50%	140%	101%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	1177437	1177437	< 0.2	< 0.2	NA	< 0.2	113%	50%	140%	94%	60%	130%	108%	50%	140%
Methylene Chloride	1177437	1177437	< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	102%	60%	130%	113%	50%	140%
trans- 1,2-dichloroethylene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	88%	60%	130%	97%	50%	140%
Methyl tert-butyl ether	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	97%	60%	130%	105%	50%	140%
1,1-Dichloroethane	1177437	1177437	< 0.30	< 0.30	NA	< 0.30	111%	50%	140%	104%	60%	130%	105%	50%	140%
Methyl Ethyl Ketone	1177437	1177437	< 1.0	< 1.0	NA	< 1.0	90%	50%	140%	107%	50%	140%	106%	50%	140%
cis- 1,2-Dichloroethylene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	100%	60%	130%	118%	50%	140%
Chloroform	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	86%	60%	130%	89%	50%	140%
1,2-Dichloroethane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	82%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	1177437	1177437	< 0.30	< 0.30	NA	< 0.30	76%	50%	140%	74%	60%	130%	80%	50%	140%
Carbon Tetrachloride	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	82%	60%	130%	90%	50%	140%
Benzene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	92%	60%	130%	86%	50%	140%
1,2-Dichloropropane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	91%	60%	130%	79%	50%	140%
Trichloroethylene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	86%	60%	130%	84%	50%	140%
Bromodichloromethane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	84%	60%	130%	81%	50%	140%
cis-1,3-Dichloropropene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	79%	60%	130%	87%	50%	140%
Methyl Isobutyl Ketone	1177437	1177437	< 1.0	< 1.0	NA	< 1.0	90%	50%	140%	97%	50%	140%	93%	50%	140%
trans-1,3-Dichloropropene	1177437	1177437	< 0.30	< 0.30	NA	< 0.30	78%	50%	140%	84%	60%	130%	80%	50%	140%
1,1,2-Trichloroethane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	107%	60%	130%	107%	50%	140%
Toluene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	108%	60%	130%	105%	50%	140%
2-Hexanone	1177437	1177437	< 1.0	< 1.0	NA	< 1.0	84%	50%	140%	92%	50%	140%	90%	50%	140%
Dibromochloromethane	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	77%	50%	140%	81%	60%	130%	99%	50%	140%
Ethylene Dibromide	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	94%	60%	130%	100%	50%	140%
Tetrachloroethylene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	101%	60%	130%	102%	50%	140%
1,1,1,2-Tetrachloroethane	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	78%	50%	140%	84%	60%	130%	90%	50%	140%
Chlorobenzene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	101%	60%	130%	106%	50%	140%
Ethylbenzene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	88%	50%	140%	96%	60%	130%	90%	50%	140%
m & p-Xylene	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	97%	60%	130%	100%	50%	140%
Bromoform	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	79%	60%	130%	92%	50%	140%
Styrene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	81%	50%	140%	87%	60%	130%	82%	50%	140%
1,1,2,2-Tetrachloroethane	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	107%	60%	130%	110%	50%	140%
o-Xylene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	98%	60%	130%	101%	50%	140%

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Quality Assurance

CLIENT NAME: GHD LIMITED
AGAT WORK ORDER: 20T609989
PROJECT: 44985 (PO#73519831)
ATTENTION TO: Laura Ermeta
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	91%	50%	140%	94%	60%	130%	101%	50%	140%
1,4-Dichlorobenzene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	88%	50%	140%	90%	60%	130%	99%	50%	140%
1,2-Dichlorobenzene	1177437	1177437	< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	86%	60%	130%	94%	50%	140%
1,2,4-Trichlorobenzene	1177437	1177437	< 0.30	< 0.30	NA	< 0.30	77%	50%	140%	77%	60%	130%	94%	50%	140%
n-Hexane	1177437	1177437	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	60%	130%	90%	50%	140%
Volatile Organic Compounds in Water (ug/L)															
Dichlorodifluoromethane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	99%	50%	140%	82%	50%	140%
Chloromethane	1177464	1177464	< 0.40	< 0.40	NA	< 0.40	98%	50%	140%	87%	50%	140%	89%	50%	140%
Vinyl Chloride	1177464	1177464	< 0.17	< 0.17	NA	< 0.17	102%	50%	140%	114%	50%	140%	102%	50%	140%
Bromomethane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	113%	50%	140%	111%	50%	140%
Chloroethane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	99%	50%	140%	102%	50%	140%
Trichlorofluoromethane	1177464	1177464	< 0.40	< 0.40	NA	< 0.40	80%	50%	140%	118%	50%	140%	104%	50%	140%
Acetone	1177464	1177464	< 1.0	< 1.0	NA	< 1.0	105%	50%	140%	105%	50%	140%	91%	50%	140%
1,1-Dichloroethylene	1177464	1177464	< 0.2	< 0.2	NA	< 0.2	94%	50%	140%	87%	60%	130%	86%	50%	140%
Methylene Chloride	1177464	1177464	< 0.30	< 0.30	NA	< 0.30	99%	50%	140%	105%	60%	130%	109%	50%	140%
trans- 1,2-dichloroethylene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	88%	60%	130%	89%	50%	140%
Methyl tert-butyl ether	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	109%	60%	130%	115%	50%	140%
1,1-Dichloroethane	1177464	1177464	< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	79%	60%	130%	80%	50%	140%
Methyl Ethyl Ketone	1177464	1177464	< 1.0	< 1.0	NA	< 1.0	103%	50%	140%	79%	50%	140%	77%	50%	140%
cis- 1,2-Dichloroethylene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	85%	60%	130%	89%	50%	140%
Chloroform	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloroethane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	79%	60%	130%	80%	50%	140%
1,1,1-Trichloroethane	1177464	1177464	< 0.30	< 0.30	NA	< 0.30	79%	50%	140%	76%	60%	130%	90%	50%	140%
Carbon Tetrachloride	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	75%	60%	130%	81%	50%	140%
Benzene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	84%	60%	130%	90%	50%	140%
1,2-Dichloropropane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	94%	60%	130%	78%	50%	140%
Trichloroethylene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	85%	60%	130%	89%	50%	140%
Bromodichloromethane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	79%	60%	130%	83%	50%	140%
cis-1,3-Dichloropropene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	96%	60%	130%	92%	50%	140%
Methyl Isobutyl Ketone	1177464	1177464	< 1.0	< 1.0	NA	< 1.0	89%	50%	140%	81%	50%	140%	104%	50%	140%
trans-1,3-Dichloropropene	1177464	1177464	< 0.30	< 0.30	NA	< 0.30	83%	50%	140%	85%	60%	130%	73%	50%	140%
1,1,2-Trichloroethane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	87%	60%	130%	88%	50%	140%
Toluene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	97%	60%	130%	99%	50%	140%
2-Hexanone	1177464	1177464	< 1.0	< 1.0	NA	< 1.0	91%	50%	140%	82%	50%	140%	82%	50%	140%
Dibromochloromethane	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	77%	60%	130%	82%	50%	140%
Ethylene Dibromide	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	74%	50%	140%	73%	60%	130%	79%	50%	140%
Tetrachloroethylene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	101%	60%	130%	102%	50%	140%
1,1,1,2-Tetrachloroethane	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	98%	60%	130%	99%	50%	140%
Chlorobenzene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	94%	60%	130%	97%	50%	140%

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Quality Assurance

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Ethylbenzene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	89%	60%	130%	91%	50%	140%
m & p-Xylene	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	96%	60%	130%	97%	50%	140%
Bromoform	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	81%	50%	140%	76%	60%	130%	75%	50%	140%
Styrene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	79%	60%	130%	80%	50%	140%
1,1,2,2-Tetrachloroethane	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	79%	60%	130%	83%	50%	140%
o-Xylene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	98%	60%	130%	100%	50%	140%
1,3-Dichlorobenzene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	100%	60%	130%	104%	50%	140%
1,4-Dichlorobenzene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	100%	50%	140%	98%	60%	130%	101%	50%	140%
1,2-Dichlorobenzene	1177464	1177464	< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	89%	60%	130%	91%	50%	140%
1,2,4-Trichlorobenzene	1177464	1177464	< 0.30	< 0.30	NA	< 0.30	107%	50%	140%	79%	60%	130%	98%	50%	140%
n-Hexane	1177464	1177464	< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	101%	60%	130%	105%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Quality Assurance

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Ammonia (Water)															
Ammonia as N	1177284	1177284	<0.02	<0.02	NA	< 0.02	95%	70%	130%	98%	80%	120%	97%	70%	130%
Groundwater Parameters															
Electrical Conductivity	1177284	1177284	752	753	0.1%	< 2	105%	80%	120%	NA			NA		
pH	1177284	1177284	7.40	7.42	0.3%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	1177284	1177284	362	368	1.6%	< 20	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	1177284	1177284	278	281	1.1%	< 5	94%	80%	120%	NA			NA		
Fluoride	1177383	1177383	1.19	1.14	4.3%	< 0.05	104%	90%	110%	108%	90%	110%	108%	85%	115%
Chloride	1177383	1177383	91.6	89.2	2.7%	< 0.10	96%	70%	130%	109%	80%	120%	106%	70%	130%
Nitrate as N	1177383	1177383	< 0.25	<0.25	NA	< 0.05	102%	70%	130%	109%	80%	120%	108%	70%	130%
Nitrite as N	1177383	1177383	< 0.25	<0.25	NA	< 0.05	109%	70%	130%	115%	80%	120%	111%	70%	130%
Bromide	1177383	1177383	< 0.25	<0.25	NA	< 0.05	104%	90%	110%	107%	90%	110%	111%	85%	115%
Sulphate	1177383	1177383	< 0.50	<0.50	NA	< 0.10	104%	70%	130%	108%	80%	120%	106%	70%	130%
Cyanide, Free	1177284	1177284	< 0.002	<0.002	NA	< 0.002	95%	70%	130%	107%	80%	120%	106%	70%	130%
Dissolved Calcium	1177284	1177284	87.1	88.2	1.3%	< 0.05	95%	70%	130%	95%	80%	120%	101%	70%	130%
Dissolved Magnesium	1177284	1177284	25.6	25.1	2.0%	< 0.05	98%	70%	130%	98%	80%	120%	102%	70%	130%
Dissolved Potassium	1177284	1177284	1.49	1.46	2.0%	< 0.05	103%	70%	130%	103%	80%	120%	110%	70%	130%
Dissolved Sodium	1177284	1177284	18.3	17.9	2.2%	< 0.05	96%	70%	130%	95%	80%	120%	101%	70%	130%
Dissolved Arsenic	1177284	1177284	< 0.001	<0.001	NA	< 0.001	99%	70%	130%	100%	80%	120%	105%	70%	130%
Dissolved Barium	1177284	1177284	0.036	0.037	2.7%	< 0.002	97%	70%	130%	96%	80%	120%	99%	70%	130%
Dissolved Boron	1177284	1177284	0.060	0.058	3.4%	< 0.010	102%	70%	130%	99%	80%	120%	111%	70%	130%
Dissolved Cadmium	1177284	1177284	< 0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	101%	80%	120%	103%	70%	130%
Dissolved Chromium	1177284	1177284	< 0.002	<0.002	NA	< 0.002	99%	70%	130%	98%	80%	120%	98%	70%	130%
Dissolved Iron	1177284	1177284	0.013	<0.010	NA	< 0.010	105%	70%	130%	108%	80%	120%	96%	70%	130%
Dissolved Lead	1177284	1177284	< 0.0005	<0.0005	NA	< 0.0005	101%	70%	130%	99%	80%	120%	102%	70%	130%
Dissolved Mercury	1177284	1177284	< 0.0001	<0.0001	NA	< 0.0001	99%	70%	130%	96%	80%	120%	97%	70%	130%
Dissolved Nickel	1177284	1177284	0.009	<0.003	NA	< 0.003	100%	70%	130%	101%	80%	120%	94%	70%	130%
Dissolved Zinc	1177284	1177284	< 0.005	<0.005	NA	< 0.005	99%	70%	130%	101%	80%	120%	101%	70%	130%
Groundwater Parameters															
Electrical Conductivity	1177401	1177401	2190	2190	0.0%	< 2	103%	80%	120%	NA			NA		
pH	1177401	1177401	7.62	7.61	0.1%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	1177401	1177401	1450	1460	0.7%	< 20	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	1177401	1177401	323	324	0.3%	< 5	91%	80%	120%	NA			NA		
Dissolved Calcium	1177454	1177454	33.3	33.2	0.3%	< 0.05	95%	70%	130%	96%	80%	120%	100%	70%	130%
Dissolved Magnesium	1177454	1177454	14.8	14.6	1.4%	< 0.05	99%	70%	130%	99%	80%	120%	101%	70%	130%
Dissolved Potassium	1177454	1177454	2.73	2.70	1.1%	< 0.05	104%	70%	130%	105%	80%	120%	109%	70%	130%
Dissolved Sodium	1177454	1177454	94.4	95.0	0.6%	< 0.05	96%	70%	130%	96%	80%	120%	101%	70%	130%
Dissolved Arsenic	1177402	1177402	< 0.001	0.006	NA	< 0.001	102%	70%	130%	105%	80%	120%	108%	70%	130%
Dissolved Barium	1177402	1177402	0.019	0.019	0.0%	< 0.002	99%	70%	130%	99%	80%	120%	102%	70%	130%

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Quality Assurance

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Dissolved Boron	1177402	1177402	0.112	0.109	2.7%	< 0.010	99%	70%	130%	98%	80%	120%	107%	70%	130%
Dissolved Cadmium	1177402	1177402	< 0.0001	<0.0001	NA	< 0.0001	104%	70%	130%	102%	80%	120%	103%	70%	130%
Dissolved Chromium	1177402	1177402	< 0.002	<0.002	NA	< 0.002	102%	70%	130%	101%	80%	120%	102%	70%	130%
Dissolved Iron	1177402	1177402	0.022	<0.010	NA	< 0.010	110%	70%	130%	103%	80%	120%	101%	70%	130%
Dissolved Lead	1177402	1177402	< 0.0005	<0.0005	NA	< 0.0005	101%	70%	130%	102%	80%	120%	101%	70%	130%
Dissolved Mercury	1177402	1177402	< 0.0001	<0.0001	NA	< 0.0001	102%	70%	130%	96%	80%	120%	102%	70%	130%
Dissolved Nickel	1177402	1177402	< 0.003	0.003	NA	< 0.003	103%	70%	130%	102%	80%	120%	102%	70%	130%
Dissolved Zinc	1177402	1177402	0.011	<0.005	NA	< 0.005	109%	70%	130%	109%	80%	120%	122%	70%	130%
Groundwater Parameters															
Electrical Conductivity	1177442	1177442	2000	2000	0.0%	< 2	105%	80%	120%	NA			NA		
pH	1177442	1177442	7.61	7.59	0.3%	NA	100%	90%	110%	NA			NA		
Alkalinity (as CaCO3)	1177442	1177442	456	461	1.1%	< 5	92%	80%	120%	NA			NA		
Dissolved Calcium	1177462	1177462	< 0.05	<0.05	NA	< 0.05	94%	70%	130%	95%	80%	120%	98%	70%	130%
Dissolved Magnesium	1177462	1177462	< 0.05	<0.05	NA	< 0.05	97%	70%	130%	98%	80%	120%	100%	70%	130%
Dissolved Potassium	1177462	1177462	< 0.05	<0.05	NA	< 0.05	101%	70%	130%	101%	80%	120%	106%	70%	130%
Dissolved Sodium	1177462	1177462	< 0.05	<0.05	NA	< 0.05	96%	70%	130%	96%	80%	120%	97%	70%	130%
Dissolved Arsenic	1177445	1177445	0.002	0.003	NA	< 0.001	106%	70%	130%	106%	80%	120%	109%	70%	130%
Dissolved Barium	1177445	1177445	0.030	0.030	0.0%	< 0.002	101%	70%	130%	102%	80%	120%	100%	70%	130%
Dissolved Boron	1177445	1177445	0.109	0.112	2.7%	< 0.010	100%	70%	130%	94%	80%	120%	104%	70%	130%
Dissolved Cadmium	1177445	1177445	< 0.0001	<0.0001	NA	< 0.0001	104%	70%	130%	100%	80%	120%	108%	70%	130%
Dissolved Chromium	1177445	1177445	< 0.002	<0.002	NA	< 0.002	103%	70%	130%	97%	80%	120%	105%	70%	130%
Dissolved Iron	1177445	1177445	< 0.010	<0.010	NA	< 0.010	106%	70%	130%	104%	80%	120%	113%	70%	130%
Dissolved Lead	1177445	1177445	< 0.0005	<0.0005	NA	< 0.0005	101%	70%	130%	103%	80%	120%	103%	70%	130%
Dissolved Mercury	1177445	1177445	< 0.0001	<0.0001	NA	< 0.0001	102%	70%	130%	100%	80%	120%	100%	70%	130%
Dissolved Nickel	1177445	1177445	< 0.003	<0.003	NA	< 0.003	101%	70%	130%	96%	80%	120%	101%	70%	130%
Dissolved Zinc	1177445	1177445	< 0.005	<0.005	NA	< 0.005	104%	70%	130%	103%	80%	120%	109%	70%	130%
Groundwater Parameters															
Electrical Conductivity	1177462	1177462	< 2	<2	NA	< 2	106%	80%	120%	NA			NA		
pH	1177462	1177462	6.03	6.14	1.8%	NA	100%	90%	110%	NA			NA		
Alkalinity (as CaCO3)	1177462	1177462	< 5	<5	NA	< 5	102%	80%	120%	NA			NA		
Dissolved Calcium	1177479	1177479	88.1	88.4	0.3%	< 0.05	95%	70%	130%	95%	80%	120%	100%	70%	130%
Dissolved Magnesium	1177479	1177479	25.6	25.5	0.4%	< 0.05	98%	70%	130%	98%	80%	120%	101%	70%	130%
Dissolved Potassium	1177479	1177479	1.46	1.46	0.0%	< 0.05	101%	70%	130%	102%	80%	120%	107%	70%	130%
Dissolved Sodium	1177479	1177479	18.2	18.1	0.6%	< 0.05	96%	70%	130%	95%	80%	120%	98%	70%	130%
Dissolved Arsenic	1177479	1177479	< 0.001	<0.001	NA	< 0.001	95%	70%	130%	97%	80%	120%	98%	70%	130%
Dissolved Barium	1177479	1177479	0.034	0.036	5.7%	< 0.002	95%	70%	130%	94%	80%	120%	97%	70%	130%
Dissolved Boron	1177479	1177479	0.054	0.059	8.8%	< 0.010	110%	70%	130%	106%	80%	120%	116%	70%	130%
Dissolved Cadmium	1177479	1177479	< 0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	100%	80%	120%	97%	70%	130%
Dissolved Chromium	1177479	1177479	< 0.002	0.004	NA	< 0.002	98%	70%	130%	99%	80%	120%	96%	70%	130%

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Quality Assurance

CLIENT NAME: GHD LIMITED
AGAT WORK ORDER: 20T609989
PROJECT: 44985 (PO#73519831)
ATTENTION TO: Laura Ermeta
SAMPLING SITE:
SAMPLED BY:

Water Analysis (Continued)

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Dissolved Iron	1177479	1177479	< 0.010	0.013	NA	< 0.010	100%	70%	130%	104%	80%	120%	100%	70%	130%
Dissolved Lead	1177479	1177479	< 0.0005	<0.0005	NA	< 0.0005	97%	70%	130%	99%	80%	120%	96%	70%	130%
Dissolved Mercury	1177479	1177479	< 0.0001	<0.0001	NA	< 0.0001	103%	70%	130%	100%	80%	120%	103%	70%	130%
Dissolved Nickel	1177479	1177479	< 0.003	0.016	NA	< 0.003	98%	70%	130%	99%	80%	120%	94%	70%	130%
Dissolved Zinc	1177479	1177479	< 0.005	<0.005	NA	< 0.005	98%	70%	130%	101%	80%	120%	100%	70%	130%
Groundwater Parameters															
Fluoride	1177396	1177396	0.69	0.73	5.6%	< 0.05	105%	90%	110%	108%	90%	110%	104%	85%	115%
Chloride	1177396	1177396	17.6	17.0	3.5%	< 0.10	97%	70%	130%	109%	80%	120%	107%	70%	130%
Nitrate as N	1177396	1177396	0.6	0.6	0.0%	< 0.05	104%	70%	130%	109%	80%	120%	108%	70%	130%
Nitrite as N	1177396	1177396	<0.5	<0.5	NA	< 0.05	109%	70%	130%	115%	80%	120%	113%	70%	130%
Bromide	1177396	1177396	<0.5	<0.5	NA	< 0.05	104%	90%	110%	107%	90%	110%	110%	85%	115%
Sulphate	1177396	1177396	312	309	1.0%	< 0.10	104%	70%	130%	108%	80%	120%	NA	70%	130%
Groundwater Parameters															
Total Dissolved Solids	1177427	1177427	656	666	1.5%	< 20	96%	80%	120%	NA			NA		
Groundwater Parameters															
Total Dissolved Solids	1177454	1177454	386	388	0.5%	< 20	96%	80%	120%	NA			NA		
Groundwater Parameters															
Fluoride	1177430	1177430	1.32	1.23	7.1%	< 0.05	102%	90%	110%	105%	90%	110%	106%	85%	115%
Chloride	1177430	1177430	136	133	2.2%	< 0.10	96%	70%	130%	108%	80%	120%	NA	70%	130%
Nitrate as N	1177430	1177430	<0.25	<0.25	NA	< 0.05	104%	70%	130%	104%	80%	120%	107%	70%	130%
Nitrite as N	1177430	1177430	<0.25	<0.25	NA	< 0.05	108%	70%	130%	108%	80%	120%	113%	70%	130%
Bromide	1177430	1177430	<0.25	<0.25	NA	< 0.05	103%	90%	110%	108%	90%	110%	111%	85%	115%
Sulphate	1177430	1177430	<0.50	<0.50	NA	< 0.10	106%	70%	130%	107%	80%	120%	105%	70%	130%
Groundwater Parameters															
Fluoride	1177458	1177458	1.07	1.12	3.8%	< 0.05	102%	90%	110%	105%	90%	110%	107%	85%	115%
Chloride	1177458	1177458	95.2	94.7	0.5%	< 0.10	95%	70%	130%	108%	80%	120%	106%	70%	130%
Nitrate as N	1177458	1177458	<0.25	<0.25	NA	< 0.05	102%	70%	130%	108%	80%	120%	107%	70%	130%
Nitrite as N	1177458	1177458	<0.25	<0.25	NA	< 0.05	107%	70%	130%	108%	80%	120%	112%	70%	130%
Bromide	1177458	1177458	<0.25	<0.25	NA	< 0.05	102%	90%	110%	108%	90%	110%	113%	85%	115%
Sulphate	1177458	1177458	0.60	0.65	NA	< 0.10	104%	70%	130%	107%	80%	120%	106%	70%	130%
Ammonia (Water)															
Ammonia as N	1177433	1177433	<0.02	<0.02	NA	< 0.02	97%	70%	130%	98%	80%	120%	110%	70%	130%

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

Comments: Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

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Quality Assurance

CLIENT NAME: GHD LIMITED

PROJECT: 44985 (PO#73519831)

SAMPLING SITE:

AGAT WORK ORDER: 20T609989

ATTENTION TO: Laura Ermeta

SAMPLED BY:

Water Analysis (Continued)

RPT Date: Jun 16, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Ammonia (Water)															
Ammonia as N	1194956		<0.02	<0.02	NA	< 0.02	95%	70%	130%	97%	80%	120%	96%	70%	130%

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Comments: Ammonia duplicate and matrix spike is from non GHD sample.

Certified By:

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Method Summary

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans-1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2-Hexanone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2,4-Trichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T609989

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Total Dissolved Solids	INOR-93-6028	modified from EPA 1684,ON MOECC E3139,SM 2540C,D	BALANCE
Alkalinity (as CaCO3)	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Dissolved Calcium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Magnesium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Potassium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Iron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: [ ] Good [ ] Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number: 20T609989
Notes:

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
Email: Laura.Ermeta@ghd.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format
(Please "x" those that apply)
[ ] Single sample per page
[ ] Multiple samples per page
[ ] Results by Fax

Turnaround Time (TAT)*
(Please "x" the applicable box below)
Regular TAT:
[X] 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
[ ] 3 to 5 days
[ ] 48 to 72 hours
[ ] 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required:
(Please "x" those that apply)
[ ] Reg 153 Table (indicate one) [ ] Ind/Com [ ] Res/Park [ ] Ag [ ] Med/Fine [ ] Coarse
[ ] Sewer Use Region (Indicate one) [ ] Sanitary [ ] Storm
[ ] PWQO [ ] Reg 558 [ ] CCME [ ] Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
[ ] Yes [X] No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Dissolved Metals + Hg	Free CN	VOCs	Ammonia
GW-44985-____20-DD-4[illegible]	6/20	AM	water	6		X	X	X		X
GW-44985-____20-DD-4[illegible]			water	13		X	X	X	X	
GW-44985-____20-DD-4[illegible]			water	13		X	X	X	X	
GW-44985-____20-DD-4[illegible]			water	6		X	X	X		X
GW-44985-____20-DD-5[illegible]			water	13		X	X	X	X	
GW-44985-____20-DD-5[illegible]		PM	water	6		X	X	X		X
GW-44985-____20-DD-5[illegible]			water	13		X	X	X	X	
GW-44985-____20-DD-5[illegible]			water	6		X	X	X		X
GW-44985-____20-DD-5[illegible]			water	6		X	X	X		X
GW-44985-____20-DD-5[illegible]			water	6		X	X	X		X
GW-44985-____20-DD-5[illegible]			water	13		X	X	X	X	
TOTAL # OF CONTAINERS				101						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
[illegible]	6/5/20	Brendan G	Jun 5/20 10:30
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Brendan G	Jun 5/20 5pm		

Special Instructions
All metals + Hg filtered

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "Notes")

Arrival Temperature:

AGAT Job Number: 20T609989

Notes:

Client Information

Company: GHD Ltd.

Contact: Laura Ermeta

Address: 455 Phillip Street, Waterloo Ontario N2V 1C2

Phone: 519-884-0510 Fax: 519-725-1394

PO#: 73519831

Client Project #: 44985

AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
   Email: Laura.Ermeta@ghd.com
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

(Please "x" those that apply)

☐ Single sample per page

☐ Multiple samples per page

☐ Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)

Regular TAT:

X 5 to 7 working days

Rush TAT (Rush Surcharges Apply):

☐ 3 to 5 days

☐ 48 to 72 hours

☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "x" those that apply)

☐ Reg 153 Table (indicate one): ☐ Ind/Com ☐ Res/Park ☐ Ag ☐ Med/Fine ☐ Coarse

☐ Sewer Use Region (indicate one): ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME ☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?

☐ Yes

X No

If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Dissolved Metals + Hg	Free CN	VOCs	Ammonia
GW-44985-____20-DD-61I	0226	Am	water	6		X	X	X		X
GW-44985-____20-DD-61D	↓	↓	water	13		X	X	X	X	
GW-44985-____20-DD-61S			water	6		X	X	X		X
GW-44985-____20-DD-34S			water	6		X	X	X		X
GW-44985-____20-DD-34I			water	6		X	X	X		X
GW-44985-____20-DD-34D			water	13		X	X	X	X	
GW-44985-____20-DD-46D			water	13		X	X	X	X	
GW-44985-____20-DD-46I			water	6		X	X	X		X
GW-44985-____20-DD-46S			water	6		X	X	X		X
GW-44985-____20-DD-32IV			water	6		X	X	X		X
GW-44985-____20-DD-32II	↓	↓	water	13		X	X	X	X	
TOTAL # OF CONTAINERS				94						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Dan Aun [signature]	0520	Brendan G [signature]	Jun 5/20 1030
Brendan G [signature]	Jun 5/20 5pm		

Special Instructions

Page 2 of 6

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: [ ] Good [ ] Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number: 20T609989
Notes:

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
Email: Laura.Ermeta@ghd.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

(Please "x" those that apply)
[ ] Single sample per page
[ ] Multiple samples per page
[ ] Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)
Regular TAT:
[X] 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
[ ] 3 to 5 days
[ ] 48 to 72 hours
[ ] 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required: (Please "x" those that apply)

[ ] Reg 153 Table (indicate one) [ ] Ind/Com [ ] Res/Park [ ] Ag [ ] Med/Fine [ ] Coarse
[ ] Sewer Use Region (indicate one) [ ] Sanitary [ ] Storm
[ ] PWQO [ ] Reg 558 [ ] CCME [ ] Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
[ ] Yes [X] No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Dissolved Metals + Hg	Free CN	VOCs	Ammonia
GW-44985-____20-DD-4DS	6/2/20	PM	water	6	P	X	X	X		X
GW-44985-____20-DD-4D			water	13		X	X	X	X	
GW-44985-____20-DD-43D			water	13		X	X	X	X	
GW-44985-____20-DD-2DS			water	6		X	X	X		X
GW-44985-____20-DD-2D			water	6		X	X	X		X
GW-44985-____20-DD-6D			water	13		X	X	X	X	
GW-44985-____20-DD-22D			water	6		X	X	X		X
GW-44985-____20-DD-48D			water	13		X	X	X	X	
GW-44985-____20-DD-48S			water	6		X	X	X		X
GW-44985-____20-DD-5DS	6/2/20	PM	water	6		X	X	X		X
GW-44985-____20-DD-5D			water	13		X	X	X	X	
			TOTAL # OF CONTAINERS	104						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
[signature]	6/5/20	Brendan G	Jun 5/20 10:30
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Brendan G	Jun 5/20 5pm		

Special Instructions

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "Notes")

Arrival Temperature:

AGAT Job Number: 20T609989

Notes:

Client Information

Company: GHD Ltd.

Contact: Laura Ermeta

Address: 455 Phillip Street, Waterloo Ontario

N2V 1C2

Phone: 519-884-0510 Fax: 519-725-1394

PO#: 73519831

Client Project #: 44985

AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
   Email: Laura.Ermeta@ghd.com
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

(Please "x" those that apply)

☐ Single sample per page

☐ Multiple samples per page

☐ Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)

Regular TAT:

[X] 5 to 7 working days

Rush TAT (Rush Surcharges Apply):

☐ 3 to 5 days

☐ 48 to 72 hours

☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "x" those that apply)

☐ Reg 153 Table ____ (indicate one)
☐ Ind/Com
☐ Res/Park
☐ Ag
☐ Med/Fine ☐ Coarse

☐ Sewer Use
Region ____ (indicate one)
☐ Sanitary
☐ Storm

☐ PWQO
☐ Reg 558
☐ CCME
☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?

☐ Yes

[✓] No

If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Dissolved Metals + Hg	Free CN	VOCs	Ammonia
GW-44985-____20-DD-635	6320	Am	water	6		X	X	X		X
GW-44985-____20-DD-625	↓	↓	water	6		X	X	X		X
GW-44985-____20-DD-455			water	6		X	X	X		X
GW-44985-____20-DD-45D			water	13		X	X	X	X	
GW-44985-____20-DD-52D			water	13		X	X	X	X	
GW-44985-____20-DD-415		PM	water	6		X	X	X		X
GW-44985-____20-DD-41D		↓	water	13		X	X	X	X	
GW-44985-____20-DD-30			water	6		X	X	X		X
GW-44985-____20-DD-325			water	6		X	X	X		X
GW-44985-____20-DD-30D			water	13		X	X	X	X	
GW-44985-____20-DD-32D	↓	↓	water	13		X	X	X	X	
			TOTAL # OF CONTAINERS	101						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
[signature]	0520	Brendan G [signature]	Jun 5/20 1030
Brendan G [signature]	Jun 5/20 5pm		

Special Instructions

Page 4 of 6

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: [ ] Good [ ] Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number: 20T609989
Notes:

Client Information
Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information
1. Name: Laura Ermeta
Email: Laura.Ermeta@ghd.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format (Please "x" those that apply)
[ ] Single sample per page
[ ] Multiple samples per page
[ ] Results by Fax

Turnaround Time (TAT)* (Please "x" the applicable box below)
Regular TAT:
[X] 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
[ ] 3 to 5 days
[ ] 48 to 72 hours
[ ] 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required: (Please "x" those that apply)
[ ] Reg 153 Table (indicate one) [ ] Ind/Com [ ] Res/Park [ ] Ag [ ] Med/Fine [ ] Coarse
[ ] Sewer Use Region (indicate one) [ ] Sanitary [ ] Storm
[ ] PWQO [ ] Reg 558 [ ] CCME [ ] Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)? [ ] Yes [X] No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Dissolved Metals + Hg	Free CN	VOCs	Ammonia
GW-44985-____20-DD- 335	6/3/20	PM	water	6		X	X	X		X
GW-44985-____20-DD- 330	"	"	water	13		X	X	X	X	
GW-44985-____20-DD- 355	"	"	water	6		X	X	X		X
GW-44985-____20-DD- 350	"	"	water	13		X	X	X	X	
GW-44985-____20-DD- PW2	6/4/20	PM	water	13		X	X	X	X	
GW-44985-____20-DD- EW2A	"	"	water	13		X	X	X	X	
GW-44985-____20-DD- EW1A	"	"	water	13		X	X	X	X	
GW-44985-____20-DD- EW2-98	"	"	water	13		X	X	X	X	
GW-44985-____20-DD- PW1	"	"	water	13		X	X	X	X	
GW-44985-____20-DD- EW2C	"	PM	water	13		X	X	X	X	
GW-44985-____20-DD- EW2B	"	"	water	13		X	X	X	X	
		TOTAL # OF CONTAINERS		129						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
[signature]	6/5/20 0520	Brendan G [signature]	Jun 5/20 (0730)
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Brendan G [signature]	Jun 5/20 5pm		

Special Instructions

Page 5 of 6

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number: 20T609989
Notes:

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
   Email: Laura.Ermeta@ghd.com
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

(Please "x" those that apply)

☐ Single sample per page
☐ Multiple samples per page
☐ Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)

Regular TAT:

☒ 5 to 7 working days

Rush TAT (Rush Surcharges Apply):

☐ 3 to 5 days
☐ 48 to 72 hours
☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "x" those that apply)

☐ Reg 153 Table ____ (indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag ☐ Med/Fine ☐ Coarse
☐ Sewer Use Region ____ (indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME ☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
☐ Yes
☒ No

If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Dissolved Metals + Hg	Free CN	VOCs	Ammonia
GW-44985-____20-DD-EWC	6/4/20	PM	water	13		X	X	X	X	
GW-44985-____20-DD-EWXB	↓	↓	water	13		X	X	X	X	
GW-44985-____20-DD-B1	↓	↓	water	6		X	X	X		X
GW-44985-____20-DD-B2	↓	↓	water	6		X	X	X		X
GW-44985-____20-DD-B3	↓	↓	water	14		X	X	X	X	X
GW-44985-TRIP BLANK			water	3		~~X~~	~~X~~	~~X~~	X	
GW-44985-____20-DD-435-98	6/4/20	AM	water	6		X	X	X		X
GW-44985-____20-DD-32II-98	6/2/20	PM	water	13		X	X	X	X	
~~GW-44985-____20-DD-~~			~~water~~			~~X~~	~~X~~	~~X~~		
~~GW-44985-____20-DD-~~			~~water~~			~~X~~	~~X~~	~~X~~		
~~GW-44985-____20-DD-~~			~~water~~			~~X~~	~~X~~	~~X~~		
TOTAL # OF CONTAINERS				~~0~~ 74						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
[signature]	6/5/20	Brendan G [signature]	Jun 5/20 1030
Sample Relinquished By (print name & sign)	**Date/Time**	**Samples Received By (print name and sign)**	**Date/Time**
Brendan G [signature]	Jun 5/20 5pm		

Special Instructions

Page 6 of 6

AGAT Laboratories

Sample Temperature Log

Client: GHD

# of Coolers: 15 large

COC# or Work Order #:

# of Submissions: 15 large

Arrival Temperatures - Branch/Driver

Cooler #1:	8.3	8.1	8.6
Cooler #2:	9.3	9.7	8.2
Cooler #3:	7.7	7.9	8.3
Cooler #4:	9.2	9.5	9.1
Cooler #5:	9.7	9.8	9.0
Cooler #6:	8.6	8.3	9.4
Cooler #7:	9.7	8.2	8.5
Cooler #8	9.9	8.7	8.6
Cooler #9:	9.4	9.2	9.1
Cooler #10:	8.6	8.9	9.0

IR Gun ID:

Taken By: Brendan G

Date (yyyy/mm/dd): 2020/06/05 Time: 10:30 AM / PM

Arrival Temperatures - Laboratory

Cooler #1:	6.3	6.1	7.2
Cooler #2:	6.9	6.3	7.1
Cooler #3:	6.9	5.8	5.3
Cooler #4:	5.2	5.9	6.1
Cooler #5:	5.0	4.9	4.3
Cooler #6:	5.3	4.9	5.2
Cooler #7:	4.6	4.7	4.9
Cooler #8	5.1	5.9	4.7
Cooler #9:	4.3	4.6	3.9
Cooler #10:	4.6	5.9	5.3

IR Gun ID:

Taken By: Brendan G

Date (yyyy/mm/dd): 2020/06/05 Time: 5:00 AM / PM

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

Document ID: SR-78-9511.003
Date Issued: 2017-2-23

AGAT Laboratories

Sample Temperature Log

Client: GHD

# of Coolers: 15 large

COC# or Work Order #:

# of Submissions: 15 large

Arrival Temperatures - Branch/Driver

Cooler #1:	9.6	9.3	9.2
Cooler #2:	8.7	8.1	8.3
Cooler #3:	9.2	9.6	9.8
Cooler #4:	7.9	8.3	8.9
Cooler #5:	9.1	8.0	8.3
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Brendan G

Date (yyyy/mm/dd): 2020/06/05 Time: 10 : 30 AM / PM

Arrival Temperatures - Laboratory

Cooler #1:	6.2	6.1	5.8
Cooler #2:	5.0	4.7	4.6
Cooler #3:	5.2	4.6	4.9
Cooler #4:	5.1	4.9	5.7
Cooler #5:	6.1	6.3	5.9
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Brendan G

Date (yyyy/mm/dd): 2020/06/05 Time: 5 : 00 AM / PM

Instructions for use of this form: 1) complete all fields of Info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

Document ID: SR-78-9511.003
Date Issued: 2017-2-23

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CLIENT NAME: GHD LIMITED
455 Phillip St
WATERLOO, ON N2V1C2
(519) 884-0510
ATTENTION TO: Laura Ermeta
PROJECT: 44985 (PO#73519831)
AGAT WORK ORDER: 20T692507
WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer
DATE REPORTED: Dec 30, 2020
PAGES (INCLUDING COVER): 26
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Ammonia

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION:	GW-44985-121520-DD-58S	GW-44985-121520-DD-56S	GW-44985-121520-DD-566S	GW-44985-121520-DD-B1	GW-44985-121520-DD-57S	GW-44985-121520-DD-B2
						SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
						DATE SAMPLED:	2020-12-15	2020-12-15	2020-12-15	2020-12-15	2020-12-15	2020-12-15
							1857433	1857435	1857436	1857437	1857438	1857441
Ammonia as N	mg/L		0.02	2020-12-21	2020-12-21		0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION:	GW-44985-121520-DD-55S	GW-44985-121520-DD-43S	GW-44985-121520-DD-42S	GW-44985-121520-DD-59S	GW-44985-121520-DD-48S	GW-44985-121620-DD-63S
						SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
						DATE SAMPLED:	2020-12-15	2020-12-15	2020-12-15	2020-12-15	2020-12-15	2020-12-16
							1857442	1857444	1857447	1857448	1857450	1857452
Ammonia as N	mg/L		0.02	2020-12-21	2020-12-21		<0.02	<0.02	0.03	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION:	GW-44985-121620-DD-62S	GW-44985-121620-DD-45S	GW-44985-121620-DD-61I	GW-44985-121620-DD-61S	GW-44985-121620-DD-22	GW-44985-121620-DD-39I
						SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
						DATE SAMPLED:	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-16
							1857453	1857454	1857457	1857458	1857459	1857463
Ammonia as N	mg/L		0.02	2020-12-21	2020-12-21		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION:	GW-44985-121620-DD-39S	GW-44985-121620-DD-21II	GW-44985-121620-DD-40S	GW-44985-121620-DD-32IV	GW-44985-121620-DD-46I	GW-44985-121720-DD-46S
						SAMPLE TYPE:	Water	Water	Water	Water	Water	Water
						DATE SAMPLED:	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-16	2020-12-17
							1857464	1857465	1857468	1857470	1857471	1857473
Ammonia as N	mg/L		0.02	2020-12-21	2020-12-21		<0.02	<0.02	0.03	<0.02	<0.02	<0.02

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION:	GW-44985-121720-DD-35S	GW-44985-121720-DD-53S	GW-44985-121720-DD-32S	GW-44985-121720-DD-41S
						SAMPLE TYPE:	Water	Water	Water	Water
						DATE SAMPLED:	2020-12-17	2020-12-17	2020-12-17	2020-12-17
							1857474	1857476	1857478	1857483
Ammonia as N	mg/L		0.02	2020-12-21	2020-12-21		<0.02	<0.02	<0.02	<0.02

Certified By: Iris Verástegui

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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Ammonia

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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PROJECT: 44985 (PO#73519831)

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Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121520-DD-58S SAMPLE TYPE: Water DATE SAMPLED: 2020-12-15 1857433	RDL	GW-44985-121520-DD-56D Water 2020-12-15 1857434	RDL	GW-44985-121520-DD-56S Water 2020-12-15 1857435	GW-44985-121520-DD-566S Water 2020-12-15 1857436
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	3280	2	1610	2	1740	1740
pH	pH Units		NA	2020-12-18	2020-12-18	7.61	NA	7.80	NA	7.68	7.67
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	2900	20	824	20	1190	1190
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	493	5	345	5	402	404
Fluoride	mg/L		0.13	2020-12-21	2020-12-21	<0.13	0.05	0.87	0.07	<0.07	<0.07
Chloride	mg/L		2.0	2020-12-21	2020-12-21	264	0.50	307	1.0	42.7	42.1
Nitrate as N	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.25	<0.25	0.5	<0.5	<0.5
Nitrite as N	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.25	<0.25	0.5	<0.5	<0.5
Bromide	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.25	<0.25	0.5	<0.5	<0.5
Sulphate	mg/L		2.0	2020-12-21	2020-12-21	1170	0.50	<0.50	1.0	577	570
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.5	2020-12-29	2020-12-29	311	0.25	23.2	0.25	173	168
Dissolved Magnesium	mg/L		0.5	2020-12-29	2020-12-29	243	0.25	8.78	0.25	86.4	84.4
Dissolved Potassium	mg/L		0.5	2020-12-29	2020-12-29	6.3	0.25	2.51	0.25	2.99	2.94
Dissolved Sodium	mg/L		0.5	2020-12-29	2020-12-29	116	0.25	273	0.25	63.2	62.6

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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121520-DD-B1 SAMPLE TYPE: Water DATE SAMPLED: 2020-12-15 1857437	RDL	GW-44985-121520-DD-57S Water 2020-12-15 1857438	GW-44985-121520-DD-57D Water 2020-12-15 1857439	GW-44985-121520-DD-577D Water 2020-12-15 1857440
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	4	2	1730	2040	2000
pH	pH Units		NA	2020-12-18	2020-12-18	6.06	NA	7.74	7.76	7.78
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	<20	20	1180	1000	1010
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	<5	5	496	385	382
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.07	<0.07	<0.07	<0.07
Chloride	mg/L		0.10	2020-12-21	2020-12-21	<0.10	1.0	23.1	416	410
Nitrate as N	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.5	<0.5	<0.5	<0.5
Nitrite as N	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.5	<0.5	<0.5	<0.5
Bromide	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.5	<0.5	<0.5	<0.5
Sulphate	mg/L		0.10	2020-12-21	2020-12-21	<0.10	1.0	517	<1.0	<1.0
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	0.002	<0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	156	18.5	18.6
Dissolved Magnesium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	98.1	7.55	7.36
Dissolved Potassium	mg/L		0.05	2020-12-29	2020-12-29	0.06	0.25	3.79	2.20	2.15
Dissolved Sodium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	54.5	378	376

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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121520-DD-B2 SAMPLE TYPE: Water DATE SAMPLED: 2020-12-15 1857441	RDL	GW-44985-121520-DD-55S Water 2020-12-15 1857442	RDL	GW-44985-121520-DD-55D Water 2020-12-15 1857443
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	<2	2	1390	2	1930
pH	pH Units		NA	2020-12-18	2020-12-18	5.62	NA	7.73	NA	7.82
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	<20	20	970	20	1010
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	<5	5	314	5	298
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.05	0.48	0.07	<0.07
Chloride	mg/L		0.10	2020-12-21	2020-12-21	<0.10	0.50	16.2	1.0	434
Nitrate as N	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.25	<0.25	0.5	<0.5
Bromide	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.25	<0.25	0.5	<0.5
Sulphate	mg/L		0.10	2020-12-21	2020-12-21	<0.10	0.50	468	1.0	<1.0
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	135	0.25	20.2
Dissolved Magnesium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	69.7	0.25	6.87
Dissolved Potassium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	3.08	0.25	3.34
Dissolved Sodium	mg/L		0.05	2020-12-29	2020-12-29	<0.05	0.25	53.8	0.25	330

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Certificate of Analysis

AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121520-DD-43S SAMPLE TYPE: Water DATE SAMPLED: 2020-12-15 1857444	RDL	GW-44985-121520-DD-43D Water 2020-12-15 1857445	RDL	GW-44985-121520-DD-49D Water 2020-12-15 1857446
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	868	2	1260	2	762
pH	pH Units		NA	2020-12-18	2020-12-18	7.72	NA	7.80	NA	7.72
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	526	20	628	20	398
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	311	5	276	5	251
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.05	0.62	0.05	1.13
Chloride	mg/L		0.50	2020-12-21	2020-12-21	21.3	0.50	237	0.20	94.3
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	0.25	<0.25	0.10	<0.10
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	0.25	<0.25	0.10	<0.10
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	0.25	<0.25	0.10	<0.10
Sulphate	mg/L		0.50	2020-12-21	2020-12-21	146	0.50	<0.50	0.20	<0.20
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.10	2020-12-29	2020-12-29	96.1	0.25	24.7	0.05	16.6
Dissolved Magnesium	mg/L		0.10	2020-12-29	2020-12-29	32.5	0.25	9.09	0.05	4.94
Dissolved Potassium	mg/L		0.10	2020-12-29	2020-12-29	2.03	0.25	1.88	0.05	1.25
Dissolved Sodium	mg/L		0.10	2020-12-29	2020-12-29	27.9	0.25	201	0.05	122

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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121520-DD-42S SAMPLE TYPE: Water DATE SAMPLED: 2020-12-15 1857447	RDL	GW-44985-121520-DD-59S Water 2020-12-15 1857448	GW-44985-121520-DD-59D Water 2020-12-15 1857449	RDL	GW-44985-121520-DD-48S Water 2020-12-15 1857450
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	3170	2	981	925	2	1100
pH	pH Units		NA	2020-12-18	2020-12-18	7.59	NA	7.79	7.75	NA	7.77
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	2970	20	558	504	20	698
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	403	5	429	271	5	413
Fluoride	mg/L		0.13	2020-12-21	2020-12-21	<0.13	0.05	<0.05	0.93	0.05	<0.05
Chloride	mg/L		2.0	2020-12-21	2020-12-21	24.7	0.50	17.6	134	0.50	21.0
Nitrate as N	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.25	<0.25	<0.25	0.25	<0.25
Nitrite as N	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.25	<0.25	<0.25	0.25	<0.25
Bromide	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.25	<0.25	<0.25	0.25	<0.25
Sulphate	mg/L		2.0	2020-12-21	2020-12-21	1810	0.50	111	<0.50	0.50	190
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.5	2020-12-29	2020-12-29	402	0.10	90.9	14.4	0.25	95.6
Dissolved Magnesium	mg/L		0.5	2020-12-29	2020-12-29	209	0.10	52.7	4.85	0.25	56.4
Dissolved Potassium	mg/L		0.5	2020-12-29	2020-12-29	5.8	0.10	2.52	1.82	0.25	2.54
Dissolved Sodium	mg/L		0.5	2020-12-29	2020-12-29	88.1	0.10	30.2	158	0.25	46.2

Certified By: Iris Verástegui

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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121520-DD-48D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-15 1857451	RDL	GW-44985-121620-DD-63S Water 2020-12-16 1857452	RDL	GW-44985-121620-DD-62S Water 2020-12-16 1857453	GW-44985-121620-DD-45S Water 2020-12-16 1857454
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	1800	2	2360	2	1000	1240
pH	pH Units		NA	2020-12-18	2020-12-18	7.90	NA	7.78	NA	7.78	7.74
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	908	20	1630	20	628	782
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	345	5	432	5	322	416
Fluoride	mg/L		0.07	2020-12-21	2020-12-21	<0.07	0.13	<0.13	0.05	<0.05	<0.05
Chloride	mg/L		1.0	2020-12-21	2020-12-21	370	2.0	500	0.50	36.2	70.5
Nitrate as N	mg/L		0.5	2020-12-21	2020-12-21	<0.5	1.0	<1.0	0.25	<0.25	<0.25
Nitrite as N	mg/L		0.5	2020-12-21	2020-12-21	<0.5	1.0	<1.0	0.25	<0.25	<0.25
Bromide	mg/L		0.5	2020-12-21	2020-12-21	<0.5	1.0	<1.0	0.25	<0.25	<0.25
Sulphate	mg/L		1.0	2020-12-21	2020-12-21	<1.0	2.0	66.8	0.50	180	178
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	0.002	<0.002	0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	25.5	0.25	167	0.25	87.6	123
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	9.35	0.25	75.4	0.25	37.5	51.3
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	2.69	0.25	3.23	0.25	2.33	2.83
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	301	0.25	154	0.25	50.0	43.9

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AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-18

DATE REPORTED: 2020-12-30

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121620-DD-54D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857455	GW-44985-121620-DD-61D Water 2020-12-16 1857456	GW-44985-121620-DD-61I Water 2020-12-16 1857457	GW-44985-121620-DD-61S Water 2020-12-16 1857458	RDL	GW-44985-121620-DD-22 Water 2020-12-16 1857459
Electrical Conductivity	µS/cm		2	2020-12-18	2020-12-18	1000	1140	1310	1300	2	1970
pH	pH Units		NA	2020-12-18	2020-12-18	7.78	7.73	7.76	7.73	NA	7.77
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	518	600	906	806	20	1430
Alkalinity (as CaCO3)	mg/L		5	2020-12-18	2020-12-18	280	265	360	470	5	471
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	0.90	0.73	<0.05	<0.05	0.07	<0.07
Chloride	mg/L		0.50	2020-12-21	2020-12-21	153	147	20.1	21.9	1.0	69.9
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	<0.25	0.5	<0.5
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	<0.25	0.5	<0.5
Sulphate	mg/L		0.50	2020-12-21	2020-12-21	<0.50	86.6	379	247	1.0	633
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	15.3	30.6	135	117	0.25	171
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	5.24	12.6	66.3	62.5	0.25	118
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	1.97	2.03	1.21	2.58	0.25	2.49
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	174	171	33.7	66.2	0.25	85.0

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121620-DD-22D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857460	SAMPLE DESCRIPTION: GW-44985-121620-DD-60D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857461	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121620-DD-39D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857462
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	4960	4500	2	2020-12-19	2020-12-19	1290
pH	pH Units		NA	2020-12-19	2020-12-19	8.00	7.97	NA	2020-12-19	2020-12-19	7.57
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	2590	2370	20	2020-12-21	2020-12-22	658
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	746	692	5	2020-12-19	2020-12-19	314
Fluoride	mg/L		0.33	2020-12-21	2020-12-21	<0.33	<0.33	0.05	2020-12-21	2020-12-21	0.95
Chloride	mg/L		5.0	2020-12-21	2020-12-21	1220	1080	0.50	2020-12-21	2020-12-21	221
Nitrate as N	mg/L		2.5	2020-12-21	2020-12-21	<2.5	<2.5	0.25	2020-12-21	2020-12-21	<0.25
Nitrite as N	mg/L		2.5	2020-12-21	2020-12-21	<2.5	<2.5	0.25	2020-12-21	2020-12-21	<0.25
Bromide	mg/L		2.5	2020-12-21	2020-12-21	<2.5	<2.5	0.25	2020-12-21	2020-12-21	<0.25
Sulphate	mg/L		5.0	2020-12-21	2020-12-21	<5.0	<5.0	0.50	2020-12-21	2020-12-21	<0.50
Cyanide, Free	mg/L		0.002	2020-12-22	2020-12-22	<0.002	<0.002	0.002	2020-12-29	2020-12-29	<0.002
Dissolved Calcium	mg/L		0.5	2020-12-29	2020-12-29	32.6	28.9	0.25	2020-12-29	2020-12-29	20.9
Dissolved Magnesium	mg/L		0.5	2020-12-29	2020-12-29	13.7	12.7	0.25	2020-12-29	2020-12-29	6.03
Dissolved Potassium	mg/L		0.5	2020-12-29	2020-12-29	3.6	3.3	0.25	2020-12-29	2020-12-29	1.65
Dissolved Sodium	mg/L		0.5	2020-12-29	2020-12-29	953	863	0.25	2020-12-29	2020-12-29	220

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121620-DD-39I SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857463	GW-44985-121620-DD-39S Water 2020-12-16 1857464	GW-44985-121620-DD-21II Water 2020-12-16 1857465	RDL	GW-44985-121620-DD-47D Water 2020-12-16 1857466
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	1550	1340	1240	2	9690
pH	pH Units		NA	2020-12-19	2020-12-19	7.77	7.75	7.71	NA	8.01
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	992	814	814	20	4180
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	587	467	426	5	1140
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	<0.05	<0.05	0.7	<0.7
Chloride	mg/L		0.50	2020-12-21	2020-12-21	19.9	23.7	6.77	10	2690
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	5	<5
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	5	<5
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	5	<5
Sulphate	mg/L		0.50	2020-12-21	2020-12-21	310	283	299	10	<10
Cyanide, Free	mg/L		0.002	2020-12-29	2020-12-29	<0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	101	102	156	5	81
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	109	79.6	50.6	5	38
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	1.67	1.35	0.98	5	10
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	72.2	59.4	19.0	5	2020

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121620-DD-40D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857467	RDL	GW-44985-121620-DD-40S Water 2020-12-16 1857468	RDL	GW-44985-121620-DD-32II Water 2020-12-16 1857469
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	1720	2	1450	2	2860
pH	pH Units		NA	2020-12-19	2020-12-19	7.56	NA	7.82	NA	8.19
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	828	20	960	20	1500
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	270	5	480	5	279
Fluoride	mg/L		0.07	2020-12-21	2020-12-21	<0.07	0.05	0.52	0.13	<0.13
Chloride	mg/L		1.0	2020-12-21	2020-12-21	390	0.50	23.8	2.0	763
Nitrate as N	mg/L		0.5	2020-12-21	2020-12-21	<0.5	0.25	<0.25	1.0	<1.0
Nitrite as N	mg/L		0.5	2020-12-21	2020-12-21	<0.5	0.25	<0.25	1.0	<1.0
Bromide	mg/L		0.5	2020-12-21	2020-12-21	<0.5	0.25	<0.25	1.0	<1.0
Sulphate	mg/L		1.0	2020-12-21	2020-12-21	<1.0	0.50	347	2.0	<2.0
Cyanide, Free	mg/L		0.002	2020-12-29	2020-12-29	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	33.7	0.25	121	0.25	11.8
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	12.2	0.25	91.4	0.25	15.4
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	2.80	0.25	3.23	0.25	3.41
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	288	0.25	61.1	0.25	526

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PROJECT: 44985 (PO#73519831)

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121620-DD-32IV SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857470	SAMPLE DESCRIPTION: GW-44985-121620-DD-46I SAMPLE TYPE: Water DATE SAMPLED: 2020-12-16 1857471	SAMPLE DESCRIPTION: GW-44985-121720-DD-46D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-17 1857472	RDL	SAMPLE DESCRIPTION: GW-44985-121720-DD-46S SAMPLE TYPE: Water DATE SAMPLED: 2020-12-17 1857473
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	1310	1540	1290	2	1980
pH	pH Units		NA	2020-12-19	2020-12-19	7.77	7.88	7.70	NA	7.74
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	716	1050	654	20	1500
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	424	424	333	5	346
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	<0.05	0.75	0.07	<0.07
Chloride	mg/L		0.50	2020-12-21	2020-12-21	26.4	43.7	210	1.0	44.6
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	0.5	<0.5
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	0.5	<0.5
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	0.5	<0.5
Sulphate	mg/L		0.50	2020-12-21	2020-12-21	301	422	<0.50	1.0	788
Cyanide, Free	mg/L		0.002	2020-12-29	2020-12-29	<0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	124	144	16.3	0.25	196
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	80.8	85.8	5.14	0.25	86.4
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	3.58	2.06	2.09	0.25	6.67
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	75.7	50.7	249	0.25	101

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	GW-44985-121720-DD-35S Water 2020-12-17 1857474	RDL	GW-44985-121720-DD-35D Water 2020-12-17 1857475	GW-44985-121720-DD-53S Water 2020-12-17 1857476	RDL	GW-44985-121720-DD-53D Water 2020-12-17 1857477
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	1460	2	1670	1450	2	676
pH	pH Units		NA	2020-12-19	2020-12-19	7.66	NA	7.90	7.81	NA	7.37
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	1060	20	810	1050	20	340
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	270	5	296	384	5	172
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.05	0.65	<0.05	0.05	0.74
Chloride	mg/L		0.50	2020-12-21	2020-12-21	9.77	0.50	346	8.67	0.20	113
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	0.25	<0.25	<0.25	0.10	<0.10
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	0.25	<0.25	<0.25	0.10	<0.10
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	0.25	<0.25	<0.25	0.10	<0.10
Sulphate	mg/L		1.0	2020-12-21	2020-12-21	590	0.50	<0.50	461	0.20	15.0
Cyanide, Free	mg/L		0.002	2020-12-29	2020-12-29	<0.002	0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	174	0.25	21.4	163	0.05	27.1
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	77.6	0.25	7.64	63.1	0.05	6.82
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	3.65	0.25	2.38	1.79	0.05	2.10
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	37.7	0.25	297	27.1	0.05	88.9

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121720-DD-32S SAMPLE TYPE: Water DATE SAMPLED: 2020-12-17 1857478	GW-44985-121720-DD-32D Water 2020-12-17 1857479	GW-44985-121720-DD-30D Water 2020-12-17 1857480	RDL	GW-44985-121720-DD-45D Water 2020-12-17 1857481
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	1300	1460	1290	2	2960
pH	pH Units		NA	2020-12-19	2020-12-19	7.80	7.71	7.85	NA	8.22
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	848	730	612	20	1680
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	286	256	257	5	916
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	<0.05	0.88	0.78	0.13	<0.13
Chloride	mg/L		0.50	2020-12-21	2020-12-21	13.4	302	249	2.0	433
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	1.0	<1.0
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	1.0	<1.0
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25	<0.25	1.0	<1.0
Sulphate	mg/L		0.50	2020-12-21	2020-12-21	454	<0.50	<0.50	2.0	<2.0
Cyanide, Free	mg/L		0.002	2020-12-29	2020-12-29	<0.002	<0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	140	20.0	20.9	0.25	10.1
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	52.6	7.21	7.57	0.25	4.69
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	2.03	2.59	2.59	0.25	2.10
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	22.4	243	207	0.25	644

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Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121720-DD-41D SAMPLE TYPE: Water DATE SAMPLED: 2020-12-17 1857482	GW-44985-121720-DD-41S Water 2020-12-17 1857483
Electrical Conductivity	µS/cm		2	2020-12-19	2020-12-19	1200	1600
pH	pH Units		NA	2020-12-19	2020-12-19	7.59	7.82
Total Dissolved Solids	mg/L		20	2020-12-21	2020-12-22	624	1080
Alkalinity (as CaCO3)	mg/L		5	2020-12-19	2020-12-19	297	468
Fluoride	mg/L		0.05	2020-12-21	2020-12-21	0.74	<0.05
Chloride	mg/L		0.50	2020-12-21	2020-12-21	200	40.2
Nitrate as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25
Nitrite as N	mg/L		0.25	2020-12-21	2020-12-21	<0.25	<0.25
Bromide	mg/L		0.25	2020-12-21	2020-12-21	<0.25	1.56
Sulphate	mg/L		0.50	2020-12-21	2020-12-21	<0.50	419
Cyanide, Free	mg/L		0.002	2020-12-29	2020-12-29	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-29	2020-12-29	14.7	181
Dissolved Magnesium	mg/L		0.25	2020-12-29	2020-12-29	5.18	70.2
Dissolved Potassium	mg/L		0.25	2020-12-29	2020-12-29	1.91	2.02
Dissolved Sodium	mg/L		0.25	2020-12-29	2020-12-29	207	45.4

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1857433-1857440 Dilution required, RDL has been increased accordingly.

1857442-1857483 Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

AGAT Laboratories

5835 COOPERS AVENUE
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CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: GHD LIMITED

PROJECT: 44985 (PO#73519831)

SAMPLING SITE:

AGAT WORK ORDER: 20T692507

ATTENTION TO: Laura Ermeta

SAMPLED BY:

Water Analysis

RPT Date: Dec 30, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Groundwater Parameters															
Electrical Conductivity	1857433	1857433	3280	3270	0.3%	< 2	105%	90%	110%						
pH	1857433	1857433	7.61	7.55	0.8%	NA	99%	90%	110%						
Total Dissolved Solids	1857433	1857433	2900	2990	3.1%	< 20	100%	80%	120%						
Alkalinity (as CaCO3)	1857433	1857433	493	493	0.0%	< 5	99%	80%	120%						
Fluoride	1857435	1857435	<0.07	<0.07	NA	< 0.05	103%	90%	110%	99%	90%	110%	112%	85%	115%
Chloride	1857435	1857435	42.7	43.6	2.1%	< 0.10	101%	70%	130%	106%	80%	120%	103%	70%	130%
Nitrate as N	1857435	1857435	<0.5	<0.5	NA	< 0.05	90%	70%	130%	103%	80%	120%	102%	70%	130%
Nitrite as N	1857435	1857435	<0.5	<0.5	NA	< 0.05	91%	70%	130%	107%	80%	120%	111%	70%	130%
Bromide	1857435	1857435	<0.5	<0.5	NA	< 0.05	110%	90%	110%	102%	90%	110%	88%	85%	115%
Sulphate	1857435	1857435	577	597	3.4%	< 0.10	101%	70%	130%	106%	80%	120%	NA	70%	130%
Cyanide, Free	1857433	1857433	<0.002	<0.002	NA	< 0.002	93%	70%	130%	109%	80%	120%	102%	70%	130%
Dissolved Calcium	1857446	1857446	16.6	18.1	8.6%	< 0.05	92%	70%	130%	93%	80%	120%	101%	70%	130%
Dissolved Magnesium	1857446	1857446	4.94	5.41	9.1%	< 0.05	96%	70%	130%	96%	80%	120%	106%	70%	130%
Dissolved Potassium	1857446	1857446	1.25	1.25	0.0%	< 0.05	93%	70%	130%	95%	80%	120%	94%	70%	130%
Dissolved Sodium	1857446	1857446	122	122	0.0%	< 0.05	94%	70%	130%	97%	80%	120%	96%	70%	130%
Groundwater Parameters															
Electrical Conductivity	1857452	1857452	2360	2360	0.0%	< 2	104%	90%	110%						
pH	1857452	1857452	7.78	7.73	0.6%	NA	99%	90%	110%						
Total Dissolved Solids	1857452	1857452	1630	1660	1.8%	< 20	100%	80%	120%						
Alkalinity (as CaCO3)	1857452	1857452	432	429	0.7%	< 5	98%	80%	120%						
Fluoride	1857444	1857444	<0.05	<0.05	NA	< 0.05	106%	90%	110%	99%	90%	110%	103%	85%	115%
Chloride	1857444	1857444	21.3	21.3	0.0%	< 0.10	102%	70%	130%	106%	80%	120%	101%	70%	130%
Nitrate as N	1857444	1857444	<0.25	<0.25	NA	< 0.05	97%	70%	130%	103%	80%	120%	103%	70%	130%
Nitrite as N	1857444	1857444	<0.25	<0.25	NA	< 0.05	91%	70%	130%	107%	80%	120%	110%	70%	130%
Bromide	1857444	1857444	<0.25	<0.25	NA	< 0.05	109%	90%	110%	102%	90%	110%	93%	85%	115%
Sulphate	1857444	1857444	146	147	0.7%	< 0.10	103%	70%	130%	106%	80%	120%	NA	70%	130%
Cyanide, Free	1857453	1857453	<0.002	<0.002	NA	< 0.002	107%	70%	130%	109%	80%	120%	106%	70%	130%
Dissolved Calcium	1857453	1857453	87.6	90.2	2.9%	< 0.05	94%	70%	130%	93%	80%	120%	93%	70%	130%
Dissolved Magnesium	1857453	1857453	37.5	38.6	2.9%	< 0.05	93%	70%	130%	95%	80%	120%	95%	70%	130%
Dissolved Potassium	1857453	1857453	2.33	2.42	3.8%	< 0.05	93%	70%	130%	93%	80%	120%	95%	70%	130%
Dissolved Sodium	1857453	1857453	50.0	51.3	2.6%	< 0.05	95%	70%	130%	95%	80%	120%	96%	70%	130%
Groundwater Parameters															
Electrical Conductivity	1857471	1857471	1540	1550	0.6%	< 2	104%	90%	110%						
pH	1857471	1857471	7.88	7.77	1.4%	NA	99%	90%	110%						
Total Dissolved Solids	1857471	1857471	1050	1040	1.0%	< 20	100%	80%	120%						
Alkalinity (as CaCO3)	1857471	1857471	424	428	0.9%	< 5	98%	80%	120%						
Fluoride	1857467	1857467	<0.07	<0.07	NA	< 0.05	108%	90%	110%	99%	90%	110%	105%	85%	115%
Chloride	1857467	1857467	390	380	2.6%	< 0.10	102%	70%	130%	106%	80%	120%	NA	70%	130%
Nitrate as N	1857467	1857467	<0.5	<0.5	NA	< 0.05	95%	70%	130%	103%	80%	120%	102%	70%	130%

AGAT Laboratories
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http://www.agatlabs.com

Quality Assurance

CLIENT NAME: GHD LIMITED
PROJECT: 44985 (PO#73519831)
SAMPLING SITE:

AGAT WORK ORDER: 20T692507
ATTENTION TO: Laura Ermeta
SAMPLED BY:

Water Analysis (Continued)

RPT Date: Dec 30, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Nitrite as N	1857467	1857467	<0.5	<0.5	NA	< 0.05	93%	70%	130%	107%	80%	120%	100%	70%	130%
Bromide	1857467	1857467	<0.5	<0.5	NA	< 0.05	109%	90%	110%	102%	90%	110%	88%	85%	115%
Sulphate	1857467	1857467	<1.0	<1.0	NA	< 0.10	98%	70%	130%	106%	80%	120%	104%	70%	130%
Cyanide, Free	1857468	1857468	<0.002	<0.002	NA	< 0.002	96%	70%	130%	102%	80%	120%	103%	70%	130%
Dissolved Calcium	1857477	1857477	27.1	28.2	4.0%	< 0.05	101%	70%	130%	94%	80%	120%	95%	70%	130%
Dissolved Magnesium	1857477	1857477	6.82	7.07	3.6%	< 0.05	102%	70%	130%	95%	80%	120%	97%	70%	130%
Dissolved Potassium	1857477	1857477	2.10	2.18	3.7%	< 0.05	94%	70%	130%	94%	80%	120%	97%	70%	130%
Dissolved Sodium	1857477	1857477	88.9	88.7	0.2%	< 0.05	96%	70%	130%	96%	80%	120%	97%	70%	130%
Ammonia															
Ammonia as N	1854393		<0.02	<0.02	NA	< 0.02	107%	70%	130%	99%	80%	120%	99%	70%	130%
Ammonia															
Ammonia as N	1857435	1857435	<0.02	<0.02	NA	< 0.02	109%	70%	130%	105%	80%	120%	98%	70%	130%
Ammonia															
Ammonia as N	1857465	1857465	<0.02	<0.02	NA	< 0.02	107%	70%	130%	103%	80%	120%	94%	70%	130%

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

Certified By: Iris Verástegui

AGAT Laboratories

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CANADA L4Z 1Y2
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http://www.agatlabs.com

Method Summary

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T692507

PROJECT: 44985 (PO#73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Electrical Conductivity	INOR-93-6000	modified from SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Total Dissolved Solids	INOR-93-6028	modified from EPA 1684,ON MOECC E3139,SM 2540C,D	BALANCE
Alkalinity (as CaCO3)	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015,SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Dissolved Calcium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Magnesium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Potassium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES

AGAT Laboratories

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Mississauga, Ontario; L4Z 1Y2
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Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number: 20T692507
Notes: 5 large Cooler

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
   Email: Laura.Ermeta@ghd.com
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

(Please "x" those that apply)

☐ Single sample per page
☐ Multiple samples per page
☐ Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)

Regular TAT:
☒ 5 to 7 working days

Rush TAT (Rush Surcharges Apply):
☐ 3 to 5 days
☐ 48 to 72 hours
☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

Regulatory Guideline Required: (Please "x" those that apply)

☐ Reg 153 Table ____ (indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag ☐ Med/Fine ☐ Coarse
☐ Sewer Use Region ____ (indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME ☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
☐ Yes ☒ No

If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions		Free CN		Ammonia
GW-44985-____20-DD-S35	12/18/20	AM	water	6		X		X		X
GW-44985-____20-DD-S60	↓	↓	water	5		X		X		
GW-44985-____20-DD-S65			water	6		X		X		X
GW-44985-____20-DD-S665			water	6		X		X		X
GW-44985-____20-DD-B1			water	6		X		X		X
GW-44985-____20-DD-S75			water	6		X		X		X
GW-44985-____20-DD-S70			water	5		X		X		
GW-44985-____20-DD-S770			water	5		X		X		
GW-44985-____20-DD-B2			water	6		X		X		X
GW-44985-____20-DD-S55			water	6		X		X		X
GW-44985-____20-DD-S50	↓	↓	water	5		X		X		
TOTAL # OF CONTAINERS				62						

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
[signature]	12/18/20	Brendan G [signature]	Dec 18/20 10:15
Brendan G [signature]	Dec 18/20 3pm		

Special Instructions [illegible]

Page 1 of 5

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number:
Notes: 5 large coolers

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
Email: Laura.Ermeta@ghd.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format (Please "x" those that apply)
☐ Single sample per page
☐ Multiple samples per page
☐ Results by Fax

Turnaround Time (TAT)* (Please "x" the applicable box below)
Regular TAT:
☒ 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
☐ 3 to 5 days
☐ 48 to 72 hours
☐ 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required: (Please "x" those that apply)

☐ Reg 153 Table (indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag ☐ Med/Fine ☐ Coarse
☐ Sewer Use Region (indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME ☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
☐ Yes ☒ No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions		Free CN		Ammonia										
GW-44985-____20-DD-435	12/16/20	PM	water	6		X		X		X										
GW-44985-____20-DD-430			water	6		X		X												
GW-44985-____20-DD-440			water	6		X		X												
GW-44985-____20-DD-425			water	6		X		X		X										
GW-44985-____20-DD-505			water	6		X		X		X										
GW-44985-____20-DD-510			water	6		X		X												
GW-44985-____20-DD-455			water	6		X		X		X										
GW-44985-____20-DD-450			water	6		X		X												
GW-44985-____20-DD-635	12/16/20	AM	water	6		X		X		X										
GW-44985-____20-DD-625			water	6		X		X		X										
GW-44985-____20-DD-455			water	6		X		X												
TOTAL # OF CONTAINERS				82																

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
DAN DAN	12/16/20	Brendan G	Dec 18/20 10:05
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Brendan G	Dec 18/20 3pm		

Special Instructions

Page 2 of 5

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: [ ] Good [ ] Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number:
Notes: 5 Large Coolers

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
Email: Laura.Ermeta@ghd.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

(Please "x" those that apply)
[ ] Single sample per page
[ ] Multiple samples per page
[ ] Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)
Regular TAT:
[X] 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
[ ] 3 to 5 days
[ ] 48 to 72 hours
[ ] 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "x" those that apply)
[ ] Reg 153 Table (indicate one) [ ] Ind/Com [ ] Res/Park [ ] Ag [ ] Med/Fine [ ] Coarse
[ ] Sewer Use Region (indicate one) [ ] Sanitary [ ] Storm
[ ] PWQO [ ] Reg 558 [ ] CCME [ ] Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
[ ] Yes [X] No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions		Free CN		Ammonia										
GW-44985-____20-DD-	5/12/20	AM	water	5		X		X												
GW-44985-____20-DD- 61D			water			X		X												
GW-44985-____20-DD- 61I			water			X		X		X										
GW-44985-____20-DD- 61S			water			X		X		X										
GW-44985-____20-DD- 22			water			X		X		X										
GW-44985-____20-DD- 22D			water			X		X												
GW-44985-____20-DD- 60D			water			X		X												
GW-44985-____20-DD- 24D		PM	water			X		X												
GW-44985-____20-DD- 24I			water			X		X		X										
GW-44985-____20-DD- 24S			water			X		X		X										
GW-44985-____20-DD- 21 II			water	6		X		X		X										
			TOTAL # OF CONTAINERS	61																

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
DAN DAN	12/8/20 10 AM	Brendan G	Dec 8/20 1:05
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Brendan G	Dec 8/20 3pm		

Special Instructions

Page 5 of 5

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "Notes")

Arrival Temperature:

AGAT Job Number:

Notes: 5 Large Coolers

Client Information

Company: GHD Ltd.

Contact: Laura Ermeta

Address: 455 Phillip Street, Waterloo Ontario N2V 1C2

Phone: 519-884-0510 Fax: 519-725-1394

PO#: 73519831

Client Project #: 44985

AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
   Email: Laura.Ermeta@ghd.com
2. Name:
   Email:
3. Name:
   Email:
4. Name:
   Email:

Report Format

(Please "x" those that apply)

☐ Single sample per page
☐ Multiple samples per page
☐ Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)

Regular TAT:

☒ 5 to 7 working days

Rush TAT (Rush Surcharges Apply):

☐ 3 to 5 days
☐ 48 to 72 hours
☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "x" those that apply)

☐ Reg 153 Table (indicate one): ☐ Ind/Com ☐ Res/Park ☐ Ag ☐ Med/Fine ☐ Coarse

☐ Sewer Use — Region (indicate one): ☐ Sanitary ☐ Storm

☐ PWQO ☐ Reg 558 ☐ CCME ☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?

☐ Yes ☒ No

If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Free CN	Ammonia
GW-44985-____20-DD-47D	12/16/20	PM	water	5		X	X	
GW-44985-____20-DD-40D	↓	↓	water	5		X	X	
GW-44985-____20-DD-40S	↓	↓	water	5		X	X	X
GW-44985-____20-DD-32 II	↓	↓	water	5		X	X	
GW-44985-____20-DD-32 IV	↓	↓	water	6		X	X	X
GW-44985-____20-DD-46 I	↓	↓	water	6		X	X	X
GW-44985-____20-DD-46D	12/17/20	PM	water	5		X	X	
GW-44985-____20-DD-46S	↓	↓	water	6		X	X	X
GW-44985-____20-DD-35S	↓	↓	water	6		X	X	X
GW-44985-____20-DD-35D	↓	↓	water	5		X	X	
GW-44985-____20-DD-53S	↓	↓	water	6		X	X	X
TOTAL # OF CONTAINERS				60				

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Dan Dyan [signature]	12/18/20 1000	Brendan G [signature]	Dec 18/20 1015
Brendan G [signature]	Dec 18/20 3pm		

Special Instructions

Page 4 of 5

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: [ ] Good [ ] Poor (complete "Notes")
Arrival Temperature:
AGAT Job Number:
Notes: 5 large coolers

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
Email: Laura.Ermeta@ghd.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format
(Please "x" those that apply)
[ ] Single sample per page
[ ] Multiple samples per page
[ ] Results by Fax

Turnaround Time (TAT)*
(Please "x" the applicable box below)
Regular TAT:
[X] 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
[ ] 3 to 5 days
[ ] 48 to 72 hours
[ ] 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required: (Please "x" those that apply)

[ ] Reg 153 Table (indicate one) [ ] Ind/Com [ ] Res/Park [ ] Ag [ ] Med/Fine [ ] Coarse
[ ] Sewer Use Region (indicate one) [ ] Sanitary [ ] Storm
[ ] PWQO [ ] Reg 558 [ ] CCME [ ] Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)? [X] Yes [ ] No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions		Free CN		Ammonia										
GW-44985-____20-DD- 301	12/20	PM	water	5		X		X												
GW-44985-____20-DD- 325			water	6		X		X		X										
GW-44985-____20-DD- 320			water	5		X		X												
GW-44985-____20-DD- 310			water	5		X		X												
GW-44985-____20-DD- 305			water	5		X		X												
GW-44985-____20-DD- 415			water	5		X		X												
GW-44985-____20-DD- 416			water	6		X		X		X										
~~GW-44985-____20-DD-~~			~~water~~			~~X~~		~~X~~												
GW-44985-____20-DD-			water			X		X												
GW-44985-____20-DD-			water			X		X												
GW-44985-____20-DD-			water			X		X												
TOTAL # OF CONTAINERS				27																

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
DAN DAN	12/20 10:05	Brendan G	Dec 18/20 10:05
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Brendan G	Dec 18/20 3pm		

Special Instructions

Page 5 of 5

AGAT Laboratories

Sample Temperature Log

Client: GHD

COC# or Work Order #:

# of Coolers: 5 large

# of Submissions: 5

Arrival Temperatures - Branch/Driver

Cooler #1:	5.4	5.3	5.1
Cooler #2:	6.3	6.0	6.1
Cooler #3:	6.5	6.0	5.8
Cooler #4:	5.5	5.5	5.1
Cooler #5:	6.3	5.3	5.7
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Brendan

Date (yyyy/mm/dd): 2020/12/15 Time: 10:15 (AM) / PM

Arrival Temperatures - Laboratory

Cooler #1:	2.2	2.0	1.9
Cooler #2:	2.2	2.1	1.7
Cooler #3:	2.0	1.8	2.5
Cooler #4:	2.6	1.8	1.9
Cooler #5:	1.6	2.3	2.6
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Brendan

Date (yyyy/mm/dd): 2020/12/18 Time: 2:50 AM (PM)

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

Document ID: SR-78-9511.003
Date Issued: 2017-2-23

Page: 1 of 1

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GHD LIMITED
455 Phillip St
WATERLOO, ON N2V1C2
(519) 884-0510
ATTENTION TO: Laura Ermeta
PROJECT: 44985 (PO# 73519831)
AGAT WORK ORDER: 20T693055
WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager
DATE REPORTED: Jan 05, 2021
PAGES (INCLUDING COVER): 8
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

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Certificate of Analysis

AGAT WORK ORDER: 20T693055

PROJECT: 44985 (PO# 73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Ammonia (Water)

DATE RECEIVED: 2020-12-21

DATE REPORTED: 2021-01-05

					SAMPLE DESCRIPTION:	GW-44985-121820-DD-B3
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2020-12-18
Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	1870988
Ammonia as N	mg/L		0.02	2020-12-23	2020-12-23	<0.02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T693055

PROJECT: 44985 (PO# 73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-21

DATE REPORTED: 2021-01-05

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121820-DD-PW2 SAMPLE TYPE: Water DATE SAMPLED: 2020-12-18 1870983	GW-44985-121820-DD-PW22 Water 2020-12-18 1870987	RDL	GW-44985-121820-DD-B3 Water 2020-12-18 1870988	RDL	GW-44985-121820-DD-EW2A Water 2020-12-18 1870989
Electrical Conductivity	µS/cm		2	2020-12-22	2020-12-22	1730	1720	2	<2	2	772
pH	pH Units		NA	2020-12-22	2020-12-22	8.24	8.21	NA	5.84	NA	7.70
Total Dissolved Solids	mg/L		20	2020-12-23	2020-12-24	878	904	20	<20	20	392
Alkalinity (as CaCO3)	mg/L		5	2020-12-22	2020-12-22	350	348	5	<5	5	227
Fluoride	mg/L		0.07	2020-12-23	2020-12-23	<0.07	<0.07	0.05	<0.05	0.05	1.15
Chloride	mg/L		1.0	2020-12-23	2020-12-23	327	330	0.10	<0.10	0.20	106
Nitrate as N	mg/L		0.5	2020-12-23	2020-12-23	<0.5	<0.5	0.05	<0.05	0.10	<0.10
Nitrite as N	mg/L		0.5	2020-12-23	2020-12-23	<0.5	<0.5	0.05	<0.05	0.10	<0.10
Bromide	mg/L		0.5	2020-12-23	2020-12-23	<0.5	<0.5	0.05	<0.05	0.10	1.04
Sulphate	mg/L		1.0	2020-12-23	2020-12-23	5.9	5.2	0.10	<0.10	0.20	1.56
Cyanide, Free	mg/L		0.002	2020-12-30	2020-12-30	<0.002	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-30	2020-12-30	8.30	8.45	0.05	<0.05	0.05	29.1
Dissolved Magnesium	mg/L		0.25	2020-12-30	2020-12-30	7.09	7.30	0.05	<0.05	0.05	13.9
Dissolved Potassium	mg/L		0.25	2020-12-30	2020-12-30	2.61	2.51	0.05	<0.05	0.05	2.29
Dissolved Sodium	mg/L		0.25	2020-12-30	2020-12-30	293	294	0.05	<0.05	0.05	86.2

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Certificate of Analysis

AGAT WORK ORDER: 20T693055

PROJECT: 44985 (PO# 73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-21

DATE REPORTED: 2021-01-05

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121820-DD-EW1A SAMPLE TYPE: Water DATE SAMPLED: 2020-12-18 1870990	RDL	GW-44985-121820-DD-PW1 Water 2020-12-18 1870991	RDL	GW-44985-121820-DD-EW2C Water 2020-12-18 1870992
Electrical Conductivity	µS/cm		2	2020-12-22	2020-12-22	674	2	1800	2	760
pH	pH Units		NA	2020-12-22	2020-12-22	7.07	NA	8.16	NA	7.63
Total Dissolved Solids	mg/L		20	2020-12-23	2020-12-24	406	20	898	20	374
Alkalinity (as CaCO3)	mg/L		5	2020-12-22	2020-12-22	88	5	315	5	224
Fluoride	mg/L		0.05	2020-12-23	2020-12-23	0.50	0.07	<0.07	0.07	<0.07
Chloride	mg/L		0.20	2020-12-23	2020-12-23	62.4	1.0	368	1.0	97.1
Nitrate as N	mg/L		0.10	2020-12-23	2020-12-23	1.01	0.5	<0.5	0.5	<0.5
Nitrite as N	mg/L		0.10	2020-12-23	2020-12-23	<0.10	0.5	<0.5	0.5	<0.5
Bromide	mg/L		0.10	2020-12-23	2020-12-23	<0.10	0.5	<0.5	0.5	<0.5
Sulphate	mg/L		0.20	2020-12-23	2020-12-23	142	1.0	5.7	1.0	11.0
Cyanide, Free	mg/L		0.002	2020-12-30	2020-12-30	<0.002	0.002	<0.002	0.002	<0.002
Dissolved Calcium	mg/L		0.05	2020-12-30	2020-12-30	47.2	0.25	7.89	0.05	29.6
Dissolved Magnesium	mg/L		0.05	2020-12-30	2020-12-30	19.8	0.25	5.27	0.05	14.2
Dissolved Potassium	mg/L		0.05	2020-12-30	2020-12-30	2.01	0.25	2.18	0.05	2.31
Dissolved Sodium	mg/L		0.05	2020-12-30	2020-12-30	42.2	0.25	308	0.05	84.5

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T693055

PROJECT: 44985 (PO# 73519831)

CLIENT NAME: GHD LIMITED

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

Groundwater Parameters

DATE RECEIVED: 2020-12-21

DATE REPORTED: 2021-01-05

Parameter	Unit	G / S	RDL	Date Prepared	Date Analyzed	SAMPLE DESCRIPTION: GW-44985-121820-DD-EW2B SAMPLE TYPE: Water DATE SAMPLED: 2020-12-18 1870993	GW-44985-121820-DD-EW1C Water 2020-12-18 1870994	GW-44985-121820-DD-EW1B Water 2020-12-18 1870995
Electrical Conductivity	µS/cm		2	2020-12-22	2020-12-22	761	1700	1750
pH	pH Units		NA	2020-12-22	2020-12-22	7.75	7.71	7.65
Total Dissolved Solids	mg/L		20	2020-12-23	2020-12-24	378	888	926
Alkalinity (as CaCO3)	mg/L		5	2020-12-22	2020-12-22	230	283	288
Fluoride	mg/L		0.07	2020-12-23	2020-12-23	<0.07	<0.07	<0.07
Chloride	mg/L		1.0	2020-12-23	2020-12-23	98.2	303	308
Nitrate as N	mg/L		0.5	2020-12-23	2020-12-23	<0.5	<0.5	<0.5
Nitrite as N	mg/L		0.5	2020-12-23	2020-12-23	<0.5	<0.5	<0.5
Bromide	mg/L		0.5	2020-12-23	2020-12-23	<0.5	<0.5	<0.5
Sulphate	mg/L		1.0	2020-12-23	2020-12-23	2.1	111	116
Cyanide, Free	mg/L		0.002	2020-12-30	2020-12-30	<0.002	<0.002	<0.002
Dissolved Calcium	mg/L		0.25	2020-12-30	2020-12-30	31.3	74.9	72.4
Dissolved Magnesium	mg/L		0.25	2020-12-30	2020-12-30	14.7	44.0	43.2
Dissolved Potassium	mg/L		0.25	2020-12-30	2020-12-30	2.70	4.47	4.40
Dissolved Sodium	mg/L		0.25	2020-12-30	2020-12-30	87.1	163	163

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1870983-1870987 Dilution required, RDL has been increased accordingly.

1870989-1870995 Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: GHD LIMITED
AGAT WORK ORDER: 20T693055
PROJECT: 44985 (PO# 73519831)
ATTENTION TO: Laura Ermeta
SAMPLING SITE:
SAMPLED BY:

Water Analysis

RPT Date: Jan 05, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Groundwater Parameters															
Electrical Conductivity	1874726		4970	4960	0.2%	< 2	107%	90%	110%	NA			NA		
pH	1874726		7.64	7.57	0.9%	NA	97%	90%	110%	NA			NA		
Total Dissolved Solids	1873796		340	324	4.8%	< 20	104%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	1874726		362	366	1.1%	< 5	97%	80%	120%	NA			NA		
Fluoride	1870983	1870983	<0.07	<0.07	NA	< 0.05	97%	90%	110%	96%	90%	110%	105%	85%	115%
Chloride	1870983	1870983	327	329	0.6%	< 0.10	96%	70%	130%	100%	80%	120%	NA	70%	130%
Nitrate as N	1870983	1870983	<0.5	<0.5	NA	< 0.05	93%	70%	130%	99%	80%	120%	93%	70%	130%
Nitrite as N	1870983	1870983	<0.5	<0.5	NA	< 0.05	94%	70%	130%	104%	80%	120%	104%	70%	130%
Bromide	1870983	1870983	<0.5	<0.5	NA	< 0.05	108%	90%	110%	90%	90%	110%	95%	85%	115%
Sulphate	1870983	1870983	5.9	5.5	7.0%	< 0.10	104%	70%	130%	100%	80%	120%	99%	70%	130%
Cyanide, Free	1870992	1870992	<0.002	<0.002	NA	< 0.002	99%	70%	130%	101%	80%	120%	101%	70%	130%
Dissolved Calcium	1870990	1870990	47.2	46.3	1.9%	< 0.05	96%	70%	130%	95%	80%	120%	90%	70%	130%
Dissolved Magnesium	1870990	1870990	19.8	19.5	1.5%	< 0.05	104%	70%	130%	104%	80%	120%	98%	70%	130%
Dissolved Potassium	1870990	1870990	2.01	1.97	2.0%	< 0.05	98%	70%	130%	98%	80%	120%	95%	70%	130%
Dissolved Sodium	1870990	1870990	42.2	42.2	0.0%	< 0.05	98%	70%	130%	98%	80%	120%	93%	70%	130%

Comments: NA Signifies Not Applicable
Duplicate NA: results are under 5X the RDL and will not be calculated.
Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

Groundwater Parameters															
Electrical Conductivity	1870994	1870994	1700	1720	1.2%	< 2	97%	90%	110%	NA			NA		
pH	1870994	1870994	7.71	7.68	0.4%	NA	99%	90%	110%	NA			NA		
Alkalinity (as CaCO3)	1870994	1870994	283	286	1.1%	< 5	97%	80%	120%	NA			NA		

Comments: NA Signifies Not Applicable

Ammonia (Water)															
Ammonia as N	1876355		<0.02	<0.02	NA	< 0.02	108%	70%	130%	98%	80%	120%	102%	70%	130%

Comments: NA Signifies Not Applicable
Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:

AGAT Laboratories

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CANADA L4Z 1Y2
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http://www.agatlabs.com

Method Summary

CLIENT NAME: GHD LIMITED

AGAT WORK ORDER: 20T693055

PROJECT: 44985 (PO# 73519831)

ATTENTION TO: Laura Ermeta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Ammonia as N	INOR-93-6059	modified from SM 4500-NH3 H	LACHAT FIA
Electrical Conductivity	INOR-93-6000	modified from SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Total Dissolved Solids	INOR-93-6028	modified from EPA 1684,ON MOECC E3139,SM 2540C,D	BALANCE
Alkalinity (as CaCO3)	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015,SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Dissolved Calcium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Magnesium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Potassium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES

1 LG BIK

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "Notes")
Arrival Temperature: 1.1 | 1.4 | 1.2
AGAT Job Number: 20T693055
Notes: on ice

Client Information

Company: GHD Ltd.
Contact: Laura Ermeta
Address: 455 Phillip Street, Waterloo Ontario
N2V 1C2
Phone: 519-884-0510 Fax: 519-725-1394
PO#: 73519831
Client Project #: 44985
AGAT Quotation #:

Report Information

1. Name: Laura Ermeta
 Email: Laura.Ermeta@ghd.com
2. Name:
 Email:
3. Name:
 Email:
4. Name:
 Email:

Report Format

(Please "x" those that apply)
☐ Single sample per page
☐ Multiple samples per page
☐ Results by Fax

Turnaround Time (TAT)*

(Please "x" the applicable box below)
Regular TAT:
X 5 to 7 working days
Rush TAT (Rush Surcharges Apply):
☐ 3 to 5 days
☐ 48 to 72 hours
☐ 24 to 48 hours
Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "x" those that apply)
☐ Reg 153 Table (indicate one) ☐ Ind/Com ☐ Res/Park ☐ Ag ☐ Med/Fine ☐ Coarse
☐ Sewer Use Region (indicate one) ☐ Sanitary ☐ Storm
☐ PWQO ☐ Reg 558 ☐ CCME ☐ Other (indicate)

Is this a drinking water sample (potable water intended for human consumption)?
☐ Yes
✓ No
If "Yes" please use the Drinking Water Chain of Custody Record

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	pH, Conductivity, TDS, Alkalinity, Cations, Anions	Free CN	Ammonia
GW-44985-____20-DD-AW2	12/18/20	AM	water	5		X	X	
GW-44985-____20-DD-AW22	↓	↓	water	↓		X	X	
GW-44985-____20-DD-B3	↓	↓	water	↓		X	X	
GW-44985-____20-DD-EW2A	↓	↓	water	↓		X	X	
GW-44985-____20-DD-EW1A	↓	↓	water	↓		X	X	
GW-44985-____20-DD-A11	↓	↓	water	↓		X	X	
GW-44985-____20-DD-EW2C	↓		water	↓		X	X	
GW-44985-____20-DD-EW2B	↓	PM	water	↓		X	X	
GW-44985-____20-DD-EW1C	↓	↓	water	↓		X	X	
GW-44985-____20-DD-EW1B	↓	↓	water	↓		X	X	
~~GW-44985-____20-DD-~~			~~water~~			~~X~~	~~X~~	

TOTAL # OF CONTAINERS: 50

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

'20 DEC 21 11:19AM

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time
Dan Dan [signature]	12/21/20 1000	SIMRAN [signature]	
Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time

Special Instructions
Metals Field Filtered

Page 1 of 2

Your P.O. #: 73519806
Your Project #: 44985
Site Location: SARNIA, ONTARIO
Your C.O.C. #: 771822-01-01

Attention: 44985 - 73519806

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/07/02
Report #: R6231575
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0E0424
Received: 2020/06/08, 07:45

Sample Matrix: Water
Samples Received: 20

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Gross Alpha and Gross Beta (1)	7	N/A	2020/06/16	BQL SOP-00008	GFPC
Gross Alpha and Gross Beta (1)	6	N/A	2020/06/27	BQL SOP-00008	GFPC
Gross Alpha and Gross Beta (1)	7	N/A	2020/06/29	BQL SOP-00008	GFPC

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 Bureau Veritas Laboratories Kitimat

Your P.O. #: 73519806
Your Project #: 44985
Site Location: SARNIA, ONTARIO
Your C.O.C. #: 771822-01-01

Attention: 44985 - 73519806

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/07/02
Report #: R6231575
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0E0424
Received: 2020/06/08, 07:45

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829
==========
This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

RESULTS OF ANALYSES OF WATER

BV Labs ID		MUY141	MUY142	MUY143	MUY144		
Sampling Date		2020/06/01	2020/06/01	2020/06/02	2020/06/02		
COC Number		771822-01-01	771822-01-01	771822-01-01	771822-01-01		
	UNITS	GW-44985-20-DD-49D	GW-44985-20-DD-42S	GW-44985-20-DD-39S	GW-44985-20-DD-39I	RDL	QC Batch
RADIONUCLIDE							
Gross Alpha	Bq/L	<0.10	2.80	0.20	0.50	0.10	6779135
Gross Beta	Bq/L	<0.10	0.14	<0.10	0.26	0.10	6779135

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		MUY145	MUY146	MUY147		
Sampling Date		2020/06/02	2020/06/02	2020/06/02		
COC Number		771822-01-01	771822-01-01	771822-01-01		
	UNITS	GW-44985-20-DD-39D	GW-44985-20-DD-48D	GW-44985-20-DD-48S	RDL	QC Batch
RADIONUCLIDE						
Gross Alpha	Bq/L	<0.10	<0.10	0.35	0.10	6779135
Gross Beta	Bq/L	<0.10	<0.10	0.19	0.10	6779135

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		MUY148	MUY149	MUY150	MUY151		
Sampling Date		2020/06/03	2020/06/03	2020/06/03	2020/06/03		
COC Number		771822-01-01	771822-01-01	771822-01-01	771822-01-01		
	UNITS	GW-44985-20-DD-59D	GW-44985-20-DD-63S	GW-44985-20-DD-45S	GW-44985-20-DD-45D	RDL	QC Batch
RADIONUCLIDE							
Gross Alpha	Bq/L	<0.10	0.50	0.80	0.50	0.10	6808087
Gross Beta	Bq/L	0.11	<0.10	0.16	0.25	0.10	6808087

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		MUY152	MUY153	MUY153	MUY154		
Sampling Date		2020/06/03	2020/06/03	2020/06/03	2020/06/03		
COC Number		771822-01-01	771822-01-01	771822-01-01	771822-01-01		
	UNITS	GW-44985-20-DD-41S	GW-44985-20-DD-41D	GW-44985-20-DD-41D Lab-Dup	GW-44985-20-DD-30	RDL	QC Batch
RADIONUCLIDE							
Gross Alpha	Bq/L	0.37	<0.10	<0.10	0.34	0.10	6808087
Gross Beta	Bq/L	0.14	<0.10	<0.10	0.20	0.10	6808087

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

RESULTS OF ANALYSES OF WATER

BV Labs ID		MUY155	MUY156	MUY157	MUY158		
Sampling Date		2020/06/03	2020/06/03	2020/06/03	2020/06/04		
COC Number		771822-01-01	771822-01-01	771822-01-01	771822-01-01		
	UNITS	GW-44985-20-DD-30D	GW-44985-20-DD-35S	GW-44985-20-DD-35D	GW-44985-20-DD-EW1A	RDL	QC Batch
RADIONUCLIDE							
Gross Alpha	Bq/L	<0.10	1.00	<0.10	0.28	0.10	6808087
Gross Beta	Bq/L	<0.10	1.46	<0.10	<0.10	0.10	6808087

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		MUY159	MUY160		
Sampling Date		2020/06/04	2020/06/03		
COC Number		771822-01-01	771822-01-01		
	UNITS	GW-44985-20-DD-EW1A-98	GW-44985-20-DD-59S	RDL	QC Batch
RADIONUCLIDE					
Gross Alpha	Bq/L	0.29	0.35	0.10	6808087
Gross Beta	Bq/L	<0.10	0.18	0.10	6808087

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

TEST SUMMARY

BV Labs ID: MUY141 **Collected:** 2020/06/01
Sample ID: GW-44985-20-DD-49D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

BV Labs ID: MUY142 **Collected:** 2020/06/01
Sample ID: GW-44985-20-DD-42S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

BV Labs ID: MUY143 **Collected:** 2020/06/02
Sample ID: GW-44985-20-DD-39S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

BV Labs ID: MUY144 **Collected:** 2020/06/02
Sample ID: GW-44985-20-DD-39I **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

BV Labs ID: MUY145 **Collected:** 2020/06/02
Sample ID: GW-44985-20-DD-39D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

BV Labs ID: MUY146 **Collected:** 2020/06/02
Sample ID: GW-44985-20-DD-48D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

BV Labs ID: MUY147 **Collected:** 2020/06/02
Sample ID: GW-44985-20-DD-48S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6779135	N/A	2020/06/16	Barbara Kalbasi Esfahani

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

TEST SUMMARY

BV Labs ID: MUY148 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-59D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY149 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-63S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY150 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-45S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY151 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-45D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY152 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-41S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY153 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-41D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY153 Dup **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-41D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

TEST SUMMARY

BV Labs ID: MUY154 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-30 **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/29	Barbara Kalbasi Esfahani

BV Labs ID: MUY155 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-30D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/27	Barbara Kalbasi Esfahani

BV Labs ID: MUY156 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-35S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/27	Barbara Kalbasi Esfahani

BV Labs ID: MUY157 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-35D **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/27	Barbara Kalbasi Esfahani

BV Labs ID: MUY158 **Collected:** 2020/06/04
Sample ID: GW-44985-20-DD-EW1A **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/27	Barbara Kalbasi Esfahani

BV Labs ID: MUY159 **Collected:** 2020/06/04
Sample ID: GW-44985-20-DD-EW1A-98 **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/27	Barbara Kalbasi Esfahani

BV Labs ID: MUY160 **Collected:** 2020/06/03
Sample ID: GW-44985-20-DD-59S **Shipped:**
Matrix: Water **Received:** 2020/06/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Gross Alpha and Gross Beta	GFPC	6808087	N/A	2020/06/27	Barbara Kalbasi Esfahani

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

GENERAL COMMENTS

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

Package 1	3.0°C

Results relate only to the items tested.

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6779135	Gross Alpha	2020/06/15	111	60 - 140	<0.050	Bq/L	NC (1)	N/A
6779135	Gross Beta	2020/06/15	121	70 - 130	<0.050	Bq/L	NC (1)	N/A
6808087	Gross Alpha	2020/06/29	120	60 - 140	<0.10	Bq/L	NC (2)	N/A
6808087	Gross Beta	2020/06/29	104	70 - 130	<0.10	Bq/L	NC (2)	N/A

N/A = Not Applicable

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

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.

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 Parent ID

(2) Duplicate Parent ID [MUY153-01]

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BV Labs Job #: C0E0424
Report Date: 2020/07/02

GHD Limited
Client Project #: 44985
Site Location: SARNIA, ONTARIO
Your P.O. #: 73519806
Sampler Initials: DD

VALIDATION SIGNATURE PAGE

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

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

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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CHAIN OF CUSTODY RECORD

Page 1 of 2

INVOICE TO:	REPORT TO:	PROJECT INFORMATION:	Laboratory Use Only:
Company Name: #3000 GHD Limited	Company Name:	Quotation #: C00568	BV Labs Job #: / Bottle Order #: 771822
Attention: Laura Ermeta (AP-735)	Attention: 044985 - PO 73519806	P.O. #: 73519806	
Address: 455 Phillip St, Waterloo ON N2L 3X2	Address:	Project: 044985	COC #: C#771822-01-01
Tel: (519) 884-0510 Fax: (519) 725-1394	Tel: Fax:	Project Name:	Project Manager: Ema Gitej
Email: APinvoices-735@ghd.com	Email:	Site #: / Sampled By: Dave Aun	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): Table 1, Table 2, Table 3, Table; Res/Park, Ind/Comm, Agri/Other; Medium/Fine, Coarse, For RSC

Other Regulations: CCME, Reg 558, MISA, PWQO, Other; Sanitary Sewer Bylaw, Storm Sewer Bylaw, Municipality

Special Instructions: No

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC): Field Filtered (please circle): Metals / Hg / Cr VI; Gross Alpha and Gross Beta

Turnaround Time (TAT) Required: Please provide advance notice for rush projects

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required:
Rush Confirmation Number: (call lab for #)

#	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Gross Alpha and Gross Beta	# of Bottles	Comments
1		GW-44985-20-DD-417	6/20	AM	W	N	X	1	
2		GW-44985-20-DD-425	6/26	AM	W	N	↓	↓	
3		GW-44985-20-DD-395	6/20	AM	↓	↓	↓	↓	
4		GW-44985-20-DD-345	↓	AM	↓	↓	↓	↓	
5		GW-44985-20-DD-347	↓	PM	↓	↓	↓	↓	
6		GW-44985-20-DD-480	↓	PM	↓	↓	↓	↓	
7		GW-44985-20-DD-485	↓	PM	↓	↓	↓	↓	
8		GW-44985-20-DD-547	6/20	AM	↓	↓	↓	↓	
9		GW-44985-20-DD-635	↓	↓	↓	↓	↓	↓	
10		GW-44985-20-DD-455	↓	↓	↓	↓	↓	↓	ice

08-Jun-20 07:45
Ema Gitej
C0E0424
GK1 ENV-1274

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Time Sensitive	Laboratory Use Only
Dave Aun	20/6/6	1800	Tanisha Tanson	2020/06/08	07:45			Temperature (°C) on Recei 3/3/3 °C; Custody Seal Present / Intact: Yes
				20/06/08	17:34			

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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

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

White: BV Labs Yellow: Client

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

CHAIN OF CUSTODY RECORD

Page 2 of 2

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:		Quotation #:	C00568	BV Labs Job #:	Bottle Order #:
Attention:	Laura Ermeta (AP-735)	Attention:	044985 - PO 73519806	P.O. #:	73519806		771822
Address:	455 Phillip St	Address:		Project:	044985	COC #:	Project Manager:
	Waterloo ON N2L 3X2			Project Name:		C#771822-02-01	Ema Gitej
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Site #:			
Email:	APinvoices-735@ghd.com	Email:		Sampled By:	DAN DAn		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): Table 1 / Table 2 / Table 3 / Table ___ ; Res/Park / Ind/Comm / Agri/Other ; Medium/Fine / Coarse / For RSC

Other Regulations: CCME / Reg 558 / MISA / PWQO / Other ; Sanitary Sewer Bylaw / Storm Sewer Bylaw / Municipality ___

Special Instructions: No

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Gross Alpha and Gross Beta	# of Bottles	Comments
1		GW-44985-___20-DD-450	AM	6320	W	N	X	1	
2		GW-44985-___20-DD-446	PM	↓	↓	↓	↓	↓	
3		GW-44985-___20-DD-417	↓	↓	↓	↓	↓	↓	
4		GW-44985-___20-DD-30	↓	↓	↓	↓	↓	↓	
5		GW-44985-___20-DD-327	↓	↓	↓	↓	↓	↓	
6		GW-44985-___20-DD-355	↓	↓	↓	↓	↓	↓	
7		GW-44985-___20-DD-357	↓	↓	↓	↓	↓	↓	
8		GW-44985-___20-DD-EW1A	AM	6420	↓	↓	↓	↓	
9		GW-44985-___20-DD-EW1A98	↓	↓	↓	↓	↓	↓	
10		GW-44985-___20-DD-595	AM	6320	↓	↓	↓	↓	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Time Sensitive	Laboratory Use Only
DAN DAn	20/06/06	1520	[signature]	2020/06/06	17:37			Temperature (°C) on Recei 9/13/3 ; Custody Seal Present: No ✓ ; Intact: No ✓

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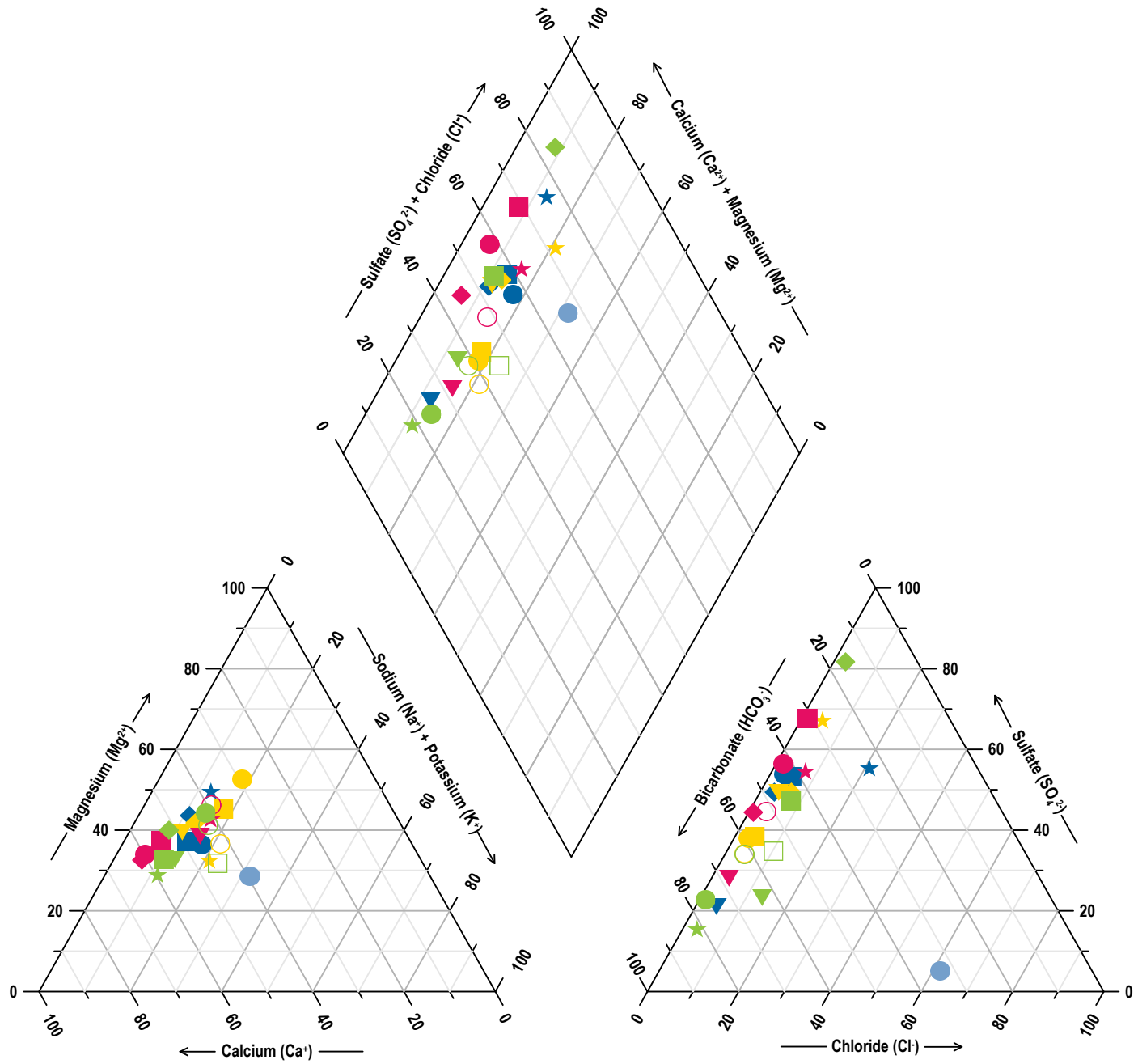
191503

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

White: BV Labs Yellow: Client

Appendix F
Piper Plots



LEGEND

Off-Site	North Berm	Downgradient of North Berm	Removed from North Berm	Internal
TW55-09S	TW39-99I	OW32-90S	TW30-94	TW63-13S
TW56-11S	TW39-99S	OW35-90S	TW41-99S	
TW57-11S	TW46-99I	TW21-94-II	TW42-99S	
TW58-11S	TW46-99S	TW22-94	TW43-99S	
TW59-13S	TW61-13I	TW32-94-IV	TW45-99S	
	TW61-13S	TW40-99S	TW48-16S	
			TW62-13S	

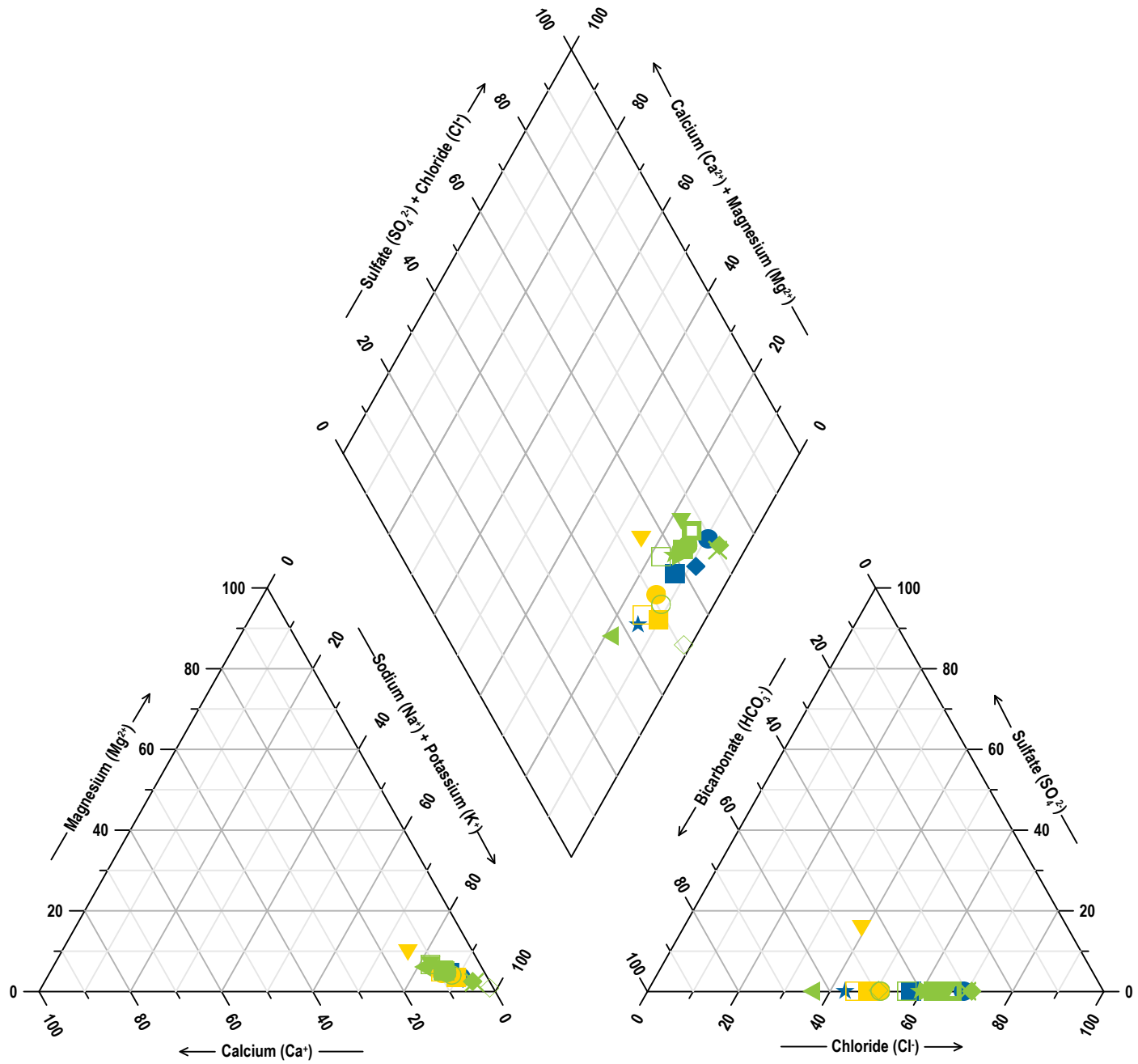
CLEAN HARBORS CANADA INC
LAMBTON FACILITY
2020 GROUNDWATER MONITORING
ANNUAL REPORT

JUNE 2020 ACTIVE AQUITARD PIPER PLOT

Project No. **044985-48**
Date **February 2021**

FIGURE F.1

HEG file: C:\Users\mmobrien\Desktop\Piper-Template-2019 - Active Aquitard.grf
Plot Date: February 05 2021 2:02 PM



LEGEND

Off-Site

- TW55-09D
- TW56-11D
- TW57-11D
- TW59-13D

Internal

- TW39-99D
- TW46-99D
- TW54-09D
- TW61-13D

Perimeter

- OW32-90D
- OW35-05D
- TW22-99D
- TW30-99D
- TW40-99D
- TW41-99D
- TW43-99D
- TW45-99D
- TW48-00D
- TW49-00D
- TW60-13D

CLEAN HARBORS CANADA INC
LAMBTON FACILITY
2020 GROUNDWATER MONITORING
ANNUAL REPORT

JUNE 2020 INTERFACE AQUIFER PIPER PLOT

Project No. **044985-43**
Date **February 2021**

FIGURE F.2

HEG file: C:\Users\mmobrien\Desktop\Piper-Template-2019 - Interface Aquifer.grf
Plot Date: February 09 2021 8:02 AM

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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