CN Milton Logistics Hub: 2022 Construction Groundwater Monitoring Follow-Up Program Results

Final Report

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Table of Contents

List of Tables

List of Appendices

Acronyms / Abbreviations

Aardvark	Aardvark Drilling Inc
AO	Aesthetic objective
AMSL	Above mean sea level
BGS	Below ground surface
CN	Canadian National Railway Company
DCC	Dufferin Construction Company
EM	Environmental Monitor
FUP	Follow up program
CDWQG	Canadian Drinking Water Quality Guidelines
Halton Region	Regional Municipality of Halton
ID	Inner diameter
MAC	Maximum allowable concentration
MECP	Ministry of Environment, Conservation and Parks
MOH	Ministry of Health
ODWQS	Ontario Drinking Water Quality Standards
OG	Operational Guideline

O.Reg.	Ontario Regulation
Project	Milton Logistics Hub
PDA	Project Development Area
PVC	Polyvinyl chloride
Stantec	Stantec Consulting, Ltd.
SWM	Stormwater management
TDS	Total dissolved solids
WWR	Water Well Record
ZOI	Zone of influence

1 Introduction

Canadian National Railway Company (CN) retained Stantec Consulting Ltd. (Stantec) to conduct a Groundwater Follow-up Program (FUP) (Stantec, 2022) for the Milton Logistics Hub (the Project) in the Town of Milton, within the Regional Municipality of Halton (Halton Region), Ontario.

This report documents the implementation of the Groundwater FUP (Stantec, 2022) for Project construction activities that occurred throughout 2022.

1.1 Program Design Considerations

This Groundwater FUP has been developed to comply with the conditions of approval in the Minister of the Environment and Climate Change's Decision Statement issued January 21, 2021, as amended July 16, 2022. As described in the Groundwater FUP (Stantec, 2022), the FUP has been developed in accordance with Condition 2.6 of the Decision Statement, and consists of two components:

- Monitoring of groundwater levels and quality in a multi-level monitoring well installed by CN adjacent to the future Lower Base Line grade separation for potential effects of groundwater dewatering on local private water supply wells from Lower Base Line construction works.
- Monitoring groundwater levels and quality at selected locations in and adjacent to the Project Development Area (PDA) for potential effects of groundwater dewatering on local private water supply wells from onsite Project construction works.

Adaptive management processes associated with each of the above components are in place should concerns arise regarding groundwater quantity and/or quality.

1.2 Activities Undertaking During Reporting Year

In Q1 of 2022, CN undertook Phase One site preparation activities, such as surveying, delineating construction site boundaries, and installing site fencing; installation of monitoring equipment; placement of stakes/demarcation materials for site safety; clearing and grubbing of vegetated areas; access road and laydown area construction; and the installation of construction site offices and other components.

In Q2, site activities included excavation of stormwater management (SWM) pond #2; preparation of the habitat enhancement areas accessible during this time of year;

continued excavation work; removal of CN-owned buildings; initiation of grading activities on the realignment of Indian Creek and Tributary A; and work on access roads, including the installation of a temporary bridged access road over Indian Creek.

Following the fisheries timing window (March 15 to June 30), CN commenced construction of the portion of the Tributary A realignment channel within the existing agricultural pond and continued with construction of the associated Tributary A habitat structures and offline portions of culverts 2A and 2B. Other activities in Q3 included site grading activities; continued construction of SWM pond #2, including the outlet structure, and initiation of SWM pond 1; site grading and earth moving activities; continued offline construction of the Indian Creek realignment channel and associated habitat structures; and the construction of an interim noise berm along Lower Base Line and the eastern property boundary near lay down area 1.

Finally, in Q4, CN connected the new realigned portion of Tributary A, as well as culvert 2B and the downstream portion of culvert 2A, to the existing Tributary A. Other activities included realignment of the Sun Canadian pipeline; removal of the temporary bridge over Indian Creek; completion of in-water and bank enhancements along Indian Creek; continued offline construction of the Indian Creek realignment channel and associated habitat structures; initiation of the realignment of the existing mainline, including grading and drainage; and completion of site stabilization measures in preparation for the winter period.

2 Methods

The following sections outline the methods for the Groundwater FUP in 2022.

2.1 Lower Base Line Separation – Private Well Groundwater Monitoring

As discussed in the Groundwater FUP, groundwater dewatering may be required during the Lower Base Line grade separation works. However, in 2022, no below ground excavation occurred along Lower Base Line and, subsequently, groundwater dewatering did not occur. When these works do occur, the Lower Base Line Grade Separation Construction Dewatering Assessment (Stantec, 2020) predicts that the dewatering zone of influence (ZOI) (i.e., horizontal extent of groundwater level declines / drawdown caused by dewatering activities at a point source) from planned excavations are not expected to intercept local private wells and, consequently, interfere with the quantity/yield and quality of these potable water supply sources.

Based on the analysis presented by Stantec (2020), the following residential properties were recommended for inclusion in the private water supply well monitoring program even though these closest properties to the future construction area are not expected to be intercepted by the ZOI:

- 3204 Lower Base Line (CN owned)
- 3214 Lower Base Line (CN owned)
- 3242 Lower Base Line (CN owned)
- 3249 Lower Base Line (CN owned)
- 3316 Lower Base Line (Private)

On behalf of CN, a field survey performed by Stantec in September 2021 confirmed that private wells listed in the MECP Water Well Information System (WWIS) for the properties located at 3204, 3214, 3242 and 3249 Lower Base Line no longer exist or were inaccessible. Stantec personnel contacted the resident of 3316 Lower Base Line for permission to access their private well for monitoring purposes; however, the resident did not wish to participate in the monitoring program. As such, permission was not granted to access the private well at 3316 Lower Base Line and, as an alternative, CN constructed a new multi-level monitoring well (i.e., MW303-21(S/D)) immediately north of this property for inclusion in the monitoring program (Figure A-1). MW303-

21(S/D) is completed to depths representative of the groundwater system in which the residence at 3316 Lower Base Line is expected to draw its potable water supply. Details on the installation and monitoring of MW303-21(S/D) are discussed in the sections below.

2.1.1 MW303-21(S/D) Construction

Stantec on behalf of CN retained Aardvark Drilling Inc. (Aardvark) to drill and construct the multi-level monitoring well consistent with the methods outlined in Ontario Regulation 903 (O.Reg.903) (MECP, 1990). Between December 20 and 21, 2021 Aardvark used a CME 75 track-mounted drilling rig equipped with a hollow stem auger and mud rotary continuous coring system to drill a 122 mm diameter borehole to a depth of 23.7 m below ground surface (BGS). Aardvark then installed a monitoring well into this borehole (i.e., MW303-21(D)), with the well consisting of a 51 mm ID Schedule 40 polyvinyl chloride (PVC) pipe connected to a 1.5 m long, 10 slot (0.01 inch) sized PVC well screen extending to a depth of 23.6 m BGS. This monitoring well is screened in the shale bedrock. The annular space between the well screen and the formation was backfilled with No. 2 grade silica sand, extending a minimum of 0.3 m above the top of the well screen. The remainder of the annular space above the sand pack was filled with a combination of peltonite chips, bentonite slurry, and bentonite chips to ground surface using positive displacement methods. The monitoring well stick-up (i.e., portion of well casing located above ground surface) was covered with a lockable steel protective casing.

Between December 21 to December 22, 2021, Aardvark drilled a 98 mm diameter borehole directly adjacent to the first borehole to a depth of 19.8 m BGS and equipped this borehole with the monitoring well (i.e., MW303-21(S)). This monitoring well is constructed with 51 mm ID Schedule 40 PVC pipe connected a 3.0 m long, No. 10 slot (0.01 inch) sized PVC well screen extending to a depth of 19.8 m BGS. The annular space of the well was backfilled similar to MW303-21(D), with the well stick-up also being covered by an above ground lockable steel protective casing. This well is screened in the deep overburden deposits of Halton Till (i.e., sandy to silty clay till).

During drilling, Stantec logged the soil stratigraphy at this location using the ASTM (2009) guideline for the description and identification of soils. The borehole logs contained descriptions (where relevant and possible) of soil type, texture, colour, structure, consistency, plasticity, moisture content, and other visual and olfactory observations. Based on the proximity to MW303-21(D), Stantec assumed the soil stratigraphy of the adjacent MW303-21(S) to be the same as the deep borehole and, as such, the overburden was not logged by Stantec for the shallower well. Appendix C

provides a copy of the borehole log, with well construction details being provided on the log and summarized in Table B-1.

Following installation, Stantec purged each monitoring well using dedicated 16 mm (2/3 inch) inside diameter high density polyethylene (HDPE) tubing connected to a D-25 Waterra™ foot valve. Using the dedicated tubing, Stantec purged a minimum of four standing column volumes from each well to clear out any fine-grained sediments from the well screen and, subsequently, establish a proper hydraulic connection with the surrounding native aquifer material.

Ground surface and top-of-pipe elevations at each borehole location were surveyed to a geodetic benchmark by Stantec Geomatics, using the Can-Net GPS Survey system having a spatial accuracy of ± 0.03 m and ± 0.02 m in the vertical and horizontal plane, respectively.

2.1.2 Groundwater Level Monitoring

The shallow (S) and deep (D) monitoring wells associated with MW303-21(S/D) are equipped with data loggers (Solinst® Edge Leveloggers) programmed to continuously record groundwater levels at one-hour intervals. The installation of the Leveloggers occurred shortly after developing the monitoring wells (January 16, 2022) and were downloaded twice during the monitoring period: June 2022 and January 2023. Manual water level measurements were taken using a battery-operated Heron™ water level indicator. Stantec personnel measured groundwater levels to the nearest 0.01 m and converted to elevations above mean sea level (AMSL) using surveyed elevation data. Table 2 provides a summary of manual groundwater level measurements obtained from MW303-21(S/D), with Figure A-2 providing hydrographs presenting recorded groundwater level fluctuations over time. Trends in total precipitation (rainfall + snowfall) and air temperature in the region are presented on Figure A-2 based on climatic data mainly collected from the Oakville TWN Climate Station with gaps in these data being infilled with data obtained from the Hamilton RBG Climate Station (Environment and Climate Change Canada, 2023). Stantec assumes that precipitation and air temperature data recorded at these stations are reflective of the precipitation and air temperature trends that occurred near the PDA.

2.1.3 Groundwater Quality Sampling

The collection of one pre-construction groundwater sample from MW303-21(S) and MW303-21(D) occurred on January 16, 2022, for the purpose of establishing baseline quality conditions of the local groundwater system near the 3316 Lower Base Line property.

Prior to sample collection, a minimum of three well volumes were removed from each monitoring well using a dedicated inertial lift Waterra™ sampling pump, with field measurements of temperature, specific conductivity, pH, oxidative/reductive potential, and dissolved oxygen being recorded after the purging each well volume using a YSI multi-parameter water quality meter. The meter was calibrated prior to use according to the manufacturer's specification with the appropriate calibration solutions. Field parameters in each well stabilized after purging three well volumes indicating that all stagnant water had been removed from the respective well casings.

Following purging, Stantec proceeded to collect groundwater samples from each well in lab-supplied bottles for quality analysis. The quality analysis included the testing of parameters listed under Tables 1, 2 and 4 of the Ministry of Environment, Conservation and Parks (MECP) (2006) *Technical Support Document for Ontario Drinking Water (Quality) Standards (ODWQS), Objectives and Guidelines* (document issued in support of Ontario Regulation 169/03): general chemistry, metals, microbiology, dioxins and furans, herbicides and pesticides, volatile organic compounds, and semi-volatile organic compounds. Groundwater samples collected for metals analysis were filtered in the field using dedicated disposable 0.45 µm in-line filters. Following collection, groundwater samples were stored in coolers with ice and delivered to the accredited laboratory Bureau Veritas (Missisauga, Ontario) for analysis. Laboratory certificates of analysis are provided in Appendix D, with the sampling results being presented in Table A-3.

2.2 Project Development Area (PDA) – Groundwater Monitoring

As discussed in the Groundwater FUP (Stantec, 2022), CN is using the existing groundwater monitoring well network that has been in place across the PDA since 2015. However, several of the monitoring wells are positioned within the footprints of various Project components and, subsequently, will require decommissioning over the various construction phases of the Project. Overall, the monitoring wells that will remain undisturbed throughout the construction and post-construction phases of the Project (i.e., for a minimum of one year) include:

- BH5
- MW202
- MW206
- MW208
- Residential water supply wells located within the PDA:
  - MECP Well 2806808
  - MECP Well 2803463

Except for BH5, these previously mentioned wells are constructed to depths/elevations that are representative of the depths/elevations of offsite private wells located immediately to the south of Tremaine Road, making them ideal for monitoring the potential advancement of any onsite dewatering ZOI beyond the southern boundary of the PDA.

The wells projected to be available for monitoring through a portion of the construction period include:

- BH1, BH10, BH12, BH17, BH28, and BH37
- MW201, MW203, MW204, MW205, MW207, MW210, MW212, and MW214.

Although several of these previously mentioned monitoring wells are present along the northern boundary of the PDA, many of these wells are not completed to depths/elevations representative of the depths/elevations of offsite private wells located near Bronte Street South, except for BH28 and MW214. To address this gap in the groundwater monitoring network, CN installed two additional multi-level monitoring wells (i.e., MW301-21(S/D) and MW302-21(S/D)) on their lands located directly to the north of the PDA (Figure 1). These multi-level monitoring wells are to provide additional coverage along the northern boundary of the PDA to track the potential advancement of any onsite dewatering ZOI towards the offsite private wells to the north.

2.2.1 Monitoring Well Decommissioning

Between April 7 and September 26, 2022, a total of nine monitoring wells identified for abandonment were decommissioned by In-Situ Contractors, Inc.:

- BH1 – decommissioned on April 7, 2022
- BH10 – decommissioned on April 7, 2022
- BH12 – decommissioned on May 31, 2022
- MW203 – decommissioned on April 28, 2022
- MW204 – decommissioned on April 7, 2022
- MW205 – decommissioned on May 31, 2022
- MW207 – decommissioned on March 8, 2022
- MW210 – decommissioned on March 18, 2022
- MW212 – decommissioned on September 26, 2022.

Each of the previously mentioned monitoring wells was filled with bentonite and the PVC casings were cut to 2.0 to 2.5 m BGS. Decommissioning records are provided in Appendix E. Available groundwater elevation and quality data up to the time of decommissioning is discussed in the results sections (Section 3.3).

2.2.2 Supplemental Monitoring Well Construction

As previously mentioned, CN authorized the installation of two multi-level monitoring wells just beyond the northern limits of the PDA: MW301-21(S/D) and MW302-21(S/D) (Figure A-1).

Stantec on behalf of CN retained Aardvark Drilling Inc. (Aardvark) to drill and construct the multi-level monitoring wells consistent with the methods outlined in O.Reg. 903 (MECP, 1990). Aardvark used a CME 75 track-mounted drilling rig equipped with a hollow stem auger and mud rotary continuous coring system to drill the boreholes, with Stantec logging the soil stratigraphy encountered following the ASTM (2009) guideline for the description and identification of soils. Upon completion, each borehole was equipped with a monitoring well. Details on the well construction are discussed in the sections below.

2.2.2.1 MW301-21(S/D) Construction

Between August 17 and August 18, 2021, Aardvark drilled a 122 mm diameter borehole to a depth of 25.8 m BGS. The deep monitoring well (i.e., MW301-21(D)) was constructed on August 18, 2021, consisting of a 51 mm ID Schedule 40 PVC pipe connected to a 3.0 m long, 10 slot (0.01 inch) sized PVC well screen extending to a depth of 25.8 m BGS. This monitoring well is screened in the shale bedrock.

On August 18, 2021, a 98 mm diameter borehole was drilled directly adjacent to the deep borehole to a depth of 19.5 m BGS. The monitoring well installed in this borehole (i.e., MW301-21(S)) is constructed with a 51 mm ID Schedule 40 PVC pipe having a 3.0 m long, No. 10 slot (0.01 inch) sized PVC well screen extending to a depth of 19.5 m BGS. This well is screened in the deeper overburden deposits of Halton Till (i.e., sandy to silty clay till).

After setting the monitoring wells in the boreholes, the annular space between each monitoring well screen and the formation was backfilled with No. 2 grade silica sand, extending a minimum of 0.2 m above the top of the well screen. The remainder of the annular space above the sand pack was filled with a combination of peltonite chips, bentonite slurry, and bentonite chips to ground surface using positive displacement methods. The monitoring well stick-up (i.e., portion of well casing located above ground surface) is covered with a lockable steel protective casing. Appendix C provides a copy of the borehole log, with well construction details being provided on the logs and summarized in Table B-1.

Following installation, Stantec purged each monitoring well using dedicated 16 mm (2/3 inch) inside diameter high density polyethylene (HDPE) tubing connected to a D-25 Waterra™ foot valve. Using the dedicated tubing, Stantec purged a minimum of four standing column volumes from each well to clear out any fine-grained sediments from the well screen and, subsequently, establish a proper hydraulic connection with the surrounding native aquifer material.

Ground surface and top-of-pipe elevations at each borehole location were surveyed to a geodetic benchmark by Stantec Geomatics, using the Can-Net GPS Survey system having a spatial accuracy of ± 0.03 m and ± 0.02 m in the vertical and horizontal plane, respectively.

2.2.2.2 MW302-21(S/D) Construction

On August 20, 2021, Aardvark drilled a 122 mm diameter borehole to a depth of 22.6 m BGS and equipped the borehole with a deep monitoring well (i.e., MW302-21(D)). The monitoring well is constructed of 51 mm ID Schedule 40 PVC pipe having a 3.0 m long, No. 10 slot (0.01 inch) sized PVC well screen extending the full depth of the borehole. This monitoring well is screened in the shale bedrock.

On August 23, 2021, a 98 mm diameter borehole was drilled directly adjacent to the previously mentioned borehole to a depth of 16.5 m BGS, with this borehole then being equipped with a monitoring well (i.e., MW302-21(S)). The well is constructed of a 51 mm ID Schedule 40 PVC pipe having a 3.0 m long, No. 10 slot (0.01 inch) sized PVC well screen extending the full depth of the borehole. This well is screened into deeper overburden deposits of Halton Till (i.e., sandy to silty clay till).

After setting the monitoring wells in the boreholes, the annular space between each monitoring well screen and the formation was backfilled with No. 2 grade silica sand, extending a minimum of 0.2 m above the top of the well screen. The remainder of the annular space above the sand pack was filled with a combination of peltonite chips, bentonite slurry, and bentonite chips up to or near ground surface using positive displacement methods. The monitoring well stick-up (i.e., portion of well casing located above ground surface) is covered with a lockable steel protective casing. Appendix C provides a copy of the borehole log, with well construction details being provided on the log and summarized in Table B-1.

Following installation, Stantec purged each monitoring well using dedicated 16 mm (2/3 inch) inside diameter high density polyethylene (HDPE) tubing connected to a D-25 Waterra™ foot valve. Using the dedicated tubing, Stantec purged a minimum of four standing column volumes from each well to clear out any fine-grained sediments from the well screen and, subsequently, establish a proper hydraulic connection with the surrounding native aquifer material.

Ground surface and top-of-pipe elevations at each borehole location were surveyed to a geodetic benchmark by Stantec Geomatics, using the Can-Net GPS Survey system having a spatial accuracy of ± 0.03 m and ± 0.02 m in the vertical and horizontal plane, respectively.

2.2.3 Groundwater Level Monitoring

Each of the monitoring wells in the PDA groundwater monitoring network are equipped with data loggers (Solinst® Edge Leveloggers). The Leveloggers have been continuously recording groundwater level fluctuations in most of the monitoring wells on an hourly basis since June 2015, except for MW301-21(S/D) and MW302-21(S/D) where recording started in August 2021. Downloading of the Leveloggers occurred at the time of taking manual water level measurements, which occurred in December 2021 / January 2022, June 2022, and January 2023. Manual water level measurements were taken using a battery-operated Heron™ water level indicator. Stantec measured groundwater levels to the nearest 0.01 m and converted to elevations above mean sea level (AMSL) using surveyed elevation data. Hydrographs presenting groundwater level fluctuations over time are shown on Figures A-2 to A-7. Trends in total precipitation (rainfall + snowfall) and air temperature in the region are also presented on previously mentioned figures using climatic data collected from the Oakville TWN Climate Station, with gaps in this data set being infilled with data obtained from the Hamilton RBG Climate Station (Environment and Climate Change Canada, 2023). Stantec assumes that precipitation and air temperature data recorded at these stations are reflective of the precipitation and air temperature trends that occurred near the PDA.

2.2.4 Groundwater Quality Sampling

Between January 13 and 16, 2022, Stantec collected pre-construction groundwater quality samples from MW301-21(S/D) and MW302-21(S/D), including samples from the two onsite private wells: Well 2803463 and Well 2806808. The analysis results from these samples represent baseline groundwater quality conditions at these locations. For the remaining monitoring wells in the PDA, pre-construction groundwater quality was established based on samples obtained from these wells in either June / July 2015 and/or April 2016.

Between June 9 and 14, 2022, Stantec collected groundwater samples from BH17, BH28, BH37, MW201, MW202, MW206, MW208, MW214, MW301-21(S/D), MW302-21(S/D), Well 2803463, and Well 2806808 for quality analysis. Groundwater samples were not collected from BH1, BH10, BH12, MW204, MW205, MW207 and MW210 as these monitoring wells had been decommissioned by the time of the sampling event. Sampling of the monitoring wells involved using a dedicated inertial lift Waterra™ sampling pump system, with utility pumps being used to sample the private wells.

Prior to sampling, a minimum of three casing volumes were removed from each monitoring well, with field measurements of specific conductivity, temperature, pH, dissolved oxygen, and oxidative-reductive potential being recorded using a YSI multi-parameter water quality meter. The meter was calibrated prior to use according to the manufacturer's specifications with the appropriate calibration solutions. Field parameters in each well stabilized after purging three well volumes indicating that all stagnant water had been removed from the respective well casings.

Following purging, Stantec proceeded to collect groundwater samples from each well for the analysis of the following quality parameters: general inorganic chemistry and dissolved metals. Groundwater samples collected for metals analysis were filtered in the field using dedicated disposable 0.45 µm in-line filters. Groundwater samples were collected directly into laboratory supplied containers, placed in a cooler on ice for storage, and delivered to an accredited laboratory for analyses (Bureau Veritas, Laboratories, Mississauga, Ontario). Sampling results were compared against the Canadian Drinking Water Quality Guidelines (CDWQG). Laboratory certificates of analysis are provided in Appendix D, with the sampling results being presented in Table A-4.

3 Results

3.1 2022 Construction Activities and On-Site Dewatering

As described in Section 1.2, activities undertaken during the monitoring period included (below ground) construction works associated with the realignment of Indian Creek and Tributary A, and the construction of SWM ponds 1 and 2. Stantec Environmental Monitor (EM) was onsite to monitor and document the progress of these works and select photographs are presented in Appendix F. CN notes that no groundwater dewatering activities, as confirmed by CN's construction contractor, Dufferin Construction Company (DCC) and Stantec EM, occurred as part of the previously mentioned below ground construction activities that occurred in 2022. Only stormwater runoff generated by rainfall and snowmelt events throughout the PDA that pooled in excavations associated with the Indian Creek and Tributary A realignments and SWM pond construction required active management via pumping. For example, Photographs 7 and 8 (Appendix F) show some of the pooling that occurred immediately after a large precipitation event on August 17, 2022, with Photograph 9 showing the dewatering of this ponded area performed on September 7, 2022. All other photos show examples of shallow excavations that had no evidence of groundwater accumulation, only pooled water that was a by-product of precipitation events.

3.2 Lower Base Line Separation – Private Well Groundwater Monitoring

3.2.1 Groundwater Levels

Table A-2 provides a summary of manual groundwater level measurements obtained from MW303-21(S/D), with hydrographs showing groundwater level fluctuations over this same period being presented in Figure A-2.

Over the monitoring period, groundwater elevations in MW301-21(S) and MW301-21(D) experienced a steady decline, dropping up to 2.3 m (Figure A-2). As no construction works occurred along Lower Base Line in 2022 and, subsequently, no associated groundwater dewatering was performed, these observed declines in groundwater elevations were naturally occurring. The observed decline in groundwater elevations is likely attributed to the lower-than-average amount of precipitation that fell over the region in 2022. According to local climate data, precipitation (rainfall + snowfall) that occurred over 2022 totaled 427 mm, which was notably below the corresponding 30-year average of 897 mm. As such, the resulting deficit of soil moisture available in the

subsurface to meet local evapotranspiration demands resulted in water being drawn up from deeper portions of the groundwater system to satisfy these demands and, consequently, causing groundwater elevations in this deeper system to experience an overall steady decline throughout the monitoring period.

3.2.2 Groundwater Quality

Groundwater samples collected from MW303-21(S/D) on January 16, 2022, represent baseline quality conditions in the deep overburden (i.e., MW303-21(S)) and bedrock (i.e., MW303-21(D)) groundwater systems near the Lower Base Line. Table 3 provides the quality results of this groundwater sampling. Stantec notes that observed exceedances for certain tested parameters outlined below are representative of existing background conditions seeing that no construction works occurred along Lower Base Line in 2022 (i.e., exceedances not attributable to Project construction activities). For the water quality parameters analyzed, the following parameters exceeded the Maximum Acceptable Concentration (MAC) for health-related risks as outlined under the ODWQS:

- Bromate (0.01 mg/L): exceeded the ODWQS MAC with a concentration of 0.027 mg/L in MW303-21(S). At MW303-21(D), the laboratory reporting limit was greater than the applicable standard. Bromate does not occur naturally in source waters and is typically a by-product of a chemical reaction that occurs between bromide in the source water and ozone, an inorganic gas used to disinfect drinking water supplies. Individuals who ingest large amounts of bromate may experience gastrointestinal symptoms.

The ODWQS for non-health related chemical parameters exceeded the Operational Guidelines (OG) for hardness, organic nitrogen, and dissolved aluminum. Those chemical parameters exceeding their corresponding Aesthetic Objective (AO) concentrations in the groundwater samples included chloride, sulfate, total dissolved solids (TDS), turbidity, iron, manganese, and sodium, with sodium also exceeding the Ministry of Health (MOH) Reporting Limit. The specific groundwater samples that exceeded these previously mentioned OG and AO concentrations were as follows:

- Chloride: exceeded the ODWQS AO of 250 mg/L in MW303-21(D) with a concentration of 1,500 mg/L. Naturally elevated chloride concentrations are common in groundwater drawn from bedrock aquifers in Ontario, noting that MW303-21(D) is screened in shale bedrock of the Queenston Formation. High levels of chloride may increase corrosion in household plumbing and hot water tanks.

- Dissolved aluminum: exceeded the ODWQS OG of 0.10 mg/L at MW303-21(S) with a concentration of 0.22 mg/L.
- Hardness: exceeded the ODWQS OG (80-100 mg/L) in both monitoring wells, with a concentration of 2,100 mg/L being detected at MW303-21(D) and 870 mg/L at MW303-21(S). Elevated hardness concentrations are typical of groundwater in Southern Ontario and not considered to be a concern. Hardness is a measure of dissolved calcium and magnesium in the water supply (also elevated in both wells) and, on heating, can form scale deposits on plumbing fixtures. Water supplies having hardness concentrations greater than 200 mg/L are considered to be poor tasting, but tolerable.
- Iron: exceeded the ODWQS AO of 0.30 mg/L in both MW303-21(D) and MW303-21(S) with concentrations of 0.60 mg/L and 0.31 mg/L, respectively. An elevated iron concentration can cause water to have a brownish colour, causing potential staining to laundered items and plumbing fixtures and may produce a bitter, astringent taste to the water.
- Manganese: exceeded the ODWQS AO of 0.05 mg/L in both MW303-21(D) and MW303-21(S) with concentrations of 0.24 mg/L and 0.20 mg/L, respectively. An elevated concentration of manganese is commonly found in groundwater that has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA. Manganese will cause laundered items and plumbing fixtures to stain black as well as cause undesirable tastes in beverages at high concentrations.
- Organic nitrogen: exceeded the ODWQS OG of 0.15 mg/L in MW303-21(D) with a concentration of 0.53 mg/L.
- Sulfate: Exceeded the ODWQS AO of 500 mg/L in both MW303-21(D) and MW303-21(S) with concentrations of 1,600 mg/L and 790 mg/L, respectively. An elevated concentration of sulfate is commonly found in groundwater that has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA. Elevated sulfate may affect the taste of water and can form a hard scale in hot water tanks.
- Total Dissolved Solids (TDS): exceeded the ODWQS AO of 500 mg/L in both MW303-21(D) and MW303-21(S) with concentrations of 4,700 mg/L and 1,600 mg/L, respectively. The principal constituents of TDS are chloride, sulfate, calcium, magnesium, and bicarbonates, all of which are common to the local groundwater system. The effects of elevated TDS on drinking water quality in terms of taste depend on the various concentrations of these individual components in the groundwater supply.

- Turbidity: exceeded the ODWQS AO of 5 NTU (nephelometric turbidity units) at both MW303-21(D) and MW303-21(S) with concentrations of 170 NTU and 160 NTU, respectively. Elevated turbidity is a common by-product of monitoring well sampling as the techniques used to purge water from the well often stirs up any residual sand and silt that may be settled at the bottom of the well. Turbidity will naturally decrease over time in MW303-21(S/D) as these monitoring wells are subjected to further purging / development.
- Sodium: exceeded both the ODWQS AO of 200 mg/L and MOH reporting limit of 20 mg/L in both MW303-21(D) and MW303-21(S) with concentrations of 800 mg/L and 230 mg/L, respectively. An elevated concentration of sodium is commonly found in groundwater that has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA. Elevated sodium concentrations in a water supply are not considered a health concern but may be an issue for people on a sodium-restricted diet.

Results of this groundwater quality sampling analysis will be used as a baseline from which future quality results of samples taken from local privately owned supply wells can be compared, should there be any private well interference complaints received during the construction or post-construction phases of the Lower Base Line grade separation work.

3.2.3 Private Well Interference Complaints

In 2022, no private well interference complaints were received. Groundwater elevation fluctuations will continue to be monitored using data loggers together with periodic manual groundwater level measurements; however, no additional groundwater sampling from these wells will be performed unless a private well interference complaint is received from a property located near the Lower Base Line grade separation area.

3.3 Project Development Area – Groundwater Monitoring

3.3.1 Groundwater Levels

Table 1 below provides a summary of the pre-construction (baseline) groundwater elevation monitoring results obtained from the PDA groundwater monitoring well network since 2015 and the range of the results recorded in 2022. Hydrographs presenting the full monitoring results (baseline and for 2022) are provided on Figures A-3 to A-7.

Groundwater elevations recorded in each of the PDA monitoring wells for 2022 remained in their corresponding historical range of pre-construction fluctuations (based on data sets dating back to 2015), except for MW201, MW202, MW206, and MW208. Groundwater elevations in MW201 (Figure A-5), MW202 (Figure A-5), MW206 (Figure A-6), and MW208 (Figure A-6) did not exceed their historical upper elevation limit, but did drop below their lower elevation limit by 0.09 to 0.69 m. At all monitoring wells that remained intact throughout 2022 (i.e., not decommissioned), groundwater elevations experienced a steady decline starting at the end of May (coinciding with the end of the spring freshet) to the end of the year. This is a common occurrence for the groundwater table in Ontario.

Table 1 Pre- and During Construction Range of Groundwater Elevations

Well ID	Pre-Construction Groundwater Elevation (m AMSL)		During Construction (2022) Groundwater Elevation (m AMSL)		Date of Well Decommissioning
	Minimum	Maximum	Minimum	Maximum	
BH1	174.99	177.13	176.37	176.51	April 7, 2022
BH10	177.20	179.83	-	-	May 31, 2022
BH12	175.27	178.34	177.33	178.19	May 31, 2022
BH17	178.50	180.32	177.20	180.15	Intact
BH28	177.65	179.50	177.62	179.35	Intact
BH37	179.31	181.38	178.08	181.20	Intact
MW201	176.53	177.76	175.84	177.79	Intact
MW202	170.02	173.85	169.35	173.72	Intact
MW203	167.47	170.94	169.69	170.47	April 28, 2022
MW204	171.96	174.59	173.80	174.39	April 7, 2022
MW205	169.80	172.48	171.94	172.35	May 31, 2022
MW206	172.83	175.38	172.74	175.33	Intact
MW207	176.10	177.49	177.27	177.49	March 18, 2022
MW208	174.35	176.80	174.06	176.65	Intact
MW210	177.44	179.24	178.46	179.14	March 18, 2022
MW212	177.23	177.89	177.89	178.50	Sept. 26, 2022
MW214	178.93	180.47	179.49	180.44	Intact
MW301-21(S)	179.60	180.21	178.54	179.86	Intact
MW301-21(D)	179.59	179.93	178.52	179.61	Intact
MW302-21(S)	179.66	180.26	179.52	180.01	Intact
MW302-21(D)	-	-	178.21	179.59	Intact
MW303-21(S)	-	-	169.53	171.66	Intact
MW303-21(D)	-	-	169.56	171.25	Intact

In Ontario, the highest groundwater conditions typically occur in the spring, with groundwater elevations typically beginning their steady rise in the late fall. This groundwater table rise is attributed to a reduction in soil moisture losses to evapotranspiration that occurs over the late fall to spring together with a melting snowpack that occurs during the spring, which in turn provides a greater volume of water available to infiltrate and recharge the groundwater system. In contrast, during the summer months the groundwater table is at its lowest elevation due to more water being drawn from the subsurface to meet an increased evapotranspiration demand.

As mentioned previously, no groundwater dewatering activities occurred as part of the construction activities that occurred throughout the PDA in 2022. Only stormwater runoff generated by rainfall and snowmelt events that pooled in excavations associated with the Indian Creek and Tributary A realignments and SWM pond construction required active management via pumping. As such, the groundwater elevation declines observed throughout the PDA groundwater monitoring network of wells was naturally occurring. The historical low groundwater elevations observed in some of the monitoring wells occurred at the end of a prolonged drop in the groundwater table attributed to the notably dry year experienced in 2022. In 2022, a lower-than-average amount of precipitation that fell over the region where total precipitation (rainfall + snowfall) equalled 427 mm compared to the corresponding 30-year average of 897 mm (as recorded at the Oakville TWN Climate Station). As such, the resulting deficit of soil moisture available in the subsurface to meet local evapotranspiration demands resulted in water being drawn up from deeper portions of the groundwater system to satisfy these demands and, consequently, causing groundwater elevations in this deeper system to experience an overall steady decline throughout the monitoring period.

Monitoring wells MW301-21(S/D) and MW302-21(S/D) were not established until August 2021 and, subsequently, an extensive pre-construction groundwater elevation data set is not available for these monitoring wells. However, given that these monitoring wells are located notably beyond the areas of site disturbance that occurred in the PDA during 2022 (Figure 1) and that no construction dewatering was completed as part of the Project in 2022, the groundwater elevation monitoring data collected from these wells in 2022 will be treated as baseline conditions for comparison purposes in future annual monitoring reports.

3.3.2 Groundwater Quality

Groundwater quality samples were collected from select existing monitoring wells in June 2015, April 2016, and June 2022. The newly installed monitoring wells MW301-21(S/D) and MW302-21(S/D) were sampled in January and June 2022. Results are presented in Table 4 and are compared against the CDWQG. Data from 2015 and 2016 is provided for wells that were decommissioned in 2022, but the analysis below is only completed for wells that were active in 2022 and were sampled. Unless otherwise noted, the groundwater quality has remained relatively unchanged for each parameter since monitoring began in 2015. Where exceedances were observed, these exceedances are representative of existing background conditions seeing no construction works that occurred in the PDA in 2022 intercepted the groundwater table (i.e., exceedances not attributable to Project construction activities). From the water quality parameters analyzed, the following parameters exceeded the CDWQG in 2022:

- Boron: exceeded the CDWQG MAC of 5 mg/L in MW302-21(D) with a concentration of 6.1 mg/L. Boron is naturally in groundwater through the weathering of boron-containing rocks and soils but can also be present from anthropogenic sources such as industrial processes and pesticide applications to agricultural fields.
- Chloride: exceeded the CDWQG AO/OG of 250 mg/L in MW206, MW301-21(S/D) and MW302-21(D), with concentrations ranging between 270 mg/L (MW301-21(S)) and 4,000 mg/L (MW301-21(D)). Chloride has historically exceeded the CDWQG in groundwater sampled from MW206. Naturally elevated chloride concentrations are common in groundwater drawn from bedrock aquifers in Ontario, noting that MW301-21(D) (4,000 mg/L) and MW302-21(D) (1,300 mg/L) are screened in shale bedrock of the Queenston Formation. High levels of chloride may increase corrosion in household plumbing and hot water tanks.
- Iron: exceeded the CDWQG AO/OG of 0.30 mg/L in MW214, MW301-21(D), MW302-21(S/D), with concentrations ranging between 0.49 mg/L (MW214) and 1.5 mg/L (MW302-21(D)). An elevated iron concentration can cause the water to have a brownish colour, causing potential staining to laundered items and plumbing fixtures and may produce a bitter, astringent taste to the water.
- Manganese: exceeded the CDWQG AO/OG of 0.02 mg/L in BH28, MW202, MW206, MW208, MW214, MW301-21(S/D), MW302-21(S/D), Well 2806808 and Well 2803463, with concentrations ranging from 0.037 mg/L (MW202) to 0.44 mg/L (MW301-21(D)). Manganese has historically exceeded the CDWQG in groundwater sampled from BH28, MW202, MW206, MW208, and MW214. An elevated concentration of manganese is commonly found in groundwater that

has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA. Manganese will cause laundered items and plumbing fixtures to stain black as well as cause undesirable tastes in beverages at high concentrations.

- Sodium: exceeded the CDWQG AO/OG of 200 mg/L in MW206, MW301-21(D), and MW302-21(S/D), with concentrations ranging between 230 mg/L (MW302-21(S)) and 1,600 mg/L (MW301-21(D)). Sodium has historically exceeded the CDWQG in groundwater sampled from MW206. An elevated concentration of sodium is commonly found in groundwater that has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA. Elevated sodium concentrations in a water supply are not considered a health concern but may be an issue for people on a sodium-restricted diet.
- Strontium: exceeded the CDWQG MAC of 7.0 mg/L in BH28, MW206, MW214, MW301-21(S/D), and MW302-21(S/D), with concentrations ranging between 7.2 mg/L (BH28) and 35 mg/L (MW301-21(D)). Strontium has historically been close to exceeding and/or exceeded the CDWQG in groundwater sampled from BH28, MW206, and MW214. Strontium often occurs in groundwater due to the naturally occurring weathering of soil.
- Sulfate: exceeded the CDWQG AO/OG of 500 mg/L in BH17, MW206, MW301-21(S/D), and MW302-21(D) in 2022, with concentrations ranging from 530 mg/L (BH17) to 1,700 mg/L (MW302-21(S)). Sulfate has historically been close to exceeding and/or exceeded the CDWQG in groundwater sampled from BH17 and MW206. An elevated concentration of sulfate is commonly found in groundwater that has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA. Elevated sulfate may affect the taste of water and can form a hard scale in hot water tanks.
- Total Dissolved Solids (TDS): exceeded the CDWQG AO/OG of 500 mg/L at all sampling locations except for Well 2806808 (380 mg/L), and these exceedances were also observed in 2015 / 2016. Concentrations in the groundwater for 2022 ranged from 550 mg/L (Well 2803463) to 8,100 mg/L (MW301-21(D)). The principal constituents of TDS are chloride, sulfate, calcium, magnesium, and bicarbonates, all of which are common to the local groundwater system. The effects of elevated TDS on drinking water quality in terms of taste depend on the various concentrations of these individual components in the groundwater supply.

- Uranium: slightly exceeded the CDWQG MAC of 0.02 mg/L at BH37 and MW301-21(D) with detected groundwater concentrations of 0.023 mg/L and 0.027 mg/L, respectively. Uranium has historically exceeded the CDWQG in groundwater sampled from BH37. Uranium is a naturally occurring element commonly found in soils and rock, particularly in those areas where shale bedrock is present as is the case with the PDA subsurface.
- Zinc: exceeded the CDWQG AO/OG of 5 mg/L in Well 2806808 with a concentration of 6.1 mg/L. High concentrations of zinc can affect the taste and smell of drinking water.

Overall, groundwater quality across the PDA subsurface in 2022 has remained relatively unchanged when compared to groundwater quality conditions recorded in 2015 / 2016.

4 Discussion

4.1 Lower Base Line Separation – Private Well Groundwater Monitoring

The data provided in Section 3.2 provides documentation of the baseline groundwater quality and quantity conditions associated with the private well groundwater monitoring as required by Section 3.5 in the Groundwater FUP. As permission to use local private water supply wells near the projected groundwater dewatering ZOI was not granted by property owners, monitoring well MW303-21(S/D) installed by CN, will instead be used to monitor any future changes in groundwater quality or quantity potentially associated with the Lower Base Line grade separation works (refer to Section 2.2). Groundwater elevations in MW303-21(S/D) will continue to be continuously measured using both manual and automatic techniques throughout the construction and post-construction phases of the Project.

Baseline water quality at MW303-21(S/D) exceeded ODWQS AO/OG for hardness, organic nitrogen, dissolved aluminum, chloride, sulfate, TDS, turbidity, iron, manganese, and sodium. These are relatively common exceedances in groundwater in rural and agricultural areas of southern Ontario. No additional water quality sampling will be completed at MW303-21(S/D) unless a private well interference complaint is received.

4.2 Project Development Area – Groundwater Monitoring

Section 4.5 of the Groundwater FUP (Stantec, 2022) outlines the reporting requirements for monitoring within the PDA.

Pre-construction groundwater elevation data indicates that groundwater levels at most monitoring wells in the PDA fluctuate seasonally, with the lowest groundwater elevations occurring in late summer to early fall and highest groundwater elevations being present during the spring (freshet). Muted seasonal fluctuations and slow recovery after sampling events are observed at MW201, MW205, MW207 and MW212. Artesian conditions (i.e., water levels in monitoring well pipes are present above ground surface) are occasionally observed at BH28 and MW206.

In 2022, the previously mentioned patterns in groundwater elevation fluctuations continued to be observed in the monitoring wells throughout the PDA. Groundwater elevations recorded in each of the PDA monitoring wells for 2022 remained in their corresponding historical range of pre-construction fluctuations, except for MW201, MW202, MW206, and MW208. In these monitoring wells, groundwater elevations

dropped by 0.09 to 0.69 m below their lowest historically recorded elevations. However, these declines were attributed to naturally occurring climatic conditions as no groundwater dewatering activities occurred as part of the construction activities performed in the PDA during 2022.

Pre-construction groundwater quality data (2015/2016) in the PDA indicated exceedances of the CDWQG for the following parameters: sulfate, TDS, turbidity, manganese, strontium, uranium, chloride, sodium, and iron. Many of the monitoring wells exhibited stable groundwater quality conditions between 2015/2016 and 2022, with the following exceptions:

- Increasing sulfate concentration in BH17, exceeding the AO/OG for the first time in 2022. However, sulfate has historically been close to exceeding the CDWQG in groundwater sampled from BH17.
- Declining TDS concentrations observed in BH28, BH37, MW201, and MW208.
- Declining manganese concentrations in MW202 and an increasing concentration trend at MW208. However elevated concentrations of manganese are commonly found in groundwater that has come into contact with shale of the Queenston Formation and glacial till deposits derived from this bedrock, which both characterize the subsurface of the PDA.
- An increasing strontium concentration at BH28 and MW206, with the MAC being exceeded at BH28 for the first time in 2022. However, strontium has historically been close to exceeding and/or exceeded the CDWQG in groundwater sampled from these monitoring wells.
- A declining uranium concentration observed at BH37. Uranium has shown to historically exceed the CDWQG in groundwater sampled from BH37.

As no groundwater dewatering activities occurred in 2022 as part of the completed Project works, these above observed changes in groundwater quality are expected to be related to naturally occurring conditions present in the PDA groundwater system.

4.3 Adaptive Management Measures

Adaptive management measures for both the Lower Base Line grade separation and the PDA are outlined in the Groundwater FUP (Stantec, 2022). These measures are to be initiated when a private well interference complaint is received during the site preparation, construction (when dewatering activities may occur), or post-construction phases of the Project. No private well interference complaints were received in 2022 and, consequently, no adaptive management measures were required.

4.4 Effectiveness of Mitigation Measures

No adaptive management measures were employed in 2022. As such, no evaluation of mitigation measures was required.

5 Summary and Conclusions

This report summarizes the results of the groundwater follow-up program for 2022, which represents first year of construction for the Project.

The following conclusions can be made for the 2022 Groundwater FUP:

- No groundwater dewatering activities, as confirmed by DCC and Stantec EM, occurred as part of the Lower Base Line grade separation or in the PDA during 2022. Only stormwater runoff generated by rainfall and snowmelt events throughout the PDA that pooled in excavations associated with the Indian Creek and Tributary A realignments and SWM pond construction required active management via pumping.
- No private well interference complaints were received by CN in 2002. Subsequently, no adaptive management measures were initiated during 2022.
- Groundwater elevations in most monitoring wells experienced a steady decline between late May to December 2022. This prolonged drop in the groundwater table is attributed to the notably dry year experienced in 2022. In 2022, a lower-than-average amount of precipitation that fell over the region where total precipitation (rainfall + snowfall) equalled 427 mm compared to the corresponding 30-year average of 897 mm (as recorded at the Oakville TWN Climate Station).
- Groundwater quality results have been relatively stable across the PDA since 2015. As no groundwater dewatering activities occurred in 2022 as part of the completed Project works, minor fluctuations in groundwater quality observed are attributed to naturally occurring conditions present in the PDA groundwater system.

A copy of this report will be provided to the Impact Assessment Agency in accordance with Conditions 3.5 and 4.5, as well as to Natural Resources Canada per the commitments in the Groundwater FUP (Stantec, 2022). In addition, this report will be posted to CN's project website (www.cn.ca/en/about-cn/milton-logistics-hub/) and a summary will be included in CN's 2022 Annual Report.

6 References

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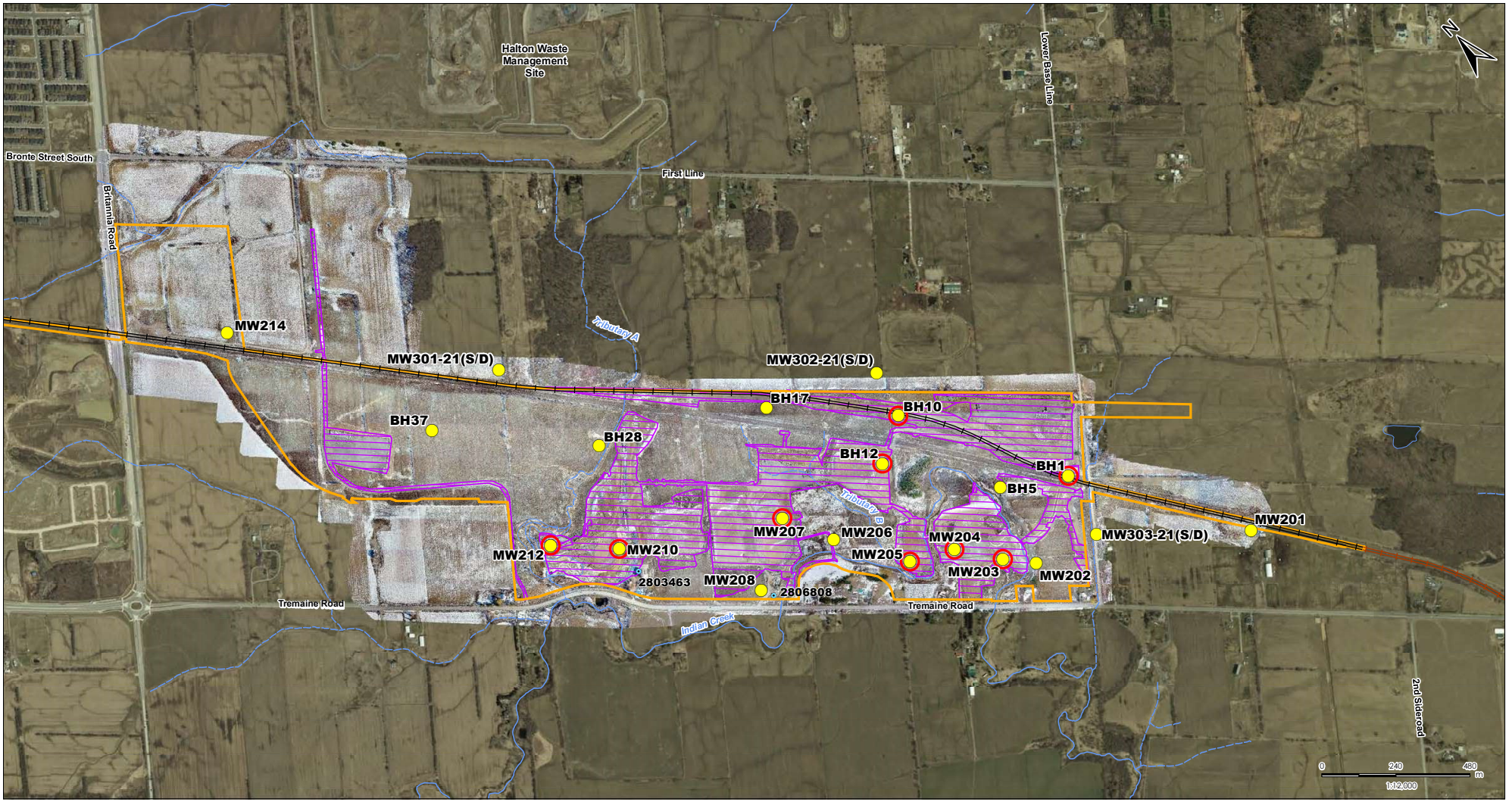
Appendices

Appendix A Figures



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Revised: 2023-02-23 By: dharvey

February 2023
160960844

Stantec

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020. Site layout: July 10, 2015.
3. Orthoimagery © Canadian National Railway (within PDA) Imagery taken 20221119. First Base Solutions, 2019. (Outside of PDA) Imagery taken in 2018.
4. MECP water well locations are approximate and have been positioned based on published UTM coordinates.

Legend

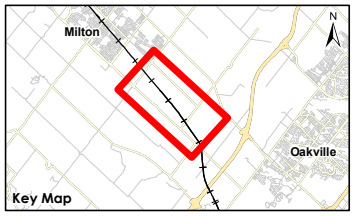
- Monitoring Well
- Decommissioned in 2022
- Private Water Supply

Project Components

- Project Development Area
- Existing Double Track Mainline
- Double Track - Mainline
- Approximate Site Disturbance (2022)

Existing Features

- Permanent Stream
- Intermittent Stream
- Waterbody



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Milton Logistics Hub 2022
Groundwater Follow-Up Program

Figure No.
A-1

Title
Project Development Area - Groundwater Monitoring Locations

Notes:

1) Data enclosed in red boxes are not included in historical range of groundwater elevations. These fluctuations are attributed to well development and/or groundwater sampling induced drawdown and recovery.
2) Climate data is provided by the Oakville TWN climate station and infilled with data from the Hamilton RBG climate station where extended gaps in data are encountered.

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Canadian National Railway
CN Milton Logistics Hub
Groundwater Monitoring Follow-Up Program (FUP)

Figure No.

A-2

Title **Hydrographs - MW303-21(S/D)**

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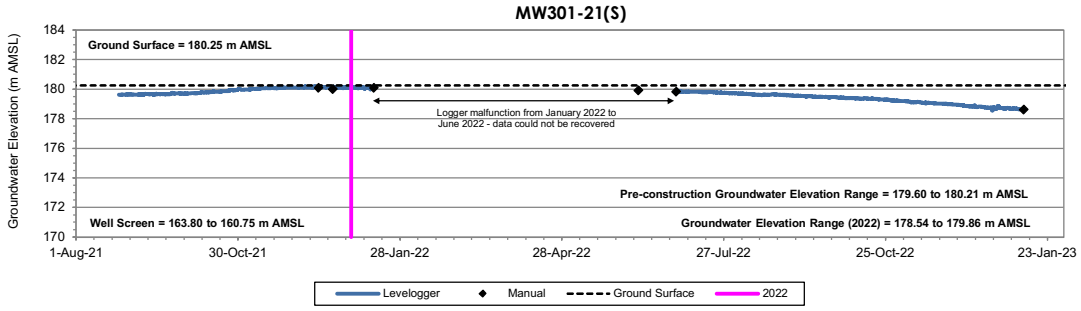

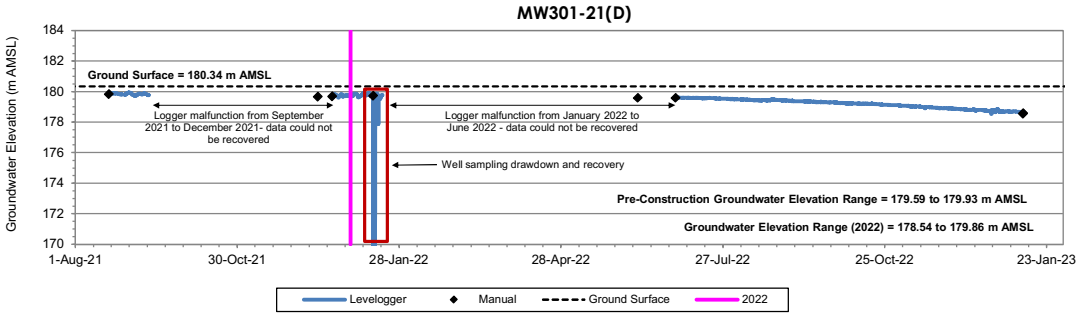

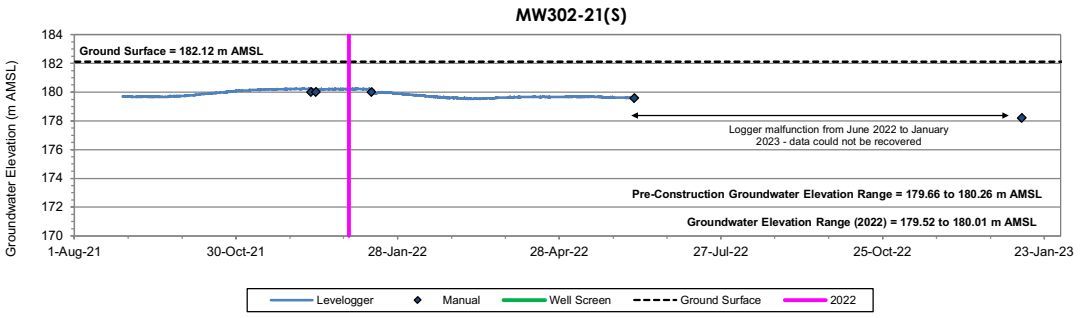

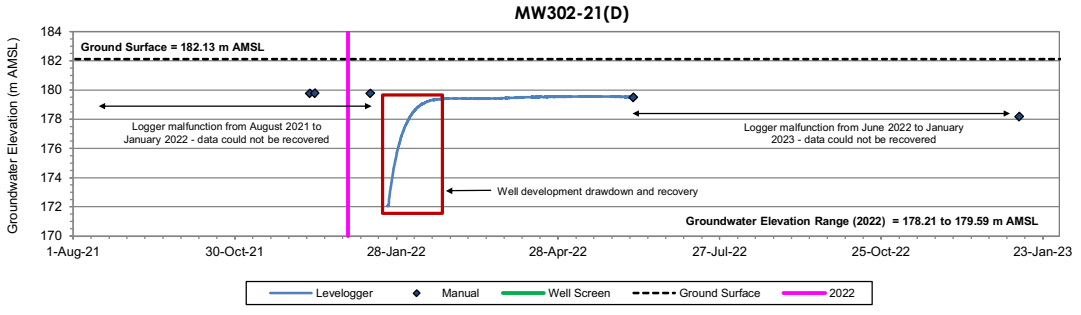

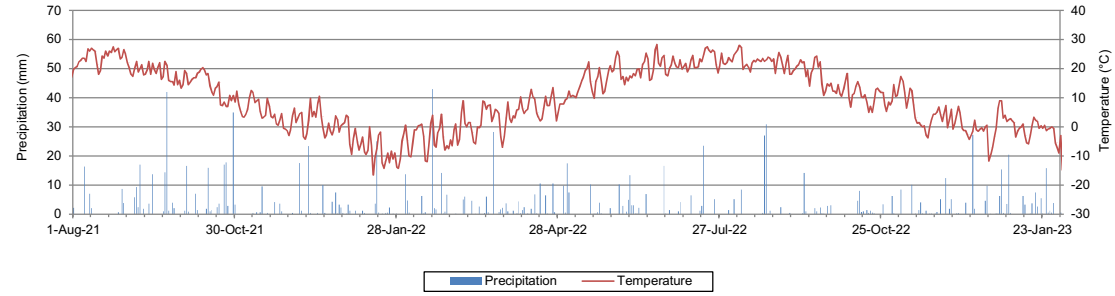

Notes:

1) Data enclosed in red boxes are not included in historical range of groundwater elevations. These fluctuations are attributed to well development and/or groundwater sampling induced drawdown and recovery.

2) Climate data is provided by the Oakville TWN climate station and infilled with data from the Hamilton RBG climate station where extended gaps in data are encountered.

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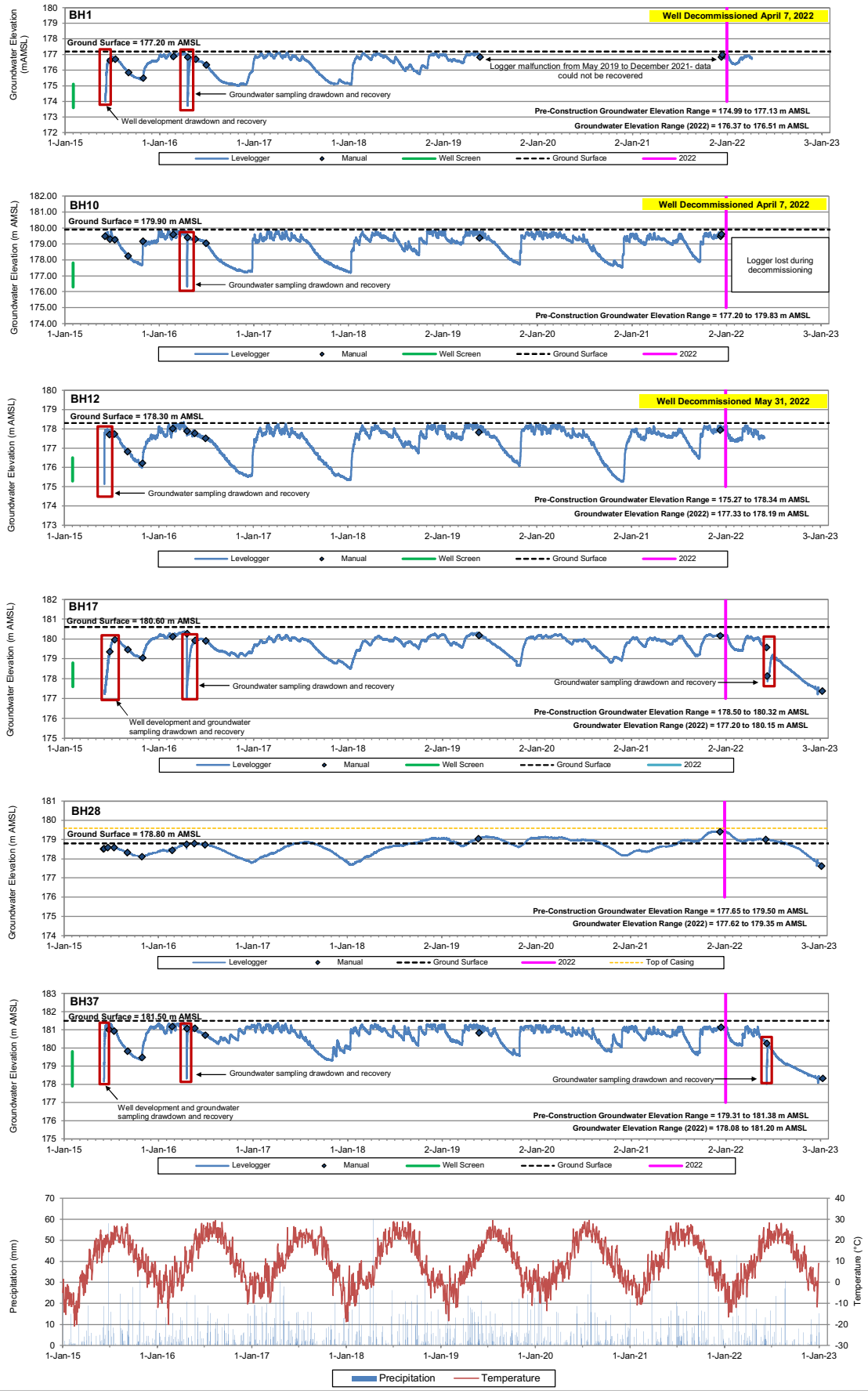
Groundwater Monitoring Follow-Up Program (FUP)

Figure No.

A-3

Title **Hydrographs - MW301-21(S/D) and MW302-21(S/D)**



Notes:

1) Data enclosed in red boxes are not included in historical range of groundwater elevations. These fluctuations are attributed to well development and/or groundwater sampling induced drawdown and recovery.
2) Climate data is provided by the Oakville TWN climate station and infilled with data from the Hamilton RBG climate station where extended gaps in data are encountered.

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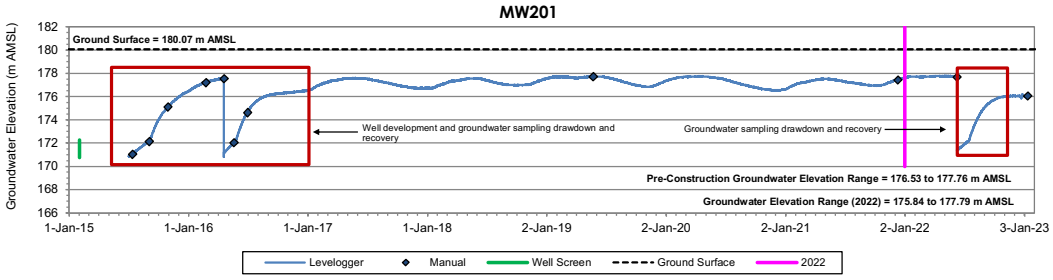
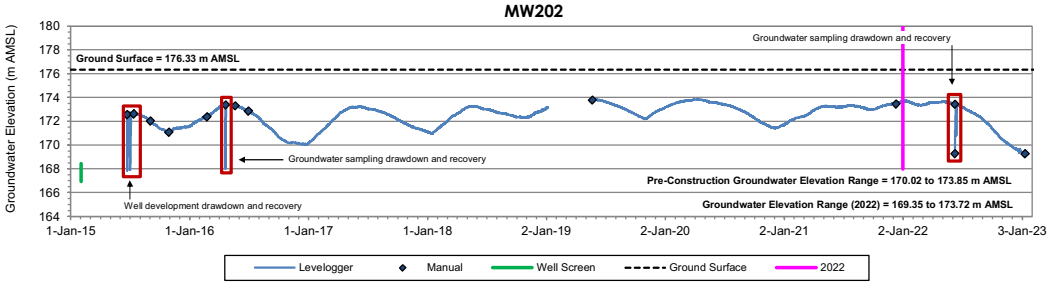
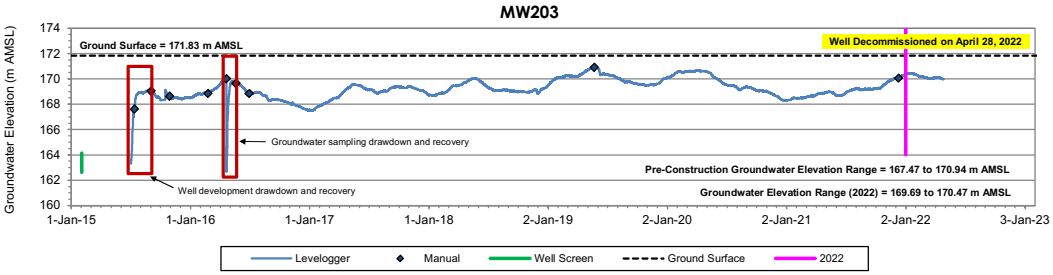
Figure No.

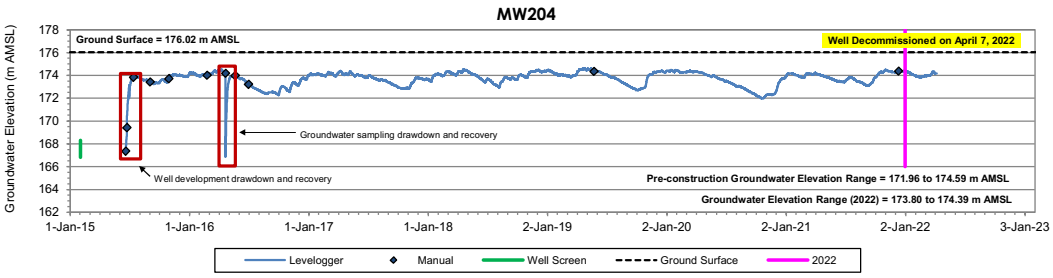
A-4

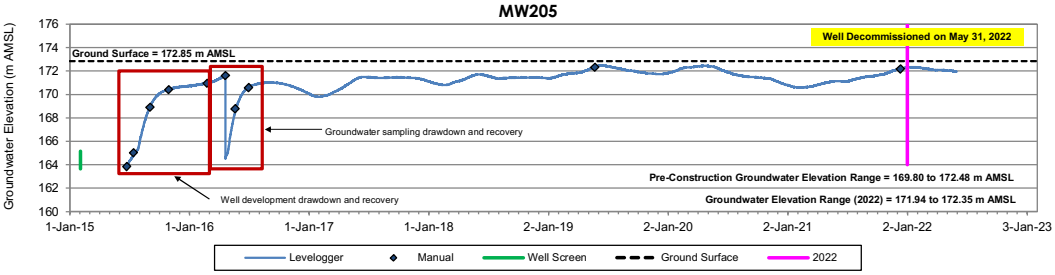
Title **Hydrographs - BH1, BH10, BH12, BH17, BH28 and BH37**

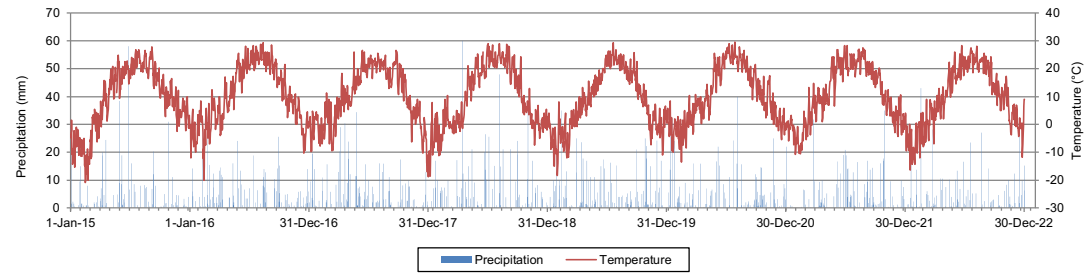












Notes:

1) Data enclosed in red boxes are not included in historical range of groundwater elevations. These fluctuations are attributed to well development and/or groundwater sampling induced drawdown and recovery.
2) Climate data is provided by the Oakville TWN climate station and infilled with data from the Hamilton RBG climate station where extended gaps in data are encountered.

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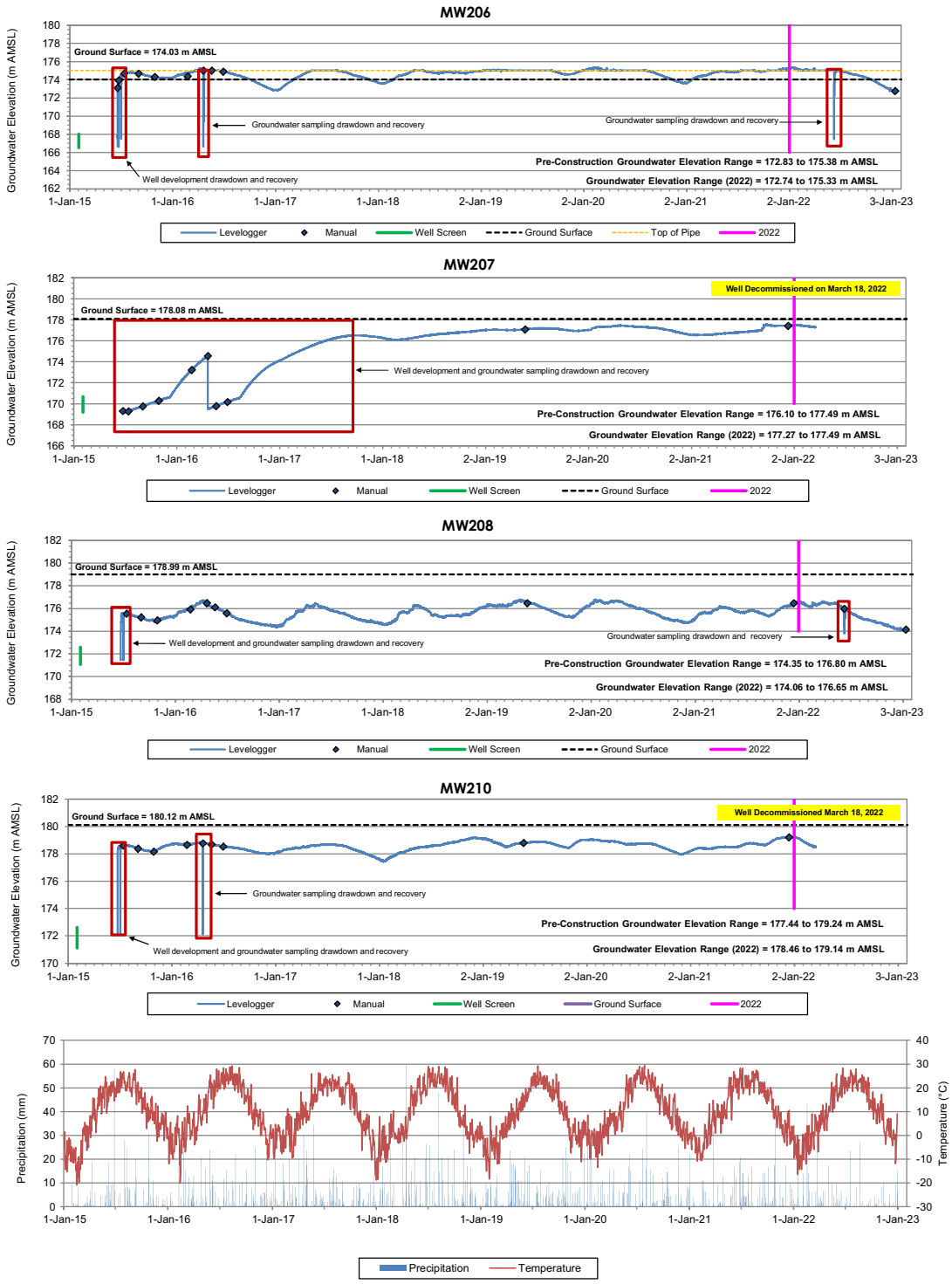
Figure No.
A-5

Title **Hydrographs - MW201, MW202, MW203, MW204, & MW205**



Notes:

1) Data enclosed in red boxes are not included in historical range of groundwater elevations. These fluctuations are attributed to well development and/or groundwater sampling induced drawdown and recovery.
2) Climate data is provided by the Oakville TWN climate station and infilled with data from the Hamilton RBG climate station where extended gaps in data are encountered.

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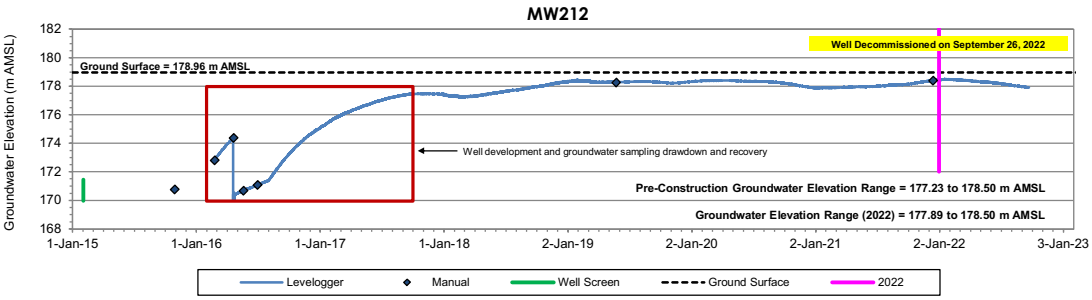
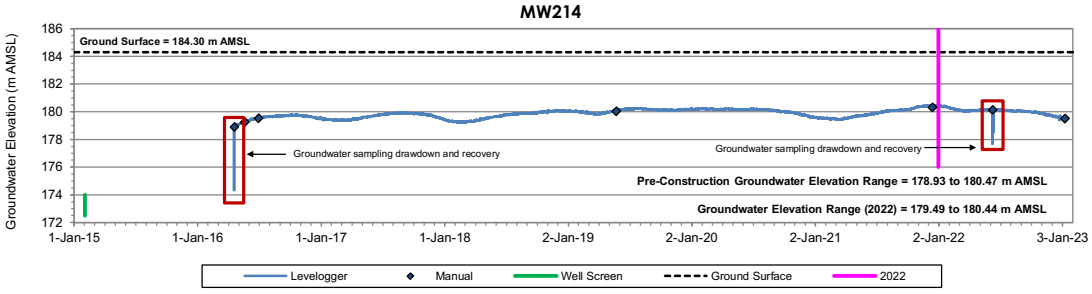
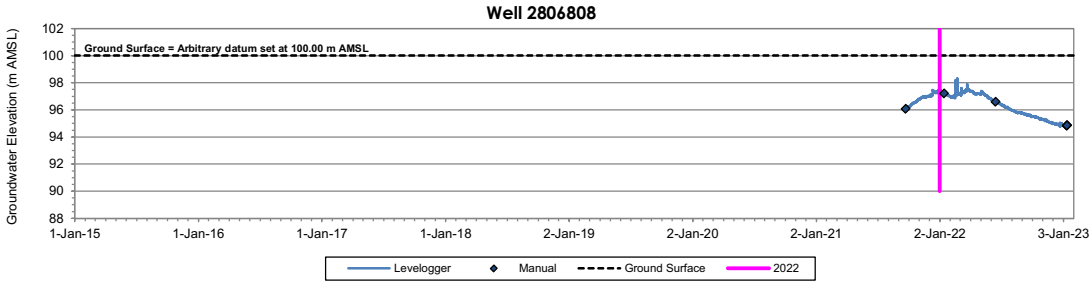
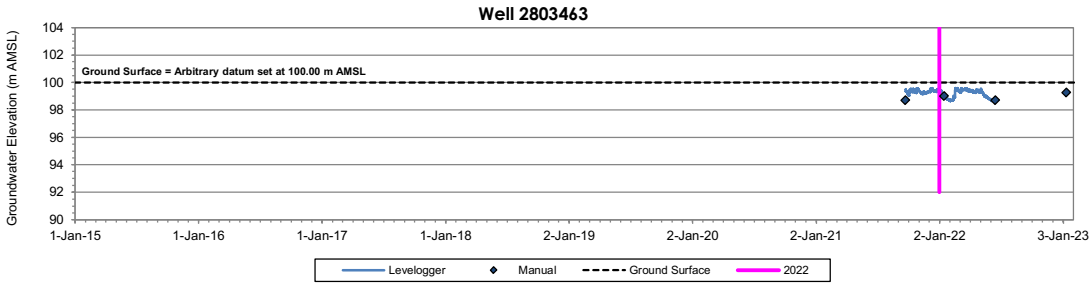
Figure No.
A-6

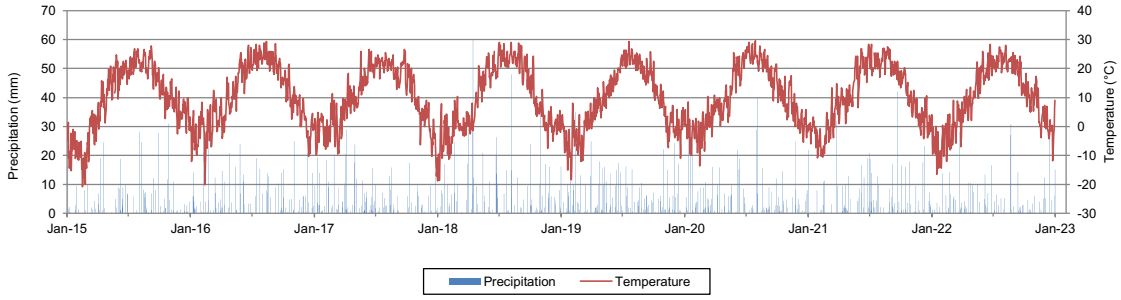
Title **Hydrographs - MW206, MW207, MW208 and MW210**











Notes:

1) Data enclosed in red boxes are not included in historical range of groundwater elevations. These fluctuations are attributed to well development and/or groundwater sampling induced drawdown and recovery.
2) Climate data is provided by the Oakville TWN climate station and infilled with data from the Hamilton RBG climate station where extended gaps in data are encountered.

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Figure No.
A-7

Title **Hydrographs - MW212, MW214, Well 2806808 and Well 2803463**

Appendix B Tables

Table B-1 - Well Construction Details

Well ID	UTM Coordinates [a]		Installation		Elevations		Well Stick-up	Borehole Depth	Borehole Depth	Base of Borehole	Screened Interval				Screened Material Description [b]	Hydrostratigraphic Unit	Hydraulic Conductivity
											Top Elevation		Bottom Elevation				
	Northing	Easting	Date	Firm	Top of Casing (m AMSL)	Ground Surface (m AMSL)	(m)	(m BTOC)	(m BGS)	(m AMSL)	(m BGS)	(m AMSL)	(m BGS)	(m AMSL)			(m/s)
Monitoring Wells																	
BH1	4811570	594989	9-Jun-14	Stantec	177.96	177.20	0.76	4.36	3.60	173.60	2.10	175.10	3.60	173.60	silty CLAY	Halton Till (Aquitard)	3.5E-09
BH5	4811692	594802	8-May-14	Stantec	178.05	177.30	0.75	4.45	3.70	173.60	2.10	175.20	3.60	173.70	silty CLAY	Halton Till (Aquitard)	-
BH10	4812086	594715	13-May-14	Stantec	180.77	179.90	0.87	4.57	3.70	176.20	2.10	177.80	3.60	176.30	silty CLAY	Halton Till (Aquitard)	1.0E-07
BH12	4812007	594572	5-May-14	Stantec	179.16	178.30	0.86	4.56	3.70	174.60	1.80	176.50	3.00	175.30	silty CLAY	Halton Till (Aquitard)	1.9E-08
BH17	4812393	594418	5-Jun-14	Stantec	181.51	180.60	0.91	4.51	3.60	177.00	1.80	178.80	3.60	177.00	silty CLAY	Halton Till (Aquitard)	7.3E-10
BH28	4812668	593934	30-May-14	Stantec	179.61	178.80	0.81	10.31	9.50	169.30	6.20	172.60	9.20	169.60	silty CLAY	Halton Till (Aquitard)	1.5E-07
BH37	4813072	593570	29-May-14	Stantec	182.40	181.50	0.90	4.60	3.70	177.80	1.70	179.80	3.60	177.90	silty CLAY	Halton Till (Aquitard)	4.6E-09
MW201	4811040	595305	16-Jun-15	Stantec	180.82	180.07	0.75	10.06	9.31	170.88	7.79	172.28	9.31	170.76	CLAY and SILT	Halton Till (Aquitard)	-
MW202	4811433	594721	12-Jun-15	Stantec	177.13	176.33	0.80	10.24	9.44	167.03	7.92	168.41	9.44	166.89	SILT	Halton Till (Aquitard)	1.1E-08
MW203	4811515	594650	15-Jun-15	Stantec	172.83	171.83	1.00	10.23	9.23	162.54	7.71	164.12	9.23	162.60	SILT / CLAY / SAND	Halton Till (Aquitard)	2.2E-09
MW204	4811644	594556	17-Jun-15	Stantec	176.77	176.02	0.75	9.96	9.21	166.80	7.69	168.33	9.21	166.81	CLAY and SILT	Halton Till (Aquitard)	1.4E-08
MW205	4811713	594423	15-Jun-15	Stantec	173.58	172.85	0.73	9.92	9.19	164.73	7.67	165.19	9.19	163.66	Silty CLAY	Halton Till (Aquitard)	-
MW206	4811932	594290	11-Jun-15	Stantec	175.02	174.03	0.99	8.50	7.51	167.43	5.99	168.05	7.51	166.52	Silty CLAY	Halton Till (Aquitard)	1.1E-08
MW207	4812095	594213	11-Jun-15	Stantec	178.81	178.08	0.73	9.65	8.92	169.85	7.40	170.68	8.92	169.16	Silty CLAY	Halton Till (Aquitard)	-
MW208	4811970	594006	11-Jun-15	Stantec	179.84	178.99	0.85	8.76	7.91	171.87	6.39	172.61	7.91	171.08	Silty CLAY / Sand and Gravel	Halton Till (Aquitard)	2.0E-08
MW210	4812378	593757	16-Jun-15	Stantec	180.96	180.12	0.84	9.85	9.01	171.73	7.49	172.63	9.01	171.11	Silty CLAY	Halton Till (Aquitard)	3.1E-08
MW212	4812537	593601	16-Jun-15	Stantec	179.70	178.96	0.74	9.79	9.05	170.55	7.53	171.43	9.05	169.91	Silty CLAY	Halton Till (Aquitard)	-
MW214	4813752	593293	17-Jun-15	Stantec	185.15	184.30	0.85	12.70	11.85	173.12	10.33	173.98	11.85	172.45	Silty CLAY / Sand and Gravel	Halton Till (Aquitard)	4.0E-07
MW301-21(S)	4813109	593912	18-Aug-21	Stantec	180.87	180.25	0.62	20.12	19.50	160.75	16.45	163.80	19.50	160.75	Silty SAND (24%) / Silty CLAY (76%)	Halton Till (Aquitard)	-
MW301-21(D)	4813107	593911	18-Aug-21	Stantec	180.87	180.34	0.54	26.34	25.80	154.54	22.75	157.59	25.80	154.54	SHALE	Queenston Formation	-
MW302-21(S)	4812227	594770	20-Aug-21	Stantec	182.82	182.12	0.71	17.21	16.50	165.62	13.45	168.66	16.50	165.62	CLAY (55%) / Silty CLAY (45%)	Halton Till (Aquitard)	-
MW302-21(D)	4812230	594772	20-Aug-21	Stantec	182.75	182.13	0.62	23.22	22.60	159.53	19.55	162.58	22.60	159.53	SHALE	Queenston Formation	-
MW303-21(S)	4811367	594937	21-Dec-21	Stantec	177.09	176.32	0.76	20.57	19.80	156.52	16.75	159.57	19.80	156.52	Silty CLAY TILL (47%) / SILT (43%)	Halton Till (Aquitard)	-
MW303-21(D)	4811365	594935	21-Dec-21	Stantec	177.04	176.35	0.69	24.29	23.60	152.75	22.08	154.27	23.60	152.75	SHALE	Queenston Formation	-

Notes:

(a) UTM coordinates based on NAD 83 Zone 17 N

(b) Refer to Appendix C for borehole and well construction logs

m AMSL = meters above mean sea level

m BGS = meters below ground surface

m BTOC = meters below top of well casing

\- = data not available

Table B-2 - Groundwater Level Data

Well ID	UTM Coordinates		Date	Time	Well Depth			Screen Length	Screen Separation [1]	Top of Casing Elevation (m AMSL)	Ground Surface Elevation (m AMSL)	Pipe Stick-up (m)	Groundwater Level			Vertical Hydraulic Gradient [3] (+) = Upward (-) = Downward
	Northing	Easting			(m BTOC)	(m BGS)	(m AMSL)						(m BGS) [2]	(m BTOC)	(m AMSL)	
BH1	4811570	594989	1-Jun-15	5:04 PM	4.38	3.62	173.58			177.96	177.20	0.76	0.54	1.30	176.66	
			24-Jun-15	9:56 AM									0.57	1.33	176.63	
			2-Jul-15	10:34 AM									0.27	1.03	176.93	
			13-Jul-15	10:28 AM									0.48	1.24	176.72	
			2-Sep-15	9:46 AM									1.34	2.10	175.86	
			23-Feb-16	12:13 PM									0.31	1.07	176.89	
			18-Apr-16	9:23 AM									0.35	1.11	176.85	
			19-May-16	9:52 AM									0.50	1.26	176.70	
			29-Jun-16	9:07 AM									0.86	1.62	176.34	
			23-May-19	11:45 AM									0.35	1.11	176.85	
			10-Dec-21	1:46 PM									0.28	1.04	176.92	
			7-Apr-22	-									Decommissioned			
BH5	4811692	594802	1-Jun-15	3:06 PM	4.32	3.57	173.73			178.05	177.30	0.75	-	DRY	-	
			24-Jun-15	10:40 AM									3.44	4.19	173.86	
			2-Jul-15	11:10 AM									3.43	4.18	173.87	
			13-Jul-15	10:52 AM									-	DRY	-	
			3-Sep-15	12:19 PM									-	DRY	-	
			23-Feb-16	12:50 PM									3.40	4.15	173.90	
			18-Apr-16	11:29 AM									3.40	4.15	173.90	
			19-May-16	9:52 AM									3.44	4.19	173.86	
			29-Jun-16	10:25 AM									3.49	4.24	173.81	
			23-May-19	11:45 AM									3.46	4.21	173.84	
			10-Dec-21	1:24 PM									3.43	4.18	173.87	
			9-Jun-22	12:34 PM									-	DRY	-	
			10-Jan-23	12:15 PM									-	DRY	-	
BH10	4812086	594715	1-Jun-15	4:25 PM	4.50	3.63	176.27			180.77	179.90	0.87	0.23	1.10	179.67	
			24-Jun-15	9:46 AM									0.59	1.46	179.31	
			2-Jul-15	10:23 AM									0.36	1.23	179.54	
			13-Jul-15	10:16 AM									0.62	1.49	179.28	
			2-Sep-15	10:07 AM									1.65	2.52	178.25	
			23-Feb-16	12:13 PM									0.30	1.17	179.60	
			18-Apr-16	9:48 AM									0.49	1.36	179.41	
			19-May-16	9:07 AM									0.59	1.46	179.31	
			29-Jun-16	9:14 AM									0.84	1.71	179.06	
			22-May-19	12:18 PM									0.52	1.39	179.38	
			10-Dec-21	2:27 PM									0.40	1.27	179.50	
			7-Apr-22	-									Decommissioned			
BH12	4812007	594572	1-Jun-15	1:38 PM	4.00	3.14	175.16			179.16	178.30	0.86	0.67	1.53	177.63	
			24-Jun-15	10:30 AM									0.59	1.45	177.71	
			2-Jul-15	11:00 AM									0.34	1.20	177.96	
			13-Jul-15	10:43 AM									0.56	1.42	177.74	
			2-Sep-15	11:45 AM									1.47	2.33	176.83	
			23-Feb-16	1:07 PM									0.28	1.14	178.02	
			18-Apr-16	11:47 AM									0.41	1.27	177.89	
			19-May-16	10:20 AM									0.52	1.38	177.78	
			29-Jun-16	10:39 AM									0.78	1.64	177.52	
			22-May-19	10:37 AM									0.47	1.33	177.83	
			10-Dec-21	10:49 AM									0.35	1.21	177.95	
			31-May-22	-									Decommissioned			

Table B-2 - Groundwater Level Data

Well ID	UTM Coordinates		Date	Time	Well Depth			Screen Length	Screen Separation [1]	Top of Casing Elevation (m AMSL)	Ground Surface Elevation (m AMSL)	Pipe Stick-up (m)	Groundwater Level			Vertical Hydraulic Gradient [3]
	Northing	Easting			(m BTOC)	(m BGS)	(m AMSL)						(m BGS) [2]	(m BTOC)	(m AMSL)	(+) = Upward (-) = Downward
BH17	4812393	594418	1-Jun-15 24-Jun-15 2-Jul-15 13-Jul-15 2-Sep-15 23-Feb-16 18-Apr-16 19-May-16 29-Jun-16 22-May-19 10-Dec-21 8-Jun-22 9-Jan-23	3:50 PM 9:03 AM 10:12 AM 9:55 AM 10:23 AM 12:44 PM 9:54 AM 9:17 AM 9:25 AM 12:36 PM 3:05 PM 2:49 PM 4:58 PM	4.53	3.62	176.98			181.51	180.60	0.91	0.66 1.24 0.79 0.63 1.13 0.49 0.33 0.90 0.69 0.41 0.43 1.02 3.22	1.57 2.15 1.70 1.54 2.04 1.40 1.24 1.81 1.60 1.32 1.34 1.93 4.13	179.94 179.36 179.81 179.97 179.47 180.11 180.27 179.70 179.91 180.19 180.17 179.58 177.38	
BH28	4812668	593934	2-Jun-15 23-Jun-15 2-Jul-15 13-Jul-15 3-Sep-15 23-Feb-16 19-Apr-16 19-May-16 29-Jun-16 23-May-19 13-Dec-21 8-Jun-22 10-Jan-23	10:10 AM 4:12 PM 8:38 AM 11:28 AM 10:04 AM 10:35 AM 12:05 PM 2:56 PM 2:54 PM 11:06 AM 1:20 PM 12:20 PM 4:08 PM	9.89	9.08	169.72			179.61	178.80	0.81	0.28 0.39 0.19 0.21 0.48 0.35 0.04 0.00 0.06 -0.25 -0.60 -0.20 1.18	1.09 1.20 1.00 1.02 1.29 1.16 0.85 0.81 0.87 0.56 0.21 0.61 1.99	178.52 178.41 178.61 178.59 178.32 178.45 178.76 178.80 178.74 179.05 179.40 179.00 177.62	
BH37	4813072	593570	2-Jun-15 23-Jun-15 2-Jul-15 13-Jul-15 3-Sep-15 23-Feb-16 19-Apr-16 19-May-16 29-Jun-16 23-May-19 13-Dec-21 8-Jun-22 10-Jan-23	11:43 AM 3:52 PM 8:52 AM 11:42 AM 9:34 AM 11:07 AM 10:57 AM 2:36 PM 2:34 PM 9:38 AM 12:44 PM 12:55 PM 3:26 PM	4.39	3.49	178.01			182.40	181.50	0.90	0.67 0.49 0.29 0.56 1.67 0.31 0.42 0.41 0.79 0.66 0.36 1.24 3.16	1.57 1.39 1.19 1.46 2.57 1.21 1.32 1.31 1.69 1.56 1.26 2.14 4.06	180.83 181.02 181.21 180.94 179.83 181.19 181.08 181.09 180.71 180.84 181.14 180.26 178.34	
MW201	4811040	595305	19-Jun-15 23-Jun-15 2-Jul-15 13-Jul-15 2-Sep-15 23-Feb-16 18-Apr-16 19-May-16 29-Jun-16 23-May-19 10-Dec-21 9-Jun-22 11-Jan-23	10:55 AM 12:25 PM 11:30 AM 12:38 PM 12:31 PM 12:18 PM 12:47 PM 10:54 AM 10:57 AM 1:30 PM 12:44 PM 1:04 PM 12:54 PM	10.06	9.31	170.76			180.82	180.07	0.75	- - 9.24 9.03 7.92 2.87 2.52 8.03 5.44 2.35 2.63 2.40 4.02	DRY DRY 9.99 9.78 8.67 3.62 3.27 8.78 6.19 3.10 3.38 3.15 4.77	- - 170.83 171.04 172.15 177.20 177.55 172.04 174.63 177.72 177.44 177.67 176.05	

Table B-2 - Groundwater Level Data

Well ID	UTM Coordinates		Date	Time	Well Depth			Screen Length	Screen Separation [1]	Top of Casing Elevation (m AMSL)	Ground Surface Elevation (m AMSL)	Pipe Stick-up (m)	Groundwater Level			Vertical Hydraulic Gradient [3]
	Northing	Easting			(m BTOC)	(m BGS)	(m AMSL)						(m BGS) [2]	(m BTOC)	(m AMSL)	(+) = Upward (-) = Downward
MW202	4811433	594721	19-Jun-15	1:53 PM	10.24	9.44	166.89			177.13	176.33	0.80	3.68	4.48	172.65	
			23-Jun-15	11:56 AM									3.76	4.56	172.57	
			2-Jul-15	12:53 PM									3.66	4.46	172.67	
			13-Jul-15	2:40 PM									3.70	4.50	172.63	
			2-Sep-15	2:51 PM									4.30	5.10	172.03	
			23-Feb-16	2:44 PM									3.70	4.50	172.63	
			20-Apr-16	11:00 AM									2.93	3.73	173.40	
			19-May-16	11:20 AM									3.03	3.83	173.30	
			29-Jun-16	11:11 AM									3.46	4.26	172.87	
			22-May-19	3:00 PM									2.55	3.35	173.78	
			10-Dec-21	1:02 PM									2.88	3.68	173.45	
			9-Jun-22	2:43 PM									2.89	3.69	173.44	
			10-Jan-23	5:08 PM									7.05	7.85	169.28	
MW203	4811515	594650	19-Jun-15	2:46 PM	10.23	9.23	162.60			172.83	171.83	1.00	7.85	8.85	163.98	
			23-Jun-15	11:40 AM									5.95	6.95	165.88	
			2-Jul-15	1:38 PM									3.28	4.28	168.55	
			13-Jul-15	2:31 PM									4.19	5.19	167.64	
			2-Sep-15	12:48 PM									2.77	3.77	169.06	
			23-Feb-16	2:12 PM									2.97	3.97	168.86	
			20-Apr-16	11:44 AM									1.81	2.81	170.02	
			19-May-16	11:36 AM									2.17	3.17	169.66	
			29-Jun-16	11:36 AM									2.97	3.97	168.86	
			22-May-19	1:42 PM									0.91	1.91	170.92	
			10-Dec-21	12:00 PM									1.76	2.76	170.07	
			28-Apr-22	-									Decommissioned			
MW204	4811644	594556	19-Jun-15	3:10 PM	9.96	9.21	166.81			176.77	176.02	0.75	8.65	9.40	167.37	
			23-Jun-15	11:20 AM									6.59	7.34	169.44	
			2-Jul-15	2:08 PM									3.13	3.88	172.89	
			13-Jul-15	2:10 PM									2.17	2.92	173.85	
			2-Sep-15	8:51 AM									2.58	3.33	173.44	
			23-Feb-16	1:39 PM									2.00	2.75	174.02	
			20-Apr-16	9:57 AM									1.83	2.58	174.19	
			19-May-16	11:36 AM									2.03	2.78	173.99	
			29-Jun-16	11:49 AM									2.78	3.53	173.24	
			23-May-19	12:35 PM									1.67	2.42	174.35	
			10-Dec-21	12:17 PM									1.63	2.38	174.39	
			7-Apr-22	-									Decommissioned			
MW205	4811713	594423	16-Jun-15	1:00 PM	9.92	9.19	164.39			173.58	172.85	0.73	-	DRY	-	
			23-Jun-15	10:05 AM									8.99	9.72	163.87	
			2-Jul-15	2:20 PM									8.55	9.28	164.30	
			13-Jul-15	9:09 AM									7.76	8.49	165.09	
			2-Sep-15	9:18 AM									3.92	4.65	168.93	
			23-Feb-16	8:47 AM									1.87	2.60	170.98	
			19-Apr-16	3:04 PM									1.22	1.95	171.63	
			19-May-16	11:36 AM									4.05	4.78	168.80	
			29-Jun-16	12:23 PM									2.25	2.98	170.60	
			22-May-19	10:03 AM									0.51	1.24	172.34	
			10-Dec-21	3:51 PM									0.65	1.38	172.20	
			31-May-22	-									Decommissioned			

Table B-2 - Groundwater Level Data

Well ID	UTM Coordinates		Date	Time	Well Depth			Screen Length	Screen Separation [1]	Top of Casing Elevation (m AMSL)	Ground Surface Elevation (m AMSL)	Pipe Stick-up (m)	Groundwater Level			Vertical Hydraulic Gradient [3] (+) = Upward (-) = Downward
	Northing	Easting			(m BTOC)	(m BGS)	(m AMSL)						(m BGS) [2]	(m BTOC)	(m AMSL)	
MW206	4811932	594290	16-Jun-15	12:50 PM	8.50	7.51	167.51			175.02	174.03	0.99	0.13	1.12	173.90	
			23-Jun-15	9:24 AM									0.10	1.09	173.93	
			2-Jul-15	2:53 PM									-0.53	0.46	174.56	
			13-Jul-15	8:58 AM									-0.67	0.32	174.70	
			2-Sep-15	8:25 AM									-0.65	0.34	174.68	
			23-Feb-16	9:06 AM									-	-	-	
			20-Apr-16	2:41 PM									-	Artesian	-	
			19-May-16	12:22 PM									-	Artesian	-	
			29-Jun-16	1:13 PM									-0.87	0.12	174.90	
			22-May-19	9:43 AM									-	Artesian	-	
			8-Jun-22	2:10 PM									-	Artesian	-	
			11-Jan-23	12:12 PM									1.26	2.25	172.77	
MW207	4812095	594213	16-Jun-15	12:42 PM	9.65	8.92	169.16			178.81	178.08	0.73	8.29	9.02	169.79	
			23-Jun-15	8:26 AM									8.75	9.48	169.33	
			2-Jul-15	3:22 PM									8.77	9.50	169.31	
			13-Jul-15	8:52 AM									8.78	9.51	169.30	
			2-Sep-15	8:14 AM									8.31	9.04	169.77	
			23-Feb-16	9:15 AM									4.85	5.58	173.23	
			20-Apr-16	8:20 AM									3.52	4.25	174.56	
			19-May-16	12:22 PM									8.28	9.01	169.80	
			29-Jun-16	1:05 PM									7.89	8.62	170.19	
			22-May-19	9:25 AM									0.98	1.71	177.10	
			10-Dec-21	10:14 AM									0.63	1.36	177.45	
			8-Mar-22	-									Decommissioned			
MW208	4811970	594006	16-Jun-15	1:15 PM	8.76	7.91	171.08			179.84	178.99	0.85	3.47	4.32	175.52	
			23-Jun-15	10:53 AM									3.43	4.28	175.57	
			2-Jul-15	1:47 PM									3.46	4.31	175.53	
			13-Jul-15	2:50 PM									3.42	4.27	175.57	
			2-Sep-15	3:00 PM									3.77	4.62	175.22	
			23-Feb-16	9:36 AM									3.06	3.91	175.93	
			20-Apr-16	9:35 AM									2.50	3.35	176.49	
			19-May-16	12:46 PM									2.89	3.74	176.10	
			29-Jun-16	1:42 PM									3.40	4.25	175.59	
			22-May-19	9:07 AM									2.52	3.37	176.47	
			13-Dec-21	3:34 PM									2.52	3.37	176.47	
			8-Jun-22	1:35 PM									3.01	3.86	175.98	
			11-Jan-23	10:55 AM									4.85	5.70	174.14	
MW210	4812378	593757	19-Jun-15	4:56 PM	9.85	9.01	171.11			180.96	180.12	0.84	4.87	5.71	175.25	
			23-Jun-15	5:18 PM									1.67	2.51	178.45	
			2-Jul-15	9:29 AM									1.52	2.36	178.60	
			13-Jul-15	12:20 PM									1.50	2.34	178.62	
			3-Sep-15	8:20 AM									1.72	2.56	178.40	
			23-Feb-16	9:50 AM									1.44	2.28	178.68	
			19-Apr-16	8:58 AM									1.34	2.18	178.78	
			19-May-16	1:59 PM									1.43	2.27	178.69	
			29-Jun-16	1:53 PM									1.58	2.42	178.54	
			23-May-19	8:28 AM									1.31	2.15	178.81	
			13-Dec-21	11:51 AM									0.90	1.74	179.22	
			18-Mar-22	-									Decommissioned			

Table B-2 - Groundwater Level Data

Well ID	UTM Coordinates		Date	Time	Well Depth			Screen Length	Screen Separation [1]	Top of Casing Elevation (m AMSL)	Ground Surface Elevation (m AMSL)	Pipe Stick-up (m)	Groundwater Level			Vertical Hydraulic Gradient [3]
	Northing	Easting			(m BTOC)	(m BGS)	(m AMSL)						(m BGS) [2]	(m BTOC)	(m AMSL)	(+) = Upward (-) = Downward
MW212	4812537	593602	16-Jun-15	12:00 PM	9.79	9.05	169.91			179.70	178.96	0.74	-	DRY	-	
			23-Jun-15	4:55 PM									-	DRY	-	
			2-Jul-15	9:20 AM									-	DRY	-	
			13-Jul-15	11:58 AM									-	DRY	-	
			3-Sep-15	8:36 AM									-	DRY	-	
			23-Feb-16	10:30 AM									6.10	6.84	172.86	
			19-Apr-16	1:22 PM									4.58	5.32	174.38	
			19-May-16	2:18 PM									8.27	9.01	170.69	
			29-Jun-16	2:12 PM									7.87	8.61	171.09	
			23-May-19	8:28 AM									0.68	1.42	178.28	
			13-Dec-21	12:09 PM									0.55	1.29	178.41	
			26-Sep-22	-									Decommissioned			
MW214	4813752	593293	16-Jun-15	5:15 PM	12.70	11.85	172.45			185.15	184.30	0.85	0.44	1.29	183.86	
			24-Jun-15	12:30 PM									0.56	1.41	183.74	
			2-Jul-15	4:48 PM									8.42	9.27	175.88	
			13-Jul-15	1:58 PM									8.37	9.22	175.93	
			2-Sep-15	2:32 PM									8.47	9.32	175.83	
			23-Feb-16	3:30 PM									6.83	7.68	177.47	
			18-Apr-16	7:00 AM									5.38	6.23	178.92	
			19-May-16	8:40 AM									5.02	5.87	179.28	
			29-Jun-16	8:39 AM									4.76	5.61	179.54	
			22-May-19	11:24 AM									4.24	5.09	180.06	
			13-Dec-21	12:09 PM									3.96	4.81	180.34	
			8-Jun-22	9:02 AM									4.14	4.99	180.16	
			9-Jan-23	2:47 PM									4.79	5.64	179.51	
MW301-21(S)	4813109	593912	23-Aug-21	3:33 PM	20.12	19.50	160.75	3.05		180.87	180.25	0.62	0.58	1.20	179.67	
			13-Dec-21	2:23 PM									0.15	0.77	180.10	
			21-Dec-21	3:16 PM									0.25	0.87	180.00	
			13-Jan-22	11:54 AM									0.16	0.78	180.09	
			8-Jun-22	11:31 AM									0.33	0.95	179.92	
			9-Jan-23	3:50 PM									1.61	2.23	178.64	
MW301-21(D)	4813107	593911	19-Aug-21	12:10 PM	26.34	25.80	154.54	3.05	6.21	180.87	180.34	0.54	0.49	1.03	179.84	0.03
			13-Dec-21	2:30 PM									0.66	1.20	179.67	-0.07
			21-Dec-21	3:06 PM									0.63	1.17	179.70	-0.05
			13-Jan-22	11:19 AM									0.59	1.13	179.74	-0.06
			8-Jun-22	11:48 AM									0.74	1.28	179.59	-0.05
			9-Jan-23	4:00 PM									1.76	2.30	178.57	-0.01

Table B-2 - Groundwater Level Data

Well ID	UTM Coordinates		Date	Time	Well Depth			Screen Length	Screen Separation [1]	Top of Casing Elevation (m AMSL)	Ground Surface Elevation (m AMSL)	Pipe Stick-up (m)	Groundwater Level			Vertical Hydraulic Gradient [3]
	Northing	Easting			(m BTOC)	(m BGS)	(m AMSL)						(m BGS) [2]	(m BTOC)	(m AMSL)	(+) = Upward (-) = Downward
MW302-21(S)	4812227	594770	10-Dec-21 13-Dec-21 13-Jan-22 8-Jun-22 9-Jan-23	2:40 PM 10:38 AM 9:10 AM 3:00 PM 4:35 PM	17.21	16.50	165.62	3.05		182.82	182.12	0.71	2.09 2.10 2.09 2.51 3.89	2.80 2.81 2.80 3.22 4.60	180.03 180.02 180.02 179.60 178.22	
MW302-21(D)	4812230	594772	23-Aug-21 10-Dec-21 13-Dec-21 13-Jan-22 8-Jun-22 9-Jan-23	12:32 PM 2:44 PM 10:45 AM 9:18 AM 3:52 PM 4:40 PM	23.22	22.60	159.53	3.05	6.08	182.75	182.13	0.62	0.01 2.34 2.33 2.34 2.61 3.92	0.63 2.96 2.95 2.96 3.23 4.54	182.12 179.80 179.81 179.79 179.52 178.21	- -0.04 -0.03 -0.04 -0.01 0.00
MW303-21(S)	4811367	594937	13-Jan-22 9-Jun-22 11-Jan-23	9:43 AM 2:57 PM 1:50 PM	20.57	19.80	156.52	3.05		177.09	176.32	0.76	2.86 5.25 6.56	3.62 6.01 7.32	173.47 171.08 169.77	
MW303-21(D)	4811365	594935	13-Jan-22 9-Jun-22 11-Jan-23	9:40 AM 2:59 PM 1:45 PM	24.29	23.60	152.75	1.52	4.54	177.04	176.35	0.69	4.54 5.58 6.47	5.22 6.26 7.15	171.82 170.78 169.89	-0.36 -0.07 0.03

Notes:

(1) Distance between the screen mid-point in the deep well and the screen mid-point in the shallow well.

(2) A negative value indicates that the water level measured within the pipe is located above ground surface

(3) Negative and positive values indicate downward and upward gradients, respectively.

m BGS = meters below ground surface

m BTOC = meters below top of casing

DRY = no water level present in the monitoring well

- = measurement not available

Table B-3 - Groundwater Quality Results, Lower Base Line Monitoring Wells

Sample Location			MW303-21(D)			MW303-21(S)		
Sample Date			16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22
Sample ID			MW303-21 D	MW303-21D	MW303-21 D Lab-Dup	MW303-21 S	MW303-21S	MW303-21 S Lab-Dup
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			BV	SGS	BV	BV	SGS	BV
Laboratory Work Order			C213548	CA16609-JAN22	C213548	C213548	CA16609-JAN22	C213548
Laboratory Sample ID			RQJ421	UNKNOWN	RQJ421	RQJ422	UNKNOWN	RQJ422
Sample Type	Units	ODWQS			Lab Replicate			Lab Replicate
General Chemistry								
Alkalinity, Total (as CaCO3)	mg/L	30-500[E]	50	-	-	98	-	87
Ammonia (as N)	mg/L	n/v	4.7	-	-	1.2 QA	-	-
Bromate	mg/L	0.01[B]	-	*<0.025*	-	-	0.027[B]	-
Chloride	mg/L	250[C]	1,500[C]	-	-	240	-	-
Color	color unit (CU)	5.0[C]	<2	-	-	2	-	2
Cyanide (Free)	mg/L	0.2[B]	<0.0010	-	<0.0010	<0.0010	-	-
Dissolved Organic Carbon (DOC)	mg/L	5[C]	0.74	-	-	3.1	-	-
Fluoride	mg/L	1.5[B]	0.50	-	-	0.30	-	0.30
Hardness (as CaCO3)	mg/L	80-100[E]	2,100[E]	-	-	870[E]	-	-
Methane	L/m3	3[C]	0.016	-	-	0.016	-	-
Methane	mg/L	n/v	0.010	-	-	0.010	-	-
Microcystin	µg/L	1.5[B]	<0.10	-	<0.10	<0.10	-	-
Nitrate (as N)	mg/L	10.0$_d$[B]	<0.10	-	-	<0.10	-	-
Nitrate + Nitrite (as N)	mg/L	10.0$_d$[B]	<0.10	-	-	<0.10	-	-
Nitrilotriacetic Acid (NTA)	mg/L	0.4[B]	<0.25 DB	-	<0.25	<0.050	-	-
Nitrite (as N)	mg/L	1.0$_d$[B]	<0.010	-	-	<0.010	-	-
Nitrogen (Organic)	mg/L	0.15[E]	0.53[E]	-	-	<0.10	-	-
N-Nitrosodimethylamine (NDMA)	ng/L	9.0[B]	<2.08	-	-	<2.15	-	-
pH, lab	S.U.	6.5-8.5[E]	7.58	-	-	7.75	-	7.82
Sulfate	mg/L	500$_h$[C]	1,600[C]	-	-	790[C]	-	-
Sulfide	mg/L	0.05[C]	<0.020	-	-	<0.020	-	-
Total Dissolved Solids (Calculated)	mg/L	500[C]	4,700[C]	-	-	1,600[C]	-	-
Total Kjeldahl Nitrogen	mg/L	n/v	5.2	-	-	1.1 QA	-	-
Turbidity, Lab	NTU	5$_i$[C] [E] $_j$	170[C]	-	170[C]	160[C]	-	-
Metals								
Aluminum	mg/L	0.1[E]	0.013	-	-	0.22[E]	-	-
Antimony	mg/L	0.006[B]	<0.00050	-	-	<0.00050	-	-
Arsenic	mg/L	0.01[B]	<0.0010	-	-	0.0032	-	-
Barium	mg/L	1[B]	0.037	-	-	0.054	-	-
Boron	mg/L	5[B]	4.7	-	-	2.0	-	-
Cadmium	mg/L	0.005[B]	<0.000090	-	-	<0.000090	-	-
Calcium	mg/L	n/v	550	-	-	210	-	-
Chromium	mg/L	0.05[B]	<0.0050	-	-	<0.0050	-	-
Copper	mg/L	1[C]	<0.00090	-	-	0.0012	-	-
Iron	mg/L	0.3[C]	0.60[C]	-	-	0.31[C]	-	-
Lead	mg/L	0.01[B]	<0.00050	-	-	<0.00050	-	-
Magnesium	mg/L	n/v	190	-	-	85	-	-
Manganese	mg/L	0.05[C]	0.24[C]	-	-	0.20[C]	-	-
Mercury	mg/L	0.001[B]	<0.00010	-	-	*<0.0015 DB*	-	-
Potassium	mg/L	n/v	43	-	-	15	-	-
Selenium	mg/L	0.05[B]	<0.0020	-	-	<0.0020	-	-
Sodium	mg/L	200$_g$[C] 20$_q$[D]	800[C,D]	-	-	230[C,D]	-	-
Uranium	mg/L	0.02[B]	0.0011	-	-	0.0024	-	-
Zinc	mg/L	5[C]	<0.0050	-	-	<0.0050	-	-
Microbiological								
Escherichia coli (E.Coli)	cfu/100mL	0[A]	NDOGN	-	-	-	-	-
Heterotrophic Plate Count	cfu/mL	[E] $_k$	>5700	-	-	-	-	-
Total Coliform Background	cfu/100mL	n/v	NDOGN	-	-	-	-	-
Total Coliforms	cfu/100mL	0[A]	NDOGN	-	-	-	-	-

See notes on last page

Table B-3 - Groundwater Quality Results, Lower Base Line Monitoring Wells

Sample Location			MW303-21(D)			MW303-21(S)		
Sample Date			16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22
Sample ID			MW303-21 D	MW303-21D	MW303-21 D Lab-Dup	MW303-21 S	MW303-21S	MW303-21 S Lab-Dup
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			BV	SGS	BV	BV	SGS	BV
Laboratory Work Order			C213548	CA16609-JAN22	C213548	C213548	CA16609-JAN22	C213548
Laboratory Sample ID			RQJ421	UNKNOWN	RQJ421	RQJ422	UNKNOWN	RQJ422
Sample Type	Units	ODWQS			Lab Replicate			Lab Replicate
Dioxins & Furans								
Dioxins/Furans TEQs	pg/L	15_a[B]	9.1	-	-	4.5	-	-
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	pg/L	n/v	<0.997	-	-	<1.69 PD	-	-
Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	pg/L	n/v	1.29	-	-	<1.72	-	-
Heptachlorodibenzo-p-Dioxin, 1,2,3,4,6,7,8-	pg/L	n/v	<2.83	-	-	3.43	-	-
Hexachlorodibenzofuran, 1,2,3,4,7,8-	pg/L	n/v	<1.85	-	-	<1.26	-	-
Hexachlorodibenzofuran, 1,2,3,6,7,8-	pg/L	n/v	<1.47	-	-	<1.32	-	-
Hexachlorodibenzofuran, 1,2,3,7,8,9-	pg/L	n/v	<1.77	-	-	<1.33	-	-
Hexachlorodibenzofuran, 2,3,4,6,7,8-	pg/L	n/v	<1.41	-	-	<1.23	-	-
Hexachlorodibenzo-p-Dioxin, 1,2,3,4,7,8-	pg/L	n/v	<2.24	-	-	<1.38	-	-
Hexachlorodibenzo-p-Dioxin, 1,2,3,6,7,8-	pg/L	n/v	<1.87	-	-	<1.36	-	-
Hexachlorodibenzo-p-Dioxin, 1,2,3,7,8,9-	pg/L	n/v	<1.99	-	-	<1.40	-	-
Octachlorodibenzofuran (OCDF)	pg/L	n/v	<1.90	-	-	3.17	-	-
Octachlorodibenzo-p-dioxin	pg/L	n/v	2.98	-	-	56.6	-	-
Pentachlorodibenzofuran, 1,2,3,7,8- (PeCDF)	pg/L	n/v	<2.64	-	-	<1.37	-	-
Pentachlorodibenzofuran, 2,3,4,7,8-	pg/L	n/v	<2.39	-	-	<1.25	-	-
Pentachlorodibenzo-p-Dioxin, 1,2,3,7,8-	pg/L	n/v	<4.18	-	-	<1.48	-	-
Tetrachlorodibenzofuran, 2,3,7,8-	pg/L	n/v	<1.60	-	-	<1.24	-	-
Tetrachlorodibenzo-p-Dioxin, 2,3,7,8-	pg/L	n/v	<2.65	-	-	<1.45	-	-
Total Heptachlorodibenzofuran	pg/L	n/v	1.29	-	-	<1.69	-	-
Total Heptachlorodibenzo-p-dioxin	pg/L	n/v	<2.83	-	-	7.38	-	-
Total Hexachlorodibenzofuran	pg/L	n/v	<1.60	-	-	<1.28	-	-
Total Hexachlorodibenzo-p-dioxin	pg/L	n/v	<2.02	-	-	4.10	-	-
Total Pentachlorodibenzofuran	pg/L	n/v	<2.51	-	-	<1.31	-	-
Total Pentachlorodibenzo-p-dioxin	pg/L	n/v	<4.18	-	-	3.85	-	-
Total Tetrachlorodibenzofuran	pg/L	n/v	<1.60	-	-	<1.24	-	-
Total Tetrachlorodibenzo-p-dioxin	pg/L	n/v	<2.65	-	-	<1.45	-	-
Herbicide and Pesticide								
Aldrin	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Aldrin + Dieldrin	µg/L	n/v	<0.006	-	-	<0.06	-	-
Aroclor 1016	µg/L	n/v	<0.050	-	-	<0.50	-	-
Aroclor 1221	µg/L	n/v	<0.050	-	-	<0.50	-	-
Aroclor 1232	µg/L	n/v	<0.050	-	-	<0.50	-	-
Aroclor 1242	µg/L	n/v	<0.050	-	-	<0.50	-	-
Aroclor 1248	µg/L	n/v	<0.050	-	-	<0.50	-	-
Aroclor 1254	µg/L	n/v	<0.050	-	-	<0.50	-	-
Aroclor 1260	µg/L	n/v	<0.050	-	-	<0.50	-	-
Azinphos-methyl (Guthion)	µg/L	20[B]	<2.0	-	-	<2.0	-	-
Chlordane (Total)	µg/L	n/v	<0.006	-	-	<0.06	-	-
Chlordane, alpha-	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Chlordane, gamma-	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDD (p,p'-DDD)	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDD, o,p'-	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDE (p,p'-DDE)	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDE, o,p'-	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDT (p,p'-DDT)	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDT, o,p'-	µg/L	n/v	<0.0060	-	-	<0.060	-	-
DDT+ Metabolites	µg/L	n/v	<0.006 / <0.024	-	-	<0.06 / <0.24	-	-
Dieldrin	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Diquat	µg/L	70[B]	<7.0	-	-	<14	-	-
Diuron	µg/L	150[B]	<10	-	-	<10	-	-
Glyphosate	µg/L	280[B]	<10	-	-	<10	-	-
Heptachlor	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Heptachlor + Heptachlor Epoxide	µg/L	n/v	<0.006	-	-	<0.06	-	-
Heptachlor Epoxide	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Lindane (Hexachlorocyclohexane, gamma)	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Methoxychlor (4,4'-Methoxychlor)	µg/L	50[B]	<0.024	-	-	<0.24	-	-
Oxychlordane	µg/L	n/v	<0.0060	-	-	<0.060	-	-
Paraquat	µg/L	10[B]	<1.0	-	-	<2.0	-	-
Polychlorinated Biphenyls (PCBs)	µg/L	3.0[B]	<0.050 / <0.05	-	-	<0.50 / <0.5	-	-
Temephos	µg/L	n/v	<10	-	-	<10	-	-

See notes on last page

Table B-3 - Groundwater Quality Results, Lower Base Line Monitoring Wells

Sample Location			MW303-21(D)			MW303-21(S)		
Sample Date			16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22	16-Jan-22
Sample ID			MW303-21 D	MW303-21D	MW303-21 D Lab-Dup	MW303-21 S	MW303-21S	MW303-21 S Lab-Dup
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			BV	SGS	BV	BV	SGS	BV
Laboratory Work Order			C213548	CA16609-JAN22	C213548	C213548	CA16609-JAN22	C213548
Laboratory Sample ID			RQJ421	UNKNOWN	RQJ421	RQJ422	UNKNOWN	RQJ422
Sample Type	Units	ODWQS			Lab Replicate			Lab Replicate
Semi-Volatile Organic Compounds								
Alachlor	µg/L	5.0[B]	<0.50	-	-	<0.50	-	-
Aldicarb	µg/L	n/v	<5.0	-	-	<5.0	-	-
Atrazine	µg/L	n/v	<0.50	-	-	<0.50	-	-
Atrazine + Desethyl atrazine	µg/L	n/v	<1.0	-	-	<1.0	-	-
Bendiocarb	µg/L	n/v	<2.0	-	-	<2.0	-	-
Benzo(a)pyrene	µg/L	0.010[B]	<0.0050	-	-	***<0.015 MI***	-	-
Bromoxynil	µg/L	5.0[B]	<0.50	-	-	<0.50	-	-
Carbaryl	µg/L	90[B]	<5.0	-	-	<5.0	-	-
Carbofuran	µg/L	90[B]	<5.0	-	-	<5.0	-	-
Chlorpyrifos	µg/L	90[B]	<1.0	-	-	<1.0	-	-
Cyanazine (Bladex)	µg/L	n/v	<1.0	-	-	<1.0	-	-
Desethyl Atrazine	µg/L	n/v	<0.50	-	-	<0.50	-	-
Diazinon	µg/L	20[B]	<1.0	-	-	<1.0	-	-
Dicamba	µg/L	120[B]	<1.0	-	-	<1.0	-	-
Dichlorophenol, 2,4-	µg/L	900[B] 0.30$_f$[C]	<0.25	-	-	<0.25	-	-
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/L	100[B]	<1.0	-	-	<1.0	-	-
Diclofop-methyl	µg/L	9.0[B]	<0.90	-	-	<0.90	-	-
Dimethoate	µg/L	20[B]	<2.5	-	-	<2.5	-	-
Dinitrobutyl Phenol (Dinoseb)	µg/L	n/v	<1.0	-	-	<1.0	-	-
Malathion	µg/L	190[B]	<5.0	-	-	<5.0	-	-
Methyl Parathion	µg/L	n/v	<1.0	-	-	<1.0	-	-
Metolachlor (Dual)	µg/L	n/v	<0.50	-	-	<0.50	-	-
Metribuzin (Sencor)	µg/L	80[B]	<5.0	-	-	<5.0	-	-
Parathion (Ethyl Parathion)	µg/L	n/v	<1.0	-	-	<1.0	-	-
Pentachlorophenol	µg/L	60[B] 30$_f$[C]	<0.50	-	-	<0.50	-	-
Phorate (Thimet)	µg/L	2.0[B]	<0.50	-	-	<0.50	-	-
Picloram	µg/L	190[B]	<5.0	-	-	<5.0	-	-
Prometryn	µg/L	1.0[B]	<0.25	-	-	<0.25	-	-
Simazine	µg/L	10[B]	<1.0	-	-	<1.0	-	-
Terbufos	µg/L	1.0[B]	<0.50	-	-	<0.50	-	-
Tetrachlorophenol, 2,3,4,6-	µg/L	100[B] 1.0$_f$[C]	<0.50	-	-	<0.50	-	-
Triallate	µg/L	230[B]	<1.0	-	-	<1.0	-	-
Trichlorophenol, 2,4,6-	µg/L	5.0[B] 2.0$_f$[C]	<0.50	-	-	<0.50	-	-
Trichlorophenoxy acetic acid, 2,4,5- (2,4,5-T)	µg/L	20$_f$[C]	<1.0	-	-	<1.0	-	-
Trifluralin	µg/L	45[B]	<1.0	-	-	<1.0	-	-
Volatile Organic Compounds								
Benzene	µg/L	1.0[B]	<0.10	-	-	<0.10	-	-
Bromodichloromethane	µg/L	n/v	<0.10	-	-	<0.10	-	-
Bromoform (Tribromomethane)	µg/L	n/v	<0.20	-	-	<0.20	-	-
Carbon Tetrachloride (Tetrachloromethane)	µg/L	2.0[B]	<0.10	-	-	<0.10	-	-
Chlorobenzene (Monochlorobenzene)	µg/L	80[B] 30$_f$[C]	<0.10	-	-	<0.10	-	-
Chloroform (Trichloromethane)	µg/L	n/v	0.24	-	-	0.46	-	-
Dibromochloromethane	µg/L	n/v	<0.20	-	-	<0.20	-	-
Dichlorobenzene, 1,2-	µg/L	200[B] 3.0$_f$[C]	<0.20	-	-	<0.20	-	-
Dichlorobenzene, 1,4-	µg/L	5.0[B] 1.0$_f$[C]	<0.20	-	-	<0.20	-	-
Dichloroethane, 1,2-	µg/L	5.0[B]	<0.20	-	-	<0.20	-	-
Dichloroethene, 1,1-	µg/L	14[B]	<0.10	-	-	<0.10	-	-
Ethylbenzene	µg/L	140[B] 1.6[C]	<0.10	-	-	<0.10	-	-
Methylene Chloride (Dichloromethane)	µg/L	50[B]	<0.50	-	-	<0.50	-	-
Tetrachloroethene (PCE)	µg/L	10[B]	<0.10	-	-	<0.10	-	-
Toluene	µg/L	60[B] 24[C]	<0.20	-	-	<0.20	-	-
Trichloroethene (TCE)	µg/L	5.0[B]	<0.10	-	-	<0.10	-	-
Trihalomethanes (THMs)	µg/L	100$_b$[B]	0.24	-	-	0.46	-	-
Vinyl Chloride	µg/L	1.0[B]	<0.20	-	-	<0.20	-	-
Xylene, m & p-	µg/L	n/v	<0.10	-	-	<0.10	-	-
Xylene, o-	µg/L	n/v	<0.10	-	-	<0.10	-	-
Xylenes, Total	µg/L	90[B]	<0.10	-	-	<0.10	-	-

See notes on last page

Table B-3 - Groundwater Quality Results, Lower Base Line Monitoring Wells

Notes:

ODWS	Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines (MOE, 2006), in support of O.Reg 169/03 (January 1, 2018)
A	Schedule 1 - Microbiological Standards (expressed as a maximum)
B	Schedule 2 - Chemical Standards (expressed as a maximum acceptable concentration)
C	ODWS Table 4 - Chemical/Physical Objectives and Guidelines, Aesthetic Objectives
D	ODWS Table 4 - Medical Officer of Health Reporting Limit
E	ODWS Table 4 - Chemical/Physical Objectives and Guidelines, Operational Guidelines
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
a	Total toxic equivalents when compared with 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin)
b	Expressed as a running annual average of quarterly results.
d	Where both nitrate and nitrite are present, the total of the two should not exceed 10 mg/L (as nitrogen).
f	Refer to ODWS Table 2 for health related standard
g[CD]	The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.
h	When sulfate levels exceed 500 mg/L, water may have a laxative effect on some people.
i	Applicable for all waters at the point of consumption.
j	The operational guidelines for filtration processes are provided as performance criteria in the Procedure for Disinfection of Drinking Water in Ontario.
k	Increases in HPC concentration above baseline levels are considered undesirable.
DB	Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
MI	Detection limit was raised due to matrix interferences.
PD	EMPC/NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
QA	TKN <NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

Table B-4 - Groundwater Quality Results, PDA Monitoring Wells

Sample Location			BH1		BH10			BH12		BH17					BH28				
Sample Date			4-Jun-15	19-Apr-16	4-Jun-15	4-Jun-15	18-Apr-16	4-Jun-15	18-Apr-16	4-Jun-15	18-Apr-16	13-Jun-22	Change from June 2015	Change from April 2016	4-Jun-15	19-Apr-16	9-Jun-22	Change from June 2015	Change from April 2016
Sample ID			WG-160960844-20150604-NS08	WG 160960844-20160419-NS14	WG-160960844-20150604-NS05	WG-160960844-20150604-NS05LR	WG160960844-20160418-NS04	WG-160960844-20150604-NS09	WG160960844-20160418-NS05	WG-160960844-20150604-NS07	WG160960844-20160418-NS02	BH17			WG-160960844-20150604-NS02	WG 160960844-20160419-NS12	BH28		
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC			STANTEC	STANTEC	STANTEC		
Laboratory			MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	MAXX	BV			MAXX	MAXX	BV		
Laboratory Work Order			B5A6976	B677799	B5A6976	B5A6976	B676695	B5A6976	B676695	B5A6976	B676695	C2G3790			B5A6976	B677799	C2G0415		
Laboratory Sample ID			AJY606	CFG893	AJY603	AJY603	CFB909	AKC297	CFB910	AJY605	CFB907	SXA250			AJY600	CFG891	SWG851		
Sample Type	Units	CDWQG				Lab Replicate													
Well Status			Decommissioned April 7, 2022		Decommissioned April 7, 2022			Decommissioned May 31, 2022											
General Chemistry																			
Alkalinity, Bicarbonate (as CaCO3)	mg/L	n/v	560	510	490	-	490	440	400	670	680	-	-	-	100	99	-	-	-
Alkalinity, Carbonate (as CaCO3)	mg/L	n/v	4.5	6.9	4.0	-	3.3	2.7	5	5.5	5.3	3.1	-2.4	-2.2	<1.0	<1.0	<1.0	0	0
Alkalinity, Total (as CaCO3)	mg/L	n/v	570	520	490	-	500	440	410	680	690	660	-20	-30	100	99	93	-7	-6
Ammonia (as N)	mg/L	n/v	0.077	<0.050	0.10	-	<0.050	<0.050	<0.050	0.29	0.1	0.11	-0.18	0.01	0.45	0.3	0.38	-0.07	0.08
Anion Sum	meq/L	n/v	21.1	18.9	17.6	-	18.5	11.3	10.9	24	24.3	24.7	0.7	0.4	11.6	11	11.3	-0.3	0.3
Bicarbonate(as CaCO3, Calculated)	mg/L	n/v	-	-	-	-	-	-	-	-	-	650	-	-	-	-	92	-	-
Bromide	mg/L	n/v	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	2.6	-	-
Cation Sum	meq/L	n/v	21.0	21.2	19.1	-	20.3	11.3	11.5	26.6	26.5	26.2	-0.4	-2.3	12.1	12.1	11.4	-0.7	-0.7
Chloride	mg/L	≤250[B]	13	13	14	-	15	8	8.5	15	13	15	0	2	230	210	230	0	20
Color	color unit (CU)	≤15[B]	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	<2	-	-
Cyanide (Free)	mg/L	0.2[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	2.8	2.6	2.8	2.8	2.1	1.6	2	5.1	4.2	2.2	-2.9	-2	1.7	0.83	<0.40	-1.3	-0.43
Electrical Conductivity, Lab	µmhos/cm	n/v	1,800	1,600	1,500	-	1,600	990	950	2,000	1,900	1,900	-100	0	1,300	1,300	1,200	-100	-100
Fluoride	mg/L	1.5[C]	-	-	-	-	-	-	-	-	-	0.28	-	-	-	-	0.37	-	-
Hardness (as CaCO3)	mg/L	n/v	870	870	790	-	850	510	510	1,100	1,200	1,100	0	-100	280	270	260	-20	-10
Ion Balance	%	n/v	0.120	5.66	4.15	-	4.59	0.31	3.01	5.11	8.08	2.96	-2.15	-5.12	2.01	4.79	0.75	-1.26	-4.04
Langelier Index (at 20 C)	none	n/v	1.02	1.23	1.22	-	1.13	0.954	1.23	1.21	1.16	0.90	-0.31	-0.26	0.237	0.085	0.136	-0.101	0.051
Langelier Index (at 4 C)	none	n/v	0.772	0.984	0.971	-	0.883	0.706	0.985	0.962	0.914	0.659	-0.303	-0.255	-0.01	-0.162	-0.111	-0.101	0.051
Methane	L/m3	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methane	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microcystin	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	10[C]	7.65	6.67	3.26	-	2.63	0.65	0.88	0.77	1.49	2.19	1.42	0.7	<0.10	<0.10	<0.10	0	0
Nitrate + Nitrite (as N)	mg/L	n/v	7.67	6.67	3.26	-	2.63	0.66	0.88	0.79	1.5	2.19	1.4	0.69	<0.10	<0.10	<0.10	0	0
Nitrilotriacetic Acid (NTA)	mg/L	0.4[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	1[C]	0.016	<0.010	<0.010	-	<0.010	0.011	<0.010	0.02	0.01	<0.01	-0.01	0	<0.010	<0.010	0.012	0.002	0.002
Nitrogen (Organic)	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine (NDMA)	ng/L	40[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate (as P)	mg/L	n/v	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0	0	<0.010	<0.010	<0.010	0	0
pH, lab	S.U.	7.0-10.5[B]	7.93	8.15	7.94	-	7.85	7.81	8.12	7.94	7.92	7.71	-0.23	-0.21	7.94	7.79	7.89	-0.05	0.1
Phosphorus, Total	mg/L	n/v	-	-	-	-	-	-	-	-	-	4.4	-	-	-	-	1.3	-	-
Saturation pH (at 20 C)	none	n/v	6.91	6.92	6.72	-	6.72	6.86	6.89	6.74	6.76	6.8	0.06	0.04	7.79	7.71	7.76	0.06	0.05
Saturation pH (at 4 C)	none	n/v	7.16	7.17	6.97	-	6.97	7.11	7.14	6.98	7.01	7.05	0.07	0.04	7.95	7.95	8.01	0.06	0.06
Sulfate	mg/L	≤500[B]	420	370	340	-	390	100	110	460	480	530[B]	50	50	150	150	140	-10	-10
Sulfide	mg/L	≤0.05[B]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (Calculated)	mg/L	≤500[B]	1,200[B]	1,100[B]	1,000[B]	-	1,100[B]	580[B]	580[B]	1,300[B]	1,400[B]	1,400[B]	100	0	690[B]	680[B]	670[B]	-20	-10
Total Kjeldahl Nitrogen	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																			
Aluminum	mg/L	0.1/0.2[B]	0.011	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	0.019	0.006	0.025	0.006	0.019	0.0084	0.0083	0.018	0.0096	0.0097
Antimony	mg/L	0.006[C]	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0	0	<0.0005	<0.0005	<0.0005	0	0
Arsenic	mg/L	0.010[C]	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0	0	0.0053	0.0091	0.01	0.0047	0.0009
Barium	mg/L	2.0[C]	0.068	0.055	0.080	-	0.068	0.13	0.11	0.086	0.082	0.086	0	0.004	0.059	0.044	0.028	-0.031	-0.016
Beryllium	mg/L	n/v	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00040	0	0	<0.0005	<0.0005	<0.0004	0	0
Boron	mg/L	5[C]	0.16	0.17	0.14	-	0.18	0.13	0.12	0.28	0.29	0.3	0.02	0.01	0.95	0.99	1	0.05	0.01
Cadmium	mg/L	0.007[C]	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000090	0	0	<0.0001	<0.0001	<0.00009	0	0
Calcium	mg/L	n/v	80	83	140	-	140	95	96	100	98	94	×6	×4	63	63	60	×3	×3
Chromium	mg/L	0.05[C]	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0	0	<0.005	<0.005	<0.005	0	0
Cobalt	mg/L	n/v	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	0.0032	0.0022	<0.0005	-0.0027	-0.0015	<0.0005	<0.0005	<0.0005	0	0
Copper	mg/L	≤1.0[B] 2[C]	0.0024	0.0016	0.0019	-	0.0016	0.0025	0.0018	0.002	0.0022	0.0019	-0.0001	-0.0003	<0.0010	<0.0010	<0.0009	0	0
Iron	mg/L	≤0.3[B]	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0	0	<0.10	<0.10	0.12	0.02	0.02
Lead	mg/L	0.005[C]	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0	0	<0.00050	<0.00050	-	-	-
Magnesium	mg/L	n/v	160	160	110	-	120	65	65	210	240	220	10	-20	29	28	27	-2	-1
Manganese	mg/L	≤0.02[B] 0.12[C]	0.029[B]	0.0039	0.023[B]	-	0.0086	0.035[B]	0.0075	0.38[BC]	0.18[BC]	<0.002	-0.378	-0.178	0.11[B]	0.065[B]	0.073[B]	-0.037	0.008
Mercury	mg/L	0.001[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	mg/L	n/v	0.0019	0.0018	0.0019	-	0.00077	0.001	0.0017	0.0032	0.0027	0.0015	-0.0017	-0.0012	0.023	0.022	0.02	-0.003	-0.002
Nickel	mg/L	n/v	0.0025	<0.0010	0.0017	-	<0.0010	0.0014	<0.0010	0.004	0.003	<0.001	-0.003	-0.002	<0.001	<0.001	<0.001	0	0
Phosphorus	mg/L	n/v	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0	0	<0.10	<0.10	<0.10	0	0
Potassium	mg/L	n/v	5.2	5.5	4.5	-	4.5	4.1	4.1	6.6	5.9	5.3	-1.3	-0.6	6.1	5.5	4.8	-1.3	-0.7
Selenium	mg/L	0.05[C]	<0.0020	<0.0020	0.0026	-	0.0027	0.0033	<0.0020	<0.002	<0.002	0.0035	0.0015	0.0015	<0.002	<0.002	<0.002	0	0
Silicon	mg/L	n/v	5.7	5.4	6.3	-	6	6.6	6	6.1	6	5.9	-0.2	-0.1	4.2	4.5	4.7	0.5	0.2
Silver	mg/L	n/v	<0.00010	<0.00010	<0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00009	0	0	<0.00010	<0.00010	<0.00009	0	0
Sodium	mg/L	≤200[B]	82	84	72	-	74	26	29	81	82	75	×6	×7	150	150	140	-10	-10
Strontium	mg/L	7.0[C]	2.0	1.8	2.0	-	2.4	1.4	1.3	4.1	4.1	4.4	0.3	0.3	5.9	6.7	7.2[C]	1.3	0.5
Thallium	mg/L	n/v	<0.000050	<0.000050	<0.000050	-	<0.000050	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	0	0	<0.00005	<0.00005	<0.00005	0	0
Titanium	mg/L	n/v	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.005	<0.005	<0.005	0	0	<0.005	<0.005	<0.005	0	0
Uranium	mg/L	0.02[C]	0.013	0.011	0.0099	-	0.0099	0.0072	0.0088	0.019	0.023[C]	0.019	0	-0.004	0.0018	0.0007	0.0003	-0.0015	-0.0004
Vanadium	mg/L	n/v	0.00090	<0.00050	0.00064	-	<0.00050	<0.00050	<0.00050	0.0019	0.0007	<0.0005	-0.0031	-0.0002	0.001	<0.0005	<0.0005	-0.0005	0
Zinc	mg/L	≤5.0[B]	0.0064	0.0075	<0.0050	-	<0.0050	0.0051	0.0055	<0.005	0.007	<0.005	0.002	0	<0.005	<0.005	<0.005	0	0

See notes on last page.

Table B-4 - Groundwater Quality Results, PDA Monitoring Wells

Sample Location			BH37					MW201			MW202					MW204	MW205
Sample Date			4-Jun-15	19-Apr-16	9-Jun-22	Change from June 2015	Change from April 2016	19-Apr-16	13-Jun-22	Change from April 2016	2-Jul-15	20-Apr-16	13-Jun-22	Change from June 2015	Change from April 2016	20-Apr-16	19-Apr-16
Sample ID			WG-160960844-20150604-NS03	WG 160960844-20160419-NS10	BH37			WG 160960844-20160419-NS15	MW201		WG-160960844-20150702-AD01	WG160960844-20160420-NS19	MW202			WG160960844-20160420-NS18	WG 160960844-20160419-NS16
Sampling Company			STANTEC	STANTEC	STANTEC			STANTEC	STANTEC		STANTEC	STANTEC	STANTEC			STANTEC	STANTEC
Laboratory			MAXX	MAXX	BV			MAXX	BV		MAXX	MAXX	BV			MAXX	MAXX
Laboratory Work Order			B5A6976	B677799	C2G0415			B677799	C2G3790		B5C9274	B678894	C2G3790			B678894	B677799
Laboratory Sample ID			AJY601	CFG889	SWG852			CFG894	SXA246		AOE458	CFM172	SXA243			CFM171	CFG895
Sample Type	Units	CDWQG														Decommissioned	Decommissioned
Well Status																April 7, 2022	May 31, 2022
General Chemistry																	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	n/v	680	640	-	-	-	420	-	-	300	380	-	-	-	260	73
Alkalinity, Carbonate (as CaCO3)	mg/L	n/v	6.4	8.8	4.2	-2.2	-4.6	6.7	3.4	-3.3	3	5.4	2.4	-0.6	-3	3.7	<1.0
Alkalinity, Total (as CaCO3)	mg/L	n/v	690	650	610	-80	-40	430	460	30	310	380	380	70	0	270	74
Ammonia (as N)	mg/L	n/v	0.15	<0.05	0.11	-0.04	0.06	0.33	0.069	-0.261	0.61	0.46	<0.05	-0.56	-0.41	0.28	0.21
Anion Sum	meq/L	n/v	26.9	25.3	22.4	-4.5	-2.9	17	16.5	-0.5	16.2	19.4	18.9	2.7	-0.5	15.4	31.7
Bicarbonate(as CaCO3, Calculated)	mg/L	n/v	-	-	610	-	-	-	460	-	-	-	380	-	-	-	-
Bromide	mg/L	n/v	-	-	<1.0	-	-	-	<1.0	-	-	-	<1.0	-	-	-	-
Cation Sum	meq/L	n/v	28.3	27.1	22.7	-5.6	-4.4	17.6	17.4	-0.2	17	20.5	20.2	3.2	-0.3	15.7	35.4
Chloride	mg/L	≤250[B]	49	44	43	-6	-1	8.8	5.1	-3.7	41	30	35	-6	5	140	560[B]
Color	color unit (CU)	≤15[B]	-	-	<2	-	-	-	3	-	-	-	<2	-	-	-	-
Cyanide (Free)	mg/L	0.2[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	4.1	4	2.7	-1.4	-1.3	2.2	1.1	-1.1	1.5	1.4	0.87	-0.53	-0.43	1.2	1.5
Electrical Conductivity, Lab	µmhos/cm	n/v	2,200	2,100	1,800	-400	-300	1,400	1,400	0	1,500	1,700	1,600	100	-100	1,500	3,300
Fluoride	mg/L	1.5[C]	-	-	0.47	-	-	-	0.29	-	-	-	0.29	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	1,100	1,100	880	-220	-220	760	740	-20	590	780	750	160	-30	440	840
Ion Balance	%	n/v	2.51	3.58	0.55	-1.96	-3.03	1.88	2.66	0.78	2.31	2.76	3.4	1.09	0.64	1.17	5.51
Langelier Index (at 20 C)	none	n/v	1.15	1.3	0.877	-0.273	-0.423	1.15	0.846	-0.304	0.799	1.08	0.742	-0.057	-0.338	0.857	0.005
Langelier Index (at 4 C)	none	n/v	0.908	1.05	0.631	-0.277	-0.419	0.899	0.599	-0.3	0.553	0.83	0.496	-0.057	-0.334	0.611	-0.238
Methane	L/m3	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methane	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microcystin	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	10[C]	1.06	1.71	2.74	1.68	1.03	<0.10	0.1	0	<0.10	<0.10	0.28	0.18	0.18	<0.10	0.29
Nitrate + Nitrite (as N)	mg/L	n/v	1.06	1.71	2.74	1.68	1.03	<0.10	0.1	0	<0.10	<0.10	0.28	0.18	0.18	0.18	0.31
Nitrilotriacetic Acid (NTA)	mg/L	0.4[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	1[C]	<0.010	<0.010	<0.010	0	0	<0.010	<0.010	0	<0.010	<0.010	<0.010	0	0	0.177	0.015
Nitrogen (Organic)	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine (NDMA)	ng/L	40[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate (as P)	mg/L	n/v	<0.010	<0.010	<0.010	0	0	<0.010	<0.010	0	<0.010	<0.010	<0.010	0	0	<0.010	<0.010
pH, lab	S.U.	7.0-10.5[B]	8	8.16	7.87	-0.13	-0.29	8.23	7.9	-0.33	8.03	8.19	7.84	-0.19	-0.35	8.16	7.48
Phosphorus, Total	mg/L	n/v	-	-	6.5	-	-	-	0.097	-	-	-	0.071	-	-	-	-
Saturation pH (at 20 C)	none	n/v	6.85	6.87	6.99	0.14	0.12	7.08	7.05	-0.03	7.23	7.11	7.1	-0.13	-0.01	7.32	7.48
Saturation pH (at 4 C)	none	n/v	7.09	7.11	7.24	0.15	0.13	7.33	7.3	-0.03	7.48	7.36	7.34	-0.14	-0.02	7.56	7.72
Sulfate	mg/L	≤500[B]	560[B]	530[B]	420	-140	-110	390	340	-50	430	530[B]	490	60	-40	300	700[B]
Sulfide	mg/L	≤0.05[B]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (Calculated)	mg/L	≤500[B]	1,500[B]	1,400[B]	1,200[B]	-300	-200	940[B]	900[B]	-40	970[B]	1,100[B]	1,100[B]	130	0	900[B]	2,000[B]
Total Kjeldahl Nitrogen	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																	
Aluminum	mg/L	0.1/0.2[B]	0.0053	<0.0050	0.037	0.0317	0.032	0.0053	<0.0049	-0.0004	0.0091	<0.0050	<0.0049	-0.0042	0	<0.0050	0.0064
Antimony	mg/L	0.006[C]	<0.0005	<0.0005	<0.0005	0	0	0.0008	<0.0005	-0.0003	0.001	<0.0005	<0.0005	-0.0005	0	<0.00050	<0.00050
Arsenic	mg/L	0.010[C]	<0.001	<0.001	<0.001	0	0	0.0015	<0.0010	-0.0005	0.0017	0.0051	0.0014	-0.0003	-0.0037	0.0025	0.0016
Barium	mg/L	2.0[C]	0.087	0.081	0.056	-0.031	-0.025	0.038	0.037	-0.001	0.051	0.041	0.02	-0.031	-0.021	0.048	0.035
Beryllium	mg/L	n/v	<0.0005	<0.0005	<0.0004	0	0	<0.0005	<0.0004	0	<0.0005	<0.0005	<0.0004	0	0	<0.00050	<0.00050
Boron	mg/L	5[C]	0.36	0.31	0.24	-0.12	-0.07	0.25	0.27	0.02	0.78	0.76	0.89	0.11	0.13	0.79	1.7
Cadmium	mg/L	0.007[C]	<0.0001	<0.0001	<0.00009	0	0	<0.00010	<0.00009	0	<0.0001	<0.0001	<0.00009	0	0	<0.00010	<0.00010
Calcium	mg/L	n/v	83	83	63	-20	-20	67	66	-1	68	75	78	10	3	62	200
Chromium	mg/L	0.05[C]	<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0	<0.005	<0.005	<0.005	0	0	<0.0050	<0.0050
Cobalt	mg/L	n/v	0.00066	<0.00050	<0.00050	0	0	0.001	<0.0005	-0.0005	<0.0005	<0.0005	<0.0005	0	0	0.0008	<0.00050
Copper	mg/L	≤1.0[B] 2[C]	0.0018	0.0018	0.0018	0	0	0.0012	0.0018	0.0006	0.0019	<0.0010	<0.0009	-0.001	0	<0.0010	<0.0020
Iron	mg/L	≤0.3[B]	<0.10	<0.10	<0.10	0	0	<0.10	<0.10	0	0.16	1.1[B]	<0.10	-0.06	-1.00	0.11	<0.10
Lead	mg/L	0.005[C]	<0.00050	<0.00050	-	-	-	<0.0005	<0.0005	0	<0.0005	<0.0005	<0.0005	0	0	<0.00050	<0.00050
Magnesium	mg/L	n/v	220	210	170	-50	-40	140	140	0	100	140	130	30	-10	70	81
Manganese	mg/L	≤0.02[B] 0.12[C]	0.084[B]	0.014	<0.002	-0.062	-0.012	0.086[B]	0.004	-0.082	0.095[B]	0.10[B]	0.037[B]	-0.058	-0.063	0.079[B]	0.13[BC]
Mercury	mg/L	0.001[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	mg/L	n/v	0.0021	0.0021	0.0015	-0.0006	-0.0006	0.023	0.017	-0.006	0.024	0.025	0.022	-0.002	-0.003	0.034	0.061
Nickel	mg/L	n/v	0.0014	<0.0010	<0.0010	-0.0004	0	0.0042	0.0014	-0.0028	0.0019	0.0027	0.0023	0.0004	-0.0004	0.0036	0.0069
Phosphorus	mg/L	n/v	<0.10	<0.10	<0.10	0	0	<0.10	<0.10	0	<0.10	<0.10	<0.10	0	0	<0.10	<0.10
Potassium	mg/L	n/v	6.8	5.8	4.1	-2.7	-1.7	12	6	-6	36	17	8.9	-27.1	-8.1	18	15
Selenium	mg/L	0.05[C]	<0.002	<0.002	<0.002	0	0	<0.002	<0.002	0	<0.002	<0.002	<0.002	0	0	<0.0020	<0.0020
Silicon	mg/L	n/v	5.7	5.4	5.5	-0.2	0.1	4.5	5.2	0.7	3.9	6.1	6.5	2.6	0.4	4.7	3.9
Silver	mg/L	n/v	<0.00010	<0.00010	<0.00009	0	0	<0.0001	<0.00009	0	<0.0001	<0.0001	<0.00009	0	0	<0.00010	<0.00010
Sodium	mg/L	≤200[B]	140	130	120	-20	-10	50	58	8	98	100	120	22	20	150	420[B]
Strontium	mg/L	7.0[C]	3.9	3.3	3.2	-0.7	-0.1	2.2	2.6	0.4	3.8	5	6.1	2.3	1.1	6.4	16[C]
Thallium	mg/L	n/v	<0.00005	<0.00005	<0.00005	0	0	0.00005	<0.00005	0	<0.00005	<0.00005	<0.00005	0	0	<0.00050	<0.00050
Titanium	mg/L	n/v	<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0	<0.005	<0.005	<0.005	0	0	<0.0050	<0.0050
Uranium	mg/L	0.02[C]	0.031[C]	0.027[C]	0.023[C]	-0.008	-0.004	0.006	0.003	-0.003	0.0032	0.0024	0.0016	-0.0016	-0.0008	0.0012	0.003
Vanadium	mg/L	n/v	0.00084	<0.00050	<0.00050	-0.00034	-0.00034	0.0017	0.00079	-0.00091	0.00074	<0.00050	0.00055	-0.00019	-0.00005	<0.00050	0.00057
Zinc	mg/L	≤5.0[B]	<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0	0.008	<0.005	<0.005	-0.003	-0.003	0.013	0.0062

See notes on last page.

Stantec

Table B-4 - Groundwater Quality Results, PDA Monitoring Wells

Sample Location			MW206					MW208			MW210			MW214					MW301-21(D)		
Sample Date			2-Jul-15	20-Apr-16	9-Jun-22	Change from June 2015	Change from April 2016	3-Jul-15	13-Jun-22	Change from June 2015	3-Jul-15	19-Apr-16		2-Jul-15	18-Apr-16	13-Jun-22	Change from June 2015	Change from April 2016	16-Jan-22	13-Jun-22	Change from January 2022
Sample ID			WG-1600960844-20150702-AD02	WG1600960844-20160420-NS17	MW 206			WG-1600960844-20150703-AD05	MW208		WG-1600960844-20150703-AD04	WG 1600960844-20160419-NS06		WG-1600960844-20150702-AD03	WG-1600960844-20160418-NS01	MW214			MW301-21 D	MW301(D)	
Sampling Company			STANTEC	STANTEC	STANTEC			STANTEC	STANTEC		STANTEC	STANTEC		STANTEC	STANTEC	STANTEC			STANTEC	STANTEC	
Laboratory			MAXX	MAXX	BV			MAXX	BV		MAXX	MAXX		MAXX	MAXX	BV			BV	BV	
Laboratory Work Order			B5C9274	B678894	C2G0415			B5C9274	C2G3790		B5C9274	B677799		B5C9274	B676695	C2G3790			C213548	C2G3790	
Laboratory Sample ID			AOE459	CFM170	SWG850			AOE462	SXA245		AOE461	CFG885		AOE460	CFB906	SXA249			RQJ419	SXA248	
Sample Type	Units	CDWQG																			
Well Status											Decommissioned March 18, 2022										
General Chemistry																					
Alkalinity, Bicarbonate (as CaCO3)	mg/L	n/v	56	69	-	-	-	340	-	-	150	250		110	110	-	-	-	-	-	-
Alkalinity, Carbonate (as CaCO3)	mg/L	n/v	<1.0	<1.0	<1.0	0	0	2.6	2.3	-0.3	<1.0	2.1		<1.0	<1.0	<1.0	0	0	<1.0	<1.0	0
Alkalinity, Total (as CaCO3)	mg/L	n/v	56	69	51	-5	-18	340	480	140	150	250		110	110	100	-10	-10	56	61	5
Ammonia (as N)	mg/L	n/v	0.59	0.59	0.59	0	0	0.6	0.12	-0.48	0.62	0.44		0.49	0.42	0.45	-0.04	0.03	6.8	6.2	-0.6
Anion Sum	meq/L	n/v	25.3	26.6	25.5	0.2	-1.1	14.5	11.7	-2.8	42.4	50.5		15.8	17.6	15.5	-0.3	-2.1	138	135	-3
Bicarbonate(as CaCO3, Calculated)	mg/L	n/v	-	-	51	-	-	-	480	-	-	-		-	-	99	-	-	56	61	5
Bromide	mg/L	n/v	-	-	<5.0	-	-	-	<1.0	-	-	-		-	-	<2.0	-	-	-	<50	-
Cation Sum	meq/L	n/v	27.3	28.6	27.3	0	-1.3	15.4	12.1	-3.3	44.4	52.8		17.1	19.7	16.7	-0.4	-3	141	145	4
Chloride	mg/L	≤250[B]	430[B]	430[B]	450[B]	20	20	190	6.3	-183.7	170	150		140	140	140	0	0	4,000[B]	4,000[B]	0
Color	color unit (CU)	≤15[B]	-	-	<2	-	-	-	<2	-	-	-		-	-	<2	-	-	-	<2	-
Cyanide (Free)	mg/L	0.2[C]	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	2.5	2.1	0.55	-1.95	-1.55	5.9	1.2	-4.7	1.1	0.94		1.3	1.2	0.55	-0.75	-0.65	5.7	4.6	-1.1
Electrical Conductivity, Lab	µmhos/cm	n/v	2,700	2,700	2,600	-100	-100	1,500	980	-520	3,500	3,800		1,600	1,700	1,500	-100	-200	14,000	13,000	-1000
Fluoride	mg/L	1.5[C]	-	-	0.24	-	-	-	0.14	-	-	-		-	-	0.3	-	-	-	0.42	-
Hardness (as CaCO3)	mg/L	n/v	700	740	690	-10	-50	630	540	-90	1,700	2,100		570	660	550	-20	-110	3,500	3,700	200
Ion Balance	%	n/v	3.85	3.69	3.35	-0.5	-0.34	2.9	1.71	-1.19	2.31	2.2		4.07	5.61	3.86	-0.21	-1.75	1.11	3.46	2.35
Langelier Index (at 20 C)	none	n/v	-0.585	-0.075	-0.199	0.386	-0.124	0.818	0.825	0.007	0.539	1.14		0.224	0.34	0.241	0.017	-0.099	0.332	0.308	-0.024
Langelier Index (at 4 C)	none	n/v	-0.829	-0.319	-0.443	0.386	-0.124	0.572	0.578	0.006	0.297	0.895		-0.022	0.095	-0.005	0.017	-0.1	0.093	0.07	-0.023
Methane	L/m3	n/v	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Methane	mg/L	n/v	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Microcystin	µg/L	n/v	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	10[C]	<0.10	<0.10	0.17	0.07	0.07	<0.10	0.81	0.71	<0.10	<0.10		<0.10	<0.10	<0.10	0	0	<0.10	<0.10	0
Nitrate + Nitrite (as N)	mg/L	n/v	<0.10	<0.10	0.19	0.09	0.09	<0.10	0.87	0.77	<0.10	<0.10		<0.10	<0.10	<0.10	0	0	<0.10	<0.10	0
Nitrilotriacetic Acid (NTA)	mg/L	0.4[C]	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	1[C]	<0.010	<0.010	0.015	0.005	0.005	<0.010	0.062	0.052	<0.010	<0.010		<0.010	<0.010	<0.010	0	0	<0.010	<0.010	0
Nitrogen (Organic)	mg/L	n/v	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
N-Nitrosodimethylamine (NDMA)	ng/L	40[C]	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Orthophosphate (as P)	mg/L	n/v	<0.010	<0.010	<0.010	0	0	<0.010	<0.010	0	<0.010	<0.010		<0.010	<0.010	<0.010	0	0	<0.010	<0.010	0
pH, lab	S.U.	7.0-10.5[B]	7.05	7.46	7.49	0.44	0.03	7.91	7.71	-0.2	7.59	7.95		7.72	7.83	7.83	0.11	0	7.47	7.39	-0.08
Phosphorus, Total	mg/L	n/v	-	-	0.28	-	-	-	3.5	-	-	-		-	-	0.64	-	-	-	0.5	-
Saturation pH (at 20 C)	none	n/v	7.64	7.54	7.69	0.05	0.15	7.1	6.89	-0.21	7.05	6.81		7.5	7.5	7.59	0.09	0.09	7.14	7.08	-0.06
Saturation pH (at 4 C)	none	n/v	7.88	7.78	7.94	0.06	0.16	7.34	7.13	-0.21	7.29	7.05		7.74	7.74	7.84	0.1	0.1	7.38	7.32	-0.06
Sulfate	mg/L	≤500[B]	580[B]	630[B]	560[B]	-20	-70	110	89	-21	1,700[B]	2,000[B]		460	550[B]	460	0	-90	1,100[B]	1,100[B]	0
Sulfide	mg/L	≤0.05[B]	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Total Dissolved Solids (Calculated)	mg/L	≤500[B]	1,600[B]	1,700[B]	1,600[B]	0	-100	780[B]	600[B]	-180	2,700[B]	3,200[B]		990[B]	1,100[B]	970[B]	-20	-130	8,100[B]	8,000[B]	-100
Total Kjeldahl Nitrogen	mg/L	n/v	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
Metals																					
Aluminum	mg/L	0.1/0.2[B]	0.0099	0.0015	0.011	0.0011	-0.004	<0.0050	<0.0049	0	0.007	0.0055		0.008	0.029	<0.005	-0.003	-0.024	<0.0049	<0.0049	0
Antimony	mg/L	0.006[C]	<0.0005	<0.0005	<0.0005	0	0	<0.0005	<0.0005	0	0.0005	<0.00050		0.001	<0.0005	<0.0005	-0.0005	0	<0.0005	<0.0005	0
Arsenic	mg/L	0.010[C]	0.001	0.0021	0.0016	0.0006	-0.0005	<0.001	<0.001	0	0.0033	0.0073		0.0018	0.0047	0.0072	0.0054	0.0025	0.0014	<0.0010	-0.0004
Barium	mg/L	2.0[C]	0.19	0.11	0.04	-0.15	-0.07	0.064	0.1	0.036	0.051	0.026		0.032	0.023	0.011	-0.021	-0.012	0.034	0.02	-0.014
Beryllium	mg/L	n/v	<0.0005	<0.0005	<0.0004	0	0	<0.0005	<0.0004	0	<0.00050	<0.00050		<0.0005	<0.0005	<0.0004	0	0	<0.0004	<0.0004	0
Boron	mg/L	5[C]	1.9	2	1.8	-0.1	-0.2	0.66	0.083	-0.577	1.7	1.6		1.1	1.2	1.1	0	-0.1	3.6	4	0.4
Cadmium	mg/L	0.007[C]	<0.0001	<0.0001	<0.00009	0	0	<0.0001	<0.00009	0	<0.00010	<0.00010		<0.0001	<0.0001	<0.00009	0	0	<0.00009	<0.00009	0
Calcium	mg/L	n/v	170	180	160	-10	-20	78	83	5	290	330		99	100	90	-9	-10	930	980	50
Chromium	mg/L	0.05[C]	<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0	<0.0050	<0.0050		<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0
Cobalt	mg/L	n/v	0.001	0.0017	0.00078	-0.00022	-0.00092	<0.00050	0.00063	0.00013	0.0018	0.0031		0.0006	<0.0005	<0.0005	-0.0001	-0.0001	<0.0005	<0.0005	0
Copper	mg/L	≤1.0[B] 2[C]	0.0018	0.0014	<0.0009	-0.0009	-0.0004	0.0013	0.0011	-0.0002	0.0016	<0.0010		0.0015	0.0014	<0.0009	-0.0006	-0.0005	<0.0009	<0.0009	0
Iron	mg/L	≤0.3[B]	<0.10	<0.10	<0.10	0	0	0.18	<0.10	-0.08	<0.10	0.76[B]		<0.10	0.14	0.49[B]	0.39	0.35	1.2[B]	1.2[B]	0
Lead	mg/L	0.005[C]	<0.00050	<0.00050	-	-	-	<0.00050	<0.00050	0	<0.00050	<0.00050		<0.0005	<0.0005	<0.0005	0	0	<0.0005	<0.0005	0
Magnesium	mg/L	n/v	68	72	69	1	-3	110	79	-31	230	300		77	96	79	2	-19	290	300	10
Manganese	mg/L	≤0.02[B] 0.12[C]	0.21[BC]	0.35[BC]	0.19[BC]	-0.02	-0.16	0.18[BC]	0.31[BC]	0.13	0.30[BC]	0.37[BC]		0.090[B]	0.13[BC]	0.095[B]	0.005	-0.035	0.43[BC]	0.44[BC]	0.01
Mercury	mg/L	0.001[C]	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	#VALUE!
Molybdenum	mg/L	n/v	0.018	0.022	0.023	0.005	0.001	0.0075	0.0019	-0.0056	0.015	0.008		0.038	0.042	0.024	-0.014	-0.018	0.015	0.015	0
Nickel	mg/L	n/v	0.0013	<0.0010	<0.0010	-0.0003	-0.0003	0.0014	0.0013	-0.0001	0.0018	<0.0020 MI		0.0017	0.0014	<0.0010	-0.0007	-0.0004	0.0022	0.0014	-0.0008
Phosphorus	mg/L	n/v	<0.10	<0.10	<0.10	0	0	<0.10	<0.10	0	<0.10	<0.10		<0.10	<0.10	<0.10	0	0	<0.10	0.1	0
Potassium	mg/L	n/v	13	12	8.3	-4.7	-3.7	14	4.7	-9.3	21	19		13	8.6	6.5	-6.5	-2.1	60	61	1
Selenium	mg/L	0.05[C]	<0.002	<0.002	<0.002	0	0	<0.002	<0.002	0	<0.0020	<0.0020		<0.002	<0.002	<0.002	0	0	<0.002	<0.002	0
Silicon	mg/L	n/v	3.7	3.7	3.5	-0.2	-0.2	7.2	6	-1.2	5	6.6		4	5	5.1	1.1	0.1	3.5	3.4	-0.1
Silver	mg/L	n/v	<0.0001	<0.0001	<0.00009	0	0	<0.0001	<0.00009	0	<0.00010	<0.00010		<0.0001	<0.0001	<0.00009	0	0	<0.00009	<0.00009	0
Sodium	mg/L	≤200[B]	300[B]	310[B]	300[B]	0	-10	56	30	-26	230[B]	250[B]		130	140	130	0	-10	1,600[B]	1,600[B]	0
Strontium	mg/L	7.0[C]	14[C]	15[C]	17[C]	3	2	7.5[C]	1.7	-5.8	11[C]	11[C]		7.1[C]	8.6[C]	7.3[C]	0.2	-1.3	31[C]	35[C]	4
Thallium	mg/L	n/v	<0.00005	0.00005	<0.00005	0	0	<0.00005	<0.00005	0	<0.00050	<0.00050		<0.00005	<0.00005	<0.00005	0	0	<0.00005	<0.00005	0
Titanium	mg/L	n/v	<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0	<0.0050	<0.0050		<0.005	<0.005	<0.005	0	0	<0.005	<0.005	0
Uranium	mg/L	0.02[C]	0.0018	0.004	0.0011	-0.0007	-0.0029	0.0003	0.007	0.0067	0.0026	0.0013		0.0021	0.00063	0.00012	-0.00198	-0.00051	0.0064	0.0046	-0.0018
Vanadium	mg/L	n/v	<0.0005	<0.0005	0.0011	0.0006	0.0006	<0.0005	<0.0005	0	<0.00050	<0.00050		<0.0005	<0.0005	<0.0005	0	0	<0.0005	<0.0005	0
Zinc	mg/L	≤5.0[B]	0.009	0.036	<0.005	-0.004	-0.031	0.0062	<0.0050	-0.0012	<0.025 MI	<0.025 MI		0.006	0.009	<0.005	-0.001	-0.004	<0.005	<0.005	0

See notes on last page.

Table B-4 - Groundwater Quality Results, PDA Monitoring Wells

Sample Location			MW301-21(S)			MW302-21(S)			MW302-21(D)			Well 2803463			Well 2806808		
Sample Date			16-Jan-22	13-Jun-22	Change from January 2022	13-Jan-22	9-Jun-22	Change from January 2022	16-Jan-22	13-Jun-22	Change from January 2022	13-Jan-22	14-Jun-22	Change from January 2022	13-Jan-22	14-Jun-22	Change from January 2022
Sample ID			MW301-21 S	MW301(S)		MW302 S	MW 302 (S)		MW302-21D	MW302(D)		RW 101	2803463		RW 100	2806808	
Sampling Company			STANTEC	STANTEC		STANTEC	STANTEC		STANTEC	STANTEC		STANTEC	STANTEC		STANTEC	STANTEC	
Laboratory			BV	BV		BV	BV		BV	BV		BV	BV		BV	BV	
Laboratory Work Order			C213548	C2G3790		C210701	C2G0415		C213522	C2G3790		C210701	C2G3790		C210701	C2G3790	
Laboratory Sample ID			RQJ420	SXA247		RPU128	SWG849		RQJ323	SXA244		RPU131	SXA241		RPU130	SXA242	
Sample Type	Units	CDWQG															
Well Status																	
General Chemistry																	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity, Carbonate (as CaCO3)	mg/L	n/v	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	3	2.8	-0.2	2.2	1.6	-0.6
Alkalinity, Total (as CaCO3)	mg/L	n/v	71	64	-7	130	160	30	120	130	10	360	350	-10	300	310	10
Ammonia (as N)	mg/L	n/v	0.5	0.54	0.04	1.2	0.77	-0.43	4	4.2	0.2	0.052	0.06	0.008	<0.050	<0.050	0
Anion Sum	meq/L	n/v	13.6	13.4	-0.2	32.9	41.7	8.8	73.1	68.2	-4.9	10.2	10.1	-0.1	6.92	7.22	0.3
Bicarbonate(as CaCO3, Calculated)	mg/L	n/v	70	63	-7	120	160	40	110	130	20	360	350	-10	300	300	0
Bromide	mg/L	n/v	-	3.3	-	-	<5.0	-	-	14	-	-	<1.0	-	-	<1.0	-
Cation Sum	meq/L	n/v	13.9	14.2	0.3	33.4	42	8.6	75.1	74.2	-0.9	10.3	10.6	0.3	6.78	7.26	0.48
Chloride	mg/L	≤250[B]	270[B]	270[B]	0	160	120	-40	1,500[B]	1,300[B]	-200	29	30	1	18	23	5
Color	color unit (CU)	≤15[B]	-	<2	-	-	<2	-	-	8	-	-	6	-	-	5	-
Cyanide (Free)	mg/L	0.2[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	1.3	1	-0.3	7.1	1.4	-5.7	44	18	-26	6.2	5.7	-0.5	3.2	3	-0.2
Electrical Conductivity, Lab	µmhos/cm	n/v	1,500	1,500	0	3,000	3,100	100	7,000	6,200	-800	950	910	-40	650	660	10
Fluoride	mg/L	1.5[C]	-	0.32	-	-	0.26	-	-	0.6	-	-	0.25	-	-	0.15	-
Hardness (as CaCO3)	mg/L	n/v	280	290	10	1,100	1,600	500	1,900	1,800	-100	430	440	10	310	330	20
Ion Balance	%	n/v	0.9	2.95	2.05	0.78	0.32	-0.46	1.4	4.21	2.81	0.52	2.5	1.98	1.02	0.28	-0.74
Langelier Index (at 20 C)	none	n/v	0.092	0.069	-0.023	0.633	0.524	-0.109	0.528	0.324	-0.204	1.04	1	-0.04	0.943	0.834	-0.109
Langelier Index (at 4 C)	none	n/v	-0.154	-0.178	-0.024	0.39	0.282	-0.108	0.287	0.083	-0.204	0.789	0.753	-0.036	0.695	0.585	-0.11
Methane	L/m3	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methane	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microcystin	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (as N)	mg/L	10[C]	<0.10	<0.10	0	0.18	<0.10	-0.08	<0.10	<0.10	0	0.16	<0.10	-0.06	<0.10	<0.10	0
Nitrate + Nitrite (as N)	mg/L	n/v	<0.10	<0.10	0	0.2	<0.10	-0.1	<0.10	<0.10	0	0.16	<0.10	-0.06	<0.10	<0.10	0
Nitrilotriacetic Acid (NTA)	mg/L	0.4[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	1[C]	<0.010	<0.010	0	0.013	<0.010	-0.003	<0.010	<0.010	0	<0.010	<0.010	0	<0.010	<0.010	0
Nitrogen (Organic)	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodimethylamine (NDMA)	ng/L	40[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate (as P)	mg/L	n/v	0.011	<0.010	-0.001	<0.010	<0.010	0	<0.010	<0.010	0	0.08	0.071	-0.009	<0.010	0.017	0.007
pH, lab	S.U.	7.0-10.5[B]	7.98	7.99	0.01	7.85	7.61	-0.24	7.55	7.31	-0.24	7.95	7.93	-0.02	7.9	7.74	-0.16
Phosphorus, Total	mg/L	n/v	-	1.8	-	-	0.089	-	-	0.19	-	-	0.078	-	-	0.016	-
Saturation pH (at 20 C)	none	n/v	7.89	7.92	0.03	7.21	7.08	-0.13	7.02	6.98	-0.04	6.91	6.83	0.02	6.96	6.91	-0.05
Saturation pH (at 4 C)	none	n/v	8.13	8.17	0.04	7.46	7.33	-0.13	7.26	7.22	-0.04	7.16	7.18	0.02	7.2	7.16	-0.04
Sulfate	mg/L	≤500[B]	220	220	0	1,200[B]	1,700[B]	500	1,400[B]	1,300[B]	-100	110	110	0	21	21	0
Sulfide	mg/L	≤0.05[B]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids (Calculated)	mg/L	≤500[B]	830[B]	830[B]	0	2,100[B]	2,700[B]	600	4,500[B]	4,300[B]	-200	550[B]	550[B]	0	360	380	20
Total Kjeldahl Nitrogen	mg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																	
Aluminum	mg/L	0.1/0.2[B]	0.014	0.043	0.029	0.0062	<0.0049	-0.0013	<0.0049	<0.0049	0	<0.0049	<0.0049	0	<0.0049	<0.0049	0
Antimony	mg/L	0.006[C]	<0.0005	<0.0005	0	0.00089	<0.00050	-0.00039	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.0005	0
Arsenic	mg/L	0.010[C]	0.0075	0.0085	0.001	0.0064	0.0078	0.0014	0.0044	0.0074	0.003	<0.0010	<0.0010	0	<0.0010	<0.0010	0
Barium	mg/L	2.0[C]	0.035	0.027	-0.008	0.029	0.01	-0.019	0.033	0.028	-0.005	0.071	0.062	-0.009	0.039	0.055	0.016
Beryllium	mg/L	n/v	<0.0004	<0.0004	0	<0.0004	<0.0004	0	<0.0004	<0.0004	0	<0.0004	<0.0004	0	<0.0004	<0.0004	0
Boron	mg/L	5[C]	1.3	1.6	0.3	2.1	2	-0.1	4.8	6.1[C]	1.3	0.14	0.16	0.02	0.011	<0.010	-0.001
Cadmium	mg/L	0.007[C]	<0.00009	<0.00009	0	<0.00009	<0.00009	0	<0.00009	<0.00009	0	<0.00009	<0.00009	0	<0.00009	<0.00009	0
Calcium	mg/L	n/v	61	63	2	220	260	40	490	460	-30	100	100	0	100	110	10
Chromium	mg/L	0.05[C]	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Cobalt	mg/L	n/v	<0.0005	<0.0005	0	<0.0005	<0.0005	0	0.00062	<0.00050	-0.00012	<0.0005	<0.0005	0	<0.0005	<0.0005	0
Copper	mg/L	≤1.0[B] 2[C]	<0.0009	<0.0009	0	0.00093	<0.00090	-0.00003	<0.0009	<0.0009	0	0.0014	<0.0009	-0.0005	0.0031	0.0031	0
Iron	mg/L	≤0.3[B]	<0.10	<0.10	0	0.66[B]	1.1[B]	0.44	0.93[B]	1.5[B]	0.57	<0.10	<0.10	0	<0.10	<0.10	0
Lead	mg/L	0.005[C]	<0.0005	<0.0005	0	<0.00050	-	-	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.0005	0
Magnesium	mg/L	n/v	30	31	1	130	220	90	150	150	0	42	45	3	14	13	-1
Manganese	mg/L	≤0.02[B] 0.12[C]	0.040[B]	0.042[B]	0.002	0.19[BC]	0.24[BC]	0.05	0.21[BC]	0.25[BC]	0.04	0.16[BC]	0.43[BC]	0.27	0.078[B]	0.007	-0.071
Mercury	mg/L	0.001[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	mg/L	n/v	0.035	0.033	-0.002	0.018	0.008	-0.01	0.029	0.011	-0.018	0.0039	0.0045	0.0006	0.0007	<0.0005	-0.0002
Nickel	mg/L	n/v	<0.001	<0.001	0	0.0017	<0.0010	-0.0007	0.003	0.0013	-0.0017	0.0018	0.002	0.0002	<0.0010	<0.0010	0
Phosphorus	mg/L	n/v	<0.10	<0.10	0	<0.10	<0.10	0	<0.10	<0.10	0	0.15	0.14	-0.01	<0.10	<0.10	0
Potassium	mg/L	n/v	10	9.1	-0.9	17	15	-2	42	41	-1	17	17	0	0.38	1.7	1.32
Selenium	mg/L	0.05[C]	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Silicon	mg/L	n/v	4.3	4.3	0	4.8	6.1	1.3	3.3	3.7	0.4	4.5	4.1	-0.4	3.9	3.7	-0.2
Silver	mg/L	n/v	<0.00009	<0.00009	0	<0.00009	<0.00009	0	<0.00009	<0.00009	0	<0.00009	<0.00009	0	<0.00009	<0.00009	0
Sodium	mg/L	≤200[B]	180	190	10	250[R]	230[R]	-20	840[R]	850[R]	10	29	31	2	13	13	0
Strontium	mg/L	7.0[C]	16[C]	19[C]	3	9.0[C]	12[C]	3	16[C]	18[C]	2	1.1	1.5	0.4	0.3	0.29	-0.01
Thallium	mg/L	n/v	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
Titanium	mg/L	n/v	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Uranium	mg/L	0.02[C]	0.00023	0.00016	-0.00007	0.0015	0.00058	-0.00092	0.027[C]	0.014	-0.013	0.0031	0.0033	0.0002	0.00098	0.00091	-0.00007
Vanadium	mg/L	n/v	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.0005	0
Zinc	mg/L	≤5.0[B]	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0	3.9	6.1[B]	2.2

See notes on last page.

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Table B-4 - Groundwater Quality Results, PDA Monitoring Wells

Notes:

CDWQG	Health Canada (September 2020). Guidelines for Canadian Drinking Water Quality—Summary Table. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.
A	Guidelines for Canadian Drinking Water Quality - Microbiological Parameters
B	Guidelines for Canadian Drinking Water Quality - Aesthetic Objectives/ Operational Guidelines
C	Guidelines for Canadian Drinking Water Quality - Maximum Acceptable Concentration
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
a	This is an operational guidance value, designed to apply only to drinking water treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. The operational guidance values of 0.1 mg/L applies to conventional treatment plants, and 0.2 mg/L applies to other types of treatment systems.
j	High levels (above 500 mg/L) can cause physiological effects such as diarrhea or dehydration.
DB	Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
MI	Detection limit was raised due to matrix interferences.
QA	TKN <NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

Appendix C Borehole Logs

Stantec

BOREHOLE RECORD

N: 4 811 570 E: 594 989

BH1

CLIENT Canadian National Railway Co. PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario DATUM Geodetic

DATES: BORING June 9, 2014 WATER LEVEL TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	STRATA PLOT	WATER LEVEL	DEPTH (ft)	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) TCR(%) / SCR(%)	SAMPLES N-VALUE OR RQD(%)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0	177.2				0					
	176.8	400 mm TOPSOIL			1	SS	1	300/610	3	
		Very soft to hard, brown, silty CLAY (CL), sandy, trace gravel (Glacial Till) - moist to wet - with fine sand seams and layers			2					
1					3					
					4	SS	2	610/610	23	
					5					
					6	SS	3	510/610	32	2 25 38 35
2					7					
					8					
					9	SS	4	560/610	32	
3					10					
	173.6				11	SS	5	300/610	18	
		END OF BOREHOLE at approximately 3.6 m below existing grade. Borehole dry upon completion of drilling.			12					
4					13					
					14					
					15					
5					16					
					17					
					18					
					19					
6					20					
					21					
					22					
7					23					
					24					
					25					
8					26					
					27					
					28					
9					29					
					30					
					31					
10					32					

UNDRAINED SHEAR STRENGTH (kPa)

50 100 150 200

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

DYNAMIC CONE PENETRATION TEST, BLOWS/0.3m ▼

STANDARD PENETRATION TEST, BLOWS/0.3m ●

10 20 30 40 50 60 70 80 90 100

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

Stantec

BOREHOLE RECORD

N: 4 811 692 E: 594 802

BH5

Sheet 1 of 1

CLIENT Canadian National Railway Co. PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario DATUM Geodetic

DATES: BORING May 8, 2014 WATER LEVEL TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	STRATA PLOT	WATER LEVEL	DEPTH (ft)	SAMPLES TYPE	NUMBER	RECOVERY (mm) TCR(%) / SCR(%)	N-VALUE OR RQD(%)
0	177.3				0				
	177.1	250 mm TOPSOIL							
		Firm to very stiff, brown, silty CLAY (CL), sandy, trace of gravel (Glacial Till) - moist - with fine sand seams			1	SS	1	410/610	4
1					3	SS	2	610/610	18
					5				
2					6	SS	3	610/610	22
					8	SS	4	610/610	28
3					10				
					11	SS	5	610/610	18
	173.6				12				
4		END OF BOREHOLE at approximately 3.6 m below existing grade. Borehole dry on completion of drilling. Groundwater monitoring well installed with a screen from 2.1 m to 3.6 m below existing grade.			13				
					14				
					15				
5					16				
					17				
					18				
					19				
6					20				
					21				
					22				
7					23				
					24				
					25				
8					26				
					27				
					28				
9					29				
					30				
					31				
10					32				

UNDRAINED SHEAR STRENGTH (kPa)

50 100 150 200

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

DYNAMIC CONE PENETRATION TEST, BLOWS/0.3m ▼

STANDARD PENETRATION TEST, BLOWS/0.3m ●

10 20 30 40 50 60 70 80 90 100

REMARKS & GRAIN SIZE DISTRIBUTION (%)

GR SA SI CL

2 26 44 28

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

Stantec

BOREHOLE RECORD

N: 4 812 086 E: 594 715

BH10

CLIENT Canadian National Railway Co. PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario DATUM Geodetic

DATES: BORING May 13, 2014 WATER LEVEL TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	STRATA PLOT	WATER LEVEL	DEPTH (ft)	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) TCR(%) / SCR(%)	SAMPLES N-VALUE OR RQD(%)
0	179.9				0				
	179.6	230 mm TOPSOIL							
		Soft to very stiff, brown, silty CLAY (CL), sandy, trace gravel (Glacial Till) - moist to wet - with fine sand seams			1	SS	1	480/610	3
1					3	SS	2	610/610	14
					5				
2					6	SS	3	560/610	27
					8				
					9	SS	4	510/610	19
3					10				
					11	SS	5	610/610	26
	176.2				12				
4		END OF BOREHOLE at approximately 3.6 m below existing grade. Borehole dry on completion of drilling. Groundwater monitoring well installed to a depth of 3.6 m with a screen from 2.1 m to 3.6 m.			13				
					14				
5					15				
					16				
					17				
					18				
6					19				
					20				
					21				
					22				
7					23				
					24				
					25				
					26				
8					27				
					28				
					29				
9					30				
					31				
					32				
10									

UNDRAINED SHEAR STRENGTH (kPa)

50 100 150 200

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

DYNAMIC CONE PENETRATION TEST, BLOWS/0.3m ▼

STANDARD PENETRATION TEST, BLOWS/0.3m ●

REMARKS & GRAIN SIZE DISTRIBUTION (%)

10 20 30 40 50 60 70 80 90 100

GR SA SI CL

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

Stantec

BOREHOLE RECORD

N: 4 812 007 E: 594 572

BH12

Sheet 1 of 1

CLIENT Canadian National Railway Co.

PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario

DATUM Geodetic

DATES: BORING May 5, 2014

WATER LEVEL

TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	DEPTH (ft)	TYPE	NUMBER	RECOVERY (mm) TCR(%) / SCR(%)	N-VALUE OR RQD(%)
0	178.3		0				
	178.0	250 mm TOPSOIL					
		Very soft to very stiff, brown, silty CLAY (CL), sandy, trace gravel (Glacial Till) - moist to wet - with fine sand seams	1	SS	1	360/610	2
1			3	SS	2	510/610	20
			5				
2			6	SS	3	510/610	24
			7				
			8	SS	4	610/610	14
3			9				
			10				
	174.6		11	SS	5	610/610	18
		END OF BOREHOLE at approximately 3.6 m below existing grade. Borehole dry on completion of drilling. Groundwater monitoring well installed with a screen from 1.8 m to 3.0 m below existing grade.	12				
4			13				
			14				
			15				
5			16				
			17				
			18				
			19				
6			20				
			21				
			22				
7			23				
			24				
			25				
8			26				
			27				
			28				
9			29				
			30				
			31				
10			32				

UNDRAINED SHEAR STRENGTH (kPa)

50 100 150 200

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

DYNAMIC CONE PENETRATION TEST, BLOWS/0.3m ▼

STANDARD PENETRATION TEST, BLOWS/0.3m ●

REMARKS & GRAIN SIZE DISTRIBUTION (%)

10 20 30 40 50 60 70 80 90 100

GR SA SI CL

6 34 38 22

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

Stantec

BOREHOLE RECORD

N: 481 239 E: 594 418

BH17

Sheet 1 of 1

CLIENT Canadian National Railway Co.

PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario

DATUM Geodetic

DATES: BORING June 5, 2014

WATER LEVEL

TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	STRATA PLOT	WATER LEVEL	DEPTH (ft)	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) TCR(%) / SCR(%)	SAMPLES N-VALUE OR RQD(%)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0	180.6				0					
	180.4	250 mm TOPSOIL			1	SS	1	610/610	7	0 22 42 37
1		Firm to very stiff, brown, silty CLAY (CL), sandy, trace gravel - moist to wet - occasional fine sand seams and layers			3	SS	2	610/610	14	
					5					
2	178.5				6	SS	3	610/610	19	
		Very stiff to hard, brown, silty CLAY (CL), sandy, trace gravel (Glacial Till) - moist to wet			8	SS	4	610/610	34	
3	177.0				10					
					11	SS	5	610/610	29	
4		END OF BOREHOLE at approximately 3.6 m below existing grade. Borehole dry upon completion. Groundwater monitoring well installed to a depth of 3.6 m, with a screen from 1.8 m to 3.6 m below existing grade.			12					
5					16					
6					20					
7					23					
8					26					
9					29					
10					32					

UNDRAINED SHEAR STRENGTH (kPa)

50 100 150 200

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

DYNAMIC CONE PENETRATION TEST, BLOWS/0.3m ▼

STANDARD PENETRATION TEST, BLOWS/0.3m ●

10 20 30 40 50 60 70 80 90 100

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

Stantec

BOREHOLE RECORD

N: 4 812 668 E: 593 934

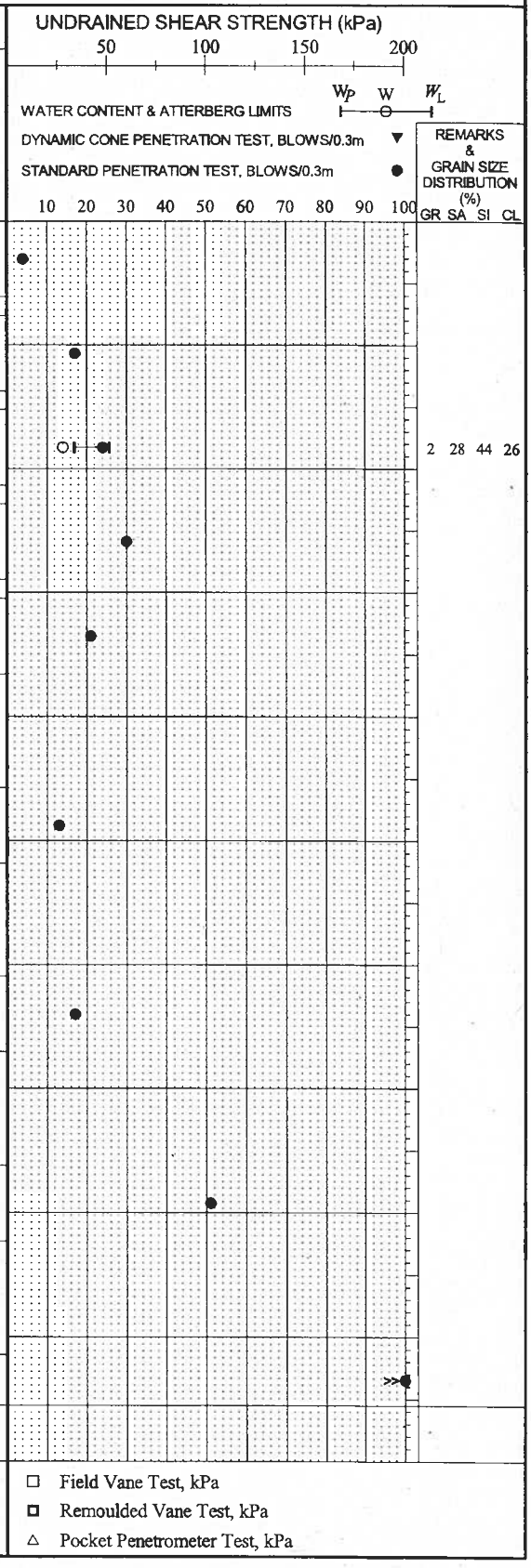
BH28

CLIENT Canadian National Railway Co. PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario DATUM Geodetic

DATES: BORING May 30, 2014 WATER LEVEL TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	DEPTH (ft)	TYPE	NUMBER	RECOVERY (mm) TCR(%) / SCR(%)	N-VALUE OR RQD(%)
0	178.8		0				
	178.5	300 mm TOPSOIL					
		Firm to hard, brown silty CLAY (CL), sandy, trace gravel (Glacial Till)	1	SS	1	300/610	4
1			3	SS	2	460/610	17
			5				
2			6	SS	3	560/610	24
			7				
			8	SS	4	610/610	30
3			9				
			10	SS	5	610/610	21
			11				
			12				
4		- grey at 4.0 m	13				
			14				
			15				
			16	SS	6	610/610	13
5			17				
			18				
			19				
6			20				
			21	SS	7	610/610	17
			22				
7			23				
			24				
			25				
		- occasional cobbles and boulders increasing with depth	26	SS	8	610/610	51
8			27				
			28				
			29				
9			30				
	169.3		31	SS	9	250/410	50/100
		END OF BOREHOLE	32				
10							



REMARKS & GRAIN SIZE DISTRIBUTION (%)	GR	SA	SI	CL
	2	28	44	26

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

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BOREHOLE RECORD

N: 4 813 072 E: 593 570

BH37

Sheet 1 of 1

CLIENT Canadian National Railway Co.

PROJECT No. 122411027

LOCATION Foxtrot, Milton, Ontario

DATUM Geodetic

DATES: BORING May 29, 2014

WATER LEVEL

TPC ELEVATION

DEPTH (m)	ELEVATION (m)	STRATA DESCRIPTION	STRATA PLOT	WATER LEVEL	DEPTH (ft)	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) TCR(%) / SCR(%)	SAMPLES N-VALUE OR RQD(%)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0	181.5				0					
	181.2	254 mm TOPSOIL								
		Soft to very stiff, brown, silty CLAY (CL), sandy, trace gravel (Glacial Till)			1	SS	1	250/610	3	
1					3	SS	2	510/610	22	
					5					
2					6	SS	3	610/610	25	2 21 50 27
					8	SS	4	610/610	29	
3					10					
	177.8				11	SS	5	610/610	29	
		END OF BOREHOLE at approximately 3.6 m below existing grade.			12					
4					13					
		Borehole dry on completion of drilling.			14					
					15					
5		Groundwater monitoring well installed to a depth of 3.6 m with a screen from 1.7 m to 3.6 m.			16					
					17					
					18					
6					19					
					20					
					21					
7					22					
					23					
					24					
					25					
8					26					
					27					
					28					
					29					
9					30					
					31					
					32					
10										

UNDRAINED SHEAR STRENGTH (kPa)

50 100 150 200

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

DYNAMIC CONE PENETRATION TEST, BLOWS/0.3m ▼

STANDARD PENETRATION TEST, BLOWS/0.3m ●

10 20 30 40 50 60 70 80 90 100

□ Field Vane Test, kPa

■ Remoulded Vane Test, kPa

△ Pocket Penetrometer Test, kPa

Monitoring Well: MW201

Project:	Milton Logistics Hub	**Drilling method:**	ATV CME 55 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	15-Jun-2015 / 16-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	180.07 m AMSL
Number:	160960844	**Top of casing elevation:**	180.82 m AMSL
Field investigator:	L. Carson	**Easting:**	595305
Contractor:	Terex Drilling Solutions	**Northing:**	4811040

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery	N Value	Diagram / Description
				180.82					
			Ground Surface	180.07					Above Ground Casing 0.75 m stick-up
0	0		TOPSOIL (SILT) brown (10 YR 5/3), some clay, trace sand and gravel, roots	0.00	1	SS	n/a	2-2-3-3 (5)	
				179.16					
			SILT (Probable Halton Till) very stiff, brown (10 YR 5/3), some clay, trace fine grained sand and gravel, subangular to subround, moist, red inclusions	0.91	2	SS	0" 0%	5-4-3-7 (7)	216 mm diameter borehole
5	2				3	SS	24" 100%	8-10-14-14 (24)	
				177.48					
			SILT AND CLAY very hard, brown (10 YR 5/3), trace fine grained sand and gravel, subangular to subround, moist, iron staining gravel is fine to coarse grained at 3.05 m BGS	2.59	4	SS	24" 100%	4-10-11-12 (21)	
10	4				5	SS	22" 92%	5-14-27-29 (41)	Bentonite Chips 0 m to 7.48 m
				175.50					
15			CLAY AND SILT very stiff, dark reddish grey (5 YR 4/2), trace fine grained sand and gravel, subangular to subround, moist	4.57	6	SS	24" 100%	9-14-16-17 (30)	
20	6		stiff from 6.10 m and 9.31 m BGS		7	SS	24" 100%	4-6-8-12 (14)	
25	8				8	SS	24" 100%	4-6-7-9 (13)	No. 2 Silica Sand 7.48 m to 9.31 m
					9	SS	24" 100%	4-7-8-8 (15)	No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.79 m to 9.31 m
30	10			170.76					Groundwater Level 9.03 m BGS 13-Jul-2015
35			End of Borehole	9.31					

Screen Interval: 7.79 - 9.31 m BGS
Sand Pack Interval: 7.48 - 9.31 m BGS
Well Seal Interval: 0.00 - 7.48 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

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Drawn By/Checked By: HB/GW

Monitoring Well: MW202

Project:	Milton Logistics Hub	**Drilling method:**	ATV CME 55 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	12-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	176.33 m AMSL
Number:	160960844	**Top of casing elevation:**	177.13 m AMSL
Field investigator:	L. Carson	**Easting:**	594721
Contractor:	Terex Drilling Solutions	**Northing:**	4811433

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery	N Value	Diagram / Description
				177.13					Above Ground Casing 0.80 m stick-up
0	0		Ground Surface	176.33					
			TOPSOIL	0.00					
			SILT AND CLAY (Probable Halton Till) firm, light grey (5 Y 7/2), trace fine grained sand and gravel, subangular to subround	176.08 0.25 175.57	1	SS	n/a	1-3-3-7 (6)	
			CLAYEY SILT (TILL) stiff to very stiff, brown (10 YR 5/3), trace fine to coarse grained sand and gravel, subangular to subround, moist	0.76	2	SS	24" 100%	7-7-13-13 (20)	216 mm diameter borehole
5	2				3	SS	24" 100%	3-3-5-7 (8)	
				174.04					
			SILT AND CLAY very stiff, brown (10 YR 5/3), trace fine grained sand and gravel, subangular to subround, moist	2.29	4	SS	24" 100%	6-10-15-21 (25)	
10			darker brown with some iron staining, fine to coarse grained gravel at 3.05 m BGS		5	SS	24" 100%	3-7-8-12 (15)	Groundwater Level 3.70 m BGS 13-Jul-2015
	4								Bentonite Chips 0 m to 7.61 m
15				171.76					
			CLAY firm, grey (5 Y 6/1), some silt, trace fine grained sand and gravel, subangular to subround, moist	4.57	6	SS	24" 100%	1-2-3-4 (5)	
20	6		olive grey (5 Y 5/2), fine to medium grained sand and gravel at 6.10 m BGS		7	SS	24" 100%	2-2-4-7 (6)	
25				168.53					
	8		SILT very hard, light reddish brown (5 YR 6/4), some clay, some fine to coarse grained gravel, trace fine grained sand, suangular to subround, moist	7.80	8	SS	24" 100%	7-13-23-27 (36)	No. 2 Silica Sand 7.61 m to 9.44 m
			rock fragments between 8.81 m and 9.44 m BGS		9	SS	15" 63%	9-49-43-49 (92)	No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.96 m to 9.44 m
30				166.89					
	10		End of Borehole	9.44					
35									

Screen Interval: 7.92 - 9.44 m BGS
Sand Pack Interval: 7.61 - 9.44 m BGS
Well Seal Interval: 0.00 - 7.61 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW203

Project:	Milton Logistics Hub	**Drilling method:**	ATV CME 550 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	15-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	171.83 m AMSL
Number:	160960844	**Top of casing elevation:**	172.83 m AMSL
Field investigator:	L. Carson	**Easting:**	594650
Contractor:	Terex Drilling Solutions	**Northing:**	4811515

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				172.83					Above Ground Casing 1.0 m stick-up
0	0		Ground Surface	171.83					
			SILT AND CLAY (Probable Halton Till) soft, brown (5 YR 5/3), trace fine grained sand and gravel, subangular to subround, moist, some red inclusions	0.00 171.22	1	SS	16" 67% 0-2-2-2 (4)		
			SILTY CLAY very stiff, olive green (5 Y 4/3), trace sand and gravel, moist	0.61	2	SS	9" 38% 5-13-16-16 (29)		216 mm diameter borehole
5	2				3	SS	24" 100% 5-10-12-22 (22)		
				169.54					
			SILT AND CLAY very stiff to very hard, olive greyish brown (5 YR 6/2), trace fine grained sand and gravel, subangular to subround, moist	2.29	4	SS	24" 100% 4-6-18-23 (24)		
10	4		no recovery at 3.05 m BGS		5	SS	24" 100% 50-50-50 (100)		Bentonite Chips 0 m to 7.40 m
									Groundwater Level 4.19 m BGS 13-Jul-2015
				167.25					
15			CLAYEY SILT very hard, greyish brown (5 YR 6/2), trace fine grained sand, trace fine to medium grained gravel, subangular to subround, moist, mottled	4.57	6	SS	24" 100% 8-20-24-28 (44)		
20	6		some fine to coarse grained gravel between 6.10 and 6.71 m BGS		7	SS	24" 100% 12-20-28-33 (48)		
				164.21					
25			SILT AND CLAY very hard, grey (5YR 5/1), trace fine grained sand, trace fine to coarse grained gravel, subangular to subround wet at 7.62 m BGS	7.62	8	SS	24" 100% 9-17-19-42 (36)		No. 2 Silica Sand 7.40 m to 9.23 m
	8			163.29					
			SILT AND SAND very hard, greenish brown (2.5 Y 5/4), fine grained sand, trace clay,	8.53 163.06	9	SS	24" 100% 8-11-16-20 (27)		No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.71 m to 9.23 m
30			SAND grey (5 Y 5/1), fine grained, some silt	8.76 162.60					
	10		End of Borehole	9.23					
35									

Screen Interval: 7.71 - 9.23 m BGS
Sand Pack Interval: 7.40 - 9.23 m BGS
Well Seal Interval: 0.00 - 7.40 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW204

Project:	Milton Logistics Hub	**Drilling method:**	ATV CME 55 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	16-Jun-2015 / 17-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	176.02 m AMSL
Number:	160960844	**Top of casing elevation:**	176.77 m AMSL
Field investigator:	L. Carson	**Easting:**	594556
Contractor:	Terex Drilling Solutions	**Northing:**	4811644

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				176.77					Above Ground Casing 0.75 m stick-up
0	0		Ground Surface	176.02					
			TOPSOIL	0.00					
			CLAY AND SILT firm to stiff, brown (10 YR 5/3), trace gravel, moist	175.84 0.18	1	SS	9" 38% 3-6-4-4 (10)		
					2	SS	24" 100% 2-3-4-5 (7)		216 mm diameter borehole
5			wet at 1.19 m BGS						
	2			174.00	3	SS	24" 100% 3-9-11-14 (20)		
			SILT AND CLAY (Probable Halton Till) very stiff, reddish brown (5 YR 5/3), trace fine grained sand and gravel, subangular to subround, moist	2.02					Groundwater Level 2.17 m BGS 13-Jul-2015
					4	SS	24" 100% 5-9-12-17 (21)		
10			fine to coarse grained gravel at 3.05 m BGS		5	SS	24" 100% 6-9-13-19 (22)		Bentonite Chips 0 m to 7.38 m
	4			171.45					
15			CLAY AND SILT firm, dark grey (2.5 YR 4/1), trace fine grained sand, trace fine to coarse grained gravel, subangular to subround, moist	4.57	6	SS	24" 100% 2-4-5-8 (9)		
					7	SS	24" 100% 3-7-9-10 (16)		
20	6		very stiff, increasing silt content at 6.25 m BGS						
			very hard at 7.62 m BGS		8	SS	n/a 10-16-27-50/5 (43)		No. 2 Silica Sand 7.38 m to 9.21 m
25	8								No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.69 m to 9.21 m
			greyish brown (10 YR 5/2), fine to medium grained sand and gravel at 8.53 m BGS		9	SS	13" 54% 16-30-42-47 (72)		
30				166.81					
	10		End of Borehole	9.21					
35									

Screen Interval: 7.69 - 9.21 m BGS
Sand Pack Interval: 7.38 - 9.21 m BGS
Well Seal Interval: 0.00 - 7.38 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW205

Project:	Milton Logistics Hub	**Drilling method:**	Track Mount CME 75 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	12-Jun-2015 / 15-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	172.85 m AMSL
Number:	160960844	**Top of casing elevation:**	173.58 m AMSL
Field investigator:	R. Dong/N. Spina	**Easting:**	594423
Contractor:	Terex Drilling Solutions	**Northing:**	4811713

Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery	N Value	Diagram	Description
				173.58						
										Above Ground Casing 0.73 m stick-up
0	0		Ground Surface	172.85						
			TOPSOIL (SILT)	0.00						
			dark greyish brown (10 YR 3/2), moist, roots	172.60	1	SS	17" 71%	0-1-2-3 (3)		
			SILT soft, reddish brown (5 YR 4/3), moist, roots	0.25						
			15 cm thick sandy silt seam at 0.76 m BGS	171.91						
			SILTY CLAY (Probable Halton Till) stiff, reddish brown (5 YR 4/3), trace to some sand and fine grained gravel, moist	0.94	2	SS	24" 100%	1-5-4-7 (9)		216 mm diameter borehole
5			silty clay diamicton from 1.52 m to 3.05 m BGS		3	SS	24" 100%	3-6-10-12 (16)		
	2				4	SS	24" 100%	4-8-10-14 (18)		
10			becomes very stiff at 3.05 m BGS		5	SS	24" 100%	9-14-20-32 (34)		Bentonite Chips 0 m to 7.36 m
	4									
15			very hard, silty clay diamicton, trace to some sand and fine to coarse grained gravel at 4.57 m BGS		6	SS	24" 100%	18-28-30-35 (58)		
	6									
20			trace to some sand and fine grained gravel at 6.1 m BGS		7	SS	24" 100%	24-49-50/4 (49)		
25					8	SS	19" 79%	33-49-50/4 (49)		No. 2 Silica Sand 7.36 m to 9.19 m Groundwater Level 7.76 m BGS 13-Jul-2015
	8				9	SS	24" 100%	10-15-18-25 (33)		No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.67 m to 9.19 m
30				163.66						
			End of Borehole	9.19						
	10									
35										

Screen Interval: 7.67 - 9.19 m BGS
Sand Pack Interval: 7.36 - 9.19 m BGS
Well Seal Interval: 0.00 - 7.36 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW206

Project:	Milton Logistics Hub	**Drilling method:**	Track Mount CME 75 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	11-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	174.03 m AMSL
Number:	160960844	**Top of casing elevation:**	175.02 m AMSL
Field investigator:	R. Dong	**Easting:**	594290
Contractor:	Terex Drilling Solutions	**Northing:**	4811932

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				175.02					Groundwater Level 0.67m AGS 13-Jul-2015
0	0		Ground Surface	174.03					Above Ground Casing 0.99 m stick-up
			TOPSOIL	0.00					
				173.74	1	SS	18" 75% 0-1-1-3 (2)		
			SILTY CLAY (Probable Halton Till) very stiff, reddish brown (5 YR 4/4), trace sand and fine gravel, moist	0.30					
					2	SS	20" 83% 4-8-11-15 (19)		216 mm diameter borehole
5					3	SS	24" 100% 3-9-13-16 (22)		
	2		very hard at 2.29 m BGS		4	SS	23" 96% 20-18-35-38 (53)		
10									Bentonite Chips 0 m to 5.68 m
					5	SS	24" 100% 12-18-25-30 (43)		
	4								
15					6	SS	24" 100% 26-20-28-40 (48)		
20	6		wet silt seam at 6.35 m BGS to 6.55 m BGS		7	SS	24" 100% 20-28-30-38 (58)		No. 2 Silica Sand 5.68 m to 7.51 m
			boulder at 7.16 m BGS						No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 5.99 m to 7.51 m
25					8	SS	18" 75% 23-42-50/5 (42)		
	8								Bottom seal 7.51 m to 9.14 m
			darkish grey (10 YR 4/2) sand from 8.69 m BGS to 8.74 m BGS		9	SS	24" 100% 20-14-23-30 (37)		
30				164.89					
			End of Borehole	9.14					
	10								
35									

Screen Interval: 5.99 - 7.51 m BGS
Sand Pack Interval: 5.68 - 7.51 m BGS
Well Seal Interval: 0.00 - 5.68 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

m AGS - metres above ground surface

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW207

Project:	Milton Logistics Hub	**Drilling method:**	Track Mount CME 75 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	11-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	178.08 m AMSL
Number:	160960844	**Top of casing elevation:**	178.81 m AMSL
Field investigator:	R. Dong	**Easting:**	594213
Contractor:	Terex Drilling Solutions	**Northing:**	4812095

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				178.81					
			Ground Surface	178.08					Above Ground Casing 0.73 m stick-up
0	0		TOPSOIL (SILTY CLAY)	0.00					
			firm, dark brown (10 YR 3/3), trace sand, moist	177.80	1	SS	14" 58% 0-3-4-6 (7)		
			SILTY CLAY	0.28					
			very stiff, dark reddish brown (5 YR 3/4), trace sand, moist		2	SS	24" 100% 6-12-14-15 (26)		216 mm diameter borehole
5	2				3	SS	24" 100% 6-11-15-19 (26)		
				175.41	4	SS	23" 96% 3-5-5-8 (10)		
			SILTY CLAY	2.67					
			stiff, dark reddish brown (5 YR 3.4), some sand, wet	175.03					
10			SANDY CLAY	3.05					
			very stiff, dark reddish brown (5 YR 3/4), some silt, wet		5	SS	10" 42% 10-9-11-11 (20)		Bentonite Chips 0 m to 7.09 m
				174.27					
	4		SILTY CLAY (Probable Halton Till)	3.81					
15			very stiff, dark greyish brown (10 YR 3/2), trace sand and fine gravel, moist		6	SS	18" 75% 5-10-12-12 (22)		
					7	SS	18" 75% 17-28-35-46 (63)		
20	6		very hard, dark reddish brown (5 YR 5/4) at 6.1 m BGS						No. 2 Silica Sand 7.09 m to 8.92 m
					8	SS	18" 75% 19-35-41-50/5 (76)		No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.09 m to 8.92 m
25	8				9	SS	23" 96% 14-36-27-50/4 (63)		
				169.16					
			End of Borehole	8.92					Groundwater Level 8.78 m BGS 13-Jul-2015
30									
	10								
35									

Screen Interval: 7.40 - 8.92 m BGS
Sand Pack Interval: 7.09 - 8.92 m BGS
Well Seal Interval: 0.00 - 7.09 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW208

Project:	Milton Logistics Hub	**Drilling method:**	ATV CME 550 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	11-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	178.99 m AMSL
Number:	160960844	**Top of casing elevation:**	179.84 m AMSL
Field investigator:	L. Carson	**Easting:**	594006
Contractor:	Terex Drilling Solutions	**Northing:**	4811970

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				179.84					Above Ground Casing 0.85 m stick-up
0	0		Ground Surface	178.99					
			TOPSOIL	0.00 / 178.74					Cement 0 to 0.05 m
			SILTY CLAY (Probable Halton Till) very stiff, light brownish grey (10 YR 6/2), some gravel, trace sand, moist	0.25	1	SS	24" 100% 2-3-6-13 (9)		
			some minor red staining at 0.76 m BGS		2	SS	24" 100% 6-8-12-16 (20)		152 mm diameter borehole
5			very hard, some gravel, trace clay, subangular to subround, moist, iron inclusions at 1.52 m BGS		3	SS	24" 100% 12-14-17-20 (31)		
	2			176.71					
			SAND dark brown (7.5 YR 3/2), trace silt, fine to coarse grained sand, subangular to subround, wet	2.29 / 176.45	4	SS	24" 100% 9-7-13-26 (20)		
			SILT light brownish grey (10 YR 6/2), some gravel, trace sand and clay, wet	2.54 / 175.94					
10			SILTY CLAY (Probable Halton Till) very hard, dark reddish grey (10 R 3/1), trace fine to coarse grained sand and gravel, subangular to subround, moist	3.05	5	SS	24" 100% 9-13-19-19 (32)		Bentonite Chips 0.05 m to 6.08 m
	4								Groundwater Level 3.42 m BGS 13-Jul-2015
15			5 cm thick wet sand seam at 4.57 m BGS		6	SS	9" 38% 18-20-50/4 (20)		
			rock at 4.98 m BGS						
	6								
20			25 cm thick brown (7.5 YR 5/3) sand and gravel layer, some clay and silt, subangular to subround, wet		7	SS	n/a n/a		No. 2 Silica Sand 6.08 m to 7.91 m
			black (10 YR 2/1) pulverized rock at 6.20 m BGS						Groundwater Level in Open Borehole 6.7 m BGS 11-Jun-2015
			grey, some sand and gravel at 6.35 m BGS	171.37					
25			SAND AND GRAVEL very hard, pale brown (10 YR 6/3), trace silt, fine to coarse grained sand and gravel, subangular to subround	7.62	8	SS	n/a 27-29-32-50/3 (61)		No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 6.39 m to 7.91 m
	8								216 mm diameter borehole 7.61 m to 7.91 m
				169.89					
30			End of Borehole	9.10					Native Cave In 7.91 m to 9.1 m
	10								
35									

Screen Interval: 6.39 - 7.91 m BGS
Sand Pack Interval: 6.08 - 7.91 m BGS
Well Seal Interval: 0.05 - 6.08 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW210

Project:	Milton Logistics Hub	**Drilling method:**	Track Mount CME 75 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	15-Jun-2015 / 16-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	180.12 m AMSL
Number:	160960844	**Top of casing elevation:**	180.96 m AMSL
Field investigator:	N. Spina	**Easting:**	593757
Contractor:	Terex Drilling Solutions	**Northing:**	4812378

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				180.96					
			Ground Surface	180.12					Above Ground Casing 0.84 m stick-up
0	0		TOPSOIL (SILTY CLAY) soft, dark brown (10 YR 3/2), trace fine grained sand, moist, trace organics	0.00 / 179.76	1	SS	24" 100% 0-0-3-4 (3)		
			SILTY CLAY (Probable Halton Till) very stiff, dark greyish brown (2.5 Y 4/2), trace fine grained sand and gravel, moist	0.36	2	SS	24" 100% 3-7-9-12 (16)		216 mm diameter borehole
5									Groundwater Level 1.50 m BGS 13-Jul-2015
	2		transition to reddish brown (5 YR 4/3) at 2.01 m BGS		3	SS	24" 100% 3-8-12-17 (20)		
					4	SS	24" 100% 5-11-17-23 (28)		
10			very hard, trace coarse sand at 3.05 m BGS		5	SS	24" 100% 6-13-18-25 (31)		Bentonite Chips 0 m to 7.18 m
	4								
15			stiff, trace fine and coarse grained gravel, moist at 4.57 m BGS		6	SS	24" 100% 3-5-7-10 (12)		
	6								
20			dark greyish brown (10 YR 4/2), trace fine grained gravel at 6.1 m BGS		7	SS	24" 100% 4-4-8-8 (12)		
									No. 2 Silica Sand 7.18 m to 9.01 m
25			very hard, reddish brown (5 YR 4/3) at 7.62 m BGS		8	SS	9" 112% 13-50/2/2.0" (50/2/2.0")		
	8								No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.49 m to 9.01 m
			broken rock at 8.53 m BGS		9	SS	1" 6% 29-37-50/5/5.0" (50/5/5.0")		
30				171.11					
	10		End of Borehole	9.01					
35									

Screen Interval: 7.49 - 9.01 m BGS
Sand Pack Interval: 7.18 - 9.01 m BGS
Well Seal Interval: 0.00 - 7.18 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW212

Project:	Milton Logistics Hub	**Drilling method:**	Track Mount CME 75 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	16-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	178.96 m AMSL
Number:	160960844	**Top of casing elevation:**	179.70 m AMSL
Field investigator:	R. Dong	**Easting:**	593602
Contractor:	Terex Drilling Solutions	**Northing:**	4812537

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery	N Value	Diagram / Description
				179.70					
			Ground Surface	178.96					Above Ground Casing 0.74 m stick-up
0	0		TOPSOIL (SILTY CLAY) soft, very dark greyish brown (10 YR 3/2), trace sand, moist	0.00 / 178.45	1	SS	21" 88%	0-1-2-2 (3)	
			SILTY CLAY firm, very dark greyish brown (10 YR 5/2), trace sand, moist	0.51					
			becoming dark brown at 1.12 m BGS		2	SS	23" 96%	1-3-6-5 (9)	216 mm diameter borehole
5			becoming dark greyish brown (10 YR 4/2) with trace fine to coarse grained gravel at 1.35 m BGS						
	2				3	SS	24" 100%	3-7-10-14 (17)	
			stiff, dark reddish brown (5 YR 3/3), trace to some sand and gravel at 2.03 m BGS						
			very stiff at 2.29 m BGS		4	SS	10" 42%	7-12-17-21 (29)	
10			very hard at 3.05 m BGS		5	SS	20" 83%	14-13-19-22 (32)	Bentonite Chips 0 m to 7.22 m
	4								
15			very stiff, dark greyish brown (10 YR 3/2), trace to some sand and fine grained gravel at 4.57 m BGS		6	SS	24" 100%	7-5-12-15 (17)	
			becomes dark reddish brown (5 YR 3/3) at 5.00 m BGS						
20	6		trace gravel at 6.1 m BGS		7	SS	24" 100%	6-13-14-18 (27)	
			2.5 cm thick seam of fine grained sand, brown (10 YR 4/3), homogeneous, moist at 6.4 m BGS						No. 2 Silica Sand 7.22 m to 9.05 m
25			very hard at 7.62 m BGS		8	SS	18" 75%	23-28-33-46 (61)	
	8								No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 7.53 m to 9.05 m
				169.90	9	SS	21" 88%	22-49-49-33 (98)	
30			End of Borehole	9.05					Well was dry on July 13, 2015
	10								
35									

Screen Interval: 7.53 - 9.05 m BGS
Sand Pack Interval: 7.22 - 9.05 m BGS
Well Seal Interval: 0.00 - 7.22 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW214

Project:	Milton Logistics Hub	**Drilling method:**	Track Mount CME 75 Hollow Stem Auger
Client:	Canadian National Railway Co.	**Date started/completed:**	17-Jun-2015
Location:	Milton, ON	**Ground surface elevation:**	184.30 m AMSL
Number:	160960844	**Top of casing elevation:**	185.15 m AMSL
Field investigator:	R. Dong	**Easting:**	593293
Contractor:	Terex Drilling Solutions	**Northing:**	4813752

SUBSURFACE PROFILE				SAMPLE DETAILS				INSTALLATION DETAILS	
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery / N Value	Diagram	Description
				185.15					Above Ground Casing 0.85 m stick-up
0	0		Ground Surface	184.30					
			TOPSOIL (SILTY CLAY) firm, brown, trace sand, roots	0.00 / 184.26	1	SS	20" 83% 2-4-3-5 (7)		
			SILTY CLAY (Probable Halton till) stiff, dark brown (10 YR 3/3), trace sand and fine gravel, moist,	0.04					
			very stiff, reddish brown (5 YR 4/4) at 1.14 m BGS		2	SS	20" 83% 3-6-10-13 (16)		216 mm diameter borehole
5	2				3	SS	23" 96% 3-9-10-14 (19)		
					4	SS	24" 100% 6-10-16-21 (26)		
10	4				5	SS	24" 100% 6-9-13-18 (22)		
15			stiff at 4.57 m BGS		6	SS	22" 92% 7-5-8-8 (13)		Bentonite Chips 0 m to 10.03 m
20	6		dark greyish brown (10 YR 3/2) at 6.1 m BGS		7	SS	12" 50% 4-4-6-7 (10)		
25	8				8	SS	0" 0% 6-11-17-45 (28)		Groundwater Level 8.37 m BGS 13-Jul-2015
30			reddish brown (5 YR 4/2) at 9.14 m BGS		9	SS	24" 100% 7-10-14-17 (24)		
	10								No. 2 Silica Sand 10.02 m to 11.24 m
35			dark grey (10 YR 4/1) at 10.67 m BGS		10	SS	15" 63% 19-14-12-15 (26)		No. 10 Slot Schedule 40 PVC Screen 51 mm Diameter 10.33 m to 11.85 m
				172.72					
	12		SAND AND GRAVEL dark grey (10 YR 4/1), wet	11.58					Natural Cave In 11.24 m to 12.19 m
40			End of Borehole	172.11 / 12.19					

Screen Interval: 11.24 - 11.85; 10.33 - 11.24 m BGS
Sand Pack Interval: 10.01 - 11.85 m BGS
Well Seal Interval: 0.00 - 10.01 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
SS - split-spoon sample
n/a - not available

Stantec

Drawn By/Checked By: HB/GW

Monitoring Well: MW301-21(S/D)

Project: CN Milton Groundwater FUP
Client: Canadian National Railway Company
Location: Milton, ON
Number: 160960844
Field investigator: R. Dong
Contractor: Aardvark Drilling Inc.
Method: Track Mounted CME 850 Hollow Stem Auger
Date started/completed: 17-Aug-2021 / 18-Aug-2021

Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)
				180.87
0	0		Ground Surface	180.34
			Topsoil	0.00
			dark brown (10YR3/3), moist, firm, sandy silt, fine grained, roots and grass	180.16
			Clayey Silt	0.18
			dark brown (10YR3/3), moist, trace fine sand, roots	179.53
			Silty Clay	0.81
			dark brown (10YR3/3), moist, trace fine, medium, and coarse sand diamicton (till), trace fine and coarse gravel	
			becoming 2.5YR5/2 at 3'5"	
5	2			
			>4.5 kg/cm2 (hard) at 8'	
10				
	4		becoming dark grey (10YR4/1) at 12'8"	
15				
20	6		becoming 2.5YR5/2 at 19'6"	
			cobble at 21'1"	
			becoming dark grey (10YR4/1), seam of soft silt sand, fine grained, wet, 4" thick	
25			becoming 2.5YR5/2, little softer from 24'6" to 25'6", remains hard	
	8			
30				
	10		few gravel beginning	
			becoming dark grey (10YR4/1)	
35			becoming red (2.5YR5/2)	
			seam of sandy silt, moist, soft, 4" thick, at 37'10"	
40	12			
			cobble at 42'6"	
			red cobble at 43'1"	
45	14			
50			seam of laminated clay, 7" thick at 50'8"	
	16			163.73
55			Silty Sand	16.61
			seam of soft silty sand to sandy silt	163.12
			Silty Clay	17.22
			dark brown (10YR3/3), moist, trace fine, medium, and coarse sand diamicton (till), trace fine and coarse gravel	
60	18			
			cobble (broken by drilling)	
			softer seam, 61'3" to 62'1"	
65	20		cobble	
				159.71
			Shale	20.63
70			weathered, soft, crumbling	
	22			
75				
	24			
80				
				154.54
85	26		End of Borehole	25.80

Sample Number	Sample Type	Recovery	SCR	RQD	Fractures per 1.52m	N Value
1	SS	16" 67%	n/a	n/a	n/a	6
2	SS	21" 88%	n/a	n/a	n/a	12
3	SS	24" 100%	n/a	n/a	n/a	23
4	CC	12" 100%	n/a	n/a	n/a	-
5	CC	50" 83%	n/a	n/a	n/a	-
6	CC	14" 23%	n/a	n/a	n/a	-
7	CC	52" 87%	n/a	n/a	n/a	-
8	CC	51" 85%	n/a	n/a	n/a	-
9	CC	60" 100%	n/a	n/a	n/a	-
10	CC	52" 87%	n/a	n/a	n/a	-
11	CC	60" 100%	n/a	n/a	n/a	-
12	CC	60" 100%	n/a	n/a	n/a	-
13	CC	60" 100%	n/a	n/a	n/a	-
14	CC	38" 63%	n/a	n/a	n/a	-
15	CC	60" 100%	n/a	n/a	n/a	-
16	CC	60" 100%	n/a	n/a	n/a	-
17	CC	43" 72%	42" 70%	42" 70%	0/1/1/1	-
18	CC	59" 98%	58" 97%	55.5" 93%	0/1/1/1/2	-
19	CC	63" 105%	57" 95%	58" 97%	2/1/2/0/1	-

WELL DETAILS

Name: MW301-21D
Location: Deep
GS Elev: 180.34 m AMSL
TOC Elev: 180.87 m AMSL
Easting: 593911
Northing: 4813107
Stick-up: 0.54 m

Name: MW301-21S
Location: Shallow
GS Elev: 180.25 m AMSL
TOC Elev: 180.87 m AMSL
Easting: 593912
Northing: 4813109
Stick-up: 0.62 m

- Above Ground Casing
- Bentonite Chips 0 to 0.9 m BGS
- Water Level 0.59 m BGS 13-January2022
- 210 mm diameter borehole 0 to 2.13 m BGS
- 122 mm (PQ) diameter borehole 2.13 to 25.8 m BGS
- Bentonite Slurry 0.9 to 21.3 m BGS
- Peltonite 21.3 to 22.5 m BGS
- No. 2 Silica Sand 22.5 to 25.8 m BGS
- No. 10 Slot Schedule 40 PVC Screen 52 mm I.D. 22.8 to 25.8 m BGS

- Above Ground Casing
- Water Level 0.16 m BGS 13-January-2022
- Bentonite Chips 0 to 6.1 m BGS
- 210 mm diameter borehole 0 to 6.1 m BGS
- 98 mm diameter borehole 6.1 to 19.5 m BGS
- Bentonite Slurry 6.1 to 15.2 m BGS
- Peltonite 15.2 to 15.8 m BGS
- No. 2 Silica Sand 15.8 to 19.5 m BGS
- No. 10 Slot Schedule 40 PVC Screen 52 mm I.D. 16.5 to 19.5 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
m BTOC - metres below top of casing
SS - split-spoon sample
CC - continuous core sample
n/a - not available

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Drawn By/Checked By: R. Dong/G. Whitehead

Sheet 1 of 1

STANTEC BOREHOLE AND WELL - CLUST 11X17 160960844_20211220_DRILLING-LOGS.GPJ STANTEC - DATA TEMPLATE.GDT 3/28/23 SHUTCHINSON

Monitoring Well: MW302-21(S/D)

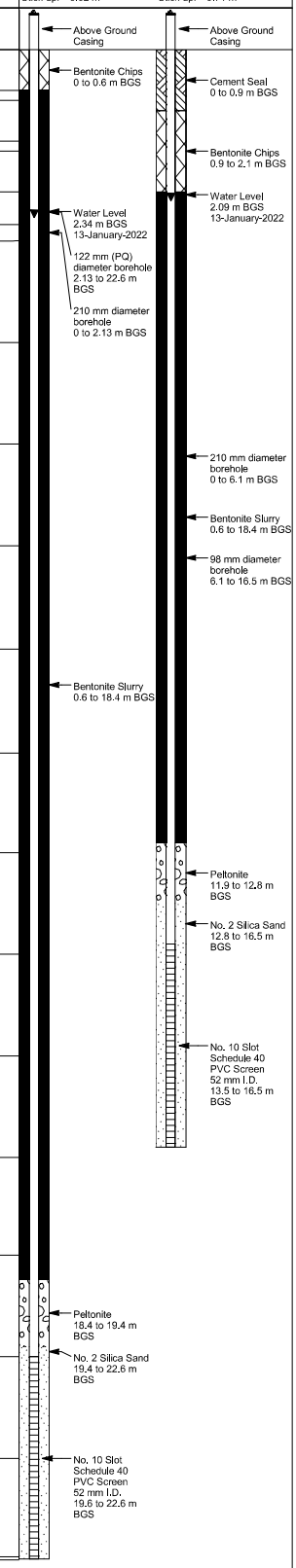
Project: CN Milton Groundwater FUP
Client: Canadian National Railway Company
Location: Milton, ON
Number: 160960844
Field investigator: R. Dong
Contractor: Aardvark Drilling Inc.
Method: Track Mounted CME 850 Hollow Stem Auger
Date started/completed: 19-Aug-2021 / 20-Aug-2021

Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)	Sample Number	Sample Type	Recovery	SCR	RQD	Fractures per 1.52m	N Value
				182.75							
0	0		Ground Surface	182.13							
			Topsoil very dark grayish brown (10YR3/2), silty clay, moist, stiff, tilled, corn field	0.00 181.52	1	SS	16" 67%	n/a	n/a	n/a	9
			Silty Clay dark greyish brown (10YR4/2), moist, trace (fine, medium, and coarse) sand, trace gravel, mottled 10YR6/6 brownish yellow, very stiff, >4.5 kg/cm2, hard, massive	0.61	2	SS	24" 100%	n/a	n/a	n/a	20
5					3	SS	21" 88%	n/a	n/a	n/a	19
	2										
					4	CC	10" (04")	n/a	n/a	n/a	-
10					5	CC	47" 78%	n/a	n/a	n/a	-
	4			178.17							
			Clay dark greyish brown, (10YR4/2), moist, very soft, trace (fine, medium, and coarse) sand, <0.12 kg/cm2, massive	3.96	6	CC	8" 13%	n/a	n/a	n/a	-
15											
20	6		trace gravel beginning at 19'5"		7	CC	23" 38%	n/a	n/a	n/a	-
25					8	CC	48" 78%	n/a	n/a	n/a	-
	8		becoming hard, trace to some fine and coarse gravelling beginning at 27'10"								
30			seam of softer material from 29'6" to 32' seams of silty sand (1" thick) at 30'6" and 30'11" (fine, medium, and coarse)		9	CC	61" 100%	n/a	n/a	n/a	-
	10		becoming reddish brown (2.5YR5/3) seam of grey (5Y5/1) 2" thick at 33'3"								
35					10	CC	47" 80%	n/a	n/a	n/a	-
			cobbles and gravel beginning at 37', seam of silty sand (fine, medium, coarse sand) from 37' to 37'6", possible sand seams missing in recovery since they are very narrow and rocks above and below								
40	12		possible sand from 38'6" to 41'		11	CC	42" 70%	n/a	n/a	n/a	-
			seam of sand and gravel from 43'4" to 43'11", rock pushed in tip for most of run, softer (~1.5 kg/cm2), very stiff								
45					12	CC	16" 27%	n/a	n/a	n/a	-
	14			167.04							
50			Silty Clay reddish brown (25YR5/3), moist, very stiff to hard, fine, medium, and coarse sand, trace to some fine and coarse gravel, trace cobbles	15.09	13	CC	58" 97%	n/a	n/a	n/a	-
	16		seam of clay, 3" thick, at 53'6"								
55			shale cobbles and boulders starting at 55'8"		14	CC	58" 101%	n/a	n/a	n/a	-
			seam of sandy silt at 57'10" to 59'4"								
60	18			163.61	15	CC	60" 100%	26" 43%	23.5" 39%	2/3/0/0	-
			Shale	18.52							
65	20				16	CC	60" 100%	59" 98%	59" 98%	0/0/1/1	-
70					17	CC	60" 100%	58" 97%	58" 97%	1/1/1/1	-
	22			159.53							
75			End of Borehole	22.60							

WELL DETAILS

Name: MW302-21D
Location: Deep
GS Elev: 182.13 m AMSL
TOC Elev: 182.75 m AMSL
Easting: 594772
Northing: 4812230
Stick-up: 0.62 m

Name: MW302-21S
Location: Shallow
GS Elev: 182.12 m AMSL
TOC Elev: 182.82 m AMSL
Easting: 594770
Northing: 4812227
Stick-up: 0.71 m



Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
m BTOC - metres below top of casing
SS - split-spoon sample
CC - continuous core sample
n/a - not available

Drawn By/Checked By: R. Dong/G. Whitehead

Monitoring Well: MW303-21(S/D)

Project: CN Milton Groundwater FUP
Client: Canadian National Railway Company
Location: Milton, ON
Number: 160960844

Field investigator: D. Smith
Contractor: Aardvark Drilling Inc.
Method: CME 75 Hollow Stem Auger
Date started/completed: 20-Dec-2021 / 21-Dec-2021

Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Elevation (m AMSL) Depth (m BGS)
			Ground Surface	176.35
0	0		Topsoil	0.00
			dark greyish brown (10YR4/2), moist, soft, silt to fine sand, organics	176.14
			Silty Clay	0.21
			greyish brown (10YR5/2), trace fine to coarse sand, trace to fine subrounded gravel, some yellow/reddish staining, hard	
5	2			
			trace coarse subangular gravel begins at 8', >4.5 kg/cm2 (hard)	
10				
			colour change to dark grey (10YR4/1) at 11'5"	
	4			172.31
			Clay	4.04
15			dark grey (10YR4/1), moist, 1.5 kg/cm2 (very stiff), poorly graded	
				171.47
			Clay Diamicton	4.88
	6		dark grey (10YR4/1), moist, 1-2 kg/cm2 (very stiff), trace fine to coarse sand and sub rounded gravel	
20				
			reddish brown rock/cobble ~5", poor quality, crumbles into multiple pieces	
			grey rock/cobble ~3", clay diamicton surounding rocks/cracks	
25	8			
				166.35
30			Silty Clay Diamicton	10.00
	10		greyish brown, 10YR5/2, moist, 4.5kg/cm2 (hard), well graded, some fine to coarse sand, trace fine and coarse sub-angular gravel	
			2" grey rock fragment	
35			increase in fine gravel and other rock fragments, some greyish green and reddish brown gravel size rock bits, very hard (>4.5kg/cm2)	
	12			
40			1" cobble blocking soil recovery	
45				
	14		5" dark grey rock, mostly intact	
			brown (10YR5/3), 4" thick, wet, soft to firm, very fine sand and silt seam,	
			reddish brown (5YR5/4), trace cobbles/rock fragments with greenish grey colouring, block/scraps of flakes almost like soft rock, but can be rollled into ribbon with water	
50				
	16		dark grey with light grey inclusions - rock fragment ~11"	
			decrease in coarse gravel and cobbles	
55				
				158.64
			Silt	17.71
60	18		brown (2.5YR5/3), moist, some clay, some fine to medium-coarse sand, hard, ~1" thick grey clay seams at 59'2", 59'9", 60'5"	
			2" silty fine sand seam, wet, soft	
			broken rocks fragments with reddish brown clay filling gaps	157.33
			Silty Clay Diamicton	19.02
65			reddish brown (5YR5/4), moist, trace fine to coarse sand, trace cobbles, gravel (sub-angular to angular) with greenish grey colour, blocky, hard (4.5 kg/cm2)	
	20			
			increase in angular rock fragments	
			transition zone, grey rock fragments with blocky red clay, top of rock at 66'10", some sections of very weathered shale, clay likely below 66'10"	155.99
			Shale	20.36
70			very weathered reddish brown shale at 67'3" to 67'11" and 69'5" to 70', other intact rock is light grey with greenish hue or dark grey	
	22			
75				
				152.75
	24		End of Borehole	23.60
80				

Sample Number	Sample Type	Recovery	SCR	RQD	Fractures per 1.52m	N Value
1	SS	19" 79%	n/a	n/a	n/a	0-1-2-4 (3)
2	SS	20" 83%	n/a	n/a	n/a	2-4-9-15 (13)
3	SS	23" 96%	n/a	n/a	n/a	3-8-11-16 (19)
4	CC	26" 96%	n/a	n/a	n/a	---- (0)
5	CC	59" 98%	n/a	n/a	n/a	---- (0)
6	CC	60" 100%	n/a	n/a	n/a	---- (0)
7	CC	51" 85%	n/a	n/a	n/a	---- (0)
8	CC	49" 82%	n/a	n/a	n/a	---- (0)
9	CC	34" 57%	n/a	n/a	n/a	---- (0)
10	CC	57" 95%	n/a	n/a	n/a	---- (0)
11	CC	13" 22%	n/a	n/a	n/a	---- (0)
12	CC	60" 100%	n/a	n/a	n/a	---- (0)
13	CC	61" 102%	n/a	n/a	n/a	---- (0)
14	CC	58" 97%	n/a	n/a	n/a	---- (0)
15	CC	60" 100%	n/a	n/a	n/a	---- (0)
16	CC	62" 103%	25" 42%	41" 68%	0/4/0/0	---- (0)
17	CC	60" 100%	55" 92%	60" 100%	1/1/1/2/1	---- (0)
18	CC	30" 100%	28.5" 95%	30" 100%	0/3/1	---- (0)

WELL DETAILS

	MW303-21D	MW303-21S
Name:	MW303-21D	MW303-21S
Location:	Deep	Shallow
GS Elev:	176.35 m AMSL	176.32 m AMSL
TOC Elev:	177.04 m AMSL	177.09 m AMSL
Easting:	594935	594937
Northing:	4811365	4811367
Stick-up:	0.69 m	0.76 m

- Above Ground Casing
- Bentonite Chips 0 to 1.5 m BGS
- 210 mm diameter borehole 0 to 2.4 m BGS
- Water Level 4.54 m BGS 13-January-2022
- 122 mm diameter borehole 2.4 to 23.7 m BGS
- Bentonite Slurry 1.5 to 19.6 m BGS
- Peltonite 19.6 to 21.5 m BGS
- No. 2 Silica Sand 19.4 to 23.6 m BGS
- No. 10 Slot Schedule 40 PVC Screen 52 mm I.D. 22.1 to 23.6 m BGS

- Above Ground Casing
- Bentonite Chips 0 to 1.5 m BGS
- 210 mm diameter borehole 0 to 6.1 m BGS
- Water Level 2.86 m BGS 13-January-2022
- Bentonite Slurry 1.5 to 14.9 m BGS
- 96 mm diameter borehole 6.1 m to 19.8 m BGS
- Peltonite 14.9 to 16.5 m BGS
- No. 2 Silica Sand 16.5 to 19.8 m BGS
- No. 10 Slot Schedule 40 PVC Screen 52 mm I.D. 16.8 to 19.8 m BGS

Notes:
m AMSL - metres above mean sea level
m BGS - metres below ground surface
m BTOC - metres below top of casing
SS - split-spoon sample
CC - continuous core sample
n/a - not available

Stantec

Drawn By/Checked By: D. Smith/G. Whitehead

Sheet 1 of 1

Appendix D Laboratory Certificates of Analysis

Your Project #: 160960844
Your C.O.C. #: 862397-02-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/03/03
Report #: R7027021
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C213548
Received: 2022/01/17, 16:11

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2022/01/19	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	2	N/A	2022/01/20	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2022/01/20	CAM SOP-00463	SM 23 4500-Cl E m
Colour	2	N/A	2022/01/21	CAM SOP-00412	SM 23 2120C m
Conductivity	2	N/A	2022/01/19	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide	2	N/A	2022/01/21	CAM SOP-00457	OMOE E3015 m
Dioxins/Furans in Water (1613B) (2)	1	2022/01/25	2022/02/08	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Water (1613B) (2)	1	2022/02/19	2022/02/23	BRL SOP-00410	EPA 1613B m
Diuron, Guthion, Temephos	2	2022/01/19	2022/01/20	CAM SOP-00306	EPA 532 m
Dissolved Organic Carbon (DOC) (3)	4	N/A	2022/01/19	CAM SOP-00446	SM 23 5310 B m
Diquat / Paraquat	2	2022/01/22	2022/01/25	CAM SOP-00327	EPA 549.2 m
Fluoride	2	2022/01/19	2022/01/19	CAM SOP-00449	SM 23 4500-F C m
Dissolved Gases in Water in mg/L units	2	N/A	2022/01/18		
Glyphosate	2	2022/01/19	2022/01/20	CAM SOP-00305	HPLC in-house method
Hardness (calculated as CaCO3)	2	N/A	2022/01/19	CAM SOP 00102/00408/00447	SM 2340 B
Hardness (calculated as CaCO3)	2	N/A	2022/01/20	CAM SOP 00102/00408/00447	SM 2340 B
Mercury in Water by CVAA	2	2022/01/20	2022/01/21	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	2	N/A	2022/01/19	CAM SOP-00447	EPA 6020B m
Metals Analysis by ICPMS (as received) (4)	2	N/A	2022/01/19	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	2	N/A	2022/01/20		
Anion and Cation Sum	2	N/A	2022/01/20		
Total Coliforms/ E. coli, CFU/100mL	1	N/A	2022/01/18	CAM SOP-00551	MOE E3407
Dissolved Methane in Water	2	N/A	2022/01/24	CAM SOP-00219 Modified Combustible Gas Indicator Method	RSKSOP-175 m
Heterotrophic plate count, (CFU/mL)	1	N/A	2022/01/18	CAM SOP-00512	SM 9215B
Microcystin	2	N/A	2022/01/20	CAM SOP-00476	OMECC-LSB E3469
Nitrosamines in Water	2	2022/01/20	2022/02/08	BRL SOP-00012	EPA M 607/1625B mod

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Your Project #: 160960844
Your C.O.C. #: 862397-02-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/03/03
Report #: R7027021
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C213548
Received: 2022/01/17, 16:11

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Ammonia-N	4	N/A	2022/01/22	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (5)	4	N/A	2022/01/19	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrilotriacetic Acid (NTA) (6)	2	2022/01/19	2022/01/19	CAM SOP-00411	EPA 430.1 m
OC Pesticides (Selected) & PCB (7)	2	2022/01/21	2022/01/22	CAM SOP-00307	EPA 8081A/ 8082B m
OC Pesticides Summed Parameters	2	N/A	2022/01/19	CAM SOP-00307	EPA 8081A/8082B m
ODWS - Semi-Volatiles	2	2022/01/19	2022/01/21	CAM SOP-00301	EPA 8270 m
Organic Nitrogen	1	N/A	2022/01/23	Auto Calc.	
Organic Nitrogen	1	N/A	2022/01/24	Auto Calc.	
pH	4	2022/01/19	2022/01/19	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	2	N/A	2022/01/19	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	2	N/A	2022/01/20		Auto Calc
Sat. pH and Langelier Index (@ 4C)	2	N/A	2022/01/20		Auto Calc
Sulphate by Automated Colourimetry	4	N/A	2022/01/19	CAM SOP-00464	EPA 375.4 m
Bromate Analysis (1)	2	N/A	N/A		
Sulphide	2	N/A	2022/01/21	CAM SOP-00455	SM 23 4500-S G m
Total Dissolved Solids (TDS calc)	4	N/A	2022/01/20		Auto Calc
Total Kjeldahl Nitrogen in Water	1	2022/01/20	2022/01/20	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2022/01/20	2022/01/24	CAM SOP-00938	OMOE E3516 m
Turbidity	2	N/A	2022/01/19	CAM SOP-00417	SM 23 2130 B m
VOCs (Drinking Water)	2	N/A	2022/01/20	CAM SOP-00226	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Your Project #: 160960844
Your C.O.C. #: 862397-02-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/03/03
Report #: R7027021
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C213548
Received: 2022/01/17, 16:11

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 Bureau Veritas, 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 SGS Environmental Services-Mineral, 185 Concession Street , Lakefield, ON, K0L 2H0
(2) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(3) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(4) Metals analysis was performed on the sample 'as received'.
(5) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(6) Bureau Veritas attempt to commence NTA analysis as soon as possible in accordance with the reference method. However, rapid analysis may not be practically achievable, particularly for samples from remote locations. Extended delay in analysis times may increase the uncertainty of the test results, but does not necessarily imply that the results are compromised.
(7) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bureauveritas.com
Phone# (905)817-5752
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This report has been generated and distributed using a secure automated process.
Bureau Veritas 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.

ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ421							
Sampling Date		2022/01/16 09:48							
COC Number		862397-02-0				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 D	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Calculated Parameters									
Calculated TDS	mg/L	4700	N/A	1.0	0.20				7787012
Hardness (CaCO3)	mg/L	2100	N/A	1.0	1.0				7787009
Total Organic Nitrogen	mg/L	0.53	N/A	0.10	N/A				7787707
Inorganics									
Total Ammonia-N	mg/L	4.7	N/A	0.050	0.0080				7790869
Colour	TCU	<2	N/A	2	N/A				7789314
Fluoride (F-)	mg/L	0.50	N/A	0.10	0.020				7788522
Total Kjeldahl Nitrogen (TKN)	mg/L	5.2	N/A	0.50	0.30				7790973
Microcystin	ug/L	<0.10	N/A	0.10	0.10				7791578
Dissolved Organic Carbon	mg/L	0.74	N/A	0.40	0.070				7788913
pH	pH	7.58							7788536
Dissolved Sulphate (SO4)	mg/L	1600	N/A	5.0	0.50				7788478
Sulphide	mg/L	<0.020	N/A	0.020	0.010				7793605
Turbidity	NTU	170	N/A	0.1	0.1				7788249
WAD Cyanide (Free)	mg/L	<0.0010	N/A	0.0010	0.00010				7790889
Alkalinity (Total as CaCO3)	mg/L	50	N/A	1.0	0.20				7788532
Dissolved Chloride (Cl-)	mg/L	1500	N/A	20	6.0				7788503
Nitrite (N)	mg/L	<0.010	N/A	0.010	0.0020				7788232
Nitrate (N)	mg/L	<0.10	N/A	0.10	0.010				7788232
Nitrate + Nitrite (N)	mg/L	<0.10	N/A	0.10	0.010				7788232
Miscellaneous Parameters									
NTA	mg/L	<0.25 (1)	N/A	0.25	N/A				7787960
Subcontracted Analysis									
Bromate	N/A	SEE ATTACH	N/A	N/A	N/A				7809109

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RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordinglyfor NTA

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ421							
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COC Number		862397-02-0				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 D	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Fixed Gases									
Methane	L/m3	0.016	N/A	0.005	N/A				7796466
Metals									
Mercury (Hg)	mg/L	<0.00010	N/A	0.00010	0.000050				7790511
Aluminum (Al)	mg/L	0.013	N/A	0.0049	0.0010				7788043
Antimony (Sb)	mg/L	<0.00050	N/A	0.00050	0.00010				7788043
Arsenic (As)	mg/L	<0.0010	N/A	0.0010	0.00020				7788043
Barium (Ba)	mg/L	0.037	N/A	0.0020	0.0010				7788043
Boron (B)	mg/L	4.7	N/A	0.010	0.0020				7788043
Cadmium (Cd)	mg/L	<0.000090	N/A	0.000090	0.000018				7788043
Calcium (Ca)	mg/L	550	N/A	1.0	0.20				7788043
Chromium (Cr)	mg/L	<0.0050	N/A	0.0050	0.0010				7788043
Copper (Cu)	mg/L	<0.00090	N/A	0.00090	0.00020				7788043
Iron (Fe)	mg/L	0.60	N/A	0.10	0.020				7788043
Lead (Pb)	mg/L	<0.00050	N/A	0.00050	0.00010				7788043
Magnesium (Mg)	mg/L	190	N/A	0.050	0.010				7788043
Manganese (Mn)	mg/L	0.24	N/A	0.0020	0.00040				7788043
Potassium (K)	mg/L	43	N/A	0.20	0.040				7788043
Selenium (Se)	mg/L	<0.0020	N/A	0.0020	0.00040				7788043
Sodium (Na)	mg/L	800	N/A	0.50	0.10				7788043
Uranium (U)	mg/L	0.0011	N/A	0.00010	0.000020				7788043
Zinc (Zn)	mg/L	<0.0050	N/A	0.0050	0.0010				7788043
Semivolatile Organics									
2,3,4,6-Tetrachlorophenol	ug/L	<0.50	N/A	0.50	0.010				7788066
2,4,5-T	ug/L	<1.0	N/A	1.0	0.013				7788066
2,4,6-Trichlorophenol	ug/L	<0.50	N/A	0.50	0.011				7788066

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2,4-D	ug/L	<1.0	N/A	1.0	0.013				7788066
2,4-Dichlorophenol	ug/L	<0.25	N/A	0.25	0.0090				7788066
Alachlor	ug/L	<0.50	N/A	0.50	0.078				7788066
Aldicarb	ug/L	<5.0	N/A	5.0	0.038				7788066
Atrazine	ug/L	<0.50	N/A	0.50	0.020				7788066
Des-ethyl atrazine	ug/L	<0.50	N/A	0.50	0.011				7788066
Atrazine + Desethyl-atrazine	ug/L	<1.0	N/A	1.0	N/A				7788066
Bendiocarb	ug/L	<2.0	N/A	2.0	0.014				7788066
Bromoxynil	ug/L	<0.50	N/A	0.50	0.0080				7788066
Carbaryl	ug/L	<5.0	N/A	5.0	0.010				7788066
Carbofuran	ug/L	<5.0	N/A	5.0	0.015				7788066
Chlorpyrifos (Dursban)	ug/L	<1.0	N/A	1.0	0.021				7788066
Cyanazine (Bladex)	ug/L	<1.0	N/A	1.0	0.025				7788066
Diazinon	ug/L	<1.0	N/A	1.0	0.021				7788066
Dicamba	ug/L	<1.0	N/A	1.0	0.018				7788066
Diclofop-methyl	ug/L	<0.90	N/A	0.90	0.050				7788066
Dimethoate	ug/L	<2.5	N/A	2.5	0.024				7788066
Dinoseb	ug/L	<1.0	N/A	1.0	0.011				7788066
Malathion	ug/L	<5.0	N/A	5.0	0.018				7788066
Metolachlor	ug/L	<0.50	N/A	0.50	0.025				7788066
Metribuzin (Sencor)	ug/L	<5.0	N/A	5.0	0.020				7788066
Ethyl Parathion	ug/L	<1.0	N/A	1.0	0.013				7788066
Pentachlorophenol	ug/L	<0.50	N/A	0.50	0.024				7788066
Phorate	ug/L	<0.50	N/A	0.50	0.011				7788066
Picloram	ug/L	<5.0	N/A	5.0	0.010				7788066
Prometryne	ug/L	<0.25	N/A	0.25	0.013				7788066

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	UNITS	MW303-21 D	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Simazine	ug/L	<1.0	N/A	1.0	0.012				7788066
Terbufos	ug/L	<0.50	N/A	0.50	0.011				7788066
Triallate	ug/L	<1.0	N/A	1.0	0.013				7788066
Trifluralin	ug/L	<1.0	N/A	1.0	0.010				7788066
Benzo(a)pyrene	ug/L	<0.0050	N/A	0.0050	0.0010				7788066
Methyl parathion	ug/L	<1.0	N/A	1.0	0.015				7788066
Volatile Organics									
1,1-Dichloroethylene	ug/L	<0.10	N/A	0.10	N/A				7788243
1,2-Dichlorobenzene	ug/L	<0.20	N/A	0.20	N/A				7788243
1,2-Dichloroethane	ug/L	<0.20	N/A	0.20	N/A				7788243
1,4-Dichlorobenzene	ug/L	<0.20	N/A	0.20	N/A				7788243
Benzene	ug/L	<0.10	N/A	0.10	N/A				7788243
Bromodichloromethane	ug/L	<0.10	N/A	0.10	N/A				7788243
Bromoform	ug/L	<0.20	N/A	0.20	N/A				7788243
Carbon Tetrachloride	ug/L	<0.10	N/A	0.10	N/A				7788243
Chlorobenzene	ug/L	<0.10	N/A	0.10	N/A				7788243
Chloroform	ug/L	0.24	N/A	0.10	N/A				7788243
Dibromochloromethane	ug/L	<0.20	N/A	0.20	N/A				7788243
Methylene Chloride(Dichloromethane)	ug/L	<0.50	N/A	0.50	N/A				7788243
Ethylbenzene	ug/L	<0.10	N/A	0.10	N/A				7788243
Tetrachloroethylene	ug/L	<0.10	N/A	0.10	N/A				7788243
Toluene	ug/L	<0.20	N/A	0.20	N/A				7788243
Trichloroethylene	ug/L	<0.10	N/A	0.10	N/A				7788243
Vinyl Chloride	ug/L	<0.20	N/A	0.20	N/A				7788243
o-Xylene	ug/L	<0.10	N/A	0.10	N/A				7788243
p+m-Xylene	ug/L	<0.10	N/A	0.10	N/A				7788243

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	UNITS	MW303-21 D	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Xylenes	ug/L	<0.10	N/A	0.10	N/A				7788243
Total Trihalomethanes	ug/L	0.24	N/A	0.20	N/A				7788243
Pesticides & Herbicides									
Glyphosate	ug/L	<10	N/A	10	0.65				7789424
Diquat	ug/L	<7.0	N/A	7.0	0.26				7795587
Diuron	ug/L	<10	N/A	10	0.049				7789387
Guthion (Azinphos-methyl)	ug/L	<2.0	N/A	2.0	0.059				7789387
Paraquat	ug/L	<1.0	N/A	1.0	0.15				7795587
Temephos	ug/L	<10	N/A	10	0.057				7789387
Calculated Parameters									
Aldrin + Dieldrin	ug/L	<0.006	N/A	0.006	N/A				7787706
Chlordane (Total)	ug/L	<0.006	N/A	0.006	N/A				7787706
DDT+ Metabolites	ug/L	<0.006	N/A	0.006	N/A				7787706
Heptachlor + Heptachlor epoxide	ug/L	<0.006	N/A	0.006	N/A				7787706
Total PCB	ug/L	<0.05	N/A	0.05	N/A				7787706
Pesticides & Herbicides									
Lindane	ug/L	<0.0060	N/A	0.0060	N/A				7792776
Heptachlor	ug/L	<0.0060	N/A	0.0060	N/A				7792776
Aldrin	ug/L	<0.0060	N/A	0.0060	N/A				7792776
Heptachlor epoxide	ug/L	<0.0060	N/A	0.0060	N/A				7792776
Oxychlordane	ug/L	<0.0060	N/A	0.0060	N/A				7792776
g-Chlordane	ug/L	<0.0060	N/A	0.0060	N/A				7792776
a-Chlordane	ug/L	<0.0060	N/A	0.0060	N/A				7792776
Dieldrin	ug/L	<0.0060	N/A	0.0060	N/A				7792776
o,p-DDE	ug/L	<0.0060	N/A	0.0060	N/A				7792776
p,p-DDE	ug/L	<0.0060	N/A	0.0060	N/A				7792776

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o,p-DDD	ug/L	<0.0060	N/A	0.0060	N/A				7792776
p,p-DDD	ug/L	<0.0060	N/A	0.0060	N/A				7792776
o,p-DDT	ug/L	<0.0060	N/A	0.0060	N/A				7792776
p,p-DDT	ug/L	<0.0060	N/A	0.0060	N/A				7792776
DDT+ Metabolites	ug/L	<0.024	N/A	0.024	N/A				7792776
Methoxychlor	ug/L	<0.024	N/A	0.024	N/A				7792776
Aroclor 1016	ug/L	<0.050	N/A	0.050	N/A				7792776
Aroclor 1221	ug/L	<0.050	N/A	0.050	N/A				7792776
Aroclor 1232	ug/L	<0.050	N/A	0.050	N/A				7792776
Aroclor 1242	ug/L	<0.050	N/A	0.050	N/A				7792776
Aroclor 1248	ug/L	<0.050	N/A	0.050	N/A				7792776
Aroclor 1254	ug/L	<0.050	N/A	0.050	N/A				7792776
Aroclor 1260	ug/L	<0.050	N/A	0.050	N/A				7792776
Total PCB	ug/L	<0.050	N/A	0.050	N/A				7792776
Dioxins & Furans									
2,3,7,8-Tetra CDD *	pg/L	<2.65	2.65	9.62	4.00	1.00	2.65	0	7843430
1,2,3,7,8-Penta CDD *	pg/L	<4.18	4.18	48.1	4.00	1.00	4.18	0	7843430
1,2,3,4,7,8-Hexa CDD *	pg/L	<2.24	2.24	48.1	4.00	0.100	0.224	0	7843430
1,2,3,6,7,8-Hexa CDD *	pg/L	<1.87	1.87	48.1	4.00	0.100	0.187	0	7843430
1,2,3,7,8,9-Hexa CDD *	pg/L	<1.99	1.99	48.1	4.00	0.100	0.199	0	7843430
1,2,3,4,6,7,8-Hepta CDD *	pg/L	<2.83	2.83	48.1	4.00	0.0100	0.0283	0	7843430
Octa CDD *	pg/L	2.98	1.47	96.2	8.00	0.000300	0.000894	1	7843430
Total Tetra CDD *	pg/L	<2.65	2.65	9.62	4.00			0	7843430
Total Penta CDD *	pg/L	<4.18	4.18	48.1	4.00			0	7843430
Total Hexa CDD *	pg/L	<2.02	2.02	48.1	4.00			0	7843430

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	UNITS	MW303-21 D	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Hepta CDD *	pg/L	<2.83	2.83	48.1	4.00			0	7843430
2,3,7,8-Tetra CDF **	pg/L	<1.60	1.60	9.62	4.00	0.100	0.160	0	7843430
1,2,3,7,8-Penta CDF **	pg/L	<2.64	2.64	48.1	4.00	0.0300	0.0792	0	7843430
2,3,4,7,8-Penta CDF **	pg/L	<2.39	2.39	48.1	4.00	0.300	0.717	0	7843430
1,2,3,4,7,8-Hexa CDF **	pg/L	<1.85	1.85	48.1	4.00	0.100	0.185	0	7843430
1,2,3,6,7,8-Hexa CDF **	pg/L	<1.47	1.47	48.1	4.00	0.100	0.147	0	7843430
2,3,4,6,7,8-Hexa CDF **	pg/L	<1.41	1.41	48.1	4.00	0.100	0.141	0	7843430
1,2,3,7,8,9-Hexa CDF **	pg/L	<1.77	1.77	48.1	4.00	0.100	0.177	0	7843430
1,2,3,4,6,7,8-Hepta CDF **	pg/L	<0.997	0.997	48.1	4.00	0.0100	0.00997	0	7843430
1,2,3,4,7,8,9-Hepta CDF **	pg/L	1.29	1.19	48.1	4.00	0.0100	0.0129	1	7843430
Octa CDF **	pg/L	<1.90	1.90	96.2	8.00	0.000300	0.000570	0	7843430
Total Tetra CDF **	pg/L	<1.60	1.60	9.62	4.00			0	7843430
Total Penta CDF **	pg/L	<2.51	2.51	48.1	4.00			0	7843430
Total Hexa CDF **	pg/L	<1.60	1.60	48.1	4.00			0	7843430
Total Hepta CDF **	pg/L	1.29	1.09	48.1	4.00			1	7843430
Microbiological									
Heterotrophic plate count	CFU/mL	>5700	N/A	N/A	N/A				7787804
Background	CFU/100mL	NDOGN (1)	N/A	N/A	N/A				7787772
Total Coliforms	CFU/100mL	NDOGN (1)	N/A	N/A	N/A				7787772
Escherichia coli	CFU/100mL	NDOGN (1)	N/A	N/A	N/A				7787772
TOTAL TOXIC EQUIVALENCY	pg/L						9.1		
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	75							7843430
C13-1234678 HeptaCDD *	%	89							7843430

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
(1) NDOGN: No data due to overgrowth. Total coliforms and / or E.coli not detected

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ421							
Sampling Date		2022/01/16 09:48							
COC Number		862397-02-0				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 D	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	92							7843430
C13-123478 HexaCDD *	%	75							7843430
C13-123478 HexaCDF **	%	69							7843430
C13-1234789 HeptaCDF **	%	100							7843430
C13-123678 HexaCDD *	%	85							7843430
C13-123678 HexaCDF **	%	81							7843430
C13-12378 PentaCDD *	%	86							7843430
C13-12378 PentaCDF **	%	77							7843430
C13-123789 HexaCDF **	%	86							7843430
C13-234678 HexaCDF **	%	89							7843430
C13-23478 PentaCDF **	%	80							7843430
C13-2378 TetraCDD *	%	60							7843430
C13-2378 TetraCDF **	%	59							7843430
C13-OCDD *	%	113							7843430
2,4,5,6-Tetrachloro-m-xylene	%	83							7792776
Decachlorobiphenyl	%	95							7792776
2,4,6-Tribromophenol	%	74							7788066
2,4-Dichlorophenyl Acetic Acid	%	83							7788066
2-Fluorobiphenyl	%	74							7788066
D14-Terphenyl (FS)	%	101							7788066
D5-Nitrobenzene	%	82							7788066
4-Bromofluorobenzene	%	96							7788243
D4-1,2-Dichloroethane	%	99							7788243
D8-Toluene	%	100							7788243

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
* CDD = Chloro Dibenzo-p-Dioxin

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ421						
Sampling Date		2022/01/16 09:48						
COC Number		862397-02-01			TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 D Lab-Dup	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Inorganics								
Microcystin	ug/L	<0.10	0.10	0.10				7791578
Turbidity	NTU	170	0.1	0.1				7788249
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	0.00010				7790889
Miscellaneous Parameters								
NTA	mg/L	<0.25	0.25	N/A				7787960
TOTAL TOXIC EQUIVALENCY	pg/L					0		

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Calculated Parameters									
Calculated TDS	mg/L	1600	N/A	1.0	0.20				7787012
Hardness (CaCO3)	mg/L	870	N/A	1.0	1.0				7787009
Total Organic Nitrogen	mg/L	<0.10	N/A	0.10	N/A				7787707
Inorganics									
Colour	TCU	2	N/A	2	N/A				7789314
Fluoride (F-)	mg/L	0.30	N/A	0.10	0.020				7788522
Total Kjeldahl Nitrogen (TKN)	mg/L	1.1 (1)	N/A	0.50	0.30				7790594
Microcystin	ug/L	<0.10	N/A	0.10	0.10				7791578
Dissolved Organic Carbon	mg/L	3.1	N/A	0.40	0.070				7788913
pH	pH	7.75							7788536
Dissolved Sulphate (SO4)	mg/L	790	N/A	5.0	0.50				7788478
Sulphide	mg/L	<0.020	N/A	0.020	0.010				7793609
Turbidity	NTU	160	N/A	0.1	0.1				7788249
WAD Cyanide (Free)	mg/L	<0.0010	N/A	0.0010	0.00010				7790889
Alkalinity (Total as CaCO3)	mg/L	98	N/A	1.0	0.20				7788532
Dissolved Chloride (Cl-)	mg/L	240	N/A	3.0	0.90				7788503
Nitrite (N)	mg/L	<0.010	N/A	0.010	0.0020				7788232
Nitrate (N)	mg/L	<0.10	N/A	0.10	0.010				7788232
Nitrate + Nitrite (N)	mg/L	<0.10	N/A	0.10	0.010				7788232
Miscellaneous Parameters									
NTA	mg/L	<0.050	N/A	0.050	N/A				7787960
Fixed Gases									
Methane	L/m3	0.016	N/A	0.005	N/A				7796466

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Metals									
Mercury (Hg)	mg/L	<0.0015 (1)	N/A	0.0015	0.00075				7790511
Aluminum (Al)	mg/L	0.22	N/A	0.0049	0.0010				7788043
Antimony (Sb)	mg/L	<0.00050	N/A	0.00050	0.00010				7788043
Arsenic (As)	mg/L	0.0032	N/A	0.0010	0.00020				7788043
Barium (Ba)	mg/L	0.054	N/A	0.0020	0.0010				7788043
Boron (B)	mg/L	2.0	N/A	0.010	0.0020				7788043
Cadmium (Cd)	mg/L	<0.000090	N/A	0.000090	0.000018				7788043
Calcium (Ca)	mg/L	210	N/A	1.0	0.20				7788043
Chromium (Cr)	mg/L	<0.0050	N/A	0.0050	0.0010				7788043
Copper (Cu)	mg/L	0.0012	N/A	0.00090	0.00020				7788043
Iron (Fe)	mg/L	0.31	N/A	0.10	0.020				7788043
Lead (Pb)	mg/L	<0.00050	N/A	0.00050	0.00010				7788043
Magnesium (Mg)	mg/L	85	N/A	0.050	0.010				7788043
Manganese (Mn)	mg/L	0.20	N/A	0.0020	0.00040				7788043
Potassium (K)	mg/L	15	N/A	0.20	0.040				7788043
Selenium (Se)	mg/L	<0.0020	N/A	0.0020	0.00040				7788043
Sodium (Na)	mg/L	230	N/A	0.10	0.020				7788043
Uranium (U)	mg/L	0.0024	N/A	0.00010	0.000020				7788043
Zinc (Zn)	mg/L	<0.0050	N/A	0.0050	0.0010				7788043
Semivolatile Organics									
2,3,4,6-Tetrachlorophenol	ug/L	<0.50	N/A	0.50	0.010				7788066
2,4,5-T	ug/L	<1.0	N/A	1.0	0.013				7788066
2,4,6-Trichlorophenol	ug/L	<0.50	N/A	0.50	0.011				7788066
2,4-D	ug/L	<1.0	N/A	1.0	0.013				7788066

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,4-Dichlorophenol	ug/L	<0.25	N/A	0.25	0.0090				7788066
Alachlor	ug/L	<0.50	N/A	0.50	0.078				7788066
Aldicarb	ug/L	<5.0	N/A	5.0	0.038				7788066
Atrazine	ug/L	<0.50	N/A	0.50	0.020				7788066
Des-ethyl atrazine	ug/L	<0.50	N/A	0.50	0.011				7788066
Atrazine + Desethyl-atrazine	ug/L	<1.0	N/A	1.0	N/A				7788066
Bendiocarb	ug/L	<2.0	N/A	2.0	0.014				7788066
Bromoxynil	ug/L	<0.50	N/A	0.50	0.0080				7788066
Carbaryl	ug/L	<5.0	N/A	5.0	0.010				7788066
Carbofuran	ug/L	<5.0	N/A	5.0	0.015				7788066
Chlorpyrifos (Dursban)	ug/L	<1.0	N/A	1.0	0.021				7788066
Cyanazine (Bladex)	ug/L	<1.0	N/A	1.0	0.025				7788066
Diazinon	ug/L	<1.0	N/A	1.0	0.021				7788066
Dicamba	ug/L	<1.0	N/A	1.0	0.018				7788066
Diclofop-methyl	ug/L	<0.90	N/A	0.90	0.050				7788066
Dimethoate	ug/L	<2.5	N/A	2.5	0.024				7788066
Dinoseb	ug/L	<1.0	N/A	1.0	0.011				7788066
Malathion	ug/L	<5.0	N/A	5.0	0.018				7788066
Metolachlor	ug/L	<0.50	N/A	0.50	0.025				7788066
Metribuzin (Sencor)	ug/L	<5.0	N/A	5.0	0.020				7788066
Ethyl Parathion	ug/L	<1.0	N/A	1.0	0.013				7788066
Pentachlorophenol	ug/L	<0.50	N/A	0.50	0.024				7788066
Phorate	ug/L	<0.50	N/A	0.50	0.011				7788066
Picloram	ug/L	<5.0	N/A	5.0	0.010				7788066
Prometryne	ug/L	<0.25	N/A	0.25	0.013				7788066
Simazine	ug/L	<1.0	N/A	1.0	0.012				7788066

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Terbufos	ug/L	<0.50	N/A	0.50	0.011				7788066
Triallate	ug/L	<1.0	N/A	1.0	0.013				7788066
Trifluralin	ug/L	<1.0	N/A	1.0	0.010				7788066
Benzo(a)pyrene	ug/L	<0.015 (1)	N/A	0.015	0.0030				7788066
Methyl parathion	ug/L	<1.0	N/A	1.0	0.015				7788066
Volatile Organics									
1,1-Dichloroethylene	ug/L	<0.10	N/A	0.10	N/A				7788243
1,2-Dichlorobenzene	ug/L	<0.20	N/A	0.20	N/A				7788243
1,2-Dichloroethane	ug/L	<0.20	N/A	0.20	N/A				7788243
1,4-Dichlorobenzene	ug/L	<0.20	N/A	0.20	N/A				7788243
Benzene	ug/L	<0.10	N/A	0.10	N/A				7788243
Bromodichloromethane	ug/L	<0.10	N/A	0.10	N/A				7788243
Bromoform	ug/L	<0.20	N/A	0.20	N/A				7788243
Carbon Tetrachloride	ug/L	<0.10	N/A	0.10	N/A				7788243
Chlorobenzene	ug/L	<0.10	N/A	0.10	N/A				7788243
Chloroform	ug/L	0.46	N/A	0.10	N/A				7788243
Dibromochloromethane	ug/L	<0.20	N/A	0.20	N/A				7788243
Methylene Chloride(Dichloromethane)	ug/L	<0.50	N/A	0.50	N/A				7788243
Ethylbenzene	ug/L	<0.10	N/A	0.10	N/A				7788243
Tetrachloroethylene	ug/L	<0.10	N/A	0.10	N/A				7788243
Toluene	ug/L	<0.20	N/A	0.20	N/A				7788243
Trichloroethylene	ug/L	<0.10	N/A	0.10	N/A				7788243
Vinyl Chloride	ug/L	<0.20	N/A	0.20	N/A				7788243
o-Xylene	ug/L	<0.10	N/A	0.10	N/A				7788243
p+m-Xylene	ug/L	<0.10	N/A	0.10	N/A				7788243

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Detection Limit was raised due to matrix interferences.

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Xylenes	ug/L	<0.10	N/A	0.10	N/A				7788243
Total Trihalomethanes	ug/L	0.46	N/A	0.20	N/A				7788243
Pesticides & Herbicides									
Glyphosate	ug/L	<10	N/A	10	0.65				7789424
Diquat	ug/L	<14	N/A	14	0.52				7795587
Diuron	ug/L	<10	N/A	10	0.049				7789387
Guthion (Azinphos-methyl)	ug/L	<2.0	N/A	2.0	0.059				7789387
Paraquat	ug/L	<2.0	N/A	2.0	0.30				7795587
Temephos	ug/L	<10	N/A	10	0.057				7789387
Calculated Parameters									
Aldrin + Dieldrin	ug/L	<0.06	N/A	0.06	N/A				7787706
Chlordane (Total)	ug/L	<0.06	N/A	0.06	N/A				7787706
DDT+ Metabolites	ug/L	<0.06	N/A	0.06	N/A				7787706
Heptachlor + Heptachlor epoxide	ug/L	<0.06	N/A	0.06	N/A				7787706
Total PCB	ug/L	<0.5	N/A	0.5	N/A				7787706
Pesticides & Herbicides									
Lindane	ug/L	<0.060	N/A	0.060	N/A				7792776
Heptachlor	ug/L	<0.060	N/A	0.060	N/A				7792776
Aldrin	ug/L	<0.060	N/A	0.060	N/A				7792776
Heptachlor epoxide	ug/L	<0.060	N/A	0.060	N/A				7792776
Oxychlordane	ug/L	<0.060	N/A	0.060	N/A				7792776
g-Chlordane	ug/L	<0.060	N/A	0.060	N/A				7792776
a-Chlordane	ug/L	<0.060	N/A	0.060	N/A				7792776
Dieldrin	ug/L	<0.060	N/A	0.060	N/A				7792776
o,p-DDE	ug/L	<0.060	N/A	0.060	N/A				7792776
p,p-DDE	ug/L	<0.060	N/A	0.060	N/A				7792776

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
o,p-DDD	ug/L	<0.060	N/A	0.060	N/A				7792776
p,p-DDD	ug/L	<0.060	N/A	0.060	N/A				7792776
o,p-DDT	ug/L	<0.060	N/A	0.060	N/A				7792776
p,p-DDT	ug/L	<0.060	N/A	0.060	N/A				7792776
DDT+ Metabolites	ug/L	<0.24	N/A	0.24	N/A				7792776
Methoxychlor	ug/L	<0.24	N/A	0.24	N/A				7792776
Aroclor 1016	ug/L	<0.50	N/A	0.50	N/A				7792776
Aroclor 1221	ug/L	<0.50	N/A	0.50	N/A				7792776
Aroclor 1232	ug/L	<0.50	N/A	0.50	N/A				7792776
Aroclor 1242	ug/L	<0.50	N/A	0.50	N/A				7792776
Aroclor 1248	ug/L	<0.50	N/A	0.50	N/A				7792776
Aroclor 1254	ug/L	<0.50	N/A	0.50	N/A				7792776
Aroclor 1260	ug/L	<0.50	N/A	0.50	N/A				7792776
Total PCB	ug/L	<0.50	N/A	0.50	N/A				7792776
Dioxins & Furans									
2,3,7,8-Tetra CDD *	pg/L	<1.45	1.45	10.8	4.00	1.00	1.45		7815698
1,2,3,7,8-Penta CDD *	pg/L	<1.48	1.48	53.8	4.00	1.00	1.48		7815698
1,2,3,4,7,8-Hexa CDD *	pg/L	<1.38	1.38	53.8	4.00	0.100	0.138		7815698
1,2,3,6,7,8-Hexa CDD *	pg/L	<1.36	1.36	53.8	4.00	0.100	0.136		7815698
1,2,3,7,8,9-Hexa CDD *	pg/L	<1.40	1.40	53.8	4.00	0.100	0.140		7815698
1,2,3,4,6,7,8-Hepta CDD *	pg/L	3.43	1.39	53.8	4.00	0.0100	0.0343		7815698
Octa CDD *	pg/L	56.6	1.27	108	8.00	0.000300	0.0170		7815698
Total Tetra CDD *	pg/L	<1.45	1.45	10.8	4.00			0	7815698
Total Penta CDD *	pg/L	3.85	1.48	53.8	4.00			1	7815698
Total Hexa CDD *	pg/L	4.10	1.41	53.8	4.00			1	7815698

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Hepta CDD *	pg/L	7.38	1.39	53.8	4.00			2	7815698
2,3,7,8-Tetra CDF **	pg/L	<1.24	1.24	10.8	4.00	0.100	0.124		7815698
1,2,3,7,8-Penta CDF **	pg/L	<1.37	1.37	53.8	4.00	0.0300	0.0411		7815698
2,3,4,7,8-Penta CDF **	pg/L	<1.25	1.25	53.8	4.00	0.300	0.375		7815698
1,2,3,4,7,8-Hexa CDF **	pg/L	<1.26	1.26	53.8	4.00	0.100	0.126		7815698
1,2,3,6,7,8-Hexa CDF **	pg/L	<1.32	1.32	53.8	4.00	0.100	0.132		7815698
2,3,4,6,7,8-Hexa CDF **	pg/L	<1.23	1.23	53.8	4.00	0.100	0.123		7815698
1,2,3,7,8,9-Hexa CDF **	pg/L	<1.33	1.33	53.8	4.00	0.100	0.133		7815698
1,2,3,4,6,7,8-Hepta CDF **	pg/L	<1.69 (1)	1.69	53.8	4.00	0.0100	0.0169		7815698
1,2,3,4,7,8,9-Hepta CDF **	pg/L	<1.72	1.72	53.8	4.00	0.0100	0.0172		7815698
Octa CDF **	pg/L	3.17	1.31	108	8.00	0.000300	0.000951		7815698
Total Tetra CDF **	pg/L	<1.24	1.24	10.8	4.00			0	7815698
Total Penta CDF **	pg/L	<1.31	1.31	53.8	4.00			0	7815698
Total Hexa CDF **	pg/L	<1.28	1.28	53.8	4.00			0	7815698
Total Hepta CDF **	pg/L	<1.69 (1)	1.69	53.8	4.00			0	7815698
TOTAL TOXIC EQUIVALENCY	pg/L						4.5		
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	121							7815698
C13-1234678 HeptaCDD *	%	94							7815698
C13-1234678 HeptaCDF **	%	105							7815698
C13-123478 HexaCDD *	%	99							7815698
C13-123478 HexaCDF **	%	103							7815698
C13-1234789 HeptaCDF **	%	113							7815698

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422							
Sampling Date		2022/01/16 09:13							
COC Number		862397-02-01				TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-123678 HexaCDD *	%	91							7815698
C13-123678 HexaCDF **	%	105							7815698
C13-12378 PentaCDD *	%	111							7815698
C13-12378 PentaCDF **	%	105							7815698
C13-123789 HexaCDF **	%	106							7815698
C13-234678 HexaCDF **	%	117							7815698
C13-23478 PentaCDF **	%	110							7815698
C13-2378 TetraCDD *	%	97							7815698
C13-2378 TetraCDF **	%	106							7815698
C13-OCDD *	%	91							7815698
2,4,5,6-Tetrachloro-m-xylene	%	90							7792776
Decachlorobiphenyl	%	83							7792776
2,4,6-Tribromophenol	%	84							7788066
2,4-Dichlorophenyl Acetic Acid	%	11 (1)							7788066
2-Fluorobiphenyl	%	65							7788066
D14-Terphenyl (FS)	%	97							7788066
D5-Nitrobenzene	%	82							7788066
4-Bromofluorobenzene	%	95							7788243
D4-1,2-Dichloroethane	%	98							7788243
D8-Toluene	%	99							7788243

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) Surrogate recovery was below the lower control limit due to matrix interference. This may represent a lower bias in some results.

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ODWQSOG TABLES 1, 2 AND 4 (WATER)

Bureau Veritas ID		RQJ422						
Sampling Date		2022/01/16 09:13						
COC Number		862397-02-01			TOXIC EQUIVALENCY		# of	
	UNITS	MW303-21 S Lab-Dup	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Inorganics								
Colour	TCU	2	2	N/A				7789314
Fluoride (F-)	mg/L	0.30	0.10	0.020				7788522
pH	pH	7.82						7788536
Alkalinity (Total as CaCO3)	mg/L	87	1.0	0.20				7788532
TOTAL TOXIC EQUIVALENCY	pg/L					0		

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		RQJ419			RQJ420			
Sampling Date		2022/01/16 10:40			2022/01/16 10:47			
COC Number		862397-02-01			862397-02-01			
	UNITS	MW301-21 D	RDL	MDL	MW301-21 S	RDL	MDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	138	N/A	N/A	13.6	N/A	N/A	7787192
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	56	1.0	0.20	70	1.0	0.20	7787008
Calculated TDS	mg/L	8100	1.0	0.20	830	1.0	0.20	7787012
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	<1.0	1.0	0.20	7787008
Cation Sum	me/L	141	N/A	N/A	13.9	N/A	N/A	7787192
Hardness (CaCO3)	mg/L	3500	1.0	1.0	280	1.0	1.0	7787009
Ion Balance (% Difference)	%	1.11	N/A	N/A	0.900	N/A	N/A	7787191
Langelier Index (@ 20C)	N/A	0.332			0.0920			7787010
Langelier Index (@ 4C)	N/A	0.0930			-0.154			7787011
Saturation pH (@ 20C)	N/A	7.14			7.89			7787010
Saturation pH (@ 4C)	N/A	7.38			8.13			7787011
Inorganics								
Total Ammonia-N	mg/L	6.8	0.050	0.0080	0.50	0.050	0.0080	7790869
Conductivity	umho/cm	14000	1.0	0.20	1500	1.0	0.20	7788345
Dissolved Organic Carbon	mg/L	5.7	0.40	0.070	1.3	0.40	0.070	7788913
Orthophosphate (P)	mg/L	<0.010	0.010	0.0050	0.011	0.010	0.0050	7788506
pH	pH	7.47			7.98			7788339
Dissolved Sulphate (SO4)	mg/L	1100	5.0	0.50	220	1.0	0.10	7788478
Alkalinity (Total as CaCO3)	mg/L	56	1.0	0.20	71	1.0	0.20	7788342
Dissolved Chloride (Cl-)	mg/L	4000	60	18	270	3.0	0.90	7788503
Nitrite (N)	mg/L	<0.010	0.010	0.0020	<0.010	0.010	0.0020	7788232
Nitrate (N)	mg/L	<0.10	0.10	0.010	<0.10	0.10	0.010	7788232
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	<0.10	0.10	0.010	7788232
Metals								
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	0.0049	0.014	0.0049	0.0049	7785671
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	7785671
Dissolved Arsenic (As)	mg/L	0.0014	0.0010	0.0010	0.0075	0.0010	0.0010	7785671
Dissolved Barium (Ba)	mg/L	0.034	0.0020	0.0020	0.035	0.0020	0.0020	7785671
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	<0.00040	0.00040	0.00040	7785671
Dissolved Boron (B)	mg/L	3.6	0.010	0.010	1.3	0.010	0.010	7785671

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

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		RQJ419			RQJ420			
Sampling Date		2022/01/16 10:40			2022/01/16 10:47			
COC Number		862397-02-01			862397-02-01			
	UNITS	MW301-21 D	RDL	MDL	MW301-21 S	RDL	MDL	QC Batch
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	<0.000090	0.000090	0.000090	7785671
Dissolved Calcium (Ca)	mg/L	930	2.0	2.0	61	1.0	1.0	7785671
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	<0.0050	0.0050	0.0050	7785671
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	7785671
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	0.00090	<0.00090	0.00090	0.00090	7785671
Dissolved Iron (Fe)	mg/L	1.2	0.10	0.050	<0.10	0.10	0.050	7785671
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	7785671
Dissolved Magnesium (Mg)	mg/L	290	0.050	0.050	30	0.050	0.050	7785671
Dissolved Manganese (Mn)	mg/L	0.43	0.0020	0.0020	0.040	0.0020	0.0020	7785671
Dissolved Molybdenum (Mo)	mg/L	0.015	0.00050	0.00050	0.035	0.00050	0.00050	7785671
Dissolved Nickel (Ni)	mg/L	0.0022	0.0010	0.0010	<0.0010	0.0010	0.0010	7785671
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	0.050	<0.10	0.10	0.050	7785671
Dissolved Potassium (K)	mg/L	60	0.20	0.20	10	0.20	0.20	7785671
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	<0.0020	0.0020	0.0020	7785671
Dissolved Silicon (Si)	mg/L	3.5	0.050	0.050	4.3	0.050	0.050	7785671
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	<0.000090	0.000090	0.000090	7785671
Dissolved Sodium (Na)	mg/L	1600	0.50	0.50	180	0.10	0.10	7785671
Dissolved Strontium (Sr)	mg/L	31	0.0010	0.0010	16	0.0010	0.0010	7785671
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	<0.000050	0.000050	0.000050	7785671
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	<0.0050	0.0050	0.0050	7785671
Dissolved Uranium (U)	mg/L	0.0064	0.00010	0.00010	0.00023	0.00010	0.00010	7785671
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	7785671
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	0.0050	<0.0050	0.0050	0.0050	7785671

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		RQJ420			
Sampling Date		2022/01/16 10:47			
COC Number		862397-02-01			
	UNITS	MW301-21 S Lab-Dup	RDL	MDL	QC Batch
Inorganics					
Orthophosphate (P)	mg/L	0.011	0.010	0.0050	7788506
Dissolved Sulphate (SO4)	mg/L	220	1.0	0.10	7788478
Dissolved Chloride (Cl-)	mg/L	270	3.0	0.90	7788503

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		RQJ421				RQJ422			
Sampling Date		2022/01/16 09:48				2022/01/16 09:13			
COC Number		862397-02-01				862397-02-01			
	UNITS	MW303-21 D	RDL	MDL	QC Batch	MW303-21 S	RDL	MDL	QC Batch
Semivolatile Organics									
N-Nitrosodimethylamine	ng/L	<2.08	2.08	0.262	7805375	<2.15	2.15	0.271	7805375
Inorganics									
Total Ammonia-N	mg/L					1.2 (1)	0.050	0.0080	7790883
Surrogate Recovery (%)									
D10-N-nitrosodiethylamine	%	73			7805375	68			7805375
D14-N-Nitrosodi-n-propylamine	%	73			7805375	69			7805375
D6-N-Nitrosodimethylamine	%	34			7805375	37			7805375
D8-N-Nitrosomorpholine	%	58			7805375	57			7805375

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

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PERMANENT GASES (WATER)

Bureau Veritas ID		RQJ421	RQJ422			
Sampling Date		2022/01/16 09:48	2022/01/16 09:13			
COC Number		862397-02-01	862397-02-01			
	UNITS	MW303-21 D	MW303-21 S	RDL	MDL	QC Batch
Fixed Gases						
Calculated Methane	mg/L	0.010	0.010	0.003	N/A	7787708

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

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Bureau Veritas Job #: C213548
Report Date: 2022/03/03

Stantec Consulting Ltd
Client Project #: 160960844
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: RQJ419
Sample ID: MW301-21 D
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7788342	N/A	2022/01/19	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7787008	N/A	2022/01/20	Automated Statchk
Chloride by Automated Colourimetry	KONE	7788503	N/A	2022/01/20	Alina Dobreanu
Conductivity	AT	7788345	N/A	2022/01/19	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7788913	N/A	2022/01/19	Anna-Kay Gooden
Hardness (calculated as CaCO3)		7787009	N/A	2022/01/19	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7785671	N/A	2022/01/19	Nan Raykha
Ion Balance (% Difference)	CALC	7787191	N/A	2022/01/20	Automated Statchk
Anion and Cation Sum	CALC	7787192	N/A	2022/01/20	Automated Statchk
Total Ammonia-N	LACH/NH4	7790869	N/A	2022/01/22	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7788232	N/A	2022/01/19	Chandra Nandlal
pH	AT	7788339	2022/01/19	2022/01/19	Surinder Rai
Orthophosphate	KONE	7788506	N/A	2022/01/19	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7787010	N/A	2022/01/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7787011	N/A	2022/01/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7788478	N/A	2022/01/19	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7787012	N/A	2022/01/20	Automated Statchk

Bureau Veritas ID: RQJ420
Sample ID: MW301-21 S
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7788342	N/A	2022/01/19	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7787008	N/A	2022/01/20	Automated Statchk
Chloride by Automated Colourimetry	KONE	7788503	N/A	2022/01/20	Alina Dobreanu
Conductivity	AT	7788345	N/A	2022/01/19	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7788913	N/A	2022/01/19	Anna-Kay Gooden
Hardness (calculated as CaCO3)		7787009	N/A	2022/01/19	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	7785671	N/A	2022/01/19	Nan Raykha
Ion Balance (% Difference)	CALC	7787191	N/A	2022/01/20	Automated Statchk
Anion and Cation Sum	CALC	7787192	N/A	2022/01/20	Automated Statchk
Total Ammonia-N	LACH/NH4	7790869	N/A	2022/01/22	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7788232	N/A	2022/01/19	Chandra Nandlal
pH	AT	7788339	2022/01/19	2022/01/19	Surinder Rai
Orthophosphate	KONE	7788506	N/A	2022/01/19	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7787010	N/A	2022/01/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7787011	N/A	2022/01/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7788478	N/A	2022/01/19	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7787012	N/A	2022/01/20	Automated Statchk

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TEST SUMMARY

Bureau Veritas ID: RQJ420 Dup
Sample ID: MW301-21 S
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	7788503	N/A	2022/01/20	Alina Dobreanu
Orthophosphate	KONE	7788506	N/A	2022/01/19	Avneet Kour Sudan
Sulphate by Automated Colourimetry	KONE	7788478	N/A	2022/01/19	Avneet Kour Sudan

Bureau Veritas ID: RQJ421
Sample ID: MW303-21 D
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7788532	N/A	2022/01/19	Surinder Rai
Chloride by Automated Colourimetry	KONE	7788503	N/A	2022/01/20	Alina Dobreanu
Colour	SPEC	7789314	N/A	2022/01/21	Viorica Rotaru
Free (WAD) Cyanide	SKAL/CN	7790889	N/A	2022/01/21	Nimarta Singh
Dioxins/Furans in Water (1613B)	HRMS/MS	7843430	2022/02/19	2022/02/23	Cathy Xu
Diuron, Guthion, Temephos	LC/UV	7789387	2022/01/19	2022/01/20	James Lee
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7788913	N/A	2022/01/19	Anna-Kay Gooden
Diquat / Paraquat	LC/UV	7795587	2022/01/22	2022/01/25	Furneesh Kumar
Fluoride	ISE	7788522	2022/01/19	2022/01/19	Surinder Rai
Dissolved Gases in Water in mg/L units		7787708	N/A	2022/01/18	Automated Statchk
Glyphosate	LC/FLU	7789424	2022/01/19	2022/01/20	Furneesh Kumar
Hardness (calculated as CaCO3)		7787009	N/A	2022/01/20	Automated Statchk
Mercury in Water by CVAA	CV/AA	7790511	2022/01/20	2022/01/21	Prempal Bhatti
Metals Analysis by ICPMS (as received)	ICP/MS	7788043	N/A	2022/01/19	Nan Raykha
Total Coliforms/ E. coli, CFU/100mL	PL	7787772	N/A	2022/01/18	Sirimathie Aluthwala
Dissolved Methane in Water	GC/FID	7796466	N/A	2022/01/24	Vasan Thiagarajah
Heterotrophic plate count, (CFU/mL)	PL	7787804	N/A	2022/01/18	Soham Patel
Microcystin	ELIS	7791578	N/A	2022/01/20	Mary Navitha
Nitrosamines in Water	GCTQ/MS	7805375	2022/01/20	2022/02/08	Wenhui (Susie) Shi
Total Ammonia-N	LACH/NH4	7790869	N/A	2022/01/22	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7788232	N/A	2022/01/19	Chandra Nandlal
Nitrilotriacetic Acid (NTA)	SPEC	7787960	2022/01/19	2022/01/19	Viorica Rotaru
OC Pesticides (Selected) & PCB	GC/ECD	7792776	2022/01/21	2022/01/22	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	7787706	N/A	2022/01/19	Automated Statchk
ODWS - Semi-Volatiles	GC/MS	7788066	2022/01/19	2022/01/21	Wendy Zhao
Organic Nitrogen	CALC	7787707	N/A	2022/01/24	Automated Statchk
pH	AT	7788536	2022/01/19	2022/01/19	Surinder Rai
Sulphate by Automated Colourimetry	KONE	7788478	N/A	2022/01/19	Avneet Kour Sudan
Bromate Analysis		7809109	N/A		Harwin Grewal
Sulphide	ISE/S	7793605	N/A	2022/01/21	Neil Dassanayake
Total Dissolved Solids (TDS calc)	CALC	7787012	N/A	2022/01/20	Automated Statchk
Total Kjeldahl Nitrogen in Water	SKAL	7790973	2022/01/20	2022/01/24	Rajni Tyagi
Turbidity	AT	7788249	N/A	2022/01/19	Neil Dassanayake
VOCs (Drinking Water)	P&T/MS	7788243	N/A	2022/01/20	Rebecca McClean

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TEST SUMMARY

Bureau Veritas ID: RQJ421 Dup
Sample ID: MW303-21 D
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	7790889	N/A	2022/01/21	Nimarta Singh
Microcystin	ELIS	7791578	N/A	2022/01/20	Mary Navitha
Nitrilotriacetic Acid (NTA)	SPEC	7787960	2022/01/19	2022/01/19	Viorica Rotaru
Turbidity	AT	7788249	N/A	2022/01/19	Neil Dassanayake

Bureau Veritas ID: RQJ422
Sample ID: MW303-21 S
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7788532	N/A	2022/01/19	Surinder Rai
Chloride by Automated Colourimetry	KONE	7788503	N/A	2022/01/20	Alina Dobreanu
Colour	SPEC	7789314	N/A	2022/01/21	Viorica Rotaru
Free (WAD) Cyanide	SKAL/CN	7790889	N/A	2022/01/21	Nimarta Singh
Dioxins/Furans in Water (1613B)	HRMS/MS	7815698	2022/01/25	2022/02/08	Angel Guerrero
Diuron, Guthion, Temephos	LC/UV	7789387	2022/01/19	2022/01/20	James Lee
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7788913	N/A	2022/01/19	Anna-Kay Gooden
Diquat / Paraquat	LC/UV	7795587	2022/01/22	2022/01/25	Furneesh Kumar
Fluoride	ISE	7788522	2022/01/19	2022/01/19	Surinder Rai
Dissolved Gases in Water in mg/L units		7787708	N/A	2022/01/18	Automated Statchk
Glyphosate	LC/FLU	7789424	2022/01/19	2022/01/20	Furneesh Kumar
Hardness (calculated as CaCO3)		7787009	N/A	2022/01/20	Automated Statchk
Mercury in Water by CVAA	CV/AA	7790511	2022/01/20	2022/01/21	Prempal Bhatti
Metals Analysis by ICPMS (as received)	ICP/MS	7788043	N/A	2022/01/19	Nan Raykha
Dissolved Methane in Water	GC/FID	7796466	N/A	2022/01/24	Vasan Thiagarajah
Microcystin	ELIS	7791578	N/A	2022/01/20	Mary Navitha
Nitrosamines in Water	GCTQ/MS	7805375	2022/01/20	2022/02/08	Wenhui (Susie) Shi
Total Ammonia-N	LACH/NH4	7790883	N/A	2022/01/22	Amanpreet Sappal
Nitrate & Nitrite as Nitrogen in Water	LACH	7788232	N/A	2022/01/19	Chandra Nandlal
Nitrilotriacetic Acid (NTA)	SPEC	7787960	2022/01/19	2022/01/19	Viorica Rotaru
OC Pesticides (Selected) & PCB	GC/ECD	7792776	2022/01/21	2022/01/22	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	7787706	N/A	2022/01/19	Automated Statchk
ODWS - Semi-Volatiles	GC/MS	7788066	2022/01/19	2022/01/21	Wendy Zhao
Organic Nitrogen	CALC	7787707	N/A	2022/01/23	Automated Statchk
pH	AT	7788536	2022/01/19	2022/01/19	Surinder Rai
Sulphate by Automated Colourimetry	KONE	7788478	N/A	2022/01/19	Avneet Kour Sudan
Bromate Analysis		7809109	N/A		Harwin Grewal
Sulphide	ISE/S	7793609	N/A	2022/01/21	Neil Dassanayake
Total Dissolved Solids (TDS calc)	CALC	7787012	N/A	2022/01/20	Automated Statchk
Total Kjeldahl Nitrogen in Water	SKAL	7790594	2022/01/20	2022/01/20	Rajni Tyagi
Turbidity	AT	7788249	N/A	2022/01/19	Neil Dassanayake
VOCs (Drinking Water)	P&T/MS	7788243	N/A	2022/01/20	Rebecca McClean

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TEST SUMMARY

Bureau Veritas ID: RQJ422 Dup
Sample ID: MW303-21 S
Matrix: Water

Collected: 2022/01/16
Shipped:
Received: 2022/01/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7788532	N/A	2022/01/19	Surinder Rai
Colour	SPEC	7789314	N/A	2022/01/21	Viorica Rotaru
Fluoride	ISE	7788522	2022/01/19	2022/01/19	Surinder Rai
pH	AT	7788536	2022/01/19	2022/01/19	Surinder Rai

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C

Sample RQJ422 [MW303-21 S] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

OC Pesticide Analysis: Due to the nature of the sample matrix, a smaller portion of the sample was extracted. DLs were adjusted accordingly.

Diquat/Paraquat Analysis:
Due to the nature of the sample, a smaller portion of the sample was used. The Detection limit was adjusted accordingly.

Results relate only to the items tested.

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Bureau Veritas Job #: C213548
Report Date: 2022/03/03

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 160960844
Sampler Initials: RD

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7788066	2,4,6-Tribromophenol	2022/01/20	88	30 - 130	96	30 - 130	92	%				
7788066	2,4-Dichlorophenyl Acetic Acid	2022/01/20	87	30 - 130	94	30 - 130	90	%				
7788066	2-Fluorobiphenyl	2022/01/20	75	30 - 130	76	30 - 130	71	%				
7788066	D14-Terphenyl (FS)	2022/01/20	92	30 - 130	100	30 - 130	99	%				
7788066	D5-Nitrobenzene	2022/01/20	84	30 - 130	88	30 - 130	92	%				
7788243	4-Bromofluorobenzene	2022/01/20	100	70 - 130	99	70 - 130	95	%				
7788243	D4-1,2-Dichloroethane	2022/01/20	96	70 - 130	99	70 - 130	96	%				
7788243	D8-Toluene	2022/01/20	102	70 - 130	100	70 - 130	99	%				
7792776	2,4,5,6-Tetrachloro-m-xylene	2022/01/22	81	30 - 130	89	30 - 130	90	%				
7792776	Decachlorobiphenyl	2022/01/22	89	30 - 130	110	30 - 130	97	%				
7805375	D10-N-nitrosodiethylamine	2022/02/08			71	10 - 150	85	%				
7805375	D14-N-Nitrosodi-n-propylamine	2022/02/08			68	10 - 150	82	%				
7805375	D6-N-Nitrosodimethylamine	2022/02/08			35	10 - 80	38	%				
7805375	D8-N-Nitrosomorpholine	2022/02/08			55	10 - 150	61	%				
7815698	37CL4 2378 Tetra CDD	2022/07/02			81	35 - 197	82	%				
7815698	C13-1234678 HeptaCDD	2022/07/02			82	23 - 140	57	%				
7815698	C13-1234678 HeptaCDF	2022/07/02			116	28 - 143	79	%				
7815698	C13-123478 HexaCDD	2022/07/02			92	32 - 141	88	%				
7815698	C13-123478 HexaCDF	2022/07/02			114	26 - 152	100	%				
7815698	C13-1234789 HeptaCDF	2022/07/02			110	28 - 138	61	%				
7815698	C13-123678 HexaCDD	2022/07/02			91	28 - 130	87	%				
7815698	C13-123678 HexaCDF	2022/07/02			116	26 - 123	102	%				
7815698	C13-12378 PentaCDD	2022/07/02			84	25 - 181	68	%				
7815698	C13-12378 PentaCDF	2022/07/02			88	24 - 185	66	%				
7815698	C13-123789 HexaCDF	2022/07/02			91	29 - 147	66	%				
7815698	C13-234678 HexaCDF	2022/07/02			127	28 - 136	108	%				
7815698	C13-23478 PentaCDF	2022/07/02			103	21 - 178	79	%				
7815698	C13-2378 TetraCDD	2022/07/02			66	25 - 164	66	%				
7815698	C13-2378 TetraCDF	2022/07/02			82	24 - 169	82	%				
7815698	C13-OCDD	2022/07/02			64	17 - 157	34	%				
7843430	37CL4 2378 Tetra CDD	2022/02/22			57	35 - 197	72	%				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7843430	C13-1234678 HeptaCDD	2022/02/22			92	23 - 140	91	%				
7843430	C13-1234678 HeptaCDF	2022/02/22			76	28 - 143	76	%				
7843430	C13-123478 HexaCDD	2022/02/22			80	32 - 141	74	%				
7843430	C13-123478 HexaCDF	2022/02/22			64	26 - 152	68	%				
7843430	C13-1234789 HeptaCDF	2022/02/22			85	28 - 138	85	%				
7843430	C13-123678 HexaCDD	2022/02/22			88	28 - 130	95	%				
7843430	C13-123678 HexaCDF	2022/02/22			71	26 - 123	75	%				
7843430	C13-12378 PentaCDD	2022/02/22			91	25 - 181	89	%				
7843430	C13-12378 PentaCDF	2022/02/22			71	24 - 185	70	%				
7843430	C13-123789 HexaCDF	2022/02/22			77	29 - 147	80	%				
7843430	C13-234678 HexaCDF	2022/02/22			79	28 - 136	83	%				
7843430	C13-23478 PentaCDF	2022/02/22			73	21 - 178	74	%				
7843430	C13-2378 TetraCDD	2022/02/22			48	25 - 164	54	%				
7843430	C13-2378 TetraCDF	2022/02/22			35	24 - 169	43	%				
7843430	C13-OCDD	2022/02/22			121	17 - 157	124	%				
7785671	Dissolved Aluminum (Al)	2022/01/19	107	80 - 120	99	80 - 120	<0.0049	mg/L				
7785671	Dissolved Antimony (Sb)	2022/01/19	104	80 - 120	99	80 - 120	<0.00050	mg/L				
7785671	Dissolved Arsenic (As)	2022/01/19	105	80 - 120	99	80 - 120	<0.0010	mg/L				
7785671	Dissolved Barium (Ba)	2022/01/19	99	80 - 120	100	80 - 120	<0.0020	mg/L				
7785671	Dissolved Beryllium (Be)	2022/01/19	99	80 - 120	98	80 - 120	<0.00040	mg/L				
7785671	Dissolved Boron (B)	2022/01/19	NC	80 - 120	95	80 - 120	<0.010	mg/L				
7785671	Dissolved Cadmium (Cd)	2022/01/19	99	80 - 120	99	80 - 120	<0.000090	mg/L				
7785671	Dissolved Calcium (Ca)	2022/01/19	NC	80 - 120	101	80 - 120	<0.20	mg/L	1.9	20		
7785671	Dissolved Chromium (Cr)	2022/01/19	101	80 - 120	96	80 - 120	<0.0050	mg/L				
7785671	Dissolved Cobalt (Co)	2022/01/19	100	80 - 120	97	80 - 120	<0.00050	mg/L				
7785671	Dissolved Copper (Cu)	2022/01/19	100	80 - 120	97	80 - 120	<0.00090	mg/L				
7785671	Dissolved Iron (Fe)	2022/01/19	104	80 - 120	100	80 - 120	<0.10	mg/L				
7785671	Dissolved Lead (Pb)	2022/01/19	96	80 - 120	98	80 - 120	<0.00050	mg/L				
7785671	Dissolved Magnesium (Mg)	2022/01/19	NC	80 - 120	98	80 - 120	<0.050	mg/L	3.0	20		
7785671	Dissolved Manganese (Mn)	2022/01/19	100	80 - 120	98	80 - 120	<0.0020	mg/L				
7785671	Dissolved Molybdenum (Mo)	2022/01/19	113	80 - 120	103	80 - 120	<0.00050	mg/L				

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7785671	Dissolved Nickel (Ni)	2022/01/19	97	80 - 120	97	80 - 120	<0.0010	mg/L				
7785671	Dissolved Phosphorus (P)	2022/01/19	97	80 - 120	112	80 - 120	<0.10	mg/L				
7785671	Dissolved Potassium (K)	2022/01/19	98	80 - 120	99	80 - 120	<0.20	mg/L				
7785671	Dissolved Selenium (Se)	2022/01/19	103	80 - 120	101	80 - 120	<0.0020	mg/L				
7785671	Dissolved Silicon (Si)	2022/01/19	105	80 - 120	100	80 - 120	<0.050	mg/L				
7785671	Dissolved Silver (Ag)	2022/01/19	101	80 - 120	105	80 - 120	<0.000090	mg/L				
7785671	Dissolved Sodium (Na)	2022/01/19	NC	80 - 120	100	80 - 120	<0.10	mg/L	1.8	20		
7785671	Dissolved Strontium (Sr)	2022/01/19	NC	80 - 120	97	80 - 120	<0.0010	mg/L				
7785671	Dissolved Thallium (Tl)	2022/01/19	98	80 - 120	99	80 - 120	<0.000050	mg/L				
7785671	Dissolved Titanium (Ti)	2022/01/19	103	80 - 120	100	80 - 120	<0.0050	mg/L				
7785671	Dissolved Uranium (U)	2022/01/19	100	80 - 120	98	80 - 120	<0.00010	mg/L				
7785671	Dissolved Vanadium (V)	2022/01/19	106	80 - 120	98	80 - 120	<0.00050	mg/L				
7785671	Dissolved Zinc (Zn)	2022/01/19	96	80 - 120	97	80 - 120	<0.0050	mg/L				
7787960	NTA	2022/01/19	0 (1)	80 - 120	102	80 - 120	<0.25	mg/L	NC	20		
7788043	Aluminum (Al)	2022/01/19	104	80 - 120	105	80 - 120	<0.0049	mg/L				
7788043	Antimony (Sb)	2022/01/19	105	80 - 120	97	80 - 120	<0.00050	mg/L				
7788043	Arsenic (As)	2022/01/19	103	80 - 120	101	80 - 120	<0.0010	mg/L				
7788043	Barium (Ba)	2022/01/19	101	80 - 120	99	80 - 120	<0.0020	mg/L				
7788043	Boron (B)	2022/01/19	94	80 - 120	90	80 - 120	<0.010	mg/L				
7788043	Cadmium (Cd)	2022/01/19	101	80 - 120	96	80 - 120	<0.000090	mg/L				
7788043	Calcium (Ca)	2022/01/19	NC	80 - 120	103	80 - 120	<0.20	mg/L				
7788043	Chromium (Cr)	2022/01/19	101	80 - 120	99	80 - 120	<0.0050	mg/L				
7788043	Copper (Cu)	2022/01/19	101	80 - 120	101	80 - 120	<0.00090	mg/L				
7788043	Iron (Fe)	2022/01/19	107	80 - 120	103	80 - 120	<0.10	mg/L				
7788043	Lead (Pb)	2022/01/19	100	80 - 120	98	80 - 120	<0.00050	mg/L				
7788043	Magnesium (Mg)	2022/01/19	104	80 - 120	106	80 - 120	<0.050	mg/L				
7788043	Manganese (Mn)	2022/01/19	103	80 - 120	101	80 - 120	<0.0020	mg/L	NC	20		
7788043	Potassium (K)	2022/01/19	105	80 - 120	104	80 - 120	<0.20	mg/L				
7788043	Selenium (Se)	2022/01/19	102	80 - 120	101	80 - 120	<0.0020	mg/L				
7788043	Sodium (Na)	2022/01/19	105	80 - 120	107	80 - 120	<0.10	mg/L				
7788043	Uranium (U)	2022/01/19	100	80 - 120	98	80 - 120	<0.00010	mg/L				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7788043	Zinc (Zn)	2022/01/19	100	80 - 120	98	80 - 120	<0.0050	mg/L				
7788066	2,3,4,6-Tetrachlorophenol	2022/01/20	101	30 - 130	107	30 - 130	<0.50	ug/L	3.3	40		
7788066	2,4,5-T	2022/01/20	99	30 - 130	103	30 - 130	<1.0	ug/L	2.8	40		
7788066	2,4,6-Trichlorophenol	2022/01/20	90	30 - 130	95	30 - 130	<0.50	ug/L	3.1	40		
7788066	2,4-D	2022/01/20	89	30 - 130	94	30 - 130	<1.0	ug/L	4.0	40		
7788066	2,4-Dichlorophenol	2022/01/20	73	30 - 130	78	30 - 130	<0.25	ug/L	4.2	40		
7788066	Alachlor	2022/01/20	89	40 - 130	101	40 - 130	<0.50	ug/L	1.1	40		
7788066	Aldicarb	2022/01/20	81	70 - 130	89	70 - 130	<5.0	ug/L	4.2	40		
7788066	Atrazine + Desethyl-atrazine	2022/01/20	44	30 - 130	64	30 - 130	<1.0	ug/L	8.2	40		
7788066	Atrazine	2022/01/20	71	30 - 130	91	30 - 130	<0.50	ug/L	7.8	40		
7788066	Bendiocarb	2022/01/20	104	40 - 130	112	40 - 130	<2.0	ug/L	4.2	40		
7788066	Benzo(a)pyrene	2022/01/20	114	30 - 130	123	30 - 130	<0.0050	ug/L	6.1	40		
7788066	Bromoxynil	2022/01/20	97	40 - 130	103	40 - 130	<0.50	ug/L	2.9	40		
7788066	Carbaryl	2022/01/20	107	40 - 130	114	40 - 130	<5.0	ug/L	3.4	40		
7788066	Carbofuran	2022/01/20	104	40 - 130	109	40 - 130	<5.0	ug/L	4.3	40		
7788066	Chlorpyrifos (Dursban)	2022/01/20	91	40 - 130	95	40 - 130	<1.0	ug/L	5.7	40		
7788066	Cyanazine (Bladex)	2022/01/20	14 (2)	40 - 130	77	40 - 130	<1.0	ug/L	8.0	40		
7788066	Des-ethyl atrazine	2022/01/20	17 (2)	30 - 130	37	30 - 130	<0.50	ug/L	9.2	40		
7788066	Diazinon	2022/01/20	70	40 - 130	92	40 - 130	<1.0	ug/L	5.8	40		
7788066	Dicamba	2022/01/20	89	30 - 130	94	30 - 130	<1.0	ug/L	3.9	40		
7788066	Diclofop-methyl	2022/01/20	100	40 - 130	108	40 - 130	<0.90	ug/L	4.1	40		
7788066	Dimethoate	2022/01/20	81	40 - 130	89	40 - 130	<2.5	ug/L	3.6	40		
7788066	Dinoseb	2022/01/20	94	40 - 130	101	40 - 130	<1.0	ug/L	3.0	40		
7788066	Ethyl Parathion	2022/01/20	88	40 - 130	97	40 - 130	<1.0	ug/L	6.9	40		
7788066	Malathion	2022/01/20	89	40 - 130	98	40 - 130	<5.0	ug/L	5.9	40		
7788066	Methyl parathion	2022/01/20	85	30 - 130	93	30 - 130	<1.0	ug/L	5.3	40		
7788066	Metolachlor	2022/01/20	91	40 - 130	98	40 - 130	<0.50	ug/L	6.7	40		
7788066	Metribuzin (Sencor)	2022/01/20	25 (2)	40 - 130	88	40 - 130	<5.0	ug/L	7.1	40		
7788066	Pentachlorophenol	2022/01/20	88	25 - 130	94	25 - 130	<0.50	ug/L	3.0	40		
7788066	Phorate	2022/01/20	74	40 - 130	86	40 - 130	<0.50	ug/L	8.2	40		
7788066	Picloram	2022/01/20	67	10 - 130	78	10 - 130	<5.0	ug/L	24	40		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7788066	Prometryne	2022/01/20	75	30 - 130	84	30 - 130	<0.25	ug/L	3.0	40		
7788066	Simazine	2022/01/20	56	40 - 130	81	40 - 130	<1.0	ug/L	7.9	40		
7788066	Terbufos	2022/01/20	73	40 - 130	84	40 - 130	<0.50	ug/L	7.4	40		
7788066	Triallate	2022/01/20	87	40 - 130	95	40 - 130	<1.0	ug/L	4.6	40		
7788066	Trifluralin	2022/01/20	97	40 - 130	100	40 - 130	<1.0	ug/L	1.3	40		
7788232	Nitrate (N)	2022/01/19	96	80 - 120	94	80 - 120	<0.10	mg/L	NC	20		
7788232	Nitrite (N)	2022/01/19	113	80 - 120	105	80 - 120	<0.010	mg/L	NC	20		
7788243	1,1-Dichloroethylene	2022/01/20	97	70 - 130	94	70 - 130	<0.10	ug/L				
7788243	1,2-Dichlorobenzene	2022/01/20	97	70 - 130	96	70 - 130	<0.20	ug/L				
7788243	1,2-Dichloroethane	2022/01/20	91	70 - 130	92	70 - 130	<0.20	ug/L				
7788243	1,4-Dichlorobenzene	2022/01/20	116	70 - 130	111	70 - 130	<0.20	ug/L				
7788243	Benzene	2022/01/20	94	70 - 130	93	70 - 130	<0.10	ug/L				
7788243	Bromodichloromethane	2022/01/20	102	70 - 130	101	70 - 130	<0.10	ug/L	1.1	30		
7788243	Bromoform	2022/01/20	97	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
7788243	Carbon Tetrachloride	2022/01/20	99	70 - 130	101	70 - 130	<0.10	ug/L				
7788243	Chlorobenzene	2022/01/20	100	70 - 130	98	70 - 130	<0.10	ug/L				
7788243	Chloroform	2022/01/20	98	70 - 130	97	70 - 130	<0.10	ug/L	3.0	30		
7788243	Dibromochloromethane	2022/01/20	98	70 - 130	96	70 - 130	<0.20	ug/L	1.8	30		
7788243	Ethylbenzene	2022/01/20	97	70 - 130	94	70 - 130	<0.10	ug/L				
7788243	Methylene Chloride(Dichloromethane)	2022/01/20	95	70 - 130	95	70 - 130	<0.50	ug/L				
7788243	o-Xylene	2022/01/20	96	70 - 130	96	70 - 130	<0.10	ug/L				
7788243	p+m-Xylene	2022/01/20	101	70 - 130	98	70 - 130	<0.10	ug/L				
7788243	Tetrachloroethylene	2022/01/20	94	70 - 130	92	70 - 130	<0.10	ug/L				
7788243	Toluene	2022/01/20	98	70 - 130	94	70 - 130	<0.20	ug/L				
7788243	Total Trihalomethanes	2022/01/20					<0.20	ug/L	2.2	30		
7788243	Total Xylenes	2022/01/20					<0.10	ug/L				
7788243	Trichloroethylene	2022/01/20	105	70 - 130	103	70 - 130	<0.10	ug/L				
7788243	Vinyl Chloride	2022/01/20	87	70 - 130	85	70 - 130	<0.20	ug/L				
7788249	Turbidity	2022/01/19			96	85 - 115	<0.1	NTU	2.0	20		
7788339	pH	2022/01/19			102	98 - 103			0.24	N/A		
7788342	Alkalinity (Total as CaCO3)	2022/01/19			94	85 - 115	<1.0	mg/L	0.27	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7788345	Conductivity	2022/01/19			100	85 - 115	<1.0	umho/cm	0.88	25		
7788478	Dissolved Sulphate (SO4)	2022/01/19	NC	75 - 125	108	80 - 120	<1.0	mg/L	0.048	20		
7788503	Dissolved Chloride (Cl-)	2022/01/20	NC	80 - 120	101	80 - 120	<1.0	mg/L	2.5	20		
7788506	Orthophosphate (P)	2022/01/19	109	75 - 125	101	80 - 120	<0.010	mg/L	1.2	25		
7788522	Fluoride (F-)	2022/01/19	100	80 - 120	102	80 - 120	<0.10	mg/L	2.3	20		
7788532	Alkalinity (Total as CaCO3)	2022/01/19			94	85 - 115	<1.0	mg/L	12	20		
7788536	pH	2022/01/19			102	98 - 103			0.87	N/A		
7788913	Dissolved Organic Carbon	2022/01/19	95	80 - 120	98	80 - 120	<0.40	mg/L	0.93	20		
7789314	Colour	2022/01/21			96	80 - 120	<2	TCU	3.5	25		
7789387	Diuron	2022/01/20	76	40 - 130	79	40 - 130	<10	ug/L	NC	40		
7789387	Guthion (Azinphos-methyl)	2022/01/20	78	40 - 130	80	40 - 130	<2.0	ug/L	NC	40		
7789387	Temephos	2022/01/20	81	40 - 130	73	40 - 130	<10	ug/L				
7789424	Glyphosate	2022/01/20	105	50 - 130	103	50 - 130	<10	ug/L	NC	40		
7790511	Mercury (Hg)	2022/01/21	94	75 - 125	95	80 - 120	<0.00010	mg/L	NC	20		
7790594	Total Kjeldahl Nitrogen (TKN)	2022/01/20	99	80 - 120	101	80 - 120	<0.10	mg/L	NC	20	99	80 - 120
7790869	Total Ammonia-N	2022/01/22	97	75 - 125	101	80 - 120	<0.050	mg/L	NC	20		
7790883	Total Ammonia-N	2022/01/22	88	75 - 125	101	80 - 120	<0.050	mg/L	0.15	20		
7790889	WAD Cyanide (Free)	2022/01/21	104	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
7790973	Total Kjeldahl Nitrogen (TKN)	2022/01/21	94	80 - 120	103	80 - 120	<0.10	mg/L	NC (3)	20	100	80 - 120
7791578	Microcystin	2022/01/20	103	60 - 140	104	60 - 140	<0.10	ug/L	NC	20		
7792776	a-Chlordane	2022/01/22	100	30 - 130	106	30 - 130	<0.0060	ug/L	6.5	40		
7792776	Aldrin	2022/01/22	83	30 - 130	95	30 - 130	<0.0060	ug/L	5.6	40		
7792776	Aroclor 1016	2022/01/22					<0.050	ug/L				
7792776	Aroclor 1221	2022/01/22					<0.050	ug/L				
7792776	Aroclor 1232	2022/01/22					<0.050	ug/L				
7792776	Aroclor 1242	2022/01/22					<0.050	ug/L				
7792776	Aroclor 1248	2022/01/22					<0.050	ug/L				
7792776	Aroclor 1254	2022/01/22					<0.050	ug/L				
7792776	Aroclor 1260	2022/01/22					<0.050	ug/L				
7792776	DDT+ Metabolites	2022/01/22					<0.024	ug/L				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7792776	Dieldrin	2022/01/22	104	30 - 130	122	30 - 130	<0.0060	ug/L	8.1	40		
7792776	g-Chlordane	2022/01/22	98	30 - 130	105	30 - 130	<0.0060	ug/L	10	40		
7792776	Heptachlor epoxide	2022/01/22	97	30 - 130	106	30 - 130	<0.0060	ug/L	6.0	40		
7792776	Heptachlor	2022/01/22	85	30 - 130	97	30 - 130	<0.0060	ug/L	7.0	40		
7792776	Lindane	2022/01/22	90	30 - 130	103	30 - 130	<0.0060	ug/L	4.3	40		
7792776	Methoxychlor	2022/01/22	110	30 - 130	121	30 - 130	<0.024	ug/L	1.9	40		
7792776	o,p-DDD	2022/01/22	95	30 - 130	108	30 - 130	<0.0060	ug/L	0.18	40		
7792776	o,p-DDE	2022/01/22	113	30 - 130	109	30 - 130	<0.0060	ug/L	1.9	40		
7792776	o,p-DDT	2022/01/22	99	30 - 130	119	30 - 130	<0.0060	ug/L	10	40		
7792776	Oxychlordane	2022/01/22	101	30 - 130	108	30 - 130	<0.0060	ug/L	5.6	40		
7792776	p,p-DDD	2022/01/22	89	30 - 130	115	30 - 130	<0.0060	ug/L	14	40		
7792776	p,p-DDE	2022/01/22	81	30 - 130	90	30 - 130	<0.0060	ug/L	1.7	40		
7792776	p,p-DDT	2022/01/22	101	30 - 130	120	30 - 130	<0.0060	ug/L	11	40		
7792776	Total PCB	2022/01/22					<0.050	ug/L				
7793605	Sulphide	2022/01/21	98	80 - 120	106	80 - 120	<0.020	mg/L	NC	20		
7793609	Sulphide	2022/01/21	87	80 - 120	94	80 - 120	<0.020	mg/L	NC	20		
7795587	Diquat	2022/01/25			77	50 - 130	<7.0	ug/L	7.1	40		
7795587	Paraquat	2022/01/25			103	50 - 130	<1.0	ug/L	2.1	40		
7796466	Methane	2022/01/24					<0.005	L/m3	4.4	20		
7805375	N-Nitrosodimethylamine	2022/02/08			96	65 - 135	<2.00	ng/L	1.4	25		
7815698	1,2,3,4,6,7,8-Hepta CDD	2022/07/02			115	70 - 140	<1.27, EDL=1.27	pg/L	0.87	25		
7815698	1,2,3,4,6,7,8-Hepta CDF	2022/07/02			110	82 - 122	<1.31, EDL=1.31	pg/L	1.8	25		
7815698	1,2,3,4,7,8,9-Hepta CDF	2022/07/02			94	78 - 138	<1.28, EDL=1.28	pg/L	7.2	25		
7815698	1,2,3,4,7,8-Hexa CDD	2022/07/02			125	70 - 164	<1.20, EDL=1.20	pg/L	0	25		
7815698	1,2,3,4,7,8-Hexa CDF	2022/07/02			120	72 - 134	<1.11, EDL=1.11	pg/L	3.3	25		
7815698	1,2,3,6,7,8-Hexa CDD	2022/07/02			119	76 - 134	<1.18, EDL=1.18	pg/L	10	25		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7815698	1,2,3,6,7,8-Hexa CDF	2022/07/02			119	84 - 130	<1.16, EDL=1.16	pg/L	1.7	25		
7815698	1,2,3,7,8,9-Hexa CDD	2022/07/02			109	64 - 162	<1.21, EDL=1.21	pg/L	7.1	25		
7815698	1,2,3,7,8,9-Hexa CDF	2022/07/02			123	78 - 130	<1.17, EDL=1.17	pg/L	8.5	25		
7815698	1,2,3,7,8-Penta CDD	2022/07/02			111	25 - 181	<0.837, EDL=0.837	pg/L	7.0	25		
7815698	1,2,3,7,8-Penta CDF	2022/07/02			119	80 - 134	<1.06, EDL=1.06	pg/L	1.7	25		
7815698	2,3,4,6,7,8-Hexa CDF	2022/07/02			108	70 - 156	<1.08, EDL=1.08	pg/L	2.7	25		
7815698	2,3,4,7,8-Penta CDF	2022/07/02			123	68 - 160	<0.974, EDL=0.974	pg/L	1.6	25		
7815698	2,3,7,8-Tetra CDD	2022/07/02			103	67 - 158	<0.853, EDL=0.853	pg/L	1.9	25		
7815698	2,3,7,8-Tetra CDF	2022/07/02			115	75 - 158	<0.981, EDL=0.981	pg/L	3.5	25		
7815698	Octa CDD	2022/07/02			110	78 - 144	<1.30, EDL=1.30	pg/L	6.2	25		
7815698	Octa CDF	2022/07/02			134	63 - 170	<1.90, EDL=1.90	pg/L	8.6	25		
7815698	Total Hepta CDD	2022/07/02					<1.27, EDL=1.27	pg/L				
7815698	Total Hepta CDF	2022/07/02					<1.30, EDL=1.30	pg/L				
7815698	Total Hexa CDD	2022/07/02					<1.22, EDL=1.22	pg/L				
7815698	Total Hexa CDF	2022/07/02					<1.13, EDL=1.13	pg/L				
7815698	Total Penta CDD	2022/07/02					<0.837, EDL=0.837	pg/L				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7815698	Total Penta CDF	2022/07/02					<1.02, EDL=1.02	pg/L				
7815698	Total Tetra CDD	2022/07/02					<0.853, EDL=0.853	pg/L				
7815698	Total Tetra CDF	2022/07/02					<0.981, EDL=0.981	pg/L				
7843430	1,2,3,4,6,7,8-Hepta CDD				91	70 - 140	<0.974, EDL=0.974	pg/L	NC	25		
7843430	1,2,3,4,6,7,8-Hepta CDF				94	82 - 122	<1.21, EDL=1.21	pg/L	NC	25		
7843430	1,2,3,4,7,8,9-Hepta CDF				96	78 - 138	<1.34, EDL=1.34	pg/L	NC	25		
7843430	1,2,3,4,7,8-Hexa CDD				94	70 - 164	<1.19, EDL=1.19	pg/L	NC	25		
7843430	1,2,3,4,7,8-Hexa CDF				93	72 - 134	<1.13, EDL=1.13	pg/L	NC	25		
7843430	1,2,3,6,7,8-Hexa CDD				95	76 - 134	<0.873, EDL=0.873	pg/L	NC	25		
7843430	1,2,3,6,7,8-Hexa CDF				91	84 - 130	<1.25, EDL=1.25	pg/L	NC	25		
7843430	1,2,3,7,8,9-Hexa CDD				99	64 - 162	<1.05, EDL=1.05	pg/L	NC	25		
7843430	1,2,3,7,8,9-Hexa CDF				95	78 - 130	<1.46, EDL=1.46	pg/L	NC	25		
7843430	1,2,3,7,8-Penta CDD				96	25 - 181	<1.22, EDL=1.22	pg/L	NC	25		
7843430	1,2,3,7,8-Penta CDF				92	80 - 134	<1.43, EDL=1.43	pg/L	NC	25		
7843430	2,3,4,6,7,8-Hexa CDF				85	70 - 156	<1.35, EDL=1.35	pg/L	NC	25		
7843430	2,3,4,7,8-Penta CDF				99	68 - 160	<1.27, EDL=1.27	pg/L	NC	25		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7843430	2,3,7,8-Tetra CDD				88	67 - 158	<1.28, EDL=1.28	pg/L	NC	25		
7843430	2,3,7,8-Tetra CDF				88	75 - 158	<1.40, EDL=1.40	pg/L	NC	25		
7843430	Octa CDD				103	78 - 144	3.51, EDL=0.841	pg/L	NC	25		
7843430	Octa CDF				93	63 - 170	<3.48, EDL=3.48	pg/L	NC	25		
7843430	Total Hepta CDD						<0.976, EDL=0.976	pg/L	NC	25		
7843430	Total Hepta CDF						<1.30, EDL=1.30	pg/L	NC	25		
7843430	Total Hexa CDD						<1.07, EDL=1.07	pg/L	NC	25		
7843430	Total Hexa CDF						<1.52, EDL=1.52	pg/L	NC	25		
7843430	Total Penta CDD						<1.22, EDL=1.22	pg/L	NC	25		
7843430	Total Penta CDF						<1.79, EDL=1.79	pg/L	NC	25		
7843430	Total Tetra CDD						<1.28, EDL=1.28	pg/L	NC	25		

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7843430	Total Tetra CDF						<1.40, EDL=1.40	pg/L	NC	25		

N/A = Not Applicable

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

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

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

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

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

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

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

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

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

(3) Due to a high concentration of NOx, the sample required dilution. The detection limit was adjusted accordingly.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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<Original signed by>

Soham Patel, Analyst 2

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

<Original signed by>

Tom Mitchell, B.Sc, Supervisor, Compressed Gases

Bureau Veritas 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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Bureau Veritas Laboratories
109 & 110, 4023 Meadowbrook Drive, London, Ontario Canada N6L 1E7 Tel:(519) 652-9444 Toll-free:800-563-6266 Fax:(519) 652-8189 www.bvna.com

Page 1 of 1

CHAIN OF CUSTODY RECORD

INVOICE TO:

Company Name: #9197 Stantec Consulting Ltd
Attention: Accounts Payable
Address: 300 Hagey Blvd Suite 100
Waterloo ON N2L 0A4
Tel: (519) 579-4410 Fax: (519) 579-6733
Email: SAPinvoices@Stantec.com

REPORT TO:

Company Name:
Attention: Grant Whitehead
Address:
Tel: (519) 585-7400 Fax: (519) 579-4239
Email: grant.whitehead@stantec.com

PROJECT INFORMATION:

Quotation #: C01624
P.O. #:
Project: 160960844
Project Name:
Site #:
Sampled By: Ryan Dag

17-Jan-22 16:11
Ronklin Gracian
C213548
VRV ENV-1417

Order #: 2397
Manager: n Gracian

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
☐ Table 1 ☐ Res/Park ☐ Medium/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other ☐ For RSC
☐ Table

Other Regulations
☐ CCME ☐ Sanitary Sewer Bylaw
☐ Reg 558 ☐ Storm Sewer Bylaw
☐ MISA Municipality
☐ PWQO ☐ Reg 406 Table
☒ Other ~~PWQO~~ CWQG

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)?

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

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	RCAp - Comprehensive	ODWQSOG Tables 1, 2 and 4	# of Bottles	Comments
1		~~MW302-21D~~	~~Jan/16/22~~	~~1130~~	~~GW~~	X	X	X	~~4~~	
2		MW301-21D	Jan/16/22	1040	GW	Y	X		4	
3		MW301-21S	"	1047	GW	Y	X		~~4~~ 4	
4		MW303-21D	"	948	GW	Y		X	~~27~~ 27	
5		MW303-21S	"	913	GW	Y		X	27	
6										
7										
8										
9										
10										

REC'D IN WATERLOO

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
	22/01/17	1625	Sarah Webster	2022/01/17	16:11	
			Joseph Boezeman	2022/01/18	16:20	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
	2/3/1	Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S 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 BUREAU VERITAS

White: Bureau Veritas Yellow: Client

once.

Bureau Veritas Canada (2019) Inc.

1|2|1 0|-1|0 0|-1|-1 BVH 420503

Your Project #: 160960844
Site Location: CN MILTON
Your C.O.C. #: 882349-01-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/06/23
Report #: R7183058
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G0415
Received: 2022/06/10, 12:22

Sample Matrix: Ground Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2022/06/14	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2022/06/15	CAM SOP-00102	APHA 4500-CO2 D
Anions	4	N/A	2022/06/14	CAM SOP-00435	SM 23 4110 B m
Chloride by Automated Colourimetry	4	N/A	2022/06/15	CAM SOP-00463	SM 23 4500-Cl E m
Colour	4	N/A	2022/06/15	CAM SOP-00412	SM 23 2120C m
Conductivity	4	N/A	2022/06/14	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (2)	1	N/A	2022/06/14	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (2)	3	N/A	2022/06/16	CAM SOP-00446	SM 23 5310 B m
Fluoride	3	2022/06/13	2022/06/14	CAM SOP-00449	SM 23 4500-F C m
Fluoride	1	2022/06/14	2022/06/14	CAM SOP-00449	SM 23 4500-F C m
Hardness (calculated as CaCO3)	4	N/A	2022/06/15	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	4	N/A	2022/06/15	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	4	N/A	2022/06/15		
Anion and Cation Sum	4	N/A	2022/06/15		
Total Phosphorus (1)	4	2022/06/21	2022/06/21	BBY6SOP-00013	SM 23 4500-P E m
Total Ammonia-N	1	N/A	2022/06/15	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	3	N/A	2022/06/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (3)	4	N/A	2022/06/15	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	3	2022/06/13	2022/06/14	CAM SOP-00413	SM 4500H+ B m
pH	1	2022/06/14	2022/06/14	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	4	N/A	2022/06/14	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	4	N/A	2022/06/15		Auto Calc
Sat. pH and Langelier Index (@ 4C)	4	N/A	2022/06/15		Auto Calc
Sulphate by Automated Colourimetry	4	N/A	2022/06/14	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	4	N/A	2022/06/15		Auto Calc
Turbidity	4	N/A	2022/06/13	CAM SOP-00417	SM 23 2130 B m

Remarks:

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

Your Project #: 160960844
Site Location: CN MILTON
Your C.O.C. #: 882349-01-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/06/23
Report #: R7183058
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G0415
Received: 2022/06/10, 12:22

Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, 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 Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5
(2) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bureauveritas.com
Phone# (905)817-5752

==========

Bureau Veritas 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.

Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG849			SWG849		
Sampling Date		2022/06/09 16:40			2022/06/09 16:40		
COC Number		882349-01-01			882349-01-01		
	UNITS	MW 302 (S)	RDL	QC Batch	MW 302 (S) Lab-Dup	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	41.7	N/A	8047116			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	160	1.0	8047112			
Calculated TDS	mg/L	2700	1.0	8047121			
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	8047112			
Cation Sum	me/L	42.0	N/A	8047116			
Hardness (CaCO3)	mg/L	1600	1.0	8047113			
Ion Balance (% Difference)	%	0.320	N/A	8047114			
Langelier Index (@ 20C)	N/A	0.524		8047118			
Langelier Index (@ 4C)	N/A	0.282		8047119			
Saturation pH (@ 20C)	N/A	7.08		8047118			
Saturation pH (@ 4C)	N/A	7.33		8047119			
Inorganics							
Total Ammonia-N	mg/L	0.77	0.050	8054805			
Conductivity	umho/cm	3100	1.0	8049848	3100	1.0	8049848
Dissolved Organic Carbon	mg/L	1.4	0.40	8052222			
Orthophosphate (P)	mg/L	<0.010	0.010	8051635			
pH	pH	7.61		8049842	7.65		8049842
Dissolved Sulphate (SO4)	mg/L	1700	5.0	8051633			
Alkalinity (Total as CaCO3)	mg/L	160	1.0	8049839	160	1.0	8049839
Dissolved Chloride (Cl-)	mg/L	120	1.0	8051641			
Nitrite (N)	mg/L	<0.010	0.010	8052286			
Nitrate (N)	mg/L	<0.10	0.10	8052286			
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	8052286			
Metals							
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	8050100			
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	8050100			
Dissolved Arsenic (As)	mg/L	0.0078	0.0010	8050100			
Dissolved Barium (Ba)	mg/L	0.010	0.0020	8050100			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG849			SWG849		
Sampling Date		2022/06/09 16:40			2022/06/09 16:40		
COC Number		882349-01-01			882349-01-01		
	UNITS	MW 302 (S)	RDL	QC Batch	MW 302 (S) Lab-Dup	RDL	QC Batch
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	8050100			
Dissolved Boron (B)	mg/L	2.0	0.010	8050100			
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	8050100			
Dissolved Calcium (Ca)	mg/L	260	1.0	8050100			
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	8050100			
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	8050100			
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	8050100			
Dissolved Iron (Fe)	mg/L	1.1	0.10	8050100			
Dissolved Magnesium (Mg)	mg/L	220	0.050	8050100			
Dissolved Manganese (Mn)	mg/L	0.24	0.0020	8050100			
Dissolved Molybdenum (Mo)	mg/L	0.0079	0.00050	8050100			
Dissolved Nickel (Ni)	mg/L	<0.0010	0.0010	8050100			
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	8050100			
Dissolved Potassium (K)	mg/L	15	0.20	8050100			
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	8050100			
Dissolved Silicon (Si)	mg/L	6.1	0.050	8050100			
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	8050100			
Dissolved Sodium (Na)	mg/L	230	0.10	8050100			
Dissolved Strontium (Sr)	mg/L	12	0.0010	8050100			
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	8050100			
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	8050100			
Dissolved Uranium (U)	mg/L	0.00058	0.00010	8050100			
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	8050100			
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	8050100			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG850			SWG850		
Sampling Date		2022/06/09 16:30			2022/06/09 16:30		
COC Number		882349-01-01			882349-01-01		
	UNITS	MW 206	RDL	QC Batch	MW 206 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	25.5	N/A	8047117			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	51	1.0	8047112			
Calculated TDS	mg/L	1600	1.0	8047121			
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	8047112			
Cation Sum	me/L	27.3	N/A	8047117			
Hardness (CaCO3)	mg/L	690	1.0	8047113			
Ion Balance (% Difference)	%	3.35	N/A	8047114			
Langelier Index (@ 20C)	N/A	-0.199		8047118			
Langelier Index (@ 4C)	N/A	-0.443		8047120			
Saturation pH (@ 20C)	N/A	7.69		8047118			
Saturation pH (@ 4C)	N/A	7.94		8047120			
Inorganics							
Total Ammonia-N	mg/L	0.59	0.050	8052829			
Conductivity	umho/cm	2600	1.0	8051118	2500	1.0	8051118
Dissolved Organic Carbon	mg/L	0.55	0.40	8052222			
Orthophosphate (P)	mg/L	<0.010	0.010	8051635			
pH	pH	7.49		8051119	7.58		8051119
Dissolved Sulphate (SO4)	mg/L	560	5.0	8051633			
Alkalinity (Total as CaCO3)	mg/L	51	1.0	8051117	53	1.0	8051117
Dissolved Chloride (Cl-)	mg/L	450	5.0	8051641			
Nitrite (N)	mg/L	0.015	0.010	8049925			
Nitrate (N)	mg/L	0.17	0.10	8049925			
Nitrate + Nitrite (N)	mg/L	0.19	0.10	8049925			
Metals							
Dissolved Aluminum (Al)	mg/L	0.011	0.0049	8050100			
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	8050100			
Dissolved Arsenic (As)	mg/L	0.0016	0.0010	8050100			
Dissolved Barium (Ba)	mg/L	0.036	0.0020	8050100			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG850			SWG850		
Sampling Date		2022/06/09 16:30			2022/06/09 16:30		
COC Number		882349-01-01			882349-01-01		
	UNITS	MW 206	RDL	QC Batch	MW 206 Lab-Dup	RDL	QC Batch
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	8050100			
Dissolved Boron (B)	mg/L	1.8	0.010	8050100			
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	8050100			
Dissolved Calcium (Ca)	mg/L	160	1.0	8050100			
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	8050100			
Dissolved Cobalt (Co)	mg/L	0.00078	0.00050	8050100			
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	8050100			
Dissolved Iron (Fe)	mg/L	<0.10	0.10	8050100			
Dissolved Magnesium (Mg)	mg/L	69	0.050	8050100			
Dissolved Manganese (Mn)	mg/L	0.19	0.0020	8050100			
Dissolved Molybdenum (Mo)	mg/L	0.023	0.00050	8050100			
Dissolved Nickel (Ni)	mg/L	<0.0010	0.0010	8050100			
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	8050100			
Dissolved Potassium (K)	mg/L	8.3	0.20	8050100			
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	8050100			
Dissolved Silicon (Si)	mg/L	3.5	0.050	8050100			
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	8050100			
Dissolved Sodium (Na)	mg/L	300	0.10	8050100			
Dissolved Strontium (Sr)	mg/L	17	0.0010	8050100			
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	8050100			
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	8050100			
Dissolved Uranium (U)	mg/L	0.0011	0.00010	8050100			
Dissolved Vanadium (V)	mg/L	0.0011	0.00050	8050100			
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	8050100			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG851			SWG852		
Sampling Date		2022/06/09 16:03			2022/06/09 15:40		
COC Number		882349-01-01			882349-01-01		
	UNITS	BH28	RDL	QC Batch	BH37	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	11.3	N/A	8047117	22.4	N/A	8047117
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	92	1.0	8047112	610	1.0	8047112
Calculated TDS	mg/L	670	1.0	8047121	1200	1.0	8047121
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	8047112	4.2	1.0	8047112
Cation Sum	me/L	11.4	N/A	8047117	22.7	N/A	8047117
Hardness (CaCO3)	mg/L	260	1.0	8047113	880	1.0	8047113
Ion Balance (% Difference)	%	0.750	N/A	8047114	0.550	N/A	8047114
Langelier Index (@ 20C)	N/A	0.136		8047118	0.877		8047118
Langelier Index (@ 4C)	N/A	-0.111		8047120	0.631		8047120
Saturation pH (@ 20C)	N/A	7.76		8047118	6.99		8047118
Saturation pH (@ 4C)	N/A	8.01		8047120	7.24		8047120
Inorganics							
Total Ammonia-N	mg/L	0.38	0.050	8054805	0.11	0.050	8054805
Conductivity	umho/cm	1200	1.0	8049848	1800	1.0	8049848
Dissolved Organic Carbon	mg/L	<0.40	0.40	8052222	2.7	0.40	8050304
Orthophosphate (P)	mg/L	<0.010	0.010	8051635	<0.010	0.010	8051635
pH	pH	7.89		8049842	7.87		8049842
Dissolved Sulphate (SO4)	mg/L	140	1.0	8051633	420	2.0	8051633
Alkalinity (Total as CaCO3)	mg/L	93	1.0	8049839	610	1.0	8049839
Dissolved Chloride (Cl-)	mg/L	230	3.0	8051641	43	1.0	8051641
Nitrite (N)	mg/L	0.012	0.010	8052286	<0.010	0.010	8052286
Nitrate (N)	mg/L	<0.10	0.10	8052286	2.74	0.10	8052286
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	8052286	2.74	0.10	8052286
Metals							
Dissolved Aluminum (Al)	mg/L	0.018	0.0049	8050100	0.037	0.0049	8050100
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	8050100	<0.00050	0.00050	8050100
Dissolved Arsenic (As)	mg/L	0.010	0.0010	8050100	<0.0010	0.0010	8050100
Dissolved Barium (Ba)	mg/L	0.028	0.0020	8050100	0.056	0.0020	8050100
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	8050100	<0.00040	0.00040	8050100

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

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RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG851			SWG852		
Sampling Date		2022/06/09 16:03			2022/06/09 15:40		
COC Number		882349-01-01			882349-01-01		
	UNITS	BH28	RDL	QC Batch	BH37	RDL	QC Batch
Dissolved Boron (B)	mg/L	1.0	0.010	8050100	0.24	0.010	8050100
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	8050100	<0.000090	0.000090	8050100
Dissolved Calcium (Ca)	mg/L	60	0.40	8050100	63	0.20	8050100
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	8050100	<0.0050	0.0050	8050100
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	8050100	<0.00050	0.00050	8050100
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	8050100	0.0018	0.00090	8050100
Dissolved Iron (Fe)	mg/L	0.12	0.10	8050100	<0.10	0.10	8050100
Dissolved Magnesium (Mg)	mg/L	27	0.050	8050100	170	0.050	8050100
Dissolved Manganese (Mn)	mg/L	0.073	0.0020	8050100	<0.0020	0.0020	8050100
Dissolved Molybdenum (Mo)	mg/L	0.020	0.00050	8050100	0.0015	0.00050	8050100
Dissolved Nickel (Ni)	mg/L	<0.0010	0.0010	8050100	<0.0010	0.0010	8050100
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	8050100	<0.10	0.10	8050100
Dissolved Potassium (K)	mg/L	4.8	0.20	8050100	4.1	0.20	8050100
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	8050100	<0.0020	0.0020	8050100
Dissolved Silicon (Si)	mg/L	4.7	0.050	8050100	5.5	0.050	8050100
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	8050100	<0.000090	0.000090	8050100
Dissolved Sodium (Na)	mg/L	140	0.10	8050100	120	0.10	8050100
Dissolved Strontium (Sr)	mg/L	7.2	0.0010	8050100	3.2	0.0010	8050100
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	8050100	<0.000050	0.000050	8050100
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	8050100	<0.0050	0.0050	8050100
Dissolved Uranium (U)	mg/L	0.00026	0.00010	8050100	0.023	0.00010	8050100
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	8050100	<0.00050	0.00050	8050100
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	8050100	<0.0050	0.0050	8050100

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		SWG852		
Sampling Date		2022/06/09 15:40		
COC Number		882349-01-01		
	UNITS	BH37 Lab-Dup	RDL	QC Batch
Inorganics				
Nitrite (N)	mg/L	<0.010	0.010	8052286
Nitrate (N)	mg/L	2.71	0.10	8052286
Nitrate + Nitrite (N)	mg/L	2.71	0.10	8052286

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		SWG849			SWG849			SWG850		
Sampling Date		2022/06/09 16:40			2022/06/09 16:40			2022/06/09 16:30		
COC Number		882349-01-01			882349-01-01			882349-01-01		
	UNITS	MW 302 (S)	RDL	QC Batch	MW 302 (S) Lab-Dup	RDL	QC Batch	MW 206	RDL	QC Batch
Inorganics										
Colour	TCU	<2	2	8049153				<2	2	8049153
Fluoride (F-)	mg/L	0.26	0.10	8049828	0.20	0.10	8049828	0.24	0.10	8051104
Total Phosphorus (P)	mg/L	0.089	0.0030	8066962				0.28	0.0030	8066962
Turbidity	NTU	150	0.1	8049095				170	0.1	8049095
Dissolved Bromide (Br-)	mg/L	<5.0	5.0	8050386				<5.0	5.0	8050386

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		SWG850			SWG851			SWG851		
Sampling Date		2022/06/09 16:30			2022/06/09 16:03			2022/06/09 16:03		
COC Number		882349-01-01			882349-01-01			882349-01-01		
	UNITS	MW 206 Lab-Dup	RDL	QC Batch	BH28	RDL	QC Batch	BH28 Lab-Dup	RDL	QC Batch
Inorganics										
Colour	TCU				<2	2	8049153			
Fluoride (F-)	mg/L	0.24	0.10	8051104	0.37	0.10	8049828			
Total Phosphorus (P)	mg/L				1.3	0.030	8066962			
Turbidity	NTU				870	0.1	8049095			
Dissolved Bromide (Br-)	mg/L				2.6	2.0	8050386	2.6	2.0	8050386

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		SWG852		
Sampling Date		2022/06/09 15:40		
COC Number		882349-01-01		
	UNITS	BH37	RDL	QC Batch
Inorganics				
Colour	TCU	<2	2	8049153
Fluoride (F-)	mg/L	0.47	0.10	8049828
Total Phosphorus (P)	mg/L	6.5	0.060	8066962
Turbidity	NTU	5800	4	8049095
Dissolved Bromide (Br-)	mg/L	<1.0	1.0	8050386

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SWG849
Sample ID: MW 302 (S)
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8049839	N/A	2022/06/14	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8047112	N/A	2022/06/15	Automated Statchk
Anions	IC	8050386	N/A	2022/06/14	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8051641	N/A	2022/06/15	Alina Dobreanu
Colour	SPEC	8049153	N/A	2022/06/15	Viorica Rotaru
Conductivity	AT	8049848	N/A	2022/06/14	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8052222	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8049828	2022/06/13	2022/06/14	Surinder Rai
Hardness (calculated as CaCO3)		8047113	N/A	2022/06/15	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8050100	N/A	2022/06/15	Daniel Teclu
Ion Balance (% Difference)	CALC	8047114	N/A	2022/06/15	Automated Statchk
Anion and Cation Sum	CALC	8047116	N/A	2022/06/15	Automated Statchk
Total Phosphorus	KONE	8066962	2022/06/21	2022/06/21	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8054805	N/A	2022/06/16	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8052286	N/A	2022/06/15	Samuel Law
pH	AT	8049842	2022/06/13	2022/06/14	Surinder Rai
Orthophosphate	KONE	8051635	N/A	2022/06/14	Chandra Nandlal
Sat. pH and Langelier Index (@ 20C)	CALC	8047118	N/A	2022/06/15	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8047119	N/A	2022/06/15	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8051633	N/A	2022/06/14	Chandra Nandlal
Total Dissolved Solids (TDS calc)	CALC	8047121	N/A	2022/06/15	Automated Statchk
Turbidity	AT	8049095	N/A	2022/06/13	Roya Fathitil

Bureau Veritas ID: SWG849 Dup
Sample ID: MW 302 (S)
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8049839	N/A	2022/06/14	Surinder Rai
Conductivity	AT	8049848	N/A	2022/06/14	Surinder Rai
Fluoride	ISE	8049828	2022/06/13	2022/06/14	Surinder Rai
pH	AT	8049842	2022/06/13	2022/06/14	Surinder Rai

Bureau Veritas ID: SWG850
Sample ID: MW 206
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8051117	N/A	2022/06/14	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8047112	N/A	2022/06/15	Automated Statchk
Anions	IC	8050386	N/A	2022/06/14	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8051641	N/A	2022/06/15	Alina Dobreanu
Colour	SPEC	8049153	N/A	2022/06/15	Viorica Rotaru
Conductivity	AT	8051118	N/A	2022/06/14	Surinder Rai

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Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SWG850
Sample ID: MW 206
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8052222	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8051104	2022/06/14	2022/06/14	Surinder Rai
Hardness (calculated as CaCO3)		8047113	N/A	2022/06/15	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8050100	N/A	2022/06/15	Daniel Teclu
Ion Balance (% Difference)	CALC	8047114	N/A	2022/06/15	Automated Statchk
Anion and Cation Sum	CALC	8047117	N/A	2022/06/15	Automated Statchk
Total Phosphorus	KONE	8066962	2022/06/21	2022/06/21	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8052829	N/A	2022/06/15	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8049925	N/A	2022/06/15	Samuel Law
pH	AT	8051119	2022/06/14	2022/06/14	Surinder Rai
Orthophosphate	KONE	8051635	N/A	2022/06/14	Chandra Nandlal
Sat. pH and Langelier Index (@ 20C)	CALC	8047118	N/A	2022/06/15	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8047120	N/A	2022/06/15	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8051633	N/A	2022/06/14	Chandra Nandlal
Total Dissolved Solids (TDS calc)	CALC	8047121	N/A	2022/06/15	Automated Statchk
Turbidity	AT	8049095	N/A	2022/06/13	Roya Fathitil

Bureau Veritas ID: SWG850 Dup
Sample ID: MW 206
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8051117	N/A	2022/06/14	Surinder Rai
Conductivity	AT	8051118	N/A	2022/06/14	Surinder Rai
Fluoride	ISE	8051104	2022/06/14	2022/06/14	Surinder Rai
pH	AT	8051119	2022/06/14	2022/06/14	Surinder Rai

Bureau Veritas ID: SWG851
Sample ID: BH28
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8049839	N/A	2022/06/14	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8047112	N/A	2022/06/15	Automated Statchk
Anions	IC	8050386	N/A	2022/06/14	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8051641	N/A	2022/06/15	Alina Dobreanu
Colour	SPEC	8049153	N/A	2022/06/15	Viorica Rotaru
Conductivity	AT	8049848	N/A	2022/06/14	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8052222	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8049828	2022/06/13	2022/06/14	Surinder Rai
Hardness (calculated as CaCO3)		8047113	N/A	2022/06/15	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8050100	N/A	2022/06/15	Daniel Teclu
Ion Balance (% Difference)	CALC	8047114	N/A	2022/06/15	Automated Statchk
Anion and Cation Sum	CALC	8047117	N/A	2022/06/15	Automated Statchk

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Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SWG851
Sample ID: BH28
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Phosphorus	KONE	8066962	2022/06/21	2022/06/21	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8054805	N/A	2022/06/16	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8052286	N/A	2022/06/15	Samuel Law
pH	AT	8049842	2022/06/13	2022/06/14	Surinder Rai
Orthophosphate	KONE	8051635	N/A	2022/06/14	Chandra Nandlal
Sat. pH and Langelier Index (@ 20C)	CALC	8047118	N/A	2022/06/15	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8047120	N/A	2022/06/15	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8051633	N/A	2022/06/14	Chandra Nandlal
Total Dissolved Solids (TDS calc)	CALC	8047121	N/A	2022/06/15	Automated Statchk
Turbidity	AT	8049095	N/A	2022/06/13	Roya Fathitil

Bureau Veritas ID: SWG851 Dup
Sample ID: BH28
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Anions	IC	8050386	N/A	2022/06/14	Surleen Kaur Romana

Bureau Veritas ID: SWG852
Sample ID: BH37
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8049839	N/A	2022/06/14	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8047112	N/A	2022/06/15	Automated Statchk
Anions	IC	8050386	N/A	2022/06/14	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8051641	N/A	2022/06/15	Alina Dobreanu
Colour	SPEC	8049153	N/A	2022/06/15	Viorica Rotaru
Conductivity	AT	8049848	N/A	2022/06/14	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8050304	N/A	2022/06/14	Massarat Jan
Fluoride	ISE	8049828	2022/06/13	2022/06/14	Surinder Rai
Hardness (calculated as CaCO3)		8047113	N/A	2022/06/15	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8050100	N/A	2022/06/15	Daniel Teclu
Ion Balance (% Difference)	CALC	8047114	N/A	2022/06/15	Automated Statchk
Anion and Cation Sum	CALC	8047117	N/A	2022/06/15	Automated Statchk
Total Phosphorus	KONE	8066962	2022/06/21	2022/06/21	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8054805	N/A	2022/06/16	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8052286	N/A	2022/06/15	Samuel Law
pH	AT	8049842	2022/06/13	2022/06/14	Surinder Rai
Orthophosphate	KONE	8051635	N/A	2022/06/14	Chandra Nandlal
Sat. pH and Langelier Index (@ 20C)	CALC	8047118	N/A	2022/06/15	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8047120	N/A	2022/06/15	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8051633	N/A	2022/06/14	Chandra Nandlal
Total Dissolved Solids (TDS calc)	CALC	8047121	N/A	2022/06/15	Automated Statchk

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Bureau Veritas Job #: C2G0415
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SWG852
Sample ID: BH37
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Turbidity	AT	8049095	N/A	2022/06/13	Roya Fathitil

Bureau Veritas ID: SWG852 Dup
Sample ID: BH37
Matrix: Ground Water

Collected: 2022/06/09
Shipped:
Received: 2022/06/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8052286	N/A	2022/06/15	Samuel Law

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.3°C

ANIONS-L: Due to high concentrations of the target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8049095	Turbidity	2022/06/13			92	85 - 115	<0.1	NTU	0.69	20
8049153	Colour	2022/06/15			99	80 - 120	<2	TCU	5.6	25
8049828	Fluoride (F-)	2022/06/14	80	80 - 120	107	80 - 120	<0.10	mg/L	NC	20
8049839	Alkalinity (Total as CaCO3)	2022/06/14			94	85 - 115	<1.0	mg/L	0.32	20
8049842	pH	2022/06/14			102	98 - 103			0.61	N/A
8049848	Conductivity	2022/06/14			102	85 - 115	<1.0	umho/cm	2.0	25
8049925	Nitrate (N)	2022/06/15	101	80 - 120	103	80 - 120	<0.10	mg/L	1.4	20
8049925	Nitrite (N)	2022/06/15	105	80 - 120	105	80 - 120	<0.010	mg/L	3.2	20
8050100	Dissolved Aluminum (Al)	2022/06/15	104	80 - 120	102	80 - 120	<0.0049	mg/L		
8050100	Dissolved Antimony (Sb)	2022/06/15	107	80 - 120	98	80 - 120	<0.00050	mg/L	NC	20
8050100	Dissolved Arsenic (As)	2022/06/15	102	80 - 120	100	80 - 120	<0.0010	mg/L	2.1	20
8050100	Dissolved Barium (Ba)	2022/06/15	100	80 - 120	97	80 - 120	<0.0020	mg/L	2.1	20
8050100	Dissolved Beryllium (Be)	2022/06/15	101	80 - 120	98	80 - 120	<0.00040	mg/L	NC	20
8050100	Dissolved Boron (B)	2022/06/15	NC	80 - 120	92	80 - 120	<0.010	mg/L	3.6	20
8050100	Dissolved Cadmium (Cd)	2022/06/15	106	80 - 120	97	80 - 120	<0.000090	mg/L	NC	20
8050100	Dissolved Calcium (Ca)	2022/06/15	NC	80 - 120	102	80 - 120	<0.20	mg/L		
8050100	Dissolved Chromium (Cr)	2022/06/15	95	80 - 120	92	80 - 120	<0.0050	mg/L	NC	20
8050100	Dissolved Cobalt (Co)	2022/06/15	101	80 - 120	100	80 - 120	<0.00050	mg/L	NC	20
8050100	Dissolved Copper (Cu)	2022/06/15	105	80 - 120	98	80 - 120	<0.00090	mg/L	NC	20
8050100	Dissolved Iron (Fe)	2022/06/15	102	80 - 120	99	80 - 120	<0.10	mg/L		
8050100	Dissolved Magnesium (Mg)	2022/06/15	NC	80 - 120	103	80 - 120	<0.050	mg/L		
8050100	Dissolved Manganese (Mn)	2022/06/15	102	80 - 120	100	80 - 120	<0.0020	mg/L		
8050100	Dissolved Molybdenum (Mo)	2022/06/15	110	80 - 120	95	80 - 120	<0.00050	mg/L	1.3	20
8050100	Dissolved Nickel (Ni)	2022/06/15	97	80 - 120	98	80 - 120	<0.0010	mg/L	NC	20
8050100	Dissolved Phosphorus (P)	2022/06/15	116	80 - 120	120	80 - 120	<0.10	mg/L		
8050100	Dissolved Potassium (K)	2022/06/15	99	80 - 120	105	80 - 120	<0.20	mg/L		
8050100	Dissolved Selenium (Se)	2022/06/15	102	80 - 120	100	80 - 120	<0.0020	mg/L	NC	20
8050100	Dissolved Silicon (Si)	2022/06/15	106	80 - 120	100	80 - 120	<0.050	mg/L		
8050100	Dissolved Silver (Ag)	2022/06/15	86	80 - 120	96	80 - 120	<0.000090	mg/L	NC	20
8050100	Dissolved Sodium (Na)	2022/06/15	NC	80 - 120	101	80 - 120	<0.10	mg/L	1.8	20
8050100	Dissolved Strontium (Sr)	2022/06/15	NC	80 - 120	97	80 - 120	<0.0010	mg/L		

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8050100	Dissolved Thallium (Tl)	2022/06/15	102	80 - 120	105	80 - 120	<0.000050	mg/L	NC	20
8050100	Dissolved Titanium (Ti)	2022/06/15	103	80 - 120	98	80 - 120	<0.0050	mg/L		
8050100	Dissolved Uranium (U)	2022/06/15	102	80 - 120	95	80 - 120	<0.00010	mg/L	2.4	20
8050100	Dissolved Vanadium (V)	2022/06/15	101	80 - 120	98	80 - 120	<0.00050	mg/L	NC	20
8050100	Dissolved Zinc (Zn)	2022/06/15	99	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20
8050304	Dissolved Organic Carbon	2022/06/14	99	80 - 120	98	80 - 120	<0.40	mg/L	0.26	20
8050386	Dissolved Bromide (Br-)	2022/06/14	94	80 - 120	101	80 - 120	<1.0	mg/L	1.2	20
8051104	Fluoride (F-)	2022/06/14	107	80 - 120	98	80 - 120	<0.10	mg/L	3.3	20
8051117	Alkalinity (Total as CaCO3)	2022/06/14			94	85 - 115	<1.0	mg/L	3.6	20
8051118	Conductivity	2022/06/14			101	85 - 115	<1.0	umho/cm	0.79	25
8051119	pH	2022/06/14			102	98 - 103			1.1	N/A
8051633	Dissolved Sulphate (SO4)	2022/06/14	109	75 - 125	105	80 - 120	<1.0	mg/L	0.24	20
8051635	Orthophosphate (P)	2022/06/14	112	75 - 125	100	80 - 120	<0.010	mg/L	0.20	25
8051641	Dissolved Chloride (Cl-)	2022/06/15	92	80 - 120	103	80 - 120	<1.0	mg/L	1.3	20
8052222	Dissolved Organic Carbon	2022/06/16	93	80 - 120	94	80 - 120	<0.40	mg/L	1.8	20
8052286	Nitrate (N)	2022/06/15	99	80 - 120	100	80 - 120	<0.10	mg/L	1.0	20
8052286	Nitrite (N)	2022/06/15	105	80 - 120	105	80 - 120	<0.010	mg/L	NC	20
8052829	Total Ammonia-N	2022/06/15	98	75 - 125	98	80 - 120	<0.050	mg/L	NC	20
8054805	Total Ammonia-N	2022/06/16	97	75 - 125	98	80 - 120	<0.050	mg/L	NC	20
8066962	Total Phosphorus (P)	2022/06/21			106	80 - 120	<0.0030	mg/L		

N/A = Not Applicable

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

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

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

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

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

<Original signed by>

Cristina Carriere, Senior Scientific Specialist

<Original signed by>

David Huang, BBY Scientific Specialist

Bureau Veritas 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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Bureau Veritas
109 & 110, 4023 Meadowbrook Drive, London, Ontario Canada N6L 1E7 Tel:(519) 652-9444 Toll-free:800-563-6266 Fax:(519) 652-8189 www.bvna.com

CHAIN OF CUSTODY RECORD

INVOICE TO:
Company Name: #9197 Stantec Consulting Ltd
Attention: Accounts Payable
Address: 300 Hagey Blvd Suite 100, Waterloo ON N2L 0A4
Tel: (519) 579-4410 Fax: (519) 579-6733
Email: SAPinvoices@Stantec.com

REPORT TO:
Company Name:
Attention: Grant Whitehead
Address: EDD@stantec.com
Tel: (519) 585-7400 Fax: (519) 579-4239
Email: grant.whitehead@stantec.com, ryan.dong@stantec.com

PROJECT INFORMATION:
Quotation #: C15856
P.O. #:
Project: 160903844
Project Name: CN Milton
Site #:
Sampled By: Ryan Dong

Laboratory Use Only:
Bureau Veritas Job #:
Bottle Order #: 882349
COC #: C#882349-01-01
Project Manager: Ronklin Gracian

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☒ Other CDWQG

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): (Metals / Hg / Cr VI)

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	RCAp - Comprehensive	Bromide	Colour	Fluoride	Turbidity	Total Phosphorus (Colourimetric)	# of Bottles	Comments
1		MW302(S)	June 9/22	1640	GW	Y	X	X	X	X	X	X	5	
2		MW206	June 9/22	1630	GW	Y	X	X	X	X	X	X	5	
3		BH28	June 9/22	1603	GW	Y	X	X	X	X	X	X	5	
4		BH37	June 9/22	1540	GW	Y	X	X	X	X	X	X	5	
5														
6														
7														
8														
9														
10														

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 #)*

10-Jun-22 12:22
Ronklin Gracian
C2G0415

IMMEDIATE TEST

REC'D IN WATERLOO

once

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
	22/06/10	1219	TAMSIN JAMSIN DAVISON	2022/06/10	12:22	
			TRINA	22/06/10	16:30	

Laboratory Use Only
Time Sensitive | Temperature (°C) on Recei: 6/3/4 °C | Custody Seal Present ☐ Intact ☐ | Yes | No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S 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.BVNA.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.BVNA.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

5/5/4

Bureau Veritas Canada (2019) Inc.

1265

Your Project #: 160960844
Site Location: CN MILTON
Your C.O.C. #: 882349-02-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/06/23
Report #: R7183062
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G3790
Received: 2022/06/14, 16:27

Sample Matrix: Water
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	11	N/A	2022/06/16	CAM SOP-00448	SM 23 2320 B m
Alkalinity	1	N/A	2022/06/21	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	12	N/A	2022/06/16	CAM SOP-00102	APHA 4500-CO2 D
Anions	12	N/A	2022/06/16	CAM SOP-00435	SM 23 4110 B m
Chloride by Automated Colourimetry	11	N/A	2022/06/16	CAM SOP-00463	SM 23 4500-Cl E m
Chloride by Automated Colourimetry	1	N/A	2022/06/21	CAM SOP-00463	SM 23 4500-Cl E m
Colour	12	N/A	2022/06/16	CAM SOP-00412	SM 23 2120C m
Conductivity	12	N/A	2022/06/16	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (2)	10	N/A	2022/06/16	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (2)	2	N/A	2022/06/17	CAM SOP-00446	SM 23 5310 B m
Fluoride	12	2022/06/15	2022/06/16	CAM SOP-00449	SM 23 4500-F C m
Hardness (calculated as CaCO3)	12	N/A	2022/06/20	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	11	N/A	2022/06/20	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	1	N/A	2022/06/22	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	12	N/A	2022/06/20		
Anion and Cation Sum	12	N/A	2022/06/20		
Total Phosphorus (1)	12	2022/06/17	2022/06/17	BBY6SOP-00013	SM 23 4500-P E m
Total Ammonia-N	12	N/A	2022/06/20	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (3)	12	N/A	2022/06/17	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	12	2022/06/15	2022/06/16	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	12	N/A	2022/06/16	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	12	N/A	2022/06/20		Auto Calc
Sat. pH and Langelier Index (@ 4C)	12	N/A	2022/06/20		Auto Calc
Sulphate by Automated Colourimetry	11	N/A	2022/06/16	CAM SOP-00464	EPA 375.4 m
Sulphate by Automated Colourimetry	1	N/A	2022/06/21	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	12	N/A	2022/06/20		Auto Calc
Turbidity	12	N/A	2022/06/15	CAM SOP-00417	SM 23 2130 B m

Remarks:

Your Project #: 160960844
Site Location: CN MILTON
Your C.O.C. #: 882349-02-01

Attention: Grant Whitehead

Stantec Consulting Ltd
300 Hagey Blvd
Suite 100
Waterloo, ON
CANADA N2L 0A4

Report Date: 2022/06/23
Report #: R7183062
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G3790
Received: 2022/06/14, 16:27

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, 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 Burnaby, 4606 Canada Way , Burnaby, BC, V5G 1K5
(2) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bureauveritas.com
Phone# (905)817-5752

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas 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.

Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA241				SXA241			
Sampling Date		2022/06/14 15:03				2022/06/14 15:03			
COC Number		882349-02-01				882349-02-01			
	UNITS	2803463	RDL	MDL	QC Batch	2803463 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	10.1	N/A	N/A	8051205				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	350	1.0	0.20	8051198				
Calculated TDS	mg/L	550	1.0	0.20	8051211				
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.8	1.0	0.20	8051198				
Cation Sum	me/L	10.6	N/A	N/A	8051205				
Hardness (CaCO3)	mg/L	440	1.0	1.0	8053035				
Ion Balance (% Difference)	%	2.50	N/A	N/A	8053116				
Langelier Index (@ 20C)	N/A	1.00			8051207				
Langelier Index (@ 4C)	N/A	0.753			8051208				
Saturation pH (@ 20C)	N/A	6.93			8051207				
Saturation pH (@ 4C)	N/A	7.18			8051208				
Inorganics									
Total Ammonia-N	mg/L	0.060	0.050	0.0080	8061833				
Conductivity	umho/cm	910	1.0	0.20	8055304				
Dissolved Organic Carbon	mg/L	5.7	0.40	0.070	8057743				
Orthophosphate (P)	mg/L	0.071	0.010	0.0050	8054923				
pH	pH	7.93			8055298				
Dissolved Sulphate (SO4)	mg/L	110	1.0	0.10	8054913				
Alkalinity (Total as CaCO3)	mg/L	350	1.0	0.20	8055296				
Dissolved Chloride (Cl-)	mg/L	30	1.0	0.30	8054911				
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8054334				
Nitrate (N)	mg/L	<0.10	0.10	0.010	8054334				
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8054334				
Metals									
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	0.0049	8058757	<0.0049	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L	<0.0010	0.0010	0.0010	8058757	<0.0010	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L	0.062	0.0020	0.0020	8058757	0.062	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	8058757	<0.00040	0.00040	0.00040	8058757

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA241				SXA241			
Sampling Date		2022/06/14 15:03				2022/06/14 15:03			
COC Number		882349-02-01				882349-02-01			
	UNITS	2803463	RDL	MDL	QC Batch	2803463 Lab-Dup	RDL	MDL	QC Batch
Dissolved Boron (B)	mg/L	0.16	0.010	0.010	8058757	0.16	0.010	0.010	8058757
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L	100	0.20	0.20	8058757	100	0.20	0.20	8058757
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	0.00090	8058757	<0.00090	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L	<0.10	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L	45	0.050	0.050	8058757	45	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L	0.43	0.0020	0.0020	8058757	0.43	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L	0.0045	0.00050	0.00050	8058757	0.0045	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L	0.0020	0.0010	0.0010	8058757	0.0020	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L	0.14	0.10	0.050	8058757	0.14	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L	17	0.20	0.20	8058757	17	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	8058757	<0.0020	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L	4.1	0.050	0.050	8058757	4.2	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L	31	0.10	0.10	8058757	31	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L	1.5	0.0010	0.0010	8058757	1.4	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	8058757	<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L	0.0033	0.00010	0.00010	8058757	0.0032	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA242				SXA243			
Sampling Date		2022/06/14 14:30				2022/06/13 15:20			
COC Number		882349-02-01				882349-02-01			
	UNITS	2806808	RDL	MDL	QC Batch	MW202	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	7.22	N/A	N/A	8051205	18.9	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	300	1.0	0.20	8051198	380	1.0	0.20	8051198
Calculated TDS	mg/L	380	1.0	0.20	8051211	1100	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.6	1.0	0.20	8051198	2.4	1.0	0.20	8051198
Cation Sum	me/L	7.26	N/A	N/A	8051205	20.2	N/A	N/A	8051205
Hardness (CaCO3)	mg/L	330	1.0	1.0	8053035	750	1.0	1.0	8053035
Ion Balance (% Difference)	%	0.280	N/A	N/A	8053116	3.40	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A	0.834			8051207	0.742			8051207
Langelier Index (@ 4C)	N/A	0.585			8051208	0.496			8051208
Saturation pH (@ 20C)	N/A	6.91			8051207	7.10			8051207
Saturation pH (@ 4C)	N/A	7.16			8051208	7.34			8051208
Inorganics									
Total Ammonia-N	mg/L	<0.050	0.050	0.0080	8061833	<0.050	0.050	0.0080	8061833
Conductivity	umho/cm	660	1.0	0.20	8055304	1600	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L	3.0	0.40	0.070	8057513	0.97	0.40	0.070	8057594
Orthophosphate (P)	mg/L	0.017	0.010	0.0050	8054923	<0.010	0.010	0.0050	8054923
pH	pH	7.74			8055298	7.84			8055298
Dissolved Sulphate (SO4)	mg/L	21	1.0	0.10	8054913	490	5.0	0.50	8054913
Alkalinity (Total as CaCO3)	mg/L	310	1.0	0.20	8055296	380	1.0	0.20	8055296
Dissolved Chloride (Cl-)	mg/L	23	1.0	0.30	8054911	35	1.0	0.30	8054911
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8054334	<0.010	0.010	0.0020	8054334
Nitrate (N)	mg/L	<0.10	0.10	0.010	8054334	0.28	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8054334	0.28	0.10	0.010	8054334
Metals									
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	0.0049	8058757	<0.0049	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L	<0.0010	0.0010	0.0010	8058757	0.0014	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L	0.055	0.0020	0.0020	8058757	0.020	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	8058757	<0.00040	0.00040	0.00040	8058757
Dissolved Boron (B)	mg/L	<0.010	0.010	0.010	8058757	0.89	0.010	0.010	8058757

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

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA242				SXA243			
Sampling Date		2022/06/14 14:30				2022/06/13 15:20			
COC Number		882349-02-01				882349-02-01			
	UNITS	2806808	RDL	MDL	QC Batch	MW202	RDL	MDL	QC Batch
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L	110	0.20	0.20	8058757	78	0.40	0.40	8058757
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L	0.0031	0.00090	0.00090	8058757	<0.00090	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L	<0.10	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L	13	0.050	0.050	8058757	130	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L	0.0073	0.0020	0.0020	8058757	0.037	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L	<0.00050	0.00050	0.00050	8058757	0.022	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L	<0.0010	0.0010	0.0010	8058757	0.0023	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L	1.7	0.20	0.20	8058757	8.9	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	8058757	<0.0020	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L	3.7	0.050	0.050	8058757	6.5	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L	13	0.10	0.10	8058757	120	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L	0.29	0.0010	0.0010	8058757	6.1	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	8058757	<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L	0.00091	0.00010	0.00010	8058757	0.0016	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	0.00050	8058757	0.00055	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L	6.1	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA244			SXA245			
Sampling Date		2022/06/13 14:15			2022/06/13 12:42			
COC Number		882349-02-01			882349-02-01			
	UNITS	MW302(D)	RDL	MDL	MW208	RDL	MDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	68.2	N/A	N/A	11.7	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	130	1.0	0.20	480	1.0	0.20	8051198
Calculated TDS	mg/L	4300	1.0	0.20	600	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	2.3	1.0	0.20	8051198
Cation Sum	me/L	74.2	N/A	N/A	12.1	N/A	N/A	8051205
Hardness (CaCO3)	mg/L	1800	1.0	1.0	540	1.0	1.0	8053035
Ion Balance (% Difference)	%	4.21	N/A	N/A	1.71	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A	0.324			0.825			8051207
Langelier Index (@ 4C)	N/A	0.0830			0.578			8051208
Saturation pH (@ 20C)	N/A	6.98			6.89			8051207
Saturation pH (@ 4C)	N/A	7.22			7.13			8051208
Inorganics								
Total Ammonia-N	mg/L	4.2	0.050	0.0080	0.12	0.050	0.0080	8061833
Conductivity	umho/cm	6200	1.0	0.20	980	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L	18	0.40	0.070	1.2	0.40	0.070	8057513
Orthophosphate (P)	mg/L	<0.010	0.010	0.0050	<0.010	0.010	0.0050	8054923
pH	pH	7.31			7.71			8055298
Dissolved Sulphate (SO4)	mg/L	1300	5.0	0.50	89	1.0	0.10	8054913
Alkalinity (Total as CaCO3)	mg/L	130	1.0	0.20	480	1.0	0.20	8055296
Dissolved Chloride (Cl-)	mg/L	1300	20	6.0	6.3	1.0	0.30	8054911
Nitrite (N)	mg/L	<0.010	0.010	0.0020	0.062	0.010	0.0020	8054334
Nitrate (N)	mg/L	<0.10	0.10	0.010	0.81	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	0.87	0.10	0.010	8054334
Metals								
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	0.0049	<0.0049	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L	0.0074	0.0010	0.0010	<0.0010	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L	0.028	0.0020	0.0020	0.10	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	<0.00040	0.00040	0.00040	8058757
Dissolved Boron (B)	mg/L	6.1	0.050	0.050	0.083	0.010	0.010	8058757

RDL = Reportable Detection Limit
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N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA244			SXA245			
Sampling Date		2022/06/13 14:15			2022/06/13 12:42			
COC Number		882349-02-01			882349-02-01			
	UNITS	MW302(D)	RDL	MDL	MW208	RDL	MDL	QC Batch
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L	460	1.0	1.0	83	0.20	0.20	8058757
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	0.00063	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	0.00090	0.0011	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L	1.5	0.10	0.050	<0.10	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L	150	0.050	0.050	79	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L	0.25	0.0020	0.0020	0.31	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L	0.011	0.00050	0.00050	0.0019	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L	0.0013	0.0010	0.0010	0.0013	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	0.050	<0.10	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L	41	0.20	0.20	4.7	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	<0.0020	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L	3.7	0.050	0.050	6.0	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L	850	0.50	0.50	30	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L	18	0.0010	0.0010	1.7	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L	0.014	0.00010	0.00010	0.0072	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	0.00050	<0.00050	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	0.0050	<0.0050	0.0050	0.0050	8058757

RDL = Reportable Detection Limit
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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA246				SXA247			
Sampling Date		2022/06/13 13:05				2022/06/13 11:35			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW201	RDL	MDL	QC Batch	MW301(S)	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	16.5	N/A	N/A	8051205	13.4	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	460	1.0	0.20	8051198	63	1.0	0.20	8051198
Calculated TDS	mg/L	900	1.0	0.20	8051211	830	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L	3.4	1.0	0.20	8051198	<1.0	1.0	0.20	8051198
Cation Sum	me/L	17.4	N/A	N/A	8051205	14.2	N/A	N/A	8051205
Hardness (CaCO3)	mg/L	740	1.0	1.0	8053035	290	1.0	1.0	8053035
Ion Balance (% Difference)	%	2.66	N/A	N/A	8053116	2.95	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A	0.846			8051207	0.0690			8051207
Langelier Index (@ 4C)	N/A	0.599			8051208	-0.178			8051208
Saturation pH (@ 20C)	N/A	7.05			8051207	7.92			8051207
Saturation pH (@ 4C)	N/A	7.30			8051208	8.17			8051208
Inorganics									
Total Ammonia-N	mg/L	0.069	0.050	0.0080	8062757	0.54	0.050	0.0080	8061833
Conductivity	umho/cm	1400	1.0	0.20	8055304	1500	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L	1.1	0.40	0.070	8057513	1.0	0.40	0.070	8057513
Orthophosphate (P)	mg/L	<0.010	0.010	0.0050	8054923	<0.010	0.010	0.0050	8054923
pH	pH	7.90			8055298	7.99			8055298
Dissolved Sulphate (SO4)	mg/L	340	2.0	0.20	8054913	220	1.0	0.10	8054913
Alkalinity (Total as CaCO3)	mg/L	460	1.0	0.20	8055296	64	1.0	0.20	8055296
Dissolved Chloride (Cl-)	mg/L	5.1	1.0	0.30	8054911	270	3.0	0.90	8054911
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8054334	<0.010	0.010	0.0020	8054334
Nitrate (N)	mg/L	0.10	0.10	0.010	8054334	<0.10	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L	0.10	0.10	0.010	8054334	<0.10	0.10	0.010	8054334
Metals									
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	0.0049	8058757	0.043	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L	<0.0010	0.0010	0.0010	8058757	0.0085	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L	0.037	0.0020	0.0020	8058757	0.027	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	8058757	<0.00040	0.00040	0.00040	8058757
Dissolved Boron (B)	mg/L	0.27	0.010	0.010	8058757	1.6	0.010	0.010	8058757

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

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA246				SXA247			
Sampling Date		2022/06/13 13:05				2022/06/13 11:35			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW201	RDL	MDL	QC Batch	MW301(S)	RDL	MDL	QC Batch
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L	66	0.20	0.20	8058757	63	1.0	1.0	8058757
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L	0.0018	0.00090	0.00090	8058757	<0.00090	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L	<0.10	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L	140	0.050	0.050	8058757	31	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L	0.0042	0.0020	0.0020	8058757	0.042	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L	0.017	0.00050	0.00050	8058757	0.033	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L	0.0014	0.0010	0.0010	8058757	<0.0010	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L	6.0	0.20	0.20	8058757	9.1	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	8058757	<0.0020	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L	5.2	0.050	0.050	8058757	4.3	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L	58	0.10	0.10	8058757	190	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L	2.6	0.0010	0.0010	8058757	19	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	8058757	<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L	0.0026	0.00010	0.00010	8058757	0.00016	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L	0.00079	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA247				SXA248			
Sampling Date		2022/06/13 11:35				2022/06/13 11:15			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW301(S) Lab-Dup	RDL	MDL	QC Batch	MW301(D)	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L					135	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L					61	1.0	0.20	8051198
Calculated TDS	mg/L					8000	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L					<1.0	1.0	0.20	8051198
Cation Sum	me/L					145	N/A	N/A	8051205
Hardness (CaCO3)	mg/L					3700	1.0	1.0	8053035
Ion Balance (% Difference)	%					3.46	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A					0.308			8051207
Langelier Index (@ 4C)	N/A					0.0700			8051208
Saturation pH (@ 20C)	N/A					7.08			8051207
Saturation pH (@ 4C)	N/A					7.32			8051208
Inorganics									
Total Ammonia-N	mg/L					6.2	0.050	0.0080	8061833
Conductivity	umho/cm					13000	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L					4.6	0.40	0.070	8057513
Orthophosphate (P)	mg/L					<0.010	0.010	0.0050	8054923
pH	pH					7.39			8055298
Dissolved Sulphate (SO4)	mg/L					1100	10	1.0	8064170
Alkalinity (Total as CaCO3)	mg/L					61	1.0	0.20	8064987
Dissolved Chloride (Cl-)	mg/L					4000	40	12	8064163
Nitrite (N)	mg/L	0.011	0.010	0.0020	8054334	<0.010	0.010	0.0020	8054334
Nitrate (N)	mg/L	<0.10	0.10	0.010	8054334	<0.10	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8054334	<0.10	0.10	0.010	8054334
Metals									
Dissolved Aluminum (Al)	mg/L					<0.0049	0.0049	0.0049	8067214
Dissolved Antimony (Sb)	mg/L					<0.00050	0.00050	0.00050	8067214
Dissolved Arsenic (As)	mg/L					<0.0010	0.0010	0.0010	8067214
Dissolved Barium (Ba)	mg/L					0.020	0.0020	0.0020	8067214
Dissolved Beryllium (Be)	mg/L					<0.00040	0.00040	0.00040	8067214

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA247				SXA248			
Sampling Date		2022/06/13 11:35				2022/06/13 11:15			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW301(S) Lab-Dup	RDL	MDL	QC Batch	MW301(D)	RDL	MDL	QC Batch
Dissolved Boron (B)	mg/L					4.0	0.010	0.010	8067214
Dissolved Cadmium (Cd)	mg/L					<0.000090	0.000090	0.000090	8067214
Dissolved Calcium (Ca)	mg/L					980	2.0	2.0	8067214
Dissolved Chromium (Cr)	mg/L					<0.0050	0.0050	0.0050	8067214
Dissolved Cobalt (Co)	mg/L					<0.00050	0.00050	0.00050	8067214
Dissolved Copper (Cu)	mg/L					<0.00090	0.00090	0.00090	8067214
Dissolved Iron (Fe)	mg/L					1.2	0.10	0.050	8067214
Dissolved Lead (Pb)	mg/L					<0.00050	0.00050	0.00050	8067214
Dissolved Magnesium (Mg)	mg/L					300	0.050	0.050	8067214
Dissolved Manganese (Mn)	mg/L					0.44	0.0020	0.0020	8067214
Dissolved Molybdenum (Mo)	mg/L					0.015	0.00050	0.00050	8067214
Dissolved Nickel (Ni)	mg/L					0.0014	0.0010	0.0010	8067214
Dissolved Phosphorus (P)	mg/L					0.10	0.10	0.050	8067214
Dissolved Potassium (K)	mg/L					61	0.20	0.20	8067214
Dissolved Selenium (Se)	mg/L					<0.0020	0.0020	0.0020	8067214
Dissolved Silicon (Si)	mg/L					3.4	0.050	0.050	8067214
Dissolved Silver (Ag)	mg/L					<0.000090	0.000090	0.000090	8067214
Dissolved Sodium (Na)	mg/L					1600	0.50	0.50	8067214
Dissolved Strontium (Sr)	mg/L					35	0.0010	0.0010	8067214
Dissolved Thallium (Tl)	mg/L					<0.000050	0.000050	0.000050	8067214
Dissolved Titanium (Ti)	mg/L					<0.0050	0.0050	0.0050	8067214
Dissolved Uranium (U)	mg/L					0.0046	0.00010	0.00010	8067214
Dissolved Vanadium (V)	mg/L					<0.00050	0.00050	0.00050	8067214
Dissolved Zinc (Zn)	mg/L					<0.0050	0.0050	0.0050	8067214

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA248				SXA249			
Sampling Date		2022/06/13 11:15				2022/06/13 12:02			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW301(D) Lab-Dup	RDL	MDL	QC Batch	MW214	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L					15.5	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L					99	1.0	0.20	8051198
Calculated TDS	mg/L					970	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L					<1.0	1.0	0.20	8051198
Cation Sum	me/L					16.7	N/A	N/A	8051205
Hardness (CaCO3)	mg/L					550	1.0	1.0	8053035
Ion Balance (% Difference)	%					3.86	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A					0.241			8051207
Langelier Index (@ 4C)	N/A					-0.00500			8051208
Saturation pH (@ 20C)	N/A					7.59			8051207
Saturation pH (@ 4C)	N/A					7.84			8051208
Inorganics									
Total Ammonia-N	mg/L					0.45	0.050	0.0080	8061833
Conductivity	umho/cm					1500	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L					0.55	0.40	0.070	8057743
Orthophosphate (P)	mg/L	<0.010	0.010	0.0050	8054923	<0.010	0.010	0.0050	8054923
pH	pH					7.83			8055298
Dissolved Sulphate (SO4)	mg/L					460	2.0	0.20	8054913
Alkalinity (Total as CaCO3)	mg/L					100	1.0	0.20	8055296
Dissolved Chloride (Cl-)	mg/L					140	2.0	0.60	8054911
Nitrite (N)	mg/L					<0.010	0.010	0.0020	8054334
Nitrate (N)	mg/L					<0.10	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L					<0.10	0.10	0.010	8054334
Metals									
Dissolved Aluminum (Al)	mg/L	0.0053	0.0049	0.0049	8067214	<0.0049	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	8067214	<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L	<0.0010	0.0010	0.0010	8067214	0.0072	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L	0.020	0.0020	0.0020	8067214	0.011	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	8067214	<0.00040	0.00040	0.00040	8058757

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA248				SXA249			
Sampling Date		2022/06/13 11:15				2022/06/13 12:02			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW301(D) Lab-Dup	RDL	MDL	QC Batch	MW214	RDL	MDL	QC Batch
Dissolved Boron (B)	mg/L	4.1	0.010	0.010	8067214	1.1	0.010	0.010	8058757
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	8067214	<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L	960	2.0	2.0	8067214	90	0.40	0.40	8058757
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	8067214	<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	8067214	<0.00050	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	0.00090	8067214	<0.00090	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L	1.2	0.10	0.050	8067214	0.49	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	8067214	<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L	310	0.050	0.050	8067214	79	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L	0.44	0.0020	0.0020	8067214	0.095	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L	0.014	0.00050	0.00050	8067214	0.024	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L	0.0013	0.0010	0.0010	8067214	<0.0010	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L	0.11	0.10	0.050	8067214	<0.10	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L	63	0.20	0.20	8067214	6.5	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	8067214	<0.0020	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L	3.4	0.050	0.050	8067214	5.1	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	8067214	<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L	1600	0.50	0.50	8067214	130	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L	34	0.0010	0.0010	8067214	7.3	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	8067214	<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	8067214	<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L	0.0043	0.00010	0.00010	8067214	0.00012	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	0.00050	8067214	<0.00050	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	0.0050	8067214	<0.0050	0.0050	0.0050	8058757

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA249				SXA250			
Sampling Date		2022/06/13 12:02				2022/06/13 13:05			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW214 Lab-Dup	RDL	MDL	QC Batch	BH17	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L					24.7	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L					650	1.0	0.20	8051198
Calculated TDS	mg/L					1400	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L					3.1	1.0	0.20	8051198
Cation Sum	me/L					26.2	N/A	N/A	8051205
Hardness (CaCO3)	mg/L					1100	1.0	1.0	8053035
Ion Balance (% Difference)	%					2.96	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A					0.904			8051207
Langelier Index (@ 4C)	N/A					0.659			8051208
Saturation pH (@ 20C)	N/A					6.80			8051207
Saturation pH (@ 4C)	N/A					7.05			8051208
Inorganics									
Total Ammonia-N	mg/L					0.11	0.050	0.0080	8062757
Conductivity	umho/cm	1500	1.0	0.20	8055304	1900	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L					2.2	0.40	0.070	8057513
Orthophosphate (P)	mg/L					<0.010	0.010	0.0050	8054923
pH	pH	7.92			8055298	7.71			8055298
Dissolved Sulphate (SO4)	mg/L					530	5.0	0.50	8054913
Alkalinity (Total as CaCO3)	mg/L	100	1.0	0.20	8055296	660	1.0	0.20	8055296
Dissolved Chloride (Cl-)	mg/L					15	1.0	0.30	8054911
Nitrite (N)	mg/L					<0.010	0.010	0.0020	8054334
Nitrate (N)	mg/L					2.19	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L					2.19	0.10	0.010	8054334
Metals									
Dissolved Aluminum (Al)	mg/L					0.025	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L					<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L					<0.0010	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L					0.086	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L					<0.00040	0.00040	0.00040	8058757

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA249				SXA250			
Sampling Date		2022/06/13 12:02				2022/06/13 13:05			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW214 Lab-Dup	RDL	MDL	QC Batch	BH17	RDL	MDL	QC Batch
Dissolved Boron (B)	mg/L					0.30	0.010	0.010	8058757
Dissolved Cadmium (Cd)	mg/L					<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L					94	0.20	0.20	8058757
Dissolved Chromium (Cr)	mg/L					<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L					<0.00050	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L					0.0019	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L					<0.10	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L					<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L					220	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L					<0.0020	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L					0.0015	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L					<0.0010	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L					<0.10	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L					5.3	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L					0.0035	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L					5.9	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L					<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L					75	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L					4.4	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L					<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L					<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L					0.019	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L					<0.00050	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L					<0.0050	0.0050	0.0050	8058757

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA251				SXA252			
Sampling Date		2022/06/13 06:50				2022/06/13 17:23			
COC Number		882349-02-01				882349-02-01			
	UNITS	FD-1	RDL	MDL	QC Batch	FD-2	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	67.0	N/A	N/A	8051205	18.7	N/A	N/A	8051205
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	130	1.0	0.20	8051198	380	1.0	0.20	8051198
Calculated TDS	mg/L	4200	1.0	0.20	8051211	1100	1.0	0.20	8051211
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	8051198	2.4	1.0	0.20	8051198
Cation Sum	me/L	74.7	N/A	N/A	8051205	20.2	N/A	N/A	8051205
Hardness (CaCO3)	mg/L	1800	1.0	1.0	8053035	750	1.0	1.0	8053035
Ion Balance (% Difference)	%	5.47	N/A	N/A	8053116	3.75	N/A	N/A	8053116
Langelier Index (@ 20C)	N/A	0.390			8051207	0.727			8051207
Langelier Index (@ 4C)	N/A	0.150			8051208	0.482			8051208
Saturation pH (@ 20C)	N/A	6.98			8051207	7.10			8051207
Saturation pH (@ 4C)	N/A	7.22			8051208	7.34			8051208
Inorganics									
Total Ammonia-N	mg/L	4.2	0.050	0.0080	8061833	<0.050	0.050	0.0080	8062757
Conductivity	umho/cm	6200	1.0	0.20	8055304	1600	1.0	0.20	8055304
Dissolved Organic Carbon	mg/L	18	0.40	0.070	8057513	1.0	0.40	0.070	8057513
Orthophosphate (P)	mg/L	<0.010	0.010	0.0050	8054923	<0.010	0.010	0.0050	8054923
pH	pH	7.37			8055298	7.82			8055298
Dissolved Sulphate (SO4)	mg/L	1300	5.0	0.50	8054913	490	5.0	0.50	8054913
Alkalinity (Total as CaCO3)	mg/L	130	1.0	0.20	8055296	380	1.0	0.20	8055296
Dissolved Chloride (Cl-)	mg/L	1300	15	4.5	8054911	35	1.0	0.30	8054911
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8054334	<0.010	0.010	0.0020	8054334
Nitrate (N)	mg/L	<0.10	0.10	0.010	8054334	0.29	0.10	0.010	8054334
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8054334	0.29	0.10	0.010	8054334
Metals									
Dissolved Aluminum (Al)	mg/L	<0.0049	0.0049	0.0049	8058757	<0.0049	0.0049	0.0049	8058757
Dissolved Antimony (Sb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Arsenic (As)	mg/L	0.0074	0.0010	0.0010	8058757	0.0014	0.0010	0.0010	8058757
Dissolved Barium (Ba)	mg/L	0.027	0.0020	0.0020	8058757	0.021	0.0020	0.0020	8058757
Dissolved Beryllium (Be)	mg/L	<0.00040	0.00040	0.00040	8058757	<0.00040	0.00040	0.00040	8058757
Dissolved Boron (B)	mg/L	6.0	0.050	0.050	8058757	0.86	0.010	0.010	8058757

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

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RCAP - COMPREHENSIVE (WATER)

Bureau Veritas ID		SXA251				SXA252			
Sampling Date		2022/06/13 06:50				2022/06/13 17:23			
COC Number		882349-02-01				882349-02-01			
	UNITS	FD-1	RDL	MDL	QC Batch	FD-2	RDL	MDL	QC Batch
Dissolved Cadmium (Cd)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Calcium (Ca)	mg/L	460	1.0	1.0	8058757	77	0.40	0.40	8058757
Dissolved Chromium (Cr)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Cobalt (Co)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Copper (Cu)	mg/L	<0.00090	0.00090	0.00090	8058757	<0.00090	0.00090	0.00090	8058757
Dissolved Iron (Fe)	mg/L	1.6	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Lead (Pb)	mg/L	<0.00050	0.00050	0.00050	8058757	<0.00050	0.00050	0.00050	8058757
Dissolved Magnesium (Mg)	mg/L	150	0.050	0.050	8058757	130	0.050	0.050	8058757
Dissolved Manganese (Mn)	mg/L	0.25	0.0020	0.0020	8058757	0.036	0.0020	0.0020	8058757
Dissolved Molybdenum (Mo)	mg/L	0.012	0.00050	0.00050	8058757	0.022	0.00050	0.00050	8058757
Dissolved Nickel (Ni)	mg/L	0.0016	0.0010	0.0010	8058757	0.0023	0.0010	0.0010	8058757
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	0.050	8058757	<0.10	0.10	0.050	8058757
Dissolved Potassium (K)	mg/L	41	0.20	0.20	8058757	9.0	0.20	0.20	8058757
Dissolved Selenium (Se)	mg/L	<0.0020	0.0020	0.0020	8058757	<0.0020	0.0020	0.0020	8058757
Dissolved Silicon (Si)	mg/L	3.7	0.050	0.050	8058757	6.3	0.050	0.050	8058757
Dissolved Silver (Ag)	mg/L	<0.000090	0.000090	0.000090	8058757	<0.000090	0.000090	0.000090	8058757
Dissolved Sodium (Na)	mg/L	860	0.50	0.50	8058757	120	0.10	0.10	8058757
Dissolved Strontium (Sr)	mg/L	18	0.0010	0.0010	8058757	6.0	0.0010	0.0010	8058757
Dissolved Thallium (Tl)	mg/L	<0.000050	0.000050	0.000050	8058757	<0.000050	0.000050	0.000050	8058757
Dissolved Titanium (Ti)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757
Dissolved Uranium (U)	mg/L	0.015	0.00010	0.00010	8058757	0.0015	0.00010	0.00010	8058757
Dissolved Vanadium (V)	mg/L	<0.00050	0.00050	0.00050	8058757	0.00056	0.00050	0.00050	8058757
Dissolved Zinc (Zn)	mg/L	<0.0050	0.0050	0.0050	8058757	<0.0050	0.0050	0.0050	8058757

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SXA241	SXA242				SXA242			
Sampling Date		2022/06/14 15:03	2022/06/14 14:30				2022/06/14 14:30			
COC Number		882349-02-01	882349-02-01				882349-02-01			
	UNITS	2803463	2806808	RDL	MDL	QC Batch	2806808 Lab-Dup	RDL	MDL	QC Batch
Inorganics										
Colour	TCU	6	5	2	N/A	8055390	5	2	N/A	8055390
Fluoride (F-)	mg/L	0.25	0.15	0.10	0.020	8055290				
Total Phosphorus (P)	mg/L	0.078	0.016	0.0030	0.0030	8063164				
Turbidity	NTU	0.5	0.2	0.1	0.1	8053965				
Dissolved Bromide (Br-)	mg/L	<1.0	<1.0	1.0	N/A	8054314				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas ID		SXA243		SXA244			SXA245			
Sampling Date		2022/06/13 15:20		2022/06/13 14:15			2022/06/13 12:42			
COC Number		882349-02-01		882349-02-01			882349-02-01			
	UNITS	MW202	RDL	MW302(D)	RDL	MDL	MW208	RDL	MDL	QC Batch
Inorganics										
Colour	TCU	<2	2	8	2	N/A	<2	2	N/A	8055390
Fluoride (F-)	mg/L	0.29	0.10	0.60	0.10	0.020	0.14	0.10	0.020	8055290
Total Phosphorus (P)	mg/L	0.071	0.0030	0.19	0.0030	0.0030	3.5	0.030	0.030	8063164
Turbidity	NTU	17	0.1	18	0.1	0.1	8600	4	4	8053965
Dissolved Bromide (Br-)	mg/L	<1.0	1.0	14	10	N/A	<1.0	1.0	N/A	8054314

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

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SXA245				SXA246			SXA247			
Sampling Date		2022/06/13 12:42				2022/06/13 13:05			2022/06/13 11:35			
COC Number		882349-02-01				882349-02-01			882349-02-01			
	UNITS	MW208 Lab-Dup	RDL	MDL	QC Batch	MW201	RDL	MDL	MW301(S)	RDL	MDL	QC Batch
Inorganics												
Colour	TCU					3	2	N/A	<2	2	N/A	8055390
Fluoride (F-)	mg/L					0.29	0.10	0.020	0.32	0.10	0.020	8055290
Total Phosphorus (P)	mg/L	3.2	0.030	0.030	8063164	0.097	0.0030	0.0030	1.8	0.030	0.030	8063164
Turbidity	NTU					140	0.1	0.1	1200	0.5	0.5	8053965
Dissolved Bromide (Br-)	mg/L					<1.0	1.0	N/A	3.3	1.0	N/A	8054314

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas ID		SXA248				SXA249			
Sampling Date		2022/06/13 11:15				2022/06/13 12:02			
COC Number		882349-02-01				882349-02-01			
	UNITS	MW301(D)	RDL	MDL	QC Batch	MW214	RDL	MDL	QC Batch
Inorganics									
Colour	TCU	<2	2	N/A	8055390	<2	2	N/A	8055390
Fluoride (F-)	mg/L	0.42	0.10	0.020	8055290	0.30	0.10	0.020	8055290
Total Phosphorus (P)	mg/L	0.50	0.030	0.030	8063164	0.64	0.030	0.030	8063165
Turbidity	NTU	1200	0.5	0.5	8053965	130	0.1	0.1	8053965
Dissolved Bromide (Br-)	mg/L	<50	50	N/A	8054314	<2.0	2.0	N/A	8054314

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

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SXA249				SXA250				SXA250			
Sampling Date		2022/06/13 12:02				2022/06/13 13:05				2022/06/13 13:05			
COC Number		882349-02-01				882349-02-01				882349-02-01			
	UNITS	MW214 Lab-Dup	RDL	MDL	QC Batch	BH17	RDL	MDL	QC Batch	BH17 Lab-Dup	RDL	MDL	QC Batch
Inorganics													
Colour	TCU					<2	2	N/A	8055390				
Fluoride (F-)	mg/L	0.29	0.10	0.020	8055290	0.28	0.10	0.020	8055290				
Total Phosphorus (P)	mg/L					4.4	0.030	0.030	8063165				
Turbidity	NTU					6400	4	4	8053965				
Dissolved Bromide (Br-)	mg/L					<1.0	1.0	N/A	8054314	<1.0	1.0	N/A	8054314

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas ID		SXA251				SXA251			
Sampling Date		2022/06/13 06:50				2022/06/13 06:50			
COC Number		882349-02-01				882349-02-01			
	UNITS	FD-1	RDL	MDL	QC Batch	FD-1 Lab-Dup	RDL	MDL	QC Batch
Inorganics									
Colour	TCU	5	2	N/A	8055390				
Fluoride (F-)	mg/L	0.61	0.10	0.020	8055290				
Total Phosphorus (P)	mg/L	0.19	0.0030	0.0030	8063165				
Turbidity	NTU	100	0.1	0.1	8053965	110	0.1	0.1	8053965
Dissolved Bromide (Br-)	mg/L	15	10	N/A	8054314				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SXA252			
Sampling Date		2022/06/13 17:23			
COC Number		882349-02-01			
	UNITS	FD-2	RDL	MDL	QC Batch
Inorganics					
Colour	TCU	<2	2	N/A	8055390
Fluoride (F-)	mg/L	0.30	0.10	0.020	8055290
Total Phosphorus (P)	mg/L	0.075	0.0030	0.0030	8063165
Turbidity	NTU	22	0.1	0.1	8053965
Dissolved Bromide (Br-)	mg/L	<1.0	1.0	N/A	8054314

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

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TEST SUMMARY

Bureau Veritas ID: SXA241
Sample ID: 2803463
Matrix: Water

Collected: 2022/06/14
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057743	N/A	2022/06/17	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA241 Dup
Sample ID: 2803463
Matrix: Water

Collected: 2022/06/14
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill

Bureau Veritas ID: SXA242
Sample ID: 2806808
Matrix: Water

Collected: 2022/06/14
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk

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TEST SUMMARY

Bureau Veritas ID: SXA242
Sample ID: 2806808
Matrix: Water

Collected: 2022/06/14
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA242 Dup
Sample ID: 2806808
Matrix: Water

Collected: 2022/06/14
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru

Bureau Veritas ID: SXA243
Sample ID: MW202
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057594	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SXA243
Sample ID: MW202
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA244
Sample ID: MW302(D)
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA245
Sample ID: MW208
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai

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TEST SUMMARY

Bureau Veritas ID: SXA245
Sample ID: MW208
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA245 Dup
Sample ID: MW208
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga

Bureau Veritas ID: SXA246
Sample ID: MW201
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8062757	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SXA246
Sample ID: MW201
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA247
Sample ID: MW301(S)
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA247 Dup
Sample ID: MW301(S)
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law

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TEST SUMMARY

Bureau Veritas ID: SXA248
Sample ID: MW301(D)
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8064987	N/A	2022/06/21	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8064163	N/A	2022/06/21	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8067214	N/A	2022/06/22	Nan Raykha
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063164	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8064170	N/A	2022/06/21	Chandra Nandlal
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA248 Dup
Sample ID: MW301(D)
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	8067214	N/A	2022/06/22	Nan Raykha
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu

Bureau Veritas ID: SXA249
Sample ID: MW214
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057743	N/A	2022/06/17	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai

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TEST SUMMARY

Bureau Veritas ID: SXA249
Sample ID: MW214
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063165	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA249 Dup
Sample ID: MW214
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai

Bureau Veritas ID: SXA250
Sample ID: BH17
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063165	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8062757	N/A	2022/06/20	Raiq Kashif

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SXA250
Sample ID: BH17
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA250 Dup
Sample ID: BH17
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana

Bureau Veritas ID: SXA251
Sample ID: FD-1
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063165	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8061833	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

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Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

TEST SUMMARY

Bureau Veritas ID: SXA251 Dup
Sample ID: FD-1
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

Bureau Veritas ID: SXA252
Sample ID: FD-2
Matrix: Water

Collected: 2022/06/13
Shipped:
Received: 2022/06/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8055296	N/A	2022/06/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8051198	N/A	2022/06/16	Automated Statchk
Anions	IC	8054314	N/A	2022/06/16	Surleen Kaur Romana
Chloride by Automated Colourimetry	KONE	8054911	N/A	2022/06/16	Alina Dobreanu
Colour	SPEC	8055390	N/A	2022/06/16	Viorica Rotaru
Conductivity	AT	8055304	N/A	2022/06/16	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8057513	N/A	2022/06/16	Massarat Jan
Fluoride	ISE	8055290	2022/06/15	2022/06/16	Surinder Rai
Hardness (calculated as CaCO3)		8053035	N/A	2022/06/20	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8058757	N/A	2022/06/20	Rupinder Gill
Ion Balance (% Difference)	CALC	8053116	N/A	2022/06/20	Automated Statchk
Anion and Cation Sum	CALC	8051205	N/A	2022/06/20	Automated Statchk
Total Phosphorus	KONE	8063165	2022/06/17	2022/06/17	Jacqueline Alvarenga
Total Ammonia-N	LACH/NH4	8062757	N/A	2022/06/20	Raiq Kashif
Nitrate & Nitrite as Nitrogen in Water	LACH	8054334	N/A	2022/06/17	Samuel Law
pH	AT	8055298	2022/06/15	2022/06/16	Surinder Rai
Orthophosphate	KONE	8054923	N/A	2022/06/16	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8051207	N/A	2022/06/20	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8051208	N/A	2022/06/20	Automated Statchk
Sulphate by Automated Colourimetry	KONE	8054913	N/A	2022/06/16	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8051211	N/A	2022/06/20	Automated Statchk
Turbidity	AT	8053965	N/A	2022/06/15	Roya Fathitil

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

ANIONS-L: Due to high concentrations of the target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G3790
Report Date: 2022/06/23

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 160960844
Site Location: CN MILTON
Sampler Initials: RD

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8053965	Turbidity	2022/06/15			99	85 - 115	<0.1	NTU	4.9	20
8054314	Dissolved Bromide (Br-)	2022/06/16	98	80 - 120	99	80 - 120	<1.0	mg/L	NC	20
8054334	Nitrate (N)	2022/06/17	96	80 - 120	97	80 - 120	<0.10	mg/L	NC	20
8054334	Nitrite (N)	2022/06/17	104	80 - 120	105	80 - 120	<0.010	mg/L	5.8	20
8054911	Dissolved Chloride (Cl-)	2022/06/16	NC	80 - 120	103	80 - 120	<1.0	mg/L		
8054913	Dissolved Sulphate (SO4)	2022/06/16	NC	75 - 125	103	80 - 120	<1.0	mg/L		
8054923	Orthophosphate (P)	2022/06/16	112	75 - 125	99	80 - 120	<0.010	mg/L	NC	25
8055290	Fluoride (F-)	2022/06/16	98	80 - 120	100	80 - 120	<0.10	mg/L	1.9	20
8055296	Alkalinity (Total as CaCO3)	2022/06/16			96	85 - 115	<1.0	mg/L	0.68	20
8055298	pH	2022/06/16			101	98 - 103			1.1	N/A
8055304	Conductivity	2022/06/16			99	85 - 115	<1.0	umho/cm	1.4	25
8055390	Colour	2022/06/16			99	80 - 120	<2	TCU	1.5	25
8057513	Dissolved Organic Carbon	2022/06/16	93	80 - 120	97	80 - 120	<0.40	mg/L	2.0	20
8057594	Dissolved Organic Carbon	2022/06/16	101	80 - 120	99	80 - 120	<0.40	mg/L	0.79	20
8057743	Dissolved Organic Carbon	2022/06/17	95	80 - 120	102	80 - 120	<0.40	mg/L	7.6	20
8058757	Dissolved Aluminum (Al)	2022/06/20	104	80 - 120	102	80 - 120	<0.0049	mg/L	NC	20
8058757	Dissolved Antimony (Sb)	2022/06/20	108	80 - 120	102	80 - 120	<0.00050	mg/L	NC	20
8058757	Dissolved Arsenic (As)	2022/06/20	103	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20
8058757	Dissolved Barium (Ba)	2022/06/20	104	80 - 120	102	80 - 120	<0.0020	mg/L	1.4	20
8058757	Dissolved Beryllium (Be)	2022/06/20	103	80 - 120	99	80 - 120	<0.00040	mg/L	NC	20
8058757	Dissolved Boron (B)	2022/06/20	101	80 - 120	98	80 - 120	<0.010	mg/L	1.6	20
8058757	Dissolved Cadmium (Cd)	2022/06/20	105	80 - 120	102	80 - 120	<0.000090	mg/L	NC	20
8058757	Dissolved Calcium (Ca)	2022/06/20	NC	80 - 120	102	80 - 120	<0.20	mg/L	1.2	20
8058757	Dissolved Chromium (Cr)	2022/06/20	97	80 - 120	96	80 - 120	<0.0050	mg/L	NC	20
8058757	Dissolved Cobalt (Co)	2022/06/20	98	80 - 120	99	80 - 120	<0.00050	mg/L	NC	20
8058757	Dissolved Copper (Cu)	2022/06/20	101	80 - 120	97	80 - 120	<0.00090	mg/L	NC	20
8058757	Dissolved Iron (Fe)	2022/06/20	101	80 - 120	100	80 - 120	<0.10	mg/L	NC	20
8058757	Dissolved Lead (Pb)	2022/06/20	98	80 - 120	97	80 - 120	<0.00050	mg/L	NC	20
8058757	Dissolved Magnesium (Mg)	2022/06/20	NC	80 - 120	103	80 - 120	<0.050	mg/L	1.7	20
8058757	Dissolved Manganese (Mn)	2022/06/20	99	80 - 120	99	80 - 120	<0.0020	mg/L	0.57	20
8058757	Dissolved Molybdenum (Mo)	2022/06/20	102	80 - 120	97	80 - 120	<0.00050	mg/L	0.090	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8058757	Dissolved Nickel (Ni)	2022/06/20	98	80 - 120	98	80 - 120	<0.0010	mg/L	1.1	20
8058757	Dissolved Phosphorus (P)	2022/06/20	102	80 - 120	111	80 - 120	<0.10	mg/L	3.8	20
8058757	Dissolved Potassium (K)	2022/06/20	103	80 - 120	103	80 - 120	<0.20	mg/L	0.90	20
8058757	Dissolved Selenium (Se)	2022/06/20	106	80 - 120	102	80 - 120	<0.0020	mg/L	NC	20
8058757	Dissolved Silicon (Si)	2022/06/20	101	80 - 120	98	80 - 120	<0.050	mg/L	1.2	20
8058757	Dissolved Silver (Ag)	2022/06/20	93	80 - 120	100	80 - 120	<0.000090	mg/L	NC	20
8058757	Dissolved Sodium (Na)	2022/06/20	NC	80 - 120	102	80 - 120	<0.10	mg/L	0.68	20
8058757	Dissolved Strontium (Sr)	2022/06/20	NC	80 - 120	99	80 - 120	<0.0010	mg/L	1.3	20
8058757	Dissolved Thallium (Tl)	2022/06/20	98	80 - 120	98	80 - 120	<0.000050	mg/L	NC	20
8058757	Dissolved Titanium (Ti)	2022/06/20	102	80 - 120	97	80 - 120	<0.0050	mg/L	NC	20
8058757	Dissolved Uranium (U)	2022/06/20	99	80 - 120	96	80 - 120	<0.00010	mg/L	1.8	20
8058757	Dissolved Vanadium (V)	2022/06/20	97	80 - 120	95	80 - 120	<0.00050	mg/L	NC	20
8058757	Dissolved Zinc (Zn)	2022/06/20	98	80 - 120	97	80 - 120	<0.0050	mg/L	NC	20
8061833	Total Ammonia-N	2022/06/20	97	75 - 125	98	80 - 120	<0.050	mg/L	6.4	20
8062757	Total Ammonia-N	2022/06/20	105	75 - 125	99	80 - 120	<0.050	mg/L	NC	20
8063164	Total Phosphorus (P)	2022/06/17	NC	N/A	107	80 - 120	<0.0030	mg/L	7.3	20
8063165	Total Phosphorus (P)	2022/06/17	101	N/A	106	80 - 120	<0.0030	mg/L		
8064163	Dissolved Chloride (Cl-)	2022/06/21	105	80 - 120	103	80 - 120	<1.0	mg/L	0.061	20
8064170	Dissolved Sulphate (SO4)	2022/06/21	100	75 - 125	106	80 - 120	<1.0	mg/L	0.31	20
8064987	Alkalinity (Total as CaCO3)	2022/06/21			96	85 - 115	<1.0	mg/L	1.2	20
8067214	Dissolved Aluminum (Al)	2022/06/22	111	80 - 120	102	80 - 120	<0.0049	mg/L	7.2	20
8067214	Dissolved Antimony (Sb)	2022/06/22	108	80 - 120	98	80 - 120	<0.00050	mg/L	NC	20
8067214	Dissolved Arsenic (As)	2022/06/22	105	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20
8067214	Dissolved Barium (Ba)	2022/06/22	105	80 - 120	100	80 - 120	<0.0020	mg/L	0.40	20
8067214	Dissolved Beryllium (Be)	2022/06/22	91	80 - 120	100	80 - 120	<0.00040	mg/L	NC	20
8067214	Dissolved Boron (B)	2022/06/22	NC	80 - 120	96	80 - 120	<0.010	mg/L	2.7	20
8067214	Dissolved Cadmium (Cd)	2022/06/22	99	80 - 120	98	80 - 120	<0.000090	mg/L	NC	20
8067214	Dissolved Calcium (Ca)	2022/06/22	NC	80 - 120	101	80 - 120	<0.20	mg/L	2.2	20
8067214	Dissolved Chromium (Cr)	2022/06/22	103	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20
8067214	Dissolved Cobalt (Co)	2022/06/22	103	80 - 120	101	80 - 120	<0.00050	mg/L	NC	20
8067214	Dissolved Copper (Cu)	2022/06/22	101	80 - 120	100	80 - 120	<0.00090	mg/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8067214	Dissolved Iron (Fe)	2022/06/22	104	80 - 120	101	80 - 120	<0.10	mg/L	1.2	20
8067214	Dissolved Lead (Pb)	2022/06/22	94	80 - 120	97	80 - 120	<0.00050	mg/L	NC	20
8067214	Dissolved Magnesium (Mg)	2022/06/22	NC	80 - 120	102	80 - 120	<0.050	mg/L	2.8	20
8067214	Dissolved Manganese (Mn)	2022/06/22	104	80 - 120	100	80 - 120	<0.0020	mg/L	1.4	20
8067214	Dissolved Molybdenum (Mo)	2022/06/22	119	80 - 120	102	80 - 120	<0.00050	mg/L	2.4	20
8067214	Dissolved Nickel (Ni)	2022/06/22	95	80 - 120	99	80 - 120	<0.0010	mg/L	4.5	20
8067214	Dissolved Phosphorus (P)	2022/06/22	113	80 - 120	119	80 - 120	<0.10	mg/L	1.7	20
8067214	Dissolved Potassium (K)	2022/06/22	NC	80 - 120	105	80 - 120	<0.20	mg/L	3.9	20
8067214	Dissolved Selenium (Se)	2022/06/22	103	80 - 120	98	80 - 120	<0.0020	mg/L	NC	20
8067214	Dissolved Silicon (Si)	2022/06/22	111	80 - 120	101	80 - 120	<0.050	mg/L	1.2	20
8067214	Dissolved Silver (Ag)	2022/06/22	88	80 - 120	102	80 - 120	<0.000090	mg/L	NC	20
8067214	Dissolved Sodium (Na)	2022/06/22	NC	80 - 120	100	80 - 120	<0.10	mg/L	0.21	20
8067214	Dissolved Strontium (Sr)	2022/06/22	NC	80 - 120	97	80 - 120	<0.0010	mg/L	0.74	20
8067214	Dissolved Thallium (Tl)	2022/06/22	95	80 - 120	97	80 - 120	<0.000050	mg/L	NC	20
8067214	Dissolved Titanium (Ti)	2022/06/22	109	80 - 120	99	80 - 120	<0.0050	mg/L	NC	20
8067214	Dissolved Uranium (U)	2022/06/22	97	80 - 120	95	80 - 120	<0.00010	mg/L	6.7	20
8067214	Dissolved Vanadium (V)	2022/06/22	109	80 - 120	100	80 - 120	<0.00050	mg/L	NC	20
8067214	Dissolved Zinc (Zn)	2022/06/22	88	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20

N/A = Not Applicable

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

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

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

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

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

<Original signed by>

Cristina Carriere, Senior Scientific Specialist

<Original signed by>

David Huang, BBY Scientific Specialist

Bureau Veritas 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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109 & 110, 4023 Meadowbrook Drive, London, Ontario Canada N6L 1E7 Tel:(519) 652-9444 Toll-free:800-563-6266 Fax:(519) 652-8189 www.bvna.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#9197 Stantec Consulting Ltd	Company Name:		Quotation #:	C15856
Attention:	Accounts Payable	Attention:	Grant Whitehead	P.O. #:	
Address:	300 Hagey Blvd Suite 100 Waterloo ON N2L 0A4	Address:	EDD @ stantec.com	Project:	160960544 GW Milton
Tel:	(519) 579-4410 Fax: (519) 579-6733	Tel:	(519) 585-7400 Fax: (519) 579-4239	Project Name:	
Email:	SAPinvoices@Stantec.com	Email:	grant.whitehead@stantec.com, ryan.dong@stantec.com	Site #:	
				Sampled By:	Ryan Dong

14-Jun-22 16:27
Ronklin Gracian
C2G3790
IGM ENV-1757

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558. ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☐ Reg 406 Table ___
- ☒ Other SDWQG

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

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	RCAp - Comprehensive	Bromide	Colour	Fluoride	Turbidity	Total Phosphorus (Colourimetric)	# of Bottles	Comments
1		2803463	June 14/22	15:03	GW	Y	X	X	X	X	X	X	5	
		2806305	June 14/22	14:30	GW	Y	X	X	X	X	X	X	5	
2		MW202	June 13/22	15:20	GW	Y	X	X	X	X	X	X	5	
		MW302(D)	"	14:15	GW	Y	X	X	X	X	X	X	5	
3		MW208	"	12:42	GW	Y	X	X	X	X	X	X	5	
4		MW201	"	13:05	GW	Y	X	X	X	X	X	X	5	
5		MW301(S)	"	11:35	GW	Y	X	X	X	X	X	X	5	
6		MW301(D)	"	11:15	GW	Y	X	X	X	X	X	X	5	
7		MW214	"	12:02	GW	Y	X	X	X	X	X	X	5	
8		BH17	"	13:50	GW	Y	X	X	X	X	X	X	5	
9		FD-1	June 13/22	16:50	GW	Y	X	X	X	X	X	X	5	
10		FD-2	June 8/22	17:23	GW	Y	X	X	X	X	X	X	5	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
	22/6/14	15:27		22/06/14	16:27	

Laboratory Use Only
Time Sensitive | Temperature (°C) on Recei: 5 7 3 1 6 | Custody Seal Present ☐ Yes ☐ No | Intact ☐

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S 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.BVNA.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.BVNA.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

BV# 63165

Appendix E Well Abandonment Records

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	CNR		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetiere St W	Montreal	PQ	H3B 2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession

County/District/Municipality	City/Town/Village	Province	Postal Code
		Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	599985	4811571		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Decommission Record for 2" PVC well Well filled with bentonite cut down 2 meters below grade			0	3.5

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used ☐ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☑ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☒ Abandoned, other, specify construction ☐ Other, specify

Water Details

Water found at Depth (m/ft)	Kind of Water	
0.78 (m/ft)	☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify
(m/ft)	☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify
(m/ft)	☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

SEE PLAN ATTACHED

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc.	6875

Business Address (Street Number/Name)	Municipality
48 Dawson Rd.	Guelph

Province	Postal Code	Business E-mail Address
On	N1H5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197630700	Cowan, Kyle

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3908		2022 07 13

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☒ No	Y Y Y Y M M D D	Audit No. Z389645
	Date Work Completed: 2022 04 07	Received

Ministry's Copy


MW location
Legend
5127 Tremaine Rd
Abandonned monitoring well
Abandonned monitoring well
5127 Tremaine Rd
Google Earth
1 km
N

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	[ ] Well Constructed by Well Owner
	CNR		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetiere St W	Montreal	PQ	H3B 2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession

County/District/Municipality	City/Town/Village	Province	Postal Code
		Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	594714	4812085		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Decommission Record for 2" monitoring well well filled with bentonite cut down 2 meters below grade			0	3.2

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[ ] Rotary (Reverse) [ ] Driving
[ ] Boring [ ] Digging
[ ] Air percussion
[ ] Other, specify

Well Use

[ ] Public [ ] Commercial [ ] Not used
[ ] Domestic [ ] Municipal [ ] Dewatering
[ ] Livestock [ ] Test Hole [X] Monitoring
[ ] Irrigation [ ] Cooling & Air Conditioning
[ ] Industrial
[ ] Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

[ ] Water Supply
[ ] Replacement Well
[ ] Test Hole
[ ] Recharge Well
[ ] Dewatering Well
[ ] Observation and/or Monitoring Hole
[ ] Alteration (Construction)
[ ] Abandoned, Insufficient Supply
[ ] Abandoned, Poor Water Quality
[X] Abandoned, other, specify
construction
[ ] Other, specify

Water Details

		Hole Diameter Depth (m/ft) From	Hole Diameter Depth (m/ft) To	Hole Diameter (cm/in)
Water found at Depth 1.21 (m/ft) [ ] Gas	Kind of Water: [ ] Fresh [X] Untested [ ] Other, specify			
Water found at Depth (m/ft) [ ] Gas	Kind of Water: [ ] Fresh [ ] Untested [ ] Other, specify			
Water found at Depth (m/ft) [ ] Gas	Kind of Water: [ ] Fresh [ ] Untested [ ] Other, specify			

Results of Well Yield Testing

After test of well yield, water was:
[ ] Clear and sand free
[ ] Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? [ ] Yes [ ] No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

SEE PLAN ATTACHED

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc	6875

Business Address (Street Number/Name)	Municipality
48 Dawson Rd	Guelph

Province	Postal Code	Business E-mail Address
On	N1H 5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197630700	Cowan, Kyle

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3908		2022/07/13

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
[ ] Yes [X] No	Y Y Y Y M M D D	Audit No. Z389646
	Date Work Completed 2022/07/07	Received


MW location
Legend
5127 Tremaine Rd
Abandonned monitoring well
Abandonned monitoring well
5127 Tremaine Rd
Google Earth
N
1 km

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☑ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 2

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Canadian National Railway		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetière Street W	Montreal	Quebec	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
5127 Tremaine Road			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Milton	Ontario	L9T2X5

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	594574	4812007		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Decommission Record				
	- well depth of 2.88m below ground surface				
	- water level of 0.72m below ground surface				
	- well removed and sealed with bentonite cap				
	- 50mm monitor well				

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used ☐ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☐ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☑ Abandoned, other, specify ☐ Other, specify

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water: Fresh	Untested	Other, specify

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		60	

Map of Well Location

Please provide a map below following instructions on the back.

See attached

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc	6875

Business Address (Street Number/Name)	Municipality
48 Dawson Rd.	Guelph

Province	Postal Code	Business E-mail Address
ON	N1H5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197630700	West, Brock

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3898	Brock West	2022/06/01

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No	Y Y Y Y M M D D	2022/05/31

Ministry Use Only

Audit No. Z389701

Received

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Ministry's Copy


Legend
Feature 1
Well
Well
Tremaine Rd N
pasture raised eggs farm
Mad Baby Designs
Lower Base Line W
Rembrandt Landscaping
22
N
400 m
Google Earth

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Canadian National Railway		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetière Street West	Montreal	Quebec	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
5127 Tremaine Road			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Milton	Ontario	L9T2X5

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	594646	4811518		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Well decommission record		2" PVC MW	0	9.39
			bentonite	0	9.39
			top 2.5m of casing removed, bentonite cap placed on top		

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☑ Abandoned, other, specify
construction
☐ Other, specify

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth (m/ft) From	To	Diameter (cm/in)
2.63 (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping _____ hrs + _____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

See attached map

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc.	6875

Business Address (Street Number/Name)	Municipality
48 Dawson Rd.	Guelph

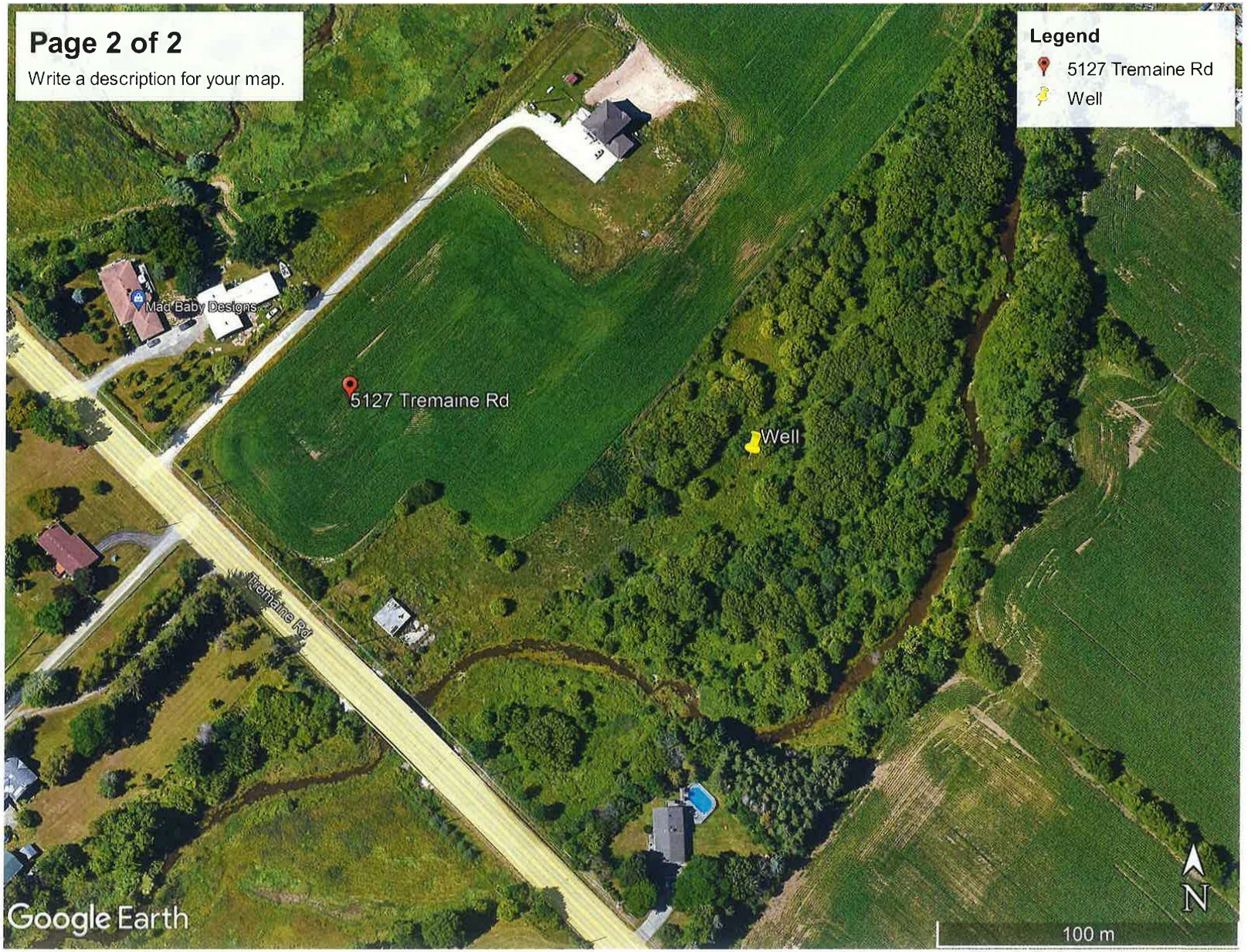
Province	Postal Code	Business E-mail Address
ON	N1H5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197636700	Warburton, Adam

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
4157	A. Warburton	2022050 2

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☐ No	Y Y Y Y M M D D	Audit No. Z375974
	Date Work Completed 2022042 8	Received

Ministry's Copy


Page 2 of 2
Write a description for your map.
Legend
5127 Tremaine Rd
Well
Mad Baby Designs
5127 Tremaine Rd
Well
Tremaine Rd
Google Earth
N
100 m

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☑ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	CNR		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetiere St W	Montreal	PQ	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
	Milton		

County/District/Municipality	City/Town/Village	Province	Postal Code
Halton		Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	594557	4810648		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
	Decommission Record for 2" well well filled with bentonite cut down 2 meters below grade			0	9.02

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☑ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☑ Abandoned, other, specify — construction
☐ Other, specify

Water Details

Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☒ Untested ☐ Gas ☐ Other, specify	Hole Diameter Depth (m/ft) From	To	Diameter (cm/in)
1.296				
(m/ft) ☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify			

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		60	

Map of Well Location

Please provide a map below following instructions on the back.

SEE PLAN ATTACHED

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc.	6875

Business Address (Street Number/Name)	Municipality
48 Dawson Rd.	Guelph

Province	Postal Code	Business E-mail Address
On	N1H5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197630700	Cowan, Kyle

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3908		2022/07/13

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☒ No	Date Work Completed 2022/04/07	Audit No. Z389649 Received

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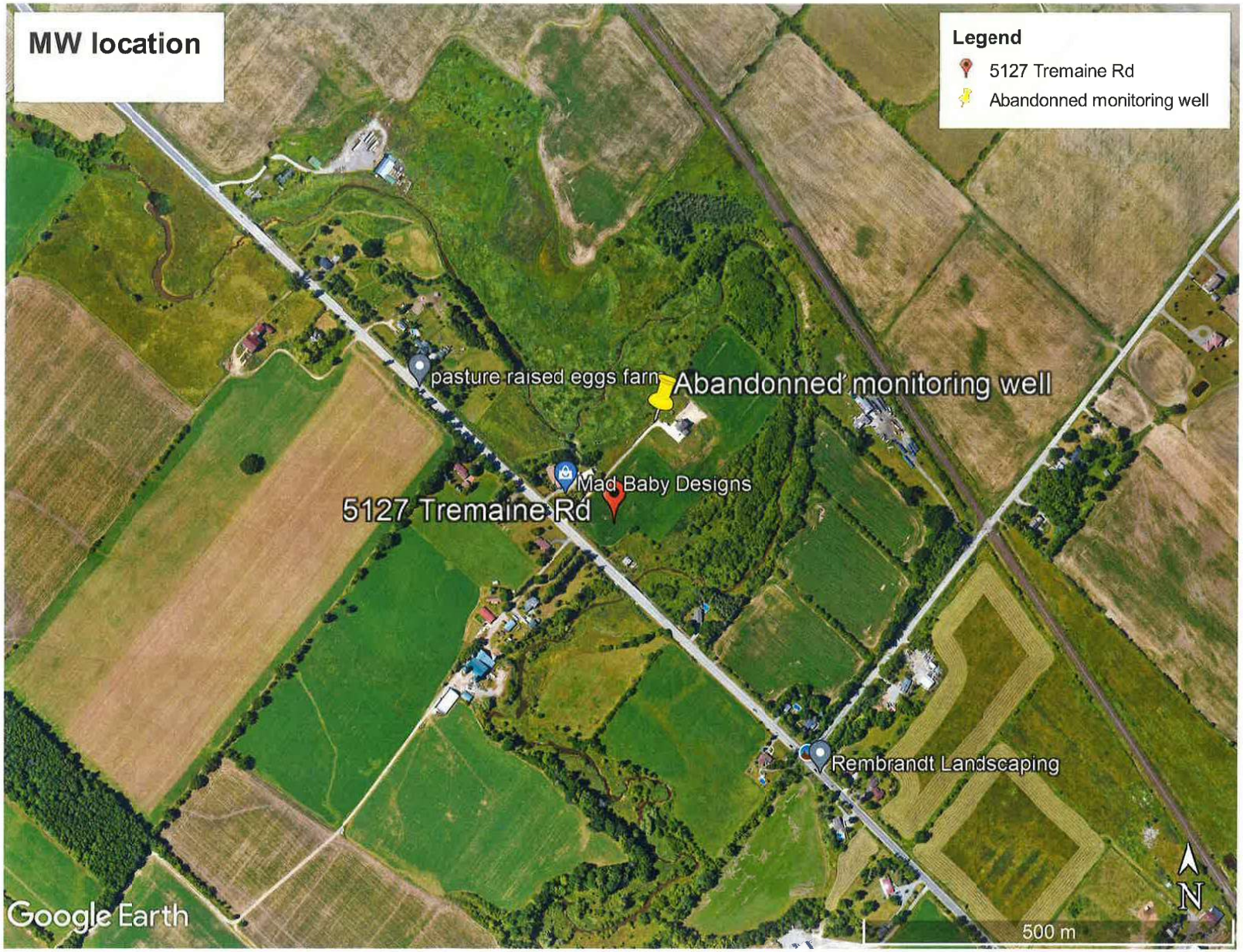
Ministry's Copy


MW location
Legend
5127 Tremaine Rd
Abandonned monitoring well
pasture raised eggs farm
Abandonned monitoring well
Mad Baby Designs
5127 Tremaine Rd
Rembrandt Landscaping
N
500 m
Google Earth

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☑ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 2

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Canadian National Railway		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetière Street W	Montreal	Quebec	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
5127 Tremaine Road			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Milton	Ontario	L9T2X5

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	594921	4811712		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Decommission Record				
	- 50 mm diameter monitor well				
	- well depth of 9.02m below ground surface				
	- water level of 1.58m below ground surface				
	- well filled with bentonite				
	- well cut off 2m below grade and sealed with bentonite cap				

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☑ Abandoned, other, specify
☐ Other, specify

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water: Fresh	Untested	Other, specify

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

See attached

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc.	6875

Business Address (Street Number/Name)	Municipality
48 Dawson Rd.	Guelph

Province	Postal Code	Business E-mail Address
ON	N1H5V1	generale@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197630700	West, Brock

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3898		2022061

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☐ No	Y Y Y Y M M D D	Audit No. Z389702
	Date Work Completed	
	20220531	Received

Ministry's Copy


Legend
Feature 1
Well
Well
Tremaine Rd N
pasture raised eggs farm
Mad Baby Designs
Lower Base Line W
Rembrandt Landscaping
22
N
400 m
Google Earth

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Canadian National Railway		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetière Street West	Montreal	Quebec	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
5269 Tremaine Road			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Milton	Ontario	L9T2X5

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	594216	4810209		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Well decommission	record	2" PVC MW	0	8.70
			bentonite	0	8.70

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☑ Abandoned, other, specify
construction
☐ Other, specify

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth (m/ft) From	Hole Diameter Depth (m/ft) To	Hole Diameter (cm/in)
0.71 (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

see attached map

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc	6187

Business Address (Street Number/Name)	Municipality
46 Dawson Rd.	Guelph

Province	Postal Code	Business E-mail Address
ON	N1H5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5177630700	Warburton, Adam

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
4157	A. Wt	2022/04/08

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No	YYYY MM DD	2022/03/08

Ministry Use Only

Audit No. Z375968

Received

Well Owner's Copy


Page 2 of 2
Write a description for your map.
Legend
5269 Tremaine Rd
Well
Well
5269 Tremaine Rd
Tremaine Road North
N
Google Earth
300 m

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Canadian National Railway		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de La Gauchetière Street West	Montreal	Quebec	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
5381 Tremaine Road			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Milton	Ontario	L9T2X5

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	593755	4812379		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Well decommission record		2" PVC MW	0	7.63
			bentonite	0	7.63
			entire casing removed for construction		

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☑ Abandoned, other, specify
construction
☐ Other, specify

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth (m/ft) From	Hole Diameter Depth (m/ft) To	Hole Diameter (cm/in)
1.30 (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

see attached map

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Insitu Contractors Inc.	6875

Business Address (Street Number/Name)	Municipality
418 Dawson Rd.	Guelph

Province	Postal Code	Business E-mail Address
ON	N1H5V1	general@insitucontractors.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
5197163070	Warburton, Adam

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
4157	A. Wart	2021/04/08

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No		2021/03/08

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Audit No. Z375969

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Well Owner's Copy


Page 2 of 2
Write a description for your map.
Legend
5269 Tremaine Rd
Well
Well
Tremaine Road North
5381 Tremaine Rd
Google Earth
300 m
N

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☒ Metric ☐ Imperial

Well Tag No. (Place Sticker and/or Print Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	CANADIAN NATIONAL RAILWAY		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
935 de la Gauchetiere St W	Montreal	Quebec	H3B2M9	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession

County/District/Municipality	City/Town/Village	Province	Postal Code
HALTON	MILTON	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	593602	4812537		

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	DECOMMISSIONING OF MW 212				

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☐ Other, specify AUGER

Well Use

☐ Public ☐ Commercial ☐ Not used ☐ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☒ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
5	PVC	0.3	0	7.5

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
5.6	PVC	10	7.5	9.1

Status of Well

☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☒ Abandoned, other, specify not needed. ☐ Other, specify

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water: Fresh / Untested / Other, specify
25	☐	
	☐	
	☐	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	9.77	

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min/GPM)

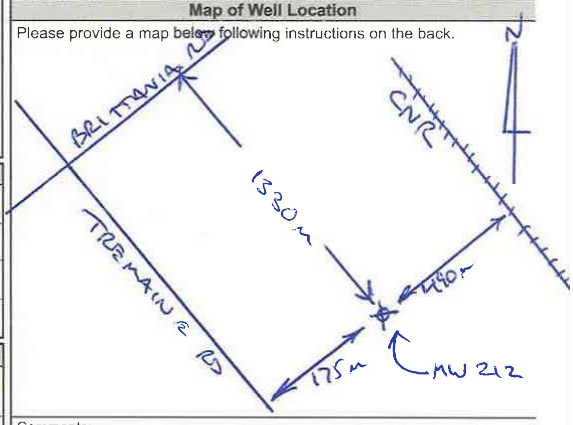
Well production (l/min/GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
INSITU CONTRACTORS INC	6875

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
INSITU CONTRACTORS INC	GUELPH	ON	N1K5V1	gerardo@insitucontractors.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
5197630700	OUSSOREN, MARK	1475		2022/11/14

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☒ No		2022/09/26

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Appendix F Photos

Stantec

Photographic Log

Client:	**Canadian National Railway Co.**	**Project:**	**Groundwater FUP**
Site Name:	**CN Milton**	**Site Location:**	

Photograph ID: 1 **Photo Location:** July 12, 2022 **Direction:** **Survey Date:** 7/12/2022 **Comments:**	
Photograph ID: 2 **Photo Location:** July 28-29. 2022 **Direction:** **Survey Date:** 7/29/2022 **Comments:**	

Client:	**Canadian National Railway Co.**	**Project:**	**Groundwater FUP**
Site Name:	**CN Milton**	**Site Location:**	

Photograph ID: 3 **Photo Location:** August 5, 2022 **Direction:** **Survey Date:** 8/5/2022 **Comments:**	
Photograph ID: 4 **Photo Location:** August 10, 2022 **Direction:** **Survey Date:** 8/10/2022 **Comments:**	

Client:	**Canadian National Railway Co.**	**Project:**	**Groundwater FUP**
Site Name:	**CN Milton**	**Site Location:**	

Photograph ID: 5 **Photo Location:** August 12, 2022 **Direction:** **Survey Date:** 8/12/2022 **Comments:**	
Photograph ID: 6 **Photo Location:** August 16, 2022 **Direction:** **Survey Date:** 8/16/2022 **Comments:**	

Client:	**Canadian National Railway Co.**	**Project:**	**Groundwater FUP**
Site Name:	**CN Milton**	**Site Location:**	

Photograph ID: 7 **Photo Location:** August 17, 2022 - immediately after precipitation event **Direction:** **Survey Date:** 8/17/2022 **Comments:**	
Photograph ID: 8 **Photo Location:** August 17, 2022 - immediately after precipitation event **Direction:** **Survey Date:** 8/17/2022 **Comments:**	

Client:	**Canadian National Railway Co.**	**Project:**	**Groundwater FUP**
Site Name:	**CN Milton**	**Site Location:**	

Photograph ID: 9 **Photo Location:** September 7, 2022 **Direction:** **Survey Date:** 9/7/2022 **Comments:**	
Photograph ID: 10 **Photo Location:** **Direction:** **Survey Date:** 9/7/2022 **Comments:**	

Client:	**Canadian National Railway Co.**	**Project:**	**Groundwater FUP**
Site Name:	**CN Milton**	**Site Location:**	

Photograph ID: 11 **Photo Location:** October 6, 2022 **Direction:** **Survey Date:** 10/6/2022 **Comments:**	
Photograph ID: 12 **Photo Location:** **Direction:** **Survey Date:** **Comments:**	No Photo Applicable