Hydrogeological Investigation

Proposed Residential Buildings
3400 Dufferin Street and 8 Jane Osler Boulevard
Toronto, ON

Prepared For:

Dufferin-401 Properties Limited

Project No.: 22-217-100
Date: July 22, 2022

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22-217-100 **July 22, 2022**

Attn: Robert Stein, President
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Via email: fv@collecdev.com

RE: Hydrogeological Investigation – 3400 Dufferin Street and 8 Jane Osler Boulevard, Toronto, ON

DS Consultants Limited (DS) was retained by Dufferin-401 Properties Limited to complete a hydrogeological investigation for the proposed development located at 3400 Dufferin Street and 8 Jane Osler Boulevard in Toronto (Site). The Site is an approximate 16,700 m^2 (4.12 Acre) parcel of land situated southwest of Highway 401 and Dufferin Street and is currently occupied by Honda dealership. It is understood that the new development consists of building two (2) twenty-nine (29) storey buildings (Building A and B) and a ten (10) storey building (Building C) with separated two (2) levels of underground parking (P2).

The average ground elevation at the site is at about 190.13 meters above sea level (masl). Based on the architectural drawings, the finished floor elevation of P2 for the proposed development is at 8 meters below the existing ground surface (mbgs). The assumed maximum excavation depth of P2 considering the footings and elevator shaft would be approximately 10 mbgs or elevation 180.13 masl.

This hydrogeological investigation includes an overview of the existing geological and hydrogeological conditions at the Site and the surrounding area, an assessment of the hydrogeological constraints, impacts of the proposed development on the local groundwater, and provides an estimation of construction dewatering and permanent drainage requirements during the proposed development phase.

The hydrogeological investigation report has been prepared in general accordance with the Ontario Water Resource Act (OWRA), the Ontario Water Taking Regulation (O.Reg.387/04), and the City of Toronto Sewers By-law (Toronto Municipal Code, Chapter 681, Sewers). If needed, the results of this investigation can be used in support of an application for a Category 3 Permit to Take Water (PTTW) or an Environmental Activity Sector Registry (EASR) for construction dewatering from the Ministry of the Environment Conservation and Parks (MECP). The hydrogeological report may also be used to support Site Plan Approvals (SPA) and discharge permitting (short and long term) from the City of Toronto. Based on the results of this investigation, the following conclusions and recommendations are presented:

1. As part of the hydrogeological investigation, DS completed a search of the MECP water well records (WWRs) database. Based on the MECP WWR search, there are eighty-five (85) water wells within 500 meters of the site. All wells were noted as monitoring well or unknown. There are no groundwater users expected within the study area, and therefore no impacts to water supply wells are anticipated.

2. Between June 14 to 22, 2022, DS drilled five (5) boreholes (BH22-1 through BH22-5) and equipped all drilled boreholes with monitoring wells at the site as part of the concurrent geotechnical, hydrogeological and environmental investigations. The boreholes were advanced to a depth ranging from 18.4 to 30.8 mbgs. Monitoring wells were screened to depths ranging from 1.6 to 19.8 mbgs.

3. The surficial geology at the site is characterized as Till deposits and consist of stone-poor sandy silt to silty sand-textured till on Paleozoic terrain deposits. The overburden geology at the site generally consisted of silty clay to clayey silt (Till) deposits, sandy silt, upper sand, lower silt, clayey silt and lower sand to silty sand.

4. Groundwater levels were measured in all available wells on July 6th, 2022, by DS staff. The shallow groundwater levels ranged from 1.7 to 5.5 mbgs or elevation 184.61 to 188.5 masl and the deep groundwater level found at the depth of 10.41 mbgs or elevation 180.09 masl. The flow direction in the study area is inferred to be westerly towards Black Creek which ultimately discharges into Lake Ontario.

5. A total of five (5) Single Well Response Tests (slug tests) were completed by DS on July 6th, 2022, to estimate hydraulic conductivity (k) for the representative geological units in which the wells were screened. Hydraulic conductivity (k) values were calculated using the Hvorslev method using the AquiferTest® Software. The k-values ranged between 9.98 x 10^{-9} to 1.03 x 10^{-6} m/s.

6. To assess the suitability for discharge of groundwater to the City of Toronto's Sanitary/Storm Sewers, one (1) unfiltered groundwater sample was collected from monitoring well BH22-5. The reported analytical results indicated that no parameters were in exceedance of the Toronto's Storm Sewer Discharge By-Law criteria except Total Suspended Solid (TSS), Manganese and Chloroform. All parameters met the City's Sanitary Sewer Discharge By-Law criteria except for TSS. Therefore, water cannot be discharged to the City's storm and sanitary sewers without treatment. Treatment should comply with the water quality limits set in Table 1 for sanitary and combined sewers and Table 2 for storm sewers before any discharge.

7. The total estimated daily dewatering rate of short-term construction dewatering for the proposed development would be 61,600 L/day (61.6 m^3/day) for Building A, 61,900 L/day (61.9 m^3/day) for Building B and 32,600 L/day (32.6 m^3/day) for Building C. This estimated value incorporates a safety factor of x2 and a theoretical 10 mm storm event into the open excavation during construction.

8. Following the construction of the underground structure, long-term groundwater flow to the underfloor drainage system for the building will be a function of the upward flux and drainage along the foundation wall. Based on the assumed design, depth to water and given k-value, the estimated permanent theoretical flow would expect to be less than 1,000 L/day (1 m^3/day) for each building. For design purposes, it can be assumed that a maximum of 5,000 L/day (5 m^3/day) will be needed to be pumped into the sewer system to manage any unforeseen groundwater issues in the future. The City of Toronto's foundation drainage policy and guidelines effective as of January 1, 2022, should be considered during the design for on-site management of foundation drainage or permanent

drainage in future. As mentioned in the policy, on-site management options for foundation drains/permanent drainage may include but are not limited to, waterproofing the buildings, modifying building design to avoid intersection with the maximum anticipated groundwater level, and/or above-ground discharge and infiltration from sump pumps.

9. Since the expected design dewatering rate for the unsealed excavation for building A and B is between the MECP water taking limit of 50,000 and 400,000 L/day, an EASR application is required to be submitted to the MECP for short-term dewatering prior to construction. For Building C, since the expected dewatering rate is below the MECP water taking limit of 50,000 L/day, an EASR is not required to be submitted to the MECP for short-term dewatering. Based on current groundwater conditions, permanent groundwater flow or permanent drainage is expected to be less than the water-taking limit of 50,000 L/day. Therefore, a PTTW is not required on a permanent basis.

10. Once a groundwater dewatering system is set up at the Site, daily and weekly monitoring should be implemented to assess the groundwater conditions such as water levels, measurement of discharge flow, discharge water quality and any adverse impacts as a result of dewatering.

11. A groundwater level monitoring program has been implemented at the Site on a bi-weekly basis for three (3) months to document the pre-construction groundwater conditions and assess seasonal groundwater fluctuations. To meet the City of Toronto's requirements, the monitoring program includes all monitoring wells and a total of six (6) water level measurements.

12. There are structures and utilities within the maximum predicted zone of influence (ZOI) about 43 meters for Building A and B and 31 meters for Building C when considering an unsealed excavation. Since the proposed construction is anticipated to be constructed within the low permeable sandy silt to clayey silt till deposits, an effect of settlement due to dewatering would be negligible within the predicted zone of influence.

13. In conformance with Regulation 903 of the Ontario Water Resources Act, the decommissioning of any dewatering system and monitoring wells should be carried out by a licensed contractor under the supervision of a licensed water well technician.

Should you have any questions regarding these findings, please contact the undersigned.

DS Consultants Ltd.

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APPENDICES:

1.0 INTRODUCTION

DS Consultants Limited (DS) was retained by Dufferin-401 Properties Limited to complete a hydrogeological investigation for the proposed development located at 3400 Dufferin Street and 8 Jane Osler Boulevard in Toronto (Site). The Site is an approximate 16,700 m^2 (4.12 Acre) parcel of land situated southwest of Highway 401 and Dufferin Street and is currently occupied by Honda dealership. It is understood that the new development consists of building two (2) twenty-nine (29) storey buildings (Building A and B) and a ten (10) storey building (Building C) with separated two (2) levels of underground parking (P2). **Figure 1** presents the site location map that highlights the location of the site and the surrounding area.

The average ground elevation at the site is at about 190.13 meters above sea level (masl). Based on the architectural drawings the finished floor elevation of P2 for the proposed development is at 8 meters below the existing ground surface (mbgs). The assumed finished floor elevation of P2 considering the footings and elevator shaft would be approximately 10 mbgs or elevation 180.13 masl.

1.1 Purpose

The purpose of this Hydrogeological Investigation is to assess the current groundwater conditions at the Site in order to evaluate the following:

- Temporary construction dewatering for the excavations of the proposed building on Site;
- Explore the potential need for a Permit to Take Water (PTTW) or Environmental Activity and Sector Registration (EASR) for the purposes of Construction Dewatering from the MECP;
- Temporary management and discharge of groundwater during short term construction dewatering
- Asses permanent drainage requirements; and
- Assess groundwater quality to identify potential adverse impacts to Toronto Region's sewer system.

1.2 Scope of Work

The scope of work for this investigation included:

- Site visits;
- Desktop review of pertinent geological and hydrogeological resources;
- Review the MECP Water Well Records and water use in the surrounding area;
- Field work drilling program including installation of five (5) monitoring wells;

- Conducting single well response tests (slug tests) to determine hydraulic conductivity values across the site;
- Characterize the stratigraphy and measure the ground water levels across the site;
- Collection and analysis of groundwater samples in order to quantify and characterize any possible contaminants that may impact future discharge applications;
- Estimation of construction dewatering volumes, which is to be used to predict the short-term groundwater control requirements for the construction of the proposed building on site.

2.0 FIELDWORK

Between June 14 to 22, 2022, DS drilled five (5) boreholes (BH22-1 through BH22-5) and equipped all drilled boreholes with monitoring wells at the site as part of the concurrent geotechnical, hydrogeological and environmental investigations. The boreholes were advanced to a depth ranging from 18.4 to 30.8 mbgs. Monitoring wells were screened to depths ranging from 1.6 to 19.8 mbgs. All wells were completed with 50 mm diameter PVC pipes with 3.05 m well screens and were installed using above ground mounted protective casings. All monitoring wells were developed before any use to allow for groundwater level monitoring, hydraulic conductivity testing, and to assess groundwater quality. A total of five (5) single well response tests (SWRTs) were completed by performing a rising head test (slug test) to estimate hydraulic conductivity values of soils at the site. One (1) unfiltered groundwater sample was also collected and analyzed for the parameters listed under the City of Toronto Sewers By-law (Toronto Municipal Code, Chapter 681, Sewers) to assess groundwater quality. The borehole (BH) and monitoring well (MW) location plan is shown in **Figure 3**.

3.0 PHYSICAL SETTING

Available topographic maps, environmental, geotechnical, and hydrogeological reports were used to develop an understanding of the physical setting of the study area. Borehole logs and the MECP WWRs were used to interpret the geological and hydrogeological conditions at the development site.

3.1 Physiography and Drainage

The topography at the Site is relatively flat with a surface elevation of approximately 190.13 metres above sea level (masl). The nearest surface water body to the Site is Black Creek, located about 4.1 km to the west of the Site, which ultimately drains into Lake Ontario. Drainage in the study area is generally controlled by streams, artificial channels, and the local topography.

3.2 Geology

The following presents a brief description of regional and development site geology based on the review of available information and development site-specific soil investigations.

3.2.1 Quaternary Geology

According to the Ontario Geological Survey mapping across the region, the site lies within the Bevelled Till Plains physiographic region of southern Ontario and quaternary geology of the Site is characterized by silt to silty clay matrix deposits consist of high carbonate content and clast poor deposits of Pleistocene. The surficial geology at the site is characterized as Till deposits and consist of stone-poor sandy silt to silty sand-textured till on Paleozoic terrain deposits. The surficial geology map is shown in **Figure 2.**

3.2.2 Bedrock Geology

According to the Ontario Geological Survey mapping across the region the bedrock at the site is predominantly comprised of shale, limestone, dolostone, siltstone of the Georgian Bay formation; Blue Mountain formation; Billings formation; Collingwood Member, and Eastview Member. Bedrock was not encountered during the current investigation. Based on the MECP WWRs investigation in the study area, the bedrock is expected to be at the depth more than 30 mbgs.

3.2.3 Site Geology

On-site subsurface soil conditions were summarized from the boreholes advanced by DS for the current investigation. Detailed subsurface conditions are presented in **Figure 4,** and the borehole logs are presented in **Appendix A**. The subsurface conditions in the boreholes are summarized in the following paragraphs.

Asphaltic Concrete and Granular Material: Asphaltic concrete pavement was encountered surficially in all boreholes. The thickness of the asphaltic concrete ranged from about 75 to 130 mm. Granular material consisting of sand and gravel was encountered below asphaltic concrete in all boreholes, and the thickness of granular material ranged from about 230 to 300 mm.

Fill Material: Fill materials consisting of silty clay to clayey silt with trace to some organics and trace gravel were encountered below the pavement structure in all boreholes. The fill material extended to depths of approximately 1.6 to 2.3 mbgs.

Silty Clay to Clayey Silt (Till): Below the fill material, silty clay to clayey silt glacial (till) deposits were encountered in all boreholes and extended to depths ranging from 12.2 to 16.8 mbgs. At BH22-1, a thin wet deposit of silt with trace clay, trace to some sand and trace gravel interrupts the silty clay to clayey silt till between 12.2 and 13.7 m depth below existing grade.

Sandy Silt (Till): A sandy silt glacial (till) deposit was encountered at below the silty clay to clayey silt till at varying depths in all boreholes and extended to depths ranging from 18.0 to 19.9 mbgs, i.e., depth of investigation in BH22-2, BH22-3, and BH22-5. A very thin (approx. 400 mm thick) layer of silty clay till was encountered below the sandy silt till in BH22-4 and extended to the depth of investigation, i.e., depth of 18.4 mbgs.

Upper Sand: Underlying the sandy silt till in BH22-1, a cohesionless sand deposit with some silt, trace clay and trace gravel was encountered and extended to a depth of 19.8 mbgs.

Lower Silt: Underlying the cohesionless deposit in BH22-1, a silt deposit with some clay, trace sand and trace gravel was encountered and extended to a depth of 22.9 mbgs.

Clayey Silt: A cohesive clayey silt deposit with trace to some sand, silt seams and trace gravel was encountered below the silt in BH22-1 and extended to a depth of 25.9 mbgs.

Lower Sand to Silty Sand: A lower cohesionless deposit of sand to silty sand with inclusions of clay and gravel was encountered below the clayey silt in BH22-1 and extended to the depth of investigation, i.e., depth of 30.8 mbgs.

3.3 Hydrogeology

The hydrogeology at the site was evaluated using the on-site monitoring wells installed by DS, and the MECP WWRs in the study area.

3.3.1 Local Groundwater Use

As part of the hydrogeological investigation, DS completed a search of the MECP water well records (WWRs) database. Based on the MECP WWR search, there are eighty-five (85) water wells within 500 meters of the site (**Appendix D**). All wells were noted as monitoring well, or unknown. **Figure 1** shows the MECP water well location plan. There are no groundwater users expected within the study area, and therefore no impacts to water supply wells are anticipated.

3.3.2 Groundwater Conditions

Groundwater levels were measured in all available wells on July 6th, 2022, by DS staff. **Table 3-1** presents the groundwater levels in all monitoring wells. The shallow groundwater levels ranged from 1.7 to 5.5 mbgs (Elev: 184.61 to 188.5 masl) and the deep groundwater level found at the depth of 10.41 mbgs or elevation 180.09 masl. The flow direction in the study area is inferred to be westerly towards Black Creek which ultimately discharges into Lake Ontario.

Table 3-1: Groundwater Levels in Monitoring Wells

Well ID	Ground Elevation (masl)	Screened Interval (mbgs)	Depth to Water (mbgs)	Groundwater Elevation (masl)
BH22-1	190.50	16.8-19.8	10.41	180.09
BH22-2	190.20	12.3-15.3	1.70	188.50
BH22-3	190.20	1.7-4.7	1.30	188.90
BH22-4	189.68	1.5-4.5	2.40	187.28
BH22-5	190.11	6.2-9.2	5.50	184.61

3.3.3 Hydraulic Conductivity

A total of five (5) Single Well Response Tests (slug tests) were completed by DS on July 6, 2022 to estimate hydraulic conductivity (k) for the representative geological units in which the wells were screened. SWRTs were completed by performing a rising head test (slug test) with the use of Waterra® tubing to 'instantaneously' remove water from the well. A data logger was placed at the bottom of the wells to accurately measure the change in the hydraulic head versus time. Hydraulic conductivity (k) values were calculated using the Hvorslev method using the AquiferTest® Software. The semi-log plots for normalized drawdown versus time are provided in **Appendix B.** The k-values ranged between 9.98 x 10^{-9} to 1.03 x 10^{-6} m/s. **Table 3-2** presents the Hydraulic Conductivity (k) values for the representative geological units.

Table 3-2: Summary of Hydraulic Conductivity (k) Test Results

Well ID	Screened Interval (mbgs)	Screened Formation	K-value (m/s)	Geomean value
BH22-1	16.8-19.8	sandy silt/sand	1.35 x 10^{-8}	5.82 x 10^{-8}
BH22-2	12.3-15.3	silty clay/clayey silt	1.03 x 10^{-6}	
BH22-3	1.7-4.7	Silty clay till	6.05 x 10^{-8}	
BH22-4	1.5-4.5	Silty clay till	9.98 x 10^{-9}	
BH22-5	6.2-9.2	silty clay/clayey silt	7.94 x 10^{-8}	

3.3.4 Groundwater Quality

To assess the suitability for discharge of groundwater to the City of Toronto's Sanitary/Storm Sewers, one (1) unfiltered groundwater sample was collected from monitoring well BH22-5 on July 6th, 2022. The samples were placed in pre-cleaned laboratory supplied vials and/or bottles provided with analytical test group-specific preservatives, as required. Dedicated nitrile gloves were used during sample handling. The groundwater samples were submitted to SGS Laboratories in Mississauga, Ontario. SGS is certified by the Canadian Association of Laboratory Accreditation Inc. (CALA) and the Canadian Standard Association (CSA). The analytical results were compared to the City of Toronto's Table 1 Limits for Sanitary and Combined Sewer Discharge, and Table 2 Limits for Storm Sewer Discharge. The reported analytical results indicated that no parameters were in exceedance of the Toronto's Storm Sewer Discharge By-Law criteria except Total Suspended Solid (TSS), Manganese and Chloroform. All parameters met the City's Sanitary Sewer Discharge By-Law criteria except for TSS. Therefore, water cannot be discharged to the City's storm and sanitary sewers without treatment. Treatment is needed to comply with the water quality limits set in Table 1 for sanitary and combined sewers and Table 2 for storm sewers before any discharge. **Table 3-3** presents a summary of the exceeded parameters, and the certificates of analyses are provided in **Appendix D.**

Table 3-3: Parameters in Groundwater Exceeding City of Toronto Sewer Use By-law 100-2016

Parameter	Unit	Toronto Sanitary By-Law Criteria	Toronto Storm By-Law Criteria	BH22-5
Total Suspended Solid (TSS)	mg/L	350	15	**431**
Manganese	mg/L	5	0.05	0.223
Chloroform	mg/L	0.04	0.002	0.0026
Bold- Exceeds Sanitary Sewer Use by Law Criteria				

Underlined- Exceeds Storm Sewer Use by Law Criteria

4.0 CONSTRUCTION DEWATERING

The proposed residential development will include the construction of two (2) twenty-nine (29) storey buildings (Building A and B) and a ten (10) storey building (Building C) with separated two (2) levels of underground parking (P2). Based on the architectural drawings the finished floor elevation of P2 for the proposed development is at 8 meters below the existing ground surface (mbgs). The assumed finished floor elevation of P2 considering the footing and elevator shaft would be approximately 10 mbgs or elevation 180.13 masl. For construction dewatering purposes, the groundwater level should be lowered at least one (1) m below the footings and elevator shaft elevation at about 179.13 masl. The unsealed construction excavation method for each separated block (Building) with excavation dimensions of 70 m long and 58 m wide for Building A, 74 m long and 55 m wide for Building B and 58 m long and 31 m wide for building C were considered for the proposed development. Since the proposed underground structure will be below the groundwater table, dewatering will be required during the excavation of overburden material.

4.1 Estimation of Flow Rate - Unsealed Excavation

This section calculates the estimated dewatering required during the construction of the proposed building based on the geomean k-value, the highest groundwater elevations at the site using the steady-state flow equation for unsealed excavation as follows. The estimated flow rates for the proposed buildings are summarised in Table 4-1.

$$Q_R = K\,x\frac{H^2 - h^2}{0.733}\,x\,Log\,(R_0/r_e)$$

$$r_e = \left(\frac{(a\,x\,b)}{\pi}\right)^{0.5}$$

$$R_0 = (r_e + 3000)(H - h)(k^{0.5})$$

Table: 4-1 Estimation of Flow Rate (Short-term Discharge) - Unsealed Excavation

Parameters	Building A	Building B	Building C
	P2 Level	P2 Level	P2 Level
K -Hydraulic conductivity(geomean) (m/s)	5.82×10^{-8}	5.82×10^{-8}	5.82×10^{-8}
H-Distance from water level to the bottom of an aquifer (m)	11.22	11.22	11.22
h -Depth of water in the well while pumping (m)	1	1	1
a- length of excavation (m)	70	74	58
b- Width of excavation (m)	58	55	31
r_e–equivalent radius, where a and b excavation dimensions (m)	36	36	24
R_o- Radius of the cone of depression	43	43	31
Estimated Flow Rate- L/day (without safety factor)	10,500	10,600	7,300

4.2 Estimation of Flow Rate- Storm Water Consideration

During construction, additional removal of stormwater from precipitation into the open excavation will be required. The estimated flow rate is based on the excavation dimensions for the phase of development and a theoretical 10 mm precipitation event in 24 hours. The total estimated dewatering that might be needed as a result of a 10 mm precipitation event for would be approximately 40,600 L/day for building A, 40,700 L/day for Building B and 18,000 L/day for Building C.

4.3 Total Estimation of Flow Rate (Short-Term/ Temporary Discharge)

Considering the unsealed excavation method, the recommended pumping rate for building A, would be approximately 61,600 L/day, for Building B would be 61,900 L/day and for Building C would be 32,600 L/day. These values incorporate a safety factor of x2 and account for stormwater as a result of a 10 mm precipitation event. The recommended flow rates for the proposed buildings are summarised in Table 4-2.

Table 4-2: Total Construction Dewatering (Short-term Discharge) - Unsealed Excavation

Building	Flow Rate Q- without a safety factor (L/day)	Flow Rate Q- with a safety factor x2 (L/day)	Storm water (@ 10 mm/24 hrs.) (L/day)	Designed Flow Rate Or Total Flow Rate (L/day)
Building A	10,500	21,000	40,600	61,600
Building B	10,600	21,200	40,700	61,900
Building C	7,300	14,600	18,000	32,600

It is expected that the initial dewatering rate will be higher to remove groundwater within the overburden formation. The dewatering rates are expected to decrease once the target water level is achieved in the excavation footprint as groundwater will have been removed locally from storage resulting in lower seepage rates into the excavation. The maximum flow calculation is intended to provide a conservative value to account for unforeseeable conditions that may arise during construction.

4.4 Permanent Drainage (Long-term Discharge)

Following the construction of the underground structure, long-term groundwater flow to the underfloor drainage system for the building will be a function of the upward flux and drainage along the foundation wall. Based on the assumed design, depth to water and given k-value, the estimated permanent theoretical flow would expect to be less than 1000 L/day (1 m^3/day) for each building. For design purposes, it can be assumed that a maximum of 5,000 L/day (5 m^3/day) will be needed to be pumped into the sewer system to manage any unforeseen groundwater issues in the future. The City of Toronto's foundation drainage policy and guidelines effective as of January 1, 2022, should be considered during the design for on-site management of foundation drainage or permanent drainage in future. As mentioned in the policy, on-site management options for foundation drains/permanent drainage may include but are not limited to, waterproofing the foundation, modifying building design to avoid intersection with the maximum anticipated groundwater level, and/or above-ground discharge and infiltration from sump pumps.

4.5 Permit Requirements

4.5.1 Environmental Activity and Sector Registry (EASR) /Permit to Take Water (PTTW) Application

An EASR is required to be submitted to the MECP if the taking of groundwater and stormwater for a temporary construction project is between 50,000 L/day and 400,000 L/ day. The EASR application is an online registry and should be submitted to the MECP before any construction dewatering. A PTTW is only required to be submitted to the MECP if the taking of groundwater and stormwater for a temporary construction project is more than 400,000 L/ day.

Since the expected design dewatering rate for the unsealed excavation for building A and B is between the MECP water taking limit of 50,000 and 400,000 L/day, an EASR application is required to be submitted to the MECP for short-term dewatering prior to construction. Based on current groundwater conditions, permanent groundwater flow or permanent drainage is expected to be less than the water-taking limit of 50,000 L/day. Therefore, a PTTW is not required on a permanent basis.

4.5.2 Discharge Permits (Construction Dewatering)

A discharge permit will be required from the City of Toronto if private water is to be sent to the sewer system for construction dewatering and permanent drainage.

5.0 POTENTIAL IMPACTS

The following are the predicted potential impacts due to construction dewatering:

5.1 Local Groundwater Use

The area is fully serviced by municipal water supply. Since it is not expected to have any use of groundwater as a source of drinking water within a 500 meters radius from the Site, it is not anticipated that there will be short-term or long-term impacts on private water wells occurring from the proposed dewatering activities.

5.2 Point of Discharge and Groundwater Quality

The reported analytical results indicated that no parameters were in exceedance of the Toronto's Storm Sewer Discharge By-Law criteria except Total Suspended Solid (TSS), Aluminum, Arsenic, Chromium, Copper, Manganese, Nickel, Phosphorus, and Zinc. All parameters met the City's Sanitary Sewer Discharge By-Law criteria except for TSS and Aluminum. Therefore, water cannot be discharged to the City's storm and sanitary sewers without treatment. Treatment is needed to comply with the water quality limits set in Table 1 for sanitary and combined sewers and Table 2 for storm sewers before any discharge. Treatment options include but are not limited to settlement and filtration of sediments.

5.3 Settlement Due to Dewatering Activities

There are structures and utilities within the maximum predicted zone of influence (ZOI) about 43 meters for Building A and B and 31 meters for Building C when considering an unsealed excavation. Since the proposed construction is anticipated to be constructed within the low permeable sandy silt to clayey silt till deposits, an effect of settlement due to dewatering would be negligible within the predicted zone of influence.

5.4 Well Decommissioning

Following the completion of construction activities, all dewatering wells, well points, eductors and monitoring wells installed at various stages of this project must be decommissioned. The installation and eventual decommissioning of the wells and the dewatering system must be carried out by a licenced water well contractor in accordance with Regulation 903 of the Ontario Water Resources Act.

6.0 MONITORING AND MITIGATION

Based on the findings of this hydrogeological assessment and associated potential impacts due to development, the following monitoring and mitigation program is provided:

- A groundwater level monitoring program has been implemented at the Site on a bi-weekly basis for three (3) months to document the pre-construction groundwater conditions and assess seasonal groundwater fluctuations. The meet the City of Toronto's requirements, the monitoring program includes all monitoring wells and a total of six (6) water level measurements.

- Baseline groundwater quality has been assessed and established before construction. However, groundwater quality can change based on several factors (land-use change, spills, etc.) and should be monitored during construction dewatering and after construction to ensure that water quality meets the guideline or regulations associated with any permits from the MECP and the City of Toronto.

- Once a groundwater dewatering system is set up at the Site, daily and weekly monitoring should be implemented to assess the groundwater conditions such as water levels, measurement of discharge flow, discharge water quality and any adverse impacts as a result of dewatering include settlement.

- Based on the dewatering assessment, an EASR application is required. Additional monitoring may be required by the MECP to be implemented during the design stage.

- A discharge permit is required to be submitted to the city for short-term dewatering if private water is sent to the sewer system.

- Following the completion of construction activities, all dewatering wells, well points, eductors and monitoring wells installed at various stages of this project must be decommissioned. The installation and eventual decommissioning of the wells and the dewatering system must be

carried out by a licensed water well contractor in accordance with Regulation 903 of the Ontario Water Resources Act.

Should you have any questions regarding these findings, please contact the undersigned.

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Senior Hydrogeologist

7.0 CONSULTANT QUALIFICATIONS

Martin Gedeon, M.Sc., P.Geo., is a Professional Geoscientist (P.Geo.) with over 26 years of experience as an environmental/hydrogeological consultant in the areas of groundwater and soil monitoring, environmental site assessments, environmental due diligence, and remediation. Martin has significant experience in physical and contaminant hydrogeology across Canada and overseas and has provided hydrogeological/environmental technical support on various projects. Martin has prepared hundreds of hydrogeological reports in support of permit applications for a private sector development application, municipal dewatering operations, and provincial infrastructure projects across the province.

Meysam Jafari, M.Sc., P.Geo., is a Professional Geoscientist (P.Geo.) with DS Consultants Ltd. Meysam holds two master's degrees in Engineering Geology and Geology (Soil & Groundwater) and has several years of experience working in the geoscience industry. Meysam has experience with conducting Phase One and Phase Two Environmental Site Assessments, hydrogeological and geotechnical investigations in the Greater Toronto Area (GTA), and has been involved with project coordination, field assessments, data interpretation and reporting.

8.0 REFERENCES

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Chapman, L.J., and D.F. Putnam; The Physiography of Southern Ontario, Third Edition, Ontario Geological Survey Special Volume 2; 1984, & 2007.

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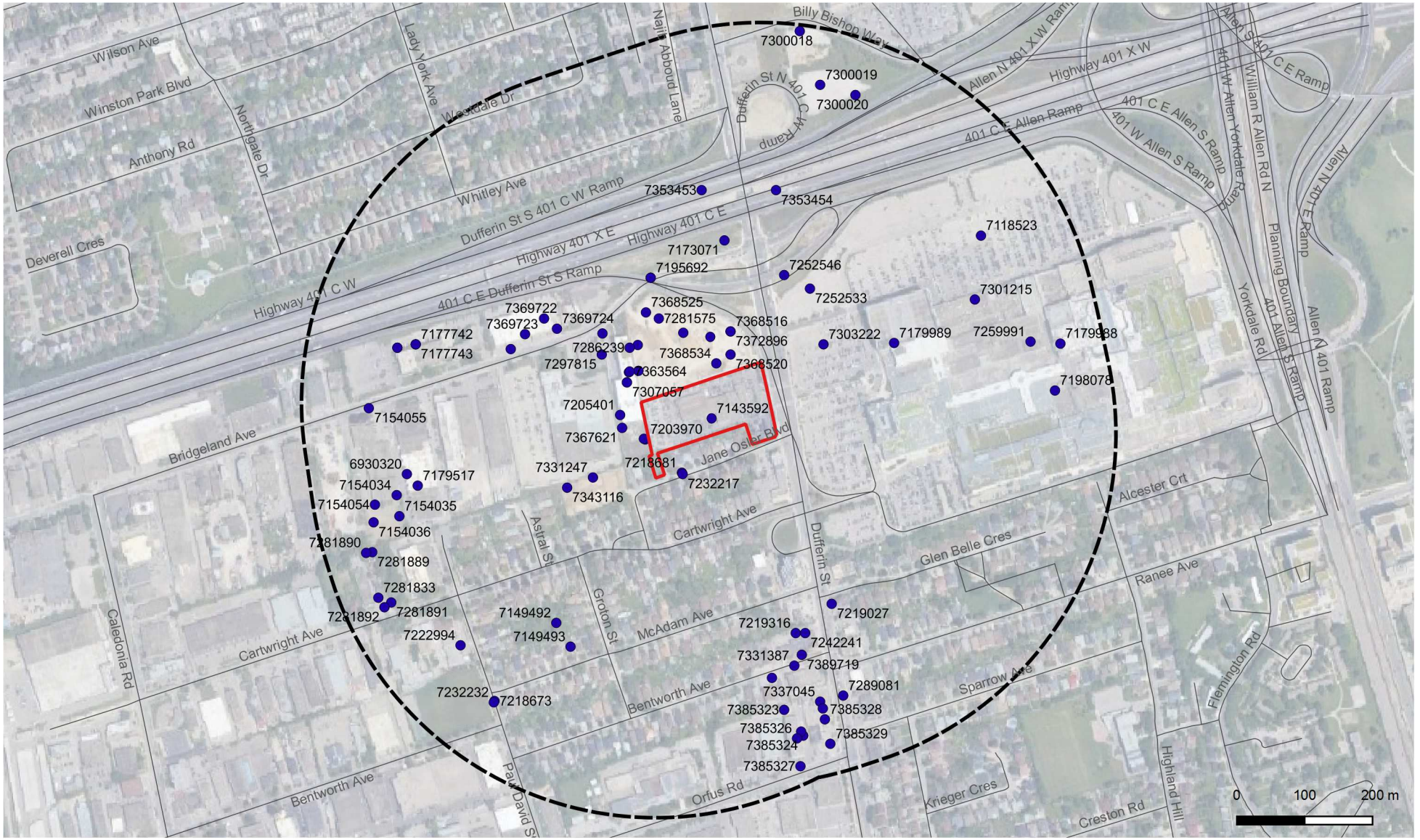
Pat M. Cashman and Martin Preene; Groundwater Lowering in Construction- Second Edition, CRC Press.

Preliminary Geotechnical Investigation Proposed Residential Building 3400 Dufferin Street and 8 Jane Osler Boulevard, Toronto, Ontario. Prepared by DS Consultants, July 2022.

Figures

C:\0Sharon\22-217-100 Hydro, 3400 Dufferin Street, Toronto\1-QGIS\HydroG\Figure 1 – Site Location and MECP Well Records.qgs Jul-29 15:04



Legend

- Approx Property Boundary
- 500m Buffer
- Registered Water Well (MECP WWR)

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www.dsconsultants.ca

Project: HYDROGEOLOGICAL INVESTIGATION
3400 Dufferin St & 8 Jane Osler Blvd., Toronto, ON

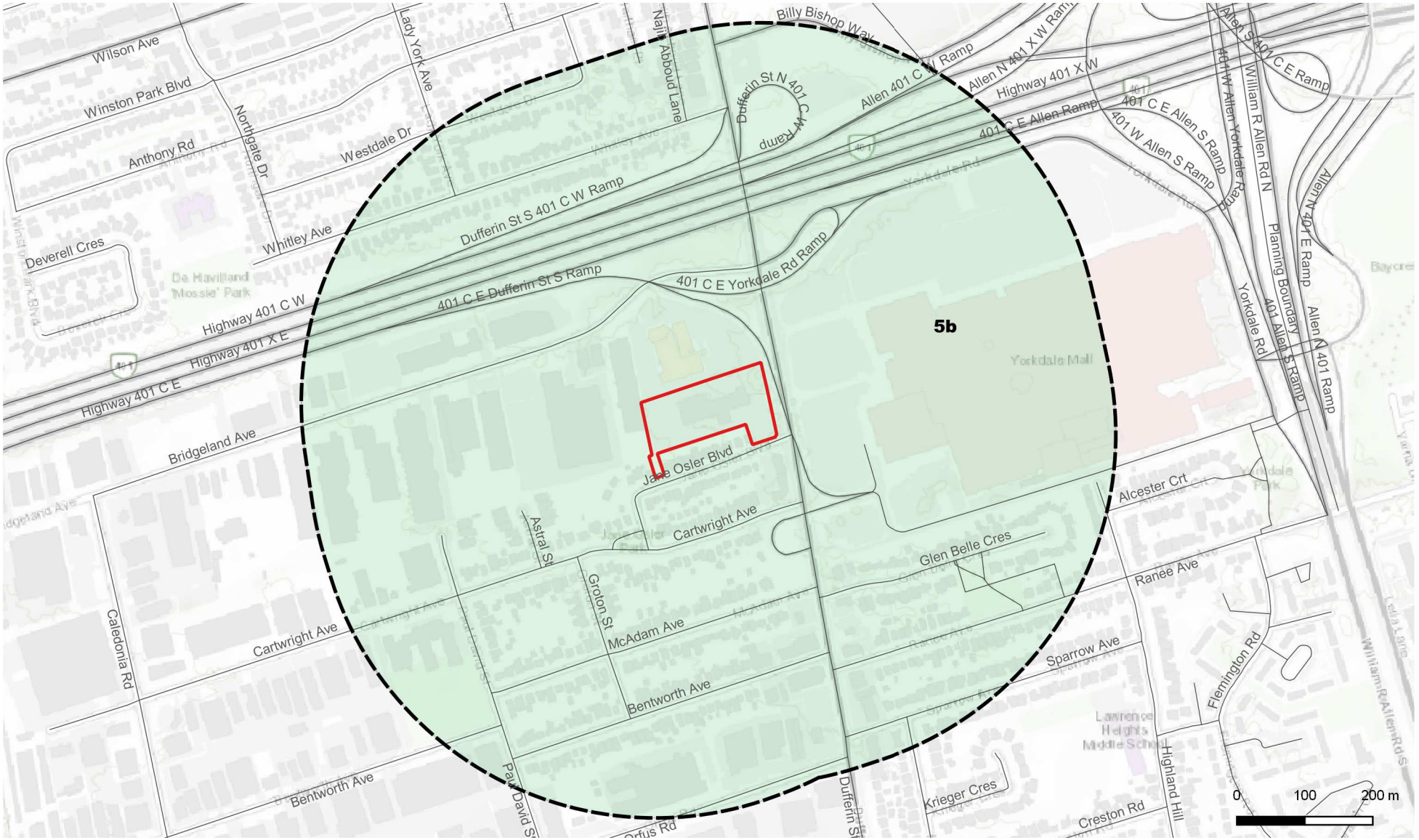
Title: **SITE LOCATION AND MECP WELL RECORDS**

Client: DUFFERIN-401 PROPERTIES LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	M.J	S.Y	July 2022
Rev: 0	Scale: As Shown	Project No.: 22-217-100	Figure No.: 1

Image/Map Source: *Google Satellite Image*

C:\0Sharon\22-217-100 Hydro, 3400 Dufferin Street, Toronto\1-QGIS\HydroG\Figure 2 – Surficial Geology Map.qgs Jul-29 15:06



Legend

- 500m Buffer
- Approx Property Boundary
- 5b - Till

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Project: HYDROGEOLOGICAL INVESTIGATION
3400 Dufferin St & 8 Jane Osler Blvd., Toronto, ON

Title: **SURFICIAL GEOLOGY MAP**

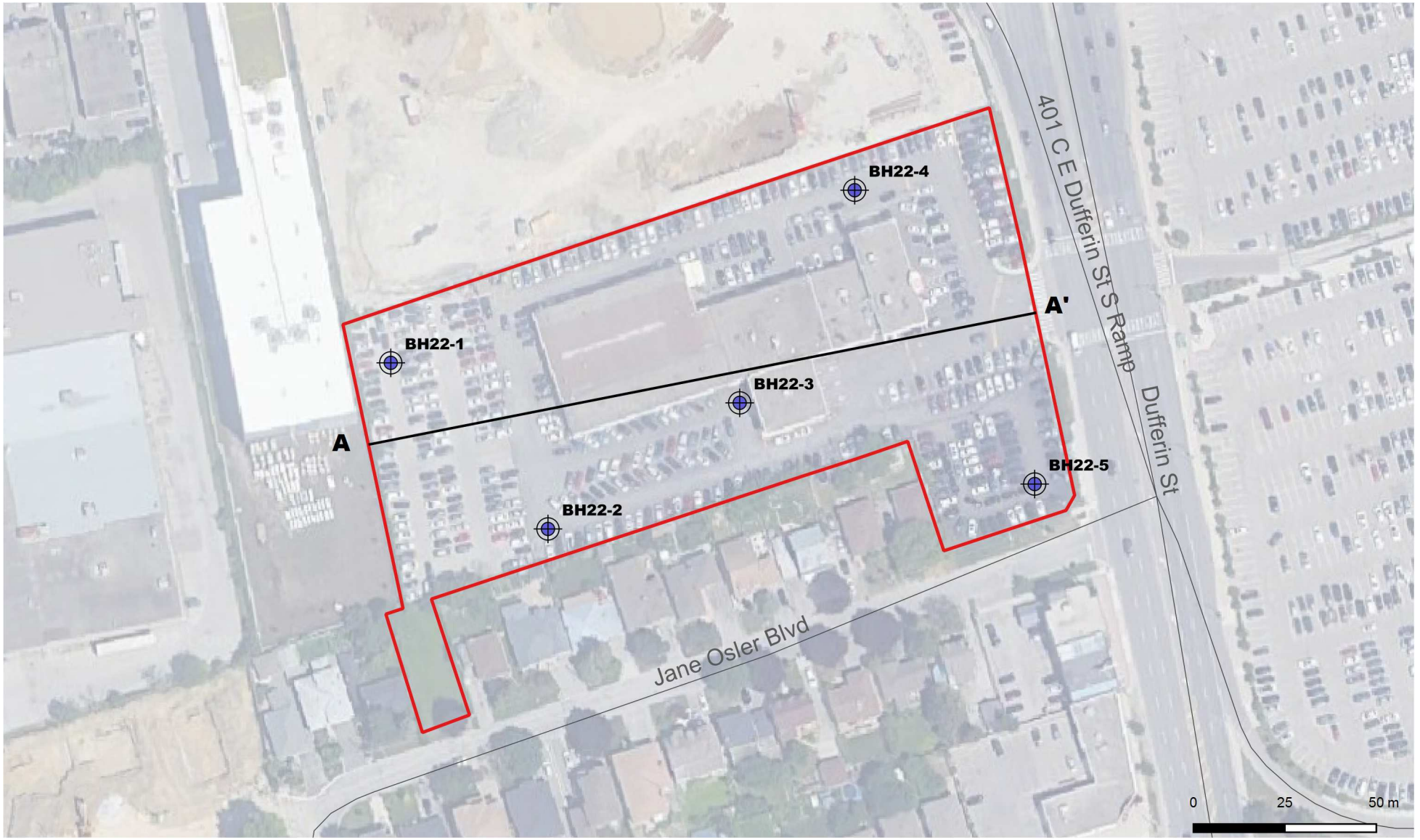
N

Client: DUFFERIN-401 PROPERTIES LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	M.J	S.Y	July 2022
Rev: 0	Scale: As Shown	Project No.: 22-217-100	Figure No.: 2

Image/Map Source: *Esri topo Map & https://www.mndm.gov.on.ca/*

C:\0Sharon\22-217-100 Hydro, 3400 Dufferin Street, Toronto\1-QGIS\HydroG\Figure 3 – Borehole and Monitoring Well Locations.qgs Jul-29 15:07



Legend

- Approx Property Boundary
- Monitoring Well
- Cross Section

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Client: DUFFERIN-401 PROPERTIES LIMITED

Project: HYDROGEOLOGICAL INVESTIGATION
3400 Dufferin St & 8 Jane Osler Blvd., Toronto, ON

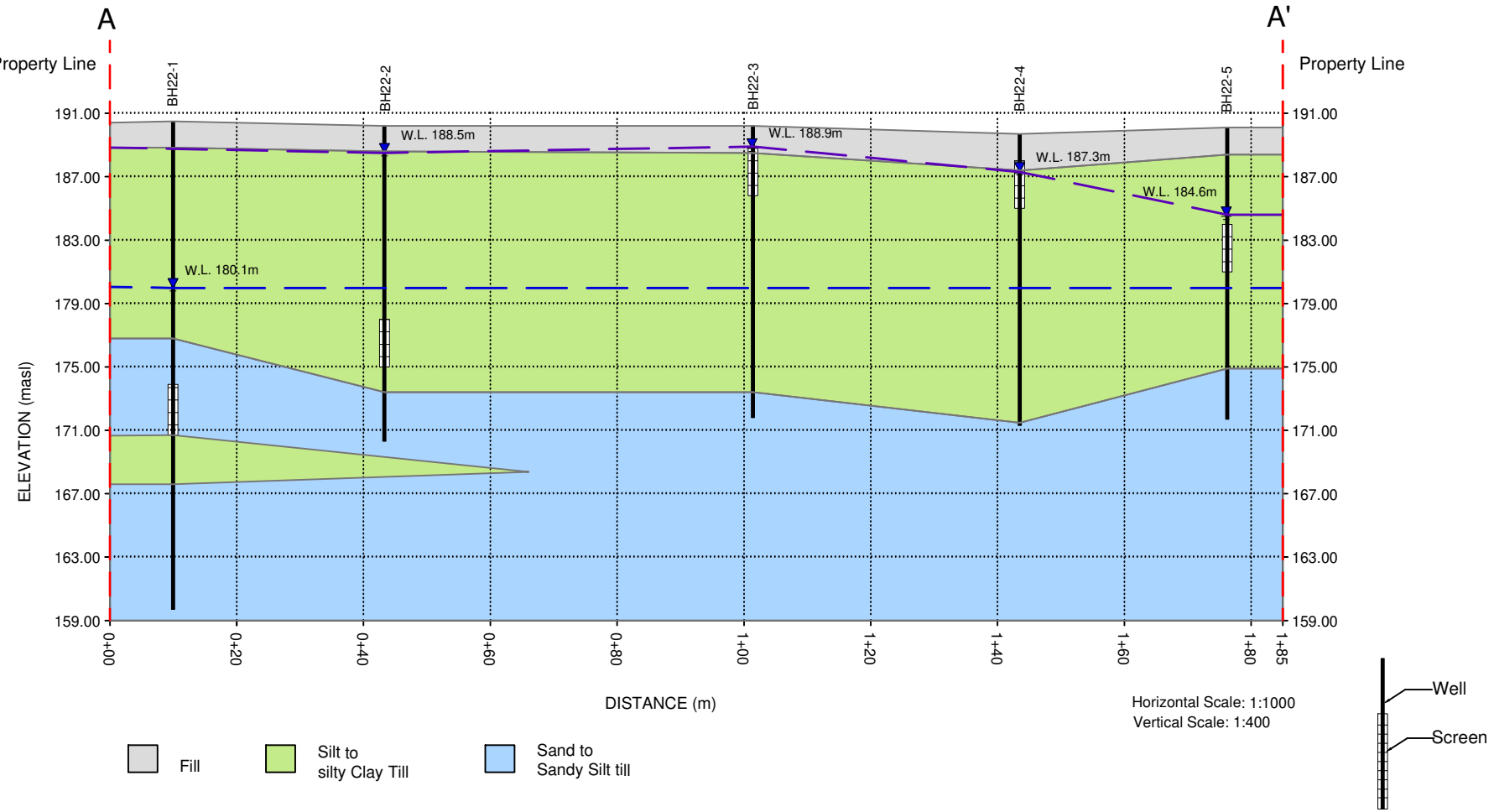
Title: **BOREHOLE AND MONITORING WELL LOCATIONS**

N

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	M.J	S.Y	July 2022
Rev: 0	Scale: As Shown	Project No.: 22-217-100	Figure No.: 3

Image/Map Source: *Google Satellite Image*

Path:c:\0sharon\22-217-100 hydro, 3400 dufferin street, toronto\7-misc\cad\geological cross section 22-217.dwg



Groundwater Elevation - Shallow (06 July 2022)

Groundwater Elevation - Deep (06 July 2022)

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Project: HYDROGEOLOGICAL INVESTIGATION
3400 Dufferin St & 8 Jane Osler Blvd., Toronto, ON

Title: **GEOLOGICAL CROSS SECTION A-A'**

Client: DUFFERIN-401 PROPERTIES LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	M.J	S.Y	July 2022
Rev.	**Scale:**	**Project No:**	**Figure No.**
	As Shown	22-217-100	**4**

Appendices

Appendix A: Borehole Logs

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Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH22-1

PROJECT: Geotechnical Investigation
CLIENT: Dufferin-401 Properties Limited
PROJECT LOCATION: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON
DATUM: Geodetic
BH LOCATION: See Drawing 1 N 4842495.09 E 624063.95

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200mm
Date: Jun-15-2022

REF. NO.: 22-217-100
ENCL NO.: 2

ELEV / DEPTH (m)	DESCRIPTION	NUMBER	TYPE	BLOWS "N" 0.3 m	ELEVATION
190.5 / 0.0	**ASPHALT:** 130mm	1	SS	22	190
190.2 / 0.3	**GRANULAR BASE:** sand and gravel mixed with crusher limestone, 300mm	2	SS	6	
188.9 / 1.6	**FILL:** silty clay, some organics, trace gravel, grey to brown, moist, firm	3	SS	16	188
	SILTY CLAY TILL: sandy, trace gravel, brown, moist, very stiff to hard	4	SS	27	
		5	SS	36	
		6	SS	26	186
		7	SS	31	184
	grey below 7.6m	8	SS	27	
		9	SS	38	182
		10	SS	35	
178.3 / 12.2	**SILT:** trace clay, trace to some sand, trace gravel, grey, wet, dense	11	SS	31	178
176.8 / 13.7	**CLAYEY SILT TILL:** sandy, trace gravel, grey, moist, very stiff	12	SS	26	
		13	SS	25	176
174.3 / 16.2	**SANDY SILT TILL:** trace to some clay, trace gravel, grey, moist, very dense	14	SS	50/130mm	174
172.5 / 18.0	**SAND:** some silt, trace clay, trace gravel, grey, moist, very dense	15	SS	50/130mm	172
170.7 / 19.8	**SILT:** some clay, trace sand, trace gravel, grey, moist, very dense	16	SS	50/100mm	
		17	SS	50/100mm	170
167.6 / 22.9	**CLAYEY SILT:** trace to some sand, silt seams, trace gravel, grey, moist, hard	18	SS	50/130mm	168
		19	SS	48	166

W. L. 180.1 m
Jul 06, 2022

Switched to Mud Rotary at 3.1m

REMARKS AND GRAIN SIZE DISTRIBUTION (%)	GR	SA	SI	CL
	3	30	50	17
	4	37	42	17
	4	82	10	4

DYNAMIC CONE PENETRATION RESISTANCE PLOT
SHEAR STRENGTH (kPa)
○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE
PLASTIC LIMIT w_P NATURAL MOISTURE CONTENT w LIQUID LIMIT w_L
WATER CONTENT (%)
POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT (kN/m³)

Continued Next Page

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
$+^3$, $\times^3$: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

LOG OF BOREHOLE BH22-1

PROJECT: Geotechnical Investigation
CLIENT: Dufferin-401 Properties Limited
PROJECT LOCATION: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON
DATUM: Geodetic
BH LOCATION: See Drawing 1 N 4842495.09 E 624063.95

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200mm
Date: Jun-15-2022

REF. NO.: 22-217-100
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
164.6							
26 25.9	**SAND:** trace clay, trace silt, grey, wet, very dense		20	SS	50/ 130mm		164
163.1							
27.4 28	**SILTY SAND:** some clay, trace gravel, grey, wet, very dense		21	SS	50/ 130mm		162
161.5							
29.0 30	**SAND:** trace to some silt, trace clay, trace gravel, grey, wet, very dense		22	SS	50/ 130mm		
159.7			23	SS	50/ 130mm		160
30.8	**END OF BOREHOLE:**						

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water Level Readings:

Date:	Water Level(mbgl):
July 6, 2022	10.41

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT (kN/m³)
REMARKS AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+3, ×3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

DS SOIL LOG-2021-FINAL 22-217-100 GEO COPY.GPJ DS.GDT 22-7-21

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LOG OF BOREHOLE BH22-2

PROJECT: Geotechnical Investigation
CLIENT: Dufferin-401 Properties Limited
PROJECT LOCATION: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON
DATUM: Geodetic
BH LOCATION: See Drawing 1 N 4842449.73 E 624106.89

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200mm
Date: Jun-14-2022

REF. NO.: 22-217-100
ENCL NO.: 3

ELEV / DEPTH (m)	DESCRIPTION	NUMBER	TYPE	BLOWS 0.3 m "N"	ELEVATION
190.2 / 0.0	**ASPHALT:** 75mm	1	SS	12	190
189.9 / 0.3	**GRANULAR BASE:** sand and gravel, crusher limestone, 280mm				
189.4 / 0.8	**FILL:** silty clay, trace organics, trace gravel, grey to brown, moist, stiff	2	SS	9	
188.4 / 1.8	**SILTY CLAY TILL:** sandy, trace gravel, brown, moist, stiff to hard	3	SS	9	
		4	SS	19	
		5	SS	21	
		6	SS	38	186
	grey below 6.1m	7	SS	23	184
		8	SS	22	182
		9	SS	26	
		10	SS	34	180
		11	SS	26	178
176.5 / 13.7	**CLAYEY SILT TILL:** sandy, trace gravel, grey, moist, very stiff	12	SS	24	176
		13	SS	24	174
173.4 / 16.8	**SANDY SILT TILL:** trace to some clay, trace gravel, occasional cobble, grey, moist, very dense	14	SS	71	
	dense @18.3m	15	SS	35	172
170.3 / 19.9	**END OF BOREHOLE:**	16	SS	50/75mm	

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water Level Readings:

Date: Water Level(mbgl):
July 6, 2022 1.7

W. L. 188.5 m
Jul 06, 2022

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%): 10 20 30

REMARKS AND GRAIN SIZE DISTRIBUTION (%)	GR	SA	SI	CL
	2	29	50	19
Switched to Mud Rotary				
	4	33	46	17

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-3

PROJECT: Geotechnical Investigation
CLIENT: Dufferin-401 Properties Limited
PROJECT LOCATION: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON
DATUM: Geodetic
BH LOCATION: See Drawing 1 N 4842484.16 E 624159.33

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200mm
Date: Jun-22-2022

REF. NO.: 22-217-100
ENCL NO.: 4

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
190.2 / 0.0	**ASPHALT:** 130mm		1	SS	13		190
189.8 / 0.4	**GRANULAR BASE:** sand and gravel, 300mm		2	SS	9		
188.5 / 1.7	**FILL:** silty clay, trace organics, trace gravel, grey to brown, moist, stiff		3	SS	9	W. L. 188.9 m Jul 06, 2022	188
	SILTY CLAY TILL: sandy, trace gravel, occasional cobble, brown, moist, stiff to hard		4	SS	15		
			5	SS	35		186
	grey below 4.6m		6	SS	22		
184.1 / 6.1	**CLAYEY SILT TILL:** sandy, trace gravel, grey, moist, stiff to hard		7	SS	28		184
			8	SS	42		182
			9	SS	36		
			10	SS	21		180
			11	SS	24		178
			12	SS	19		176
	stiff at 15.2m		13	SS	9		
173.4 / 16.8	**SANDY SILT TILL:** trace to some clay, trace gravel, grey, wet, compact to very dense		14	SS	16		174
171.7 / 18.5	**END OF BOREHOLE:**		15	SS	50/75mm		172

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water Level Readings:

Date:	Water Level(mbgl):
July 6, 2022	1.3

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR	SA	SI	CL
		1	31	49	19
		7	30	45	18
		3	37	49	11

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-4

PROJECT: Geotechnical Investigation
CLIENT: Dufferin-401 Properties Limited
PROJECT LOCATION: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON
DATUM: Geodetic
BH LOCATION: See Drawing 1 N 4842542.23 E 624190.76

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200mm
Date: Jun-15-2022

REF. NO.: 22-217-100
ENCL NO.: 5

ELEV / DEPTH (m)	DESCRIPTION	NUMBER	TYPE	BLOWS 0.3 m "N"	ELEVATION
189.7					
189.6 / 0.0	**ASPHALT:** 130mm	1	SS	7	
189.3 / 0.4	**GRANULAR BASE:** sand and gravel, 230mm				
	FILL: silty clay, trace organics, trace gravel, brown, moist, firm	2	SS	5	
187.4 / 2.3		3	SS	5	188
	SILTY CLAY TILL: sandy, trace gravel, occasional cobble, brown, moist, very stiff to hard	4	SS	26	
		5	SS	31	186
	grey below 4.6m	6	SS	31	
		7	SS	64	184
		8	SS	33	182
		9	SS	33	
		10	SS	24	180
177.5 / 12.2		11	SS	50/ 50mm	178
	SANDY SILT TILL: trace to some clay, trace gravel, grey, very moist to wet, very dense	12	SS	50/ 50mm	176
		13	SS	50/ 75mm	174
		14	SS	50/ 75mm	
171.7 / 18.0					172
171.3 / 18.4	**SILTY CLAY TILL:** sandy, trace gravel, occasional cobble, grey, moist, hard	15	SS	50/ 130mm	
	END OF BOREHOLE:				

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water Level Readings:

Date:	Water Level(mbgl):
July 6, 2022	2.4

GROUND WATER CONDITIONS: W. L. 187.3 m Jul 06, 2022

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100

SHEAR STRENGTH (kPa): ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE — 20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L

WATER CONTENT (%): 10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)

GR	SA	SI	CL
1	24	66	9

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

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LOG OF BOREHOLE BH22-5

PROJECT: Geotechnical Investigation
CLIENT: Dufferin-401 Properties Limited
PROJECT LOCATION: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON
DATUM: Geodetic
BH LOCATION: See Drawing 1 N 4842461.99 E 624239.96

DRILLING DATA
Method: Hollow Stem Auger
Diameter: 200mm
Date: Jun-17-2022

REF. NO.: 22-217-100
ENCL NO.: 6

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
190.1							
190.0 / 0.1	**ASPHALT:** 75mm		1	SS	10		
189.8 / 0.3	**GRANULAR BASE:** sand and gravel, 250mm						
	FILL: clayey silt to silty clay, trace organics, trace gravel, grey to brown, moist, firm		2	SS	7		
187.8 / 2.3			3	SS	7		188
	SILTY CLAY TILL: sandy, trace gravel, occasional cobble, brown, moist, very stiff to hard		4	SS	16		
			5	SS	18		
							186
			6	SS	48		
						▽	
	grey below 6.1m		7	SS	33	W. L. 184.6 m Jul 06, 2022	
182.5 / 7.6							
	CLAYEY SILT TILL: sandy, trace gavel, grey, moist, hard		8	SS	36		182
			9	SS	32		
							180
			10	SS	37		
	very stiff, frequent wet sand seams at 12.2m		11	SS	26		178
			12	SS	35		176
174.9 / 15.2							
	SANDY SILT TILL: trace to some clay, trace gravel, occasional cobble, grey, moist, very dense		13	SS	50/100mm		174
			14	SS	50/130mm		
171.7 / 18.4							172
	END OF BOREHOLE:		15	SS	50/130mm		

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water Level Readings:

Date: Water Level(mbgl):
July 6, 2022 5.5

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)	GR	SA	SI	CL
	2	33	47	18

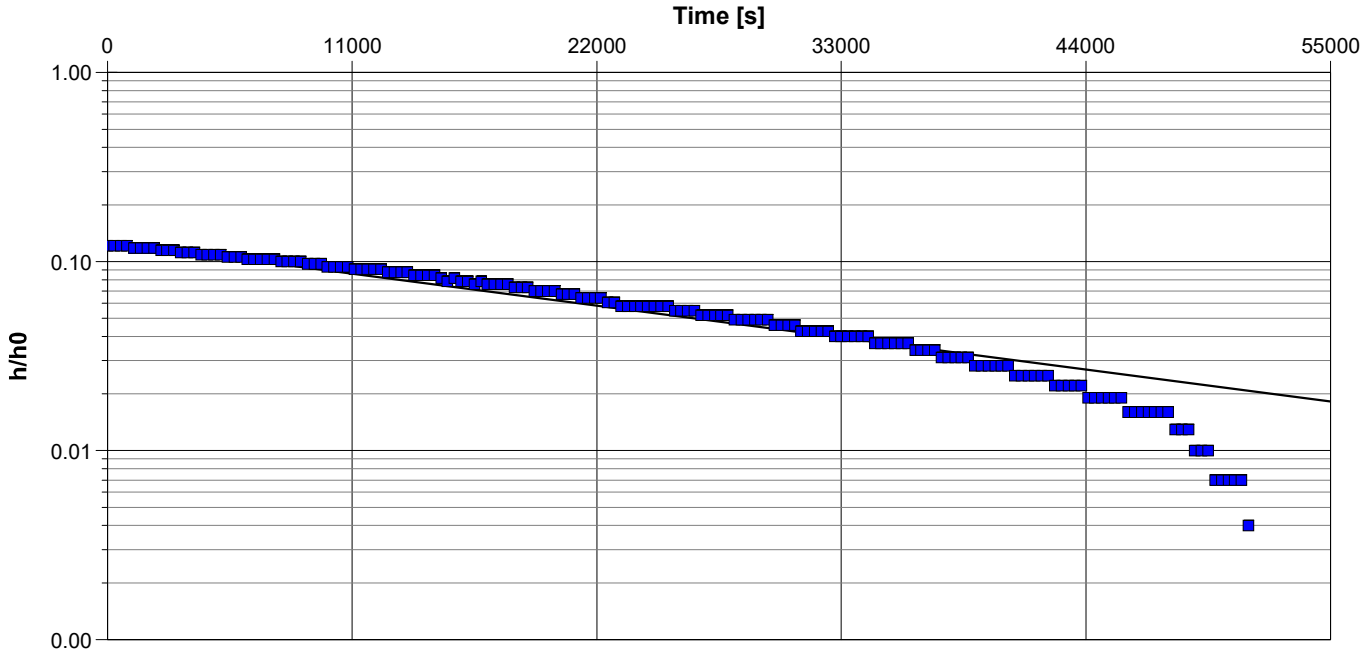
GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES
+3, ×3: Numbers refer to Sensitivity
○ε=3% Strain at Failure

DS SOIL LOG-2021-FINAL 22-217-100 GEO COPY.GPJ DS.GDT 22-7-21

Appendix B: Hydraulic Conductivity Analysis

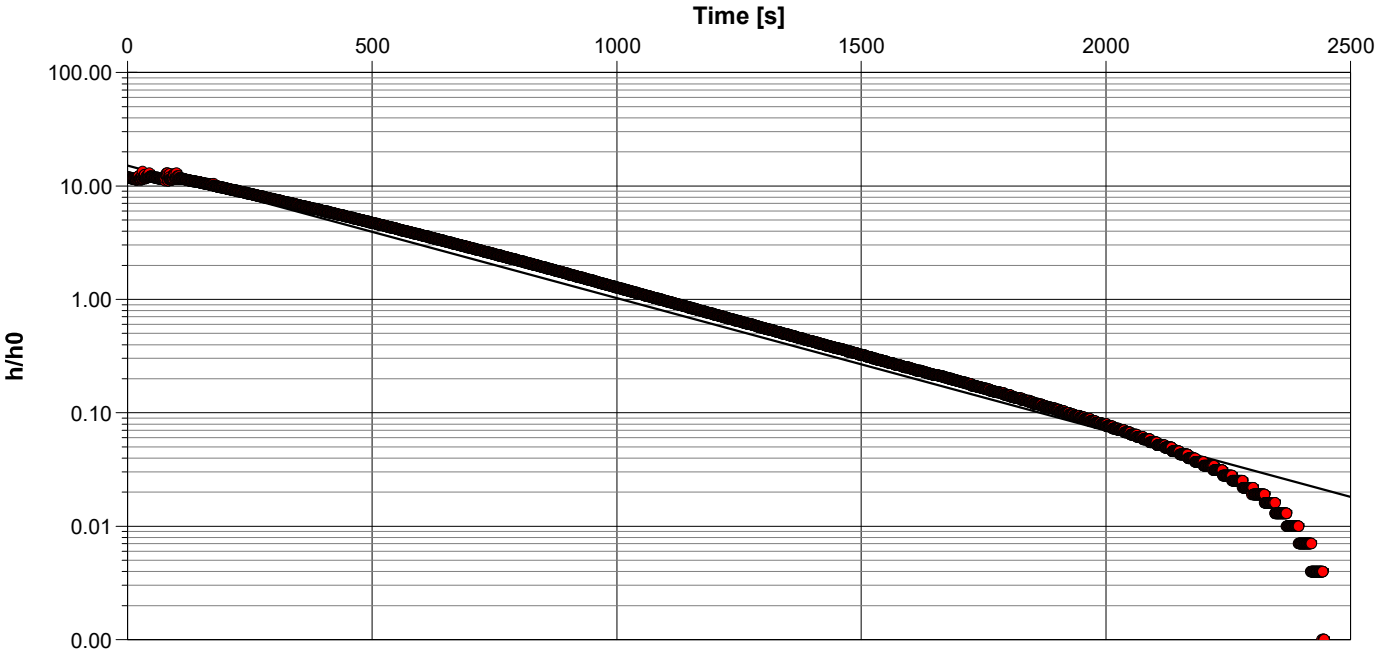
	Slug Test Analysis Report	
	Project: Hydrogeological Investigation	
	Number: 22-217-100	
	Client: Dufferin-401 Properties Limited	
Location: 3400 Dufferin St.	Slug Test: BH22-1	Test Well: BH22-1
Test Conducted by: KM		Test Date: 7/6/2022
Analysis Performed by: MJ	Hvorslev	Analysis Date: 7/13/2022
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
BH22-1	1.35×10^{-8}	

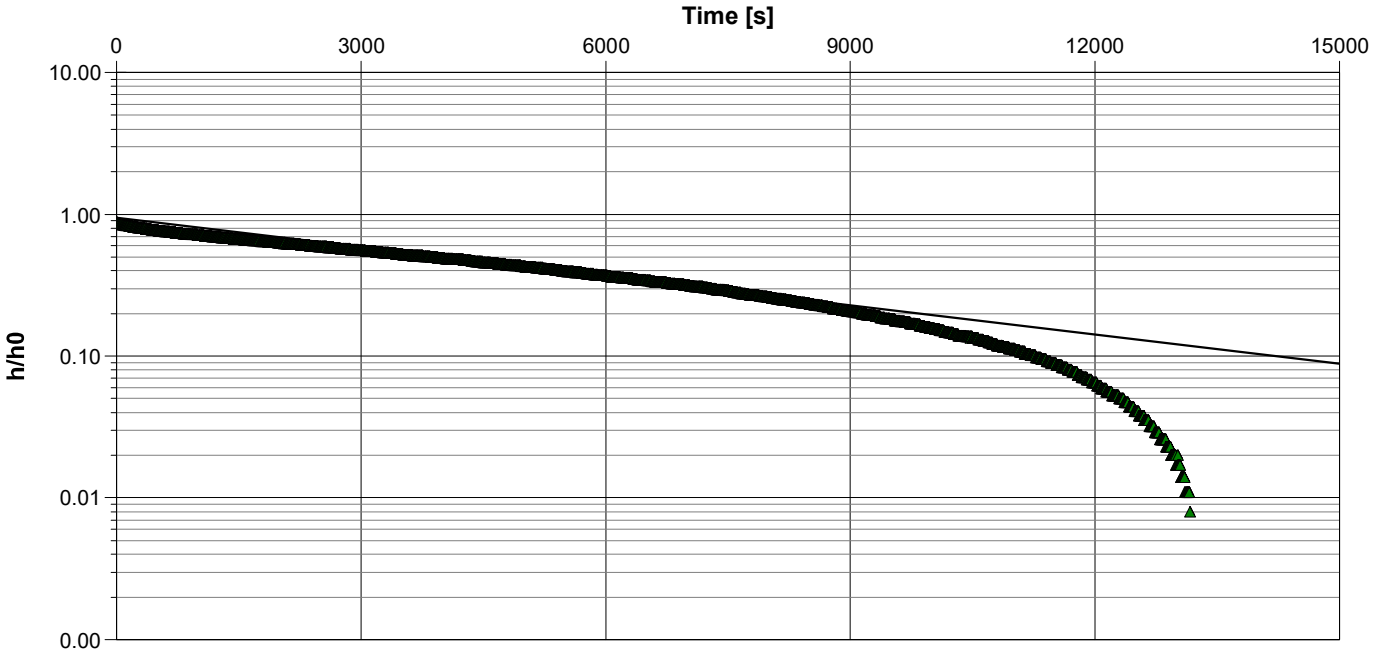
	Slug Test Analysis Report	
	Project: Hydrogeological Investigation	
	Number: 22-217-100	
	Client: Dufferin-401 Properties Limited	
Location: 3400 Dufferin St.	Slug Test: BH22-2	Test Well: BH22-2
Test Conducted by: KM		Test Date: 7/6/2022
Analysis Performed by: MJ	Hvorslev	Analysis Date: 7/13/2022
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
BH22-2	1.03×10^{-6}	

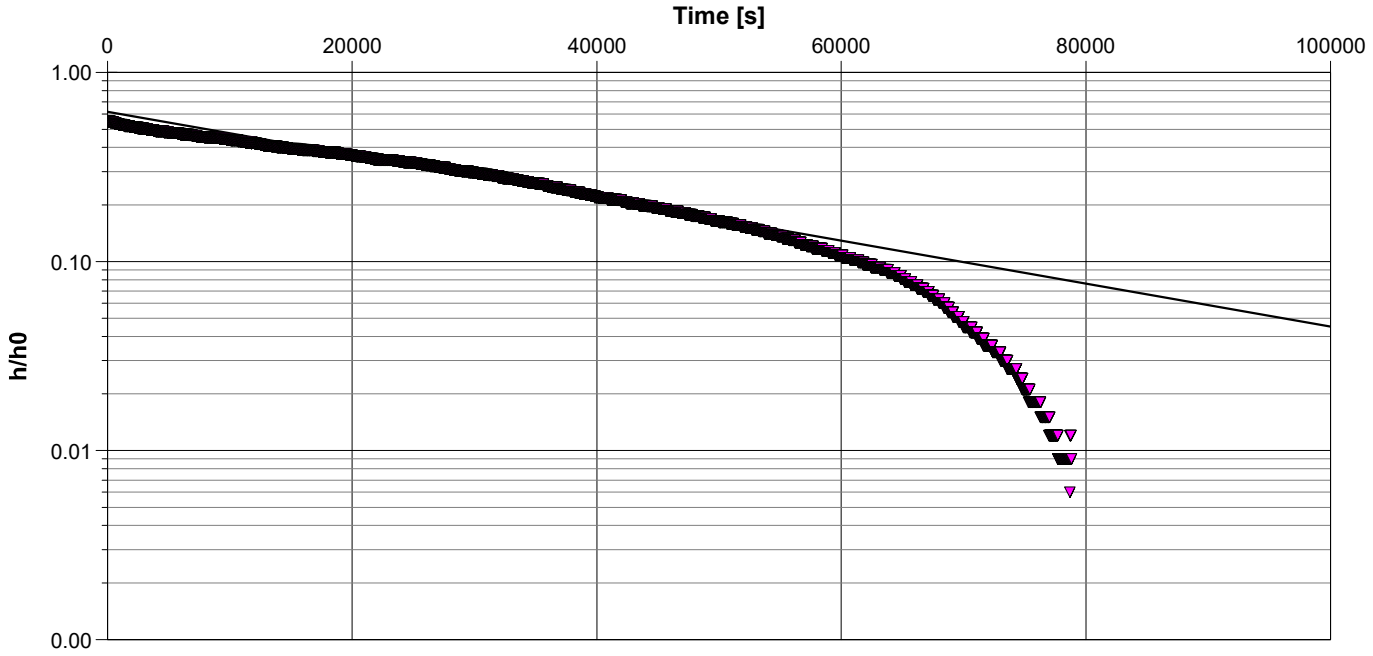
	Slug Test Analysis Report	
	Project: Hydrogeological Investigation	
	Number: 22-217-100	
	Client: Dufferin-401 Properties Limited	
Location: 3400 Dufferin St.	Slug Test: BH22-3	Test Well: BH22-3
Test Conducted by: KM		Test Date: 7/6/2022
Analysis Performed by: MJ	Hvorslev	Analysis Date: 7/13/2022
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
BH22-3	6.05×10^{-8}	

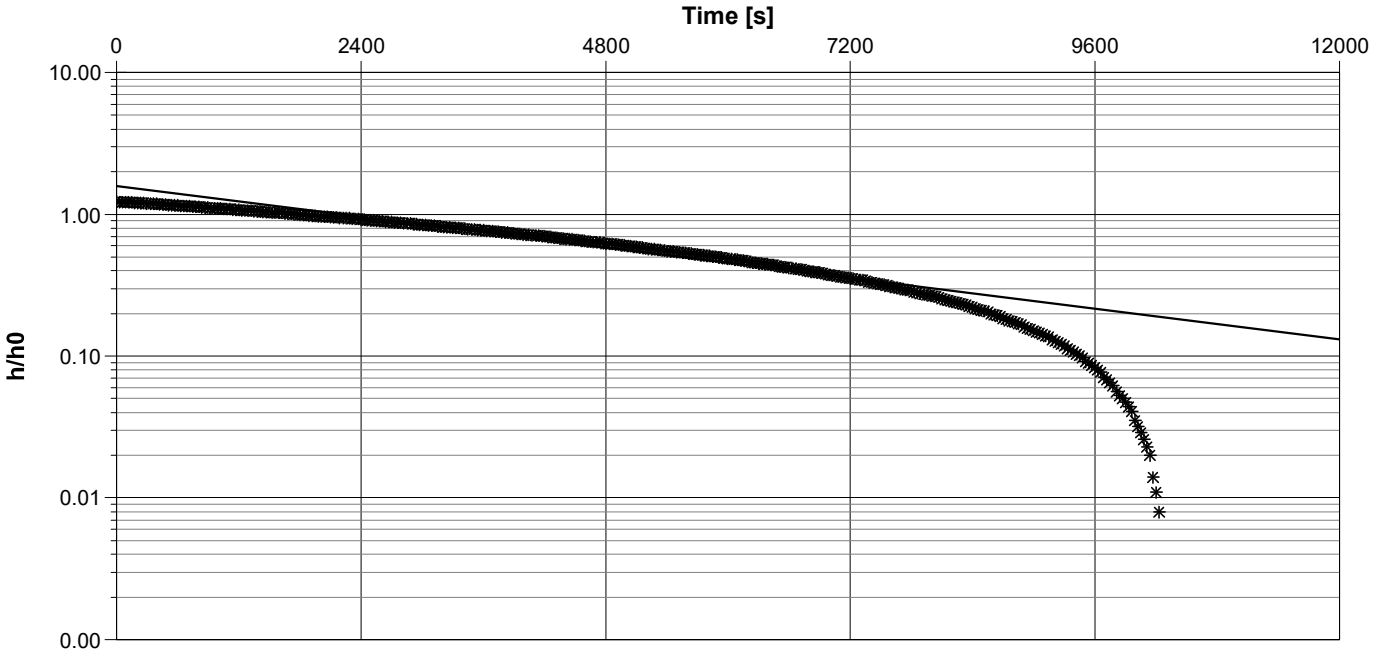
	Slug Test Analysis Report	
	Project: Hydrogeological Investigation	
	Number: 22-217-100	
	Client: Dufferin-401 Properties Limited	
Location: 3400 Dufferin St.	Slug Test: BH22-4	Test Well: BH22-4
Test Conducted by: KM		Test Date: 7/6/2022
Analysis Performed by: MJ	Hvorslev	Analysis Date: 7/13/2022
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
BH22-4	9.98×10^{-9}	

	Slug Test Analysis Report	
	Project: Hydrogeological Investigation	
	Number: 22-217-100	
	Client: Dufferin-401 Properties Limited	
Location: 3400 Dufferin St.	Slug Test: BH22-5	Test Well: BH22-5
Test Conducted by: KM		Test Date: 7/6/2022
Analysis Performed by: MJ	Hvorslev	Analysis Date: 7/13/2022
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
BH22-5	7.94×10^{-8}	

Appendix C: Groundwater Quality Certificate of Analysis

FINAL REPORT

CA40030-JUL22 R1

22-217-100, 3400 Dufferin St, Toronto

Prepared for

DS Consultants

FINAL REPORT

CA40030-JUL22 R1

First Page

CLIENT DETAILS

Client	DS Consultants
Address	6221 Highway 7 Unit 16 Vaughan, Ontario L4H 0K8. Canada
Contact	Meysam Jafari
Telephone	905-264-9393
Facsimile	905-264-2685
Email	meysam.jafari@dsconsultants.ca
Project	22-217-100, 3400 Dufferin St, Toronto
Order Number	
Samples	Ground Water (1)

LABORATORY DETAILS

Project Specialist	Maarit Wolfe, Hon.B.Sc
Laboratory	SGS Canada Inc.
Address	185 Concession St., Lakefield ON, K0L 2H0
Telephone	705-652-2000
Facsimile	705-652-6365
Email	Maarit.Wolfe@sgs.com
SGS Reference	CA40030-JUL22
Received	07/06/2022
Approved	07/12/2022
Report Number	CA40030-JUL22 R1
Date Reported	07/12/2022

COMMENTS

RL - SGS Reporting Limit

Nonylphenol Ethoxylates is the sum of nonylphenol monoethoxylate and nonylphenol diethoxylate.

Temperature of Sample upon Receipt: 9 degrees C
Cooling Agent Present: Yes
Custody Seal Present: Yes

Chain of Custody Number: 032678

Pentachlorophenol LCS recovery was outside control limits. The overall quality control was assessed to be okay. CW Jul11/22

Fluoride spike recovery low, results accepted based on other qc

SIGNATORIES

Maarit Wolfe, Hon.B.Sc

TABLE OF CONTENTS

Client: DS Consultants
Project: 22-217-100, 3400 Dufferin St, Toronto
Project Manager: Meysam Jafari
Samplers: Katie McKwana

MATRIX: WATER

L1 = SANSEW / WATER / - - Toronto Sewer Use By Law Table 1 - Sanitary and Combined Sewer Discharge - BL_100_2016

L2 = SANSEW / WATER / - - Toronto Sewer Use By Law Table 2 - Storm Sewer Discharge - BL_100_2016

Sample Number	8
Sample Name	BH 22-5
Sample Matrix	Ground Water
Sample Date	06/07/2022

Parameter	Units	RL	L1	L2	Result
General Chemistry					
Biochemical Oxygen Demand (BOD5)	mg/L	2	300	15	< 4 ↑
Total Kjeldahl Nitrogen	as N mg/L	0.5	100		0.5
Total Suspended Solids	mg/L	2	350	15	431
Metals and Inorganics					
Fluoride	mg/L	0.06	10		0.24
Cyanide (total)	mg/L	0.01	2	0.02	< 0.01
Aluminum (total)	mg/L	0.001	50		2.11
Antimony (total)	mg/L	0.0009	5		< 0.0009
Arsenic (total)	mg/L	0.0002	1	0.02	0.0016
Cadmium (total)	mg/L	0.000003	0.7	0.008	0.000190
Chromium (total)	mg/L	0.00008	4	0.08	0.00455
Cobalt (total)	mg/L	0.000004	5		0.00185
Copper (total)	mg/L	0.0002	2	0.04	0.0040
Lead (total)	mg/L	0.00009	1	0.12	0.00291
Manganese (total)	mg/L	0.00001	5	0.05	0.223
Molybdenum (total)	mg/L	0.00004	5		0.00874
Nickel (total)	mg/L	0.0001	2	0.08	0.0060
Phosphorus (total)	mg/L	0.003	10	0.4	0.190
Selenium (total)	mg/L	0.00004	1	0.02	0.00504
Silver (total)	mg/L	0.00005	5	0.12	< 0.00005

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L2 = SANSEW / WATER / - - Toronto Sewer Use By Law Table 2 - Storm Sewer Discharge - BL_100_2016

Sample Number	8
Sample Name	BH 22-5
Sample Matrix	Ground Water
Sample Date	06/07/2022

Parameter	Units	RL	L1	L2	Result
Metals and Inorganics (continued)					
Tin (total)	mg/L	0.00006	5		0.00116
Titanium (total)	mg/L	0.00005	5		0.0822
Zinc (total)	mg/L	0.002	2	0.04	0.010
Microbiology					
E. Coli	cfu/100mL	0		200	20
Nonylphenol and Ethoxylates					
Nonylphenol	mg/L	0.001	0.02	0.001	< 0.001
Nonylphenol Ethoxylates	mg/L	0.01	0.2	0.01	< 0.01
Nonylphenol diethoxylate	mg/L	0.01			< 0.01
Nonylphenol monoethoxylate	mg/L	0.01			< 0.01
Oil and Grease					
Oil & Grease (total)	mg/L	2			< 2
Oil & Grease (animal/vegetable)	mg/L	4	150		< 4
Oil & Grease (mineral/synthetic)	mg/L	4	15		< 4

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Sample Number	8
Sample Name	BH 22-5
Sample Matrix	Ground Water
Sample Date	06/07/2022

Parameter	Units	RL	L1	L2	Result
Other (ORP)					
pH	No unit	0.05	11.5	9.5	7.63
Chromium VI	mg/L	0.0002	2	0.04	< 0.0002
Mercury (total)	mg/L	0.00001	0.01	0.0004	< 0.00001
PAHs					
Benzo(b+j)fluoranthene	mg/L	0.0001			< 0.0001
PCBs					
Polychlorinated Biphenyls (PCBs) - Total	mg/L	0.0001	0.001	0.0004	< 0.0001
Phenols					
4AAP-Phenolics	mg/L	0.002	1	0.008	< 0.002
SVOCs					
3,3-Dichlorobenzidine	mg/L	0.0005	0.002	0.0008	< 0.0005
di-n-Butyl Phthalate	mg/L	0.002	0.08	0.015	< 0.002
Bis(2-ethylhexyl)phthalate	mg/L	0.002	0.012	0.0088	< 0.002
Pentachlorophenol	mg/L	0.0005	0.005	0.002	< 0.0005
PAHs (Total)	mg/L		0.005	0.002	< 0.001
Perylene	mg/L	0.0005			< 0.0005

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L2 = SANSEW / WATER / - - Toronto Sewer Use By Law Table 2 - Storm Sewer Discharge - BL_100_2016

Sample Number	8
Sample Name	BH 22-5
Sample Matrix	Ground Water
Sample Date	06/07/2022

Parameter	Units	RL	L1	L2	Result
SVOCs - PAHs					
7Hdibenzo(c,g)carbazole	mg/L	0.0001			< 0.0001
Anthracene	mg/L	0.0001			< 0.0001
Benzo(a)anthracene	mg/L	0.0001			< 0.0001
Benzo(a)pyrene	mg/L	0.0001			< 0.0001
Benzo[e]pyrene	mg/L	0.0001			< 0.0001
Benzo(ghi)perylene	mg/L	0.0002			< 0.0002
Benzo(k)fluoranthene	mg/L	0.0001			< 0.0001
Chrysene	mg/L	0.0001			< 0.0001
Dibenzo(a,h)anthracene	mg/L	0.0001			< 0.0001
Dibenzo(a,i)pyrene	mg/L	0.0001			< 0.0001
Dibenzo(a,j)acridine	mg/L	0.0001			< 0.0001
Fluoranthene	mg/L	0.0001			< 0.0001
Indeno(1,2,3-cd)pyrene	mg/L	0.0002			< 0.0002
Phenanthrene	mg/L	0.0001			< 0.0001
Pyrene	mg/L	0.0001			< 0.0001

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L2 = SANSEW / WATER / - - Toronto Sewer Use By Law Table 2 - Storm Sewer Discharge - BL_100_2016

Sample Number	8
Sample Name	BH 22-5
Sample Matrix	Ground Water
Sample Date	06/07/2022

Parameter	Units	RL	L1	L2	Result
VOCs					
Chloroform	mg/L	0.0005	0.04	0.002	0.0026
1,2-Dichlorobenzene	mg/L	0.0005	0.05	0.0056	< 0.0005
1,4-Dichlorobenzene	mg/L	0.0005	0.08	0.0068	< 0.0005
cis-1,2-Dichloroethene	mg/L	0.0005	4	0.0056	< 0.0005
trans-1,3-Dichloropropene	mg/L	0.0005	0.14	0.0056	< 0.0005
Methylene Chloride	mg/L	0.0005	2	0.0052	< 0.0005
1,1,2,2-Tetrachloroethane	mg/L	0.0005	1.4	0.017	< 0.0005
Tetrachloroethylene (perchloroethylene)	mg/L	0.0005	1	0.0044	< 0.0005
Trichloroethylene	mg/L	0.0005	0.4	0.0076	< 0.0005
VOCs - BTEX					
Benzene	mg/L	0.0005	0.01	0.002	< 0.0005
Ethylbenzene	mg/L	0.0005	0.16	0.002	< 0.0005
Toluene	mg/L	0.0005	0.016	0.002	< 0.0005
Xylene (total)	mg/L	0.0005	1.4	0.0044	< 0.0005
m-p-xylene	mg/L	0.0005			< 0.0005
o-xylene	mg/L	0.0005			< 0.0005

EXCEEDANCE SUMMARY

Parameter	Method	Units	Result	SANSEW / WATER / - - Toronto Sewer Use By Law Table 1 - Sanitary and Combined Sewer Discharge - BL_100_2016 L1	SANSEW / WATER / - - Toronto Sewer Use By Law Table 2 - Storm Sewer Discharge - BL_100_2016 L2
BH 22-5					
Chloroform	EPA 5030B/8260C	mg/L	0.0026		0.002
Total Suspended Solids	SM 2540D	mg/L	431	350	15
Manganese	SM 3030/EPA 200.8	mg/L	0.223		0.05

QC SUMMARY

Biochemical Oxygen Demand

Method: SM 5210 I Internal ref.: ME-CA-IENVIEWL-LAK-AN-007

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Biochemical Oxygen Demand (BOD5)	BOD0007-JUL22	mg/L	2	< 2	11	30	98	70	130	98	70	130

Cyanide by SFA

Method: SM 4500 I Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Cyanide (total)	SKA0080-JUL22	mg/L	0.01	<0.01	ND	10	96	90	110	84	75	125

Fluoride by Specific Ion Electrode

Method: SM 4500 I Internal ref.: ME-CA-IENVIEWL-LAK-AN-014

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Fluoride	EWL0110-JUL22	mg/L	0.06	<0.06	ND	10	102	90	110	63	75	125

QC SUMMARY

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-[ENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA0072-JUL22	mg/L	0.0002	<0.0002	ND	20	100	80	120	105	75	125

Mercury by CVAAS

Method: EPA 7471A/SM 3112B | Internal ref.: ME-CA-[ENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury (total)	EHG0012-JUL22	mg/L	0.00001	< 0.00001	0	20	NV	80	120	113	70	130

QC SUMMARY

Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver (total)	EMS0074-JUL22	mg/L	0.00005	<0.00005	ND	20	106	90	110	115	70	130
Aluminum (total)	EMS0074-JUL22	mg/L	0.001	<0.001	9	20	105	90	110	114	70	130
Arsenic (total)	EMS0074-JUL22	mg/L	0.0002	<0.0002	1	20	110	90	110	114	70	130
Cadmium (total)	EMS0074-JUL22	mg/L	0.000003	<0.000003	11	20	106	90	110	101	70	130
Cobalt (total)	EMS0074-JUL22	mg/L	0.000004	<0.000004	2	20	106	90	110	98	70	130
Chromium (total)	EMS0074-JUL22	mg/L	0.00008	<0.00008	ND	20	110	90	110	122	70	130
Copper (total)	EMS0074-JUL22	mg/L	0.0002	<0.0002	9	20	103	90	110	91	70	130
Manganese (total)	EMS0074-JUL22	mg/L	0.00001	<0.00001	0	20	103	90	110	88	70	130
Molybdenum (total)	EMS0074-JUL22	mg/L	0.00004	<0.00004	ND	20	105	90	110	104	70	130
Nickel (total)	EMS0074-JUL22	mg/L	0.0001	<0.0001	0	20	101	90	110	90	70	130
Lead (total)	EMS0074-JUL22	mg/L	0.00009	<0.00001	1	20	101	90	110	100	70	130
Phosphorus (total)	EMS0074-JUL22	mg/L	0.003	<0.003	20	20	93	90	110	NV	70	130
Antimony (total)	EMS0074-JUL22	mg/L	0.0009	<0.0009	ND	20	108	90	110	106	70	130
Selenium (total)	EMS0074-JUL22	mg/L	0.00004	<0.00004	10	20	105	90	110	95	70	130
Tin (total)	EMS0074-JUL22	mg/L	0.00006	<0.00006	ND	20	101	90	110	NV	70	130
Titanium (total)	EMS0074-JUL22	mg/L	0.00005	<0.00005	7	20	110	90	110	NV	70	130
Zinc (total)	EMS0074-JUL22	mg/L	0.002	<0.002	9	20	102	90	110	93	70	130

QC SUMMARY

Microbiology

Method: SM 9222D | Internal ref.: ME-CA-IENVIMIC-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
E. Coli	BAC9092-JUL22	cfu/100mL	-	ACCEPTED	ACCEPTED							

Nonylphenol and Ethoxylates

Method: ASTM D7065-06 | Internal ref.: ME-CA-IENVIGC-LAK-AN-015

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nonylphenol diethoxylate	GCM0135-JUL22	mg/L	0.01	< 0.01			85	55	120			
Nonylphenol Ethoxylates	GCM0135-JUL22	mg/L	0.01	< 0.01								
Nonylphenol monoethoxylate	GCM0135-JUL22	mg/L	0.01	< 0.01			85	55	120			
Nonylphenol	GCM0135-JUL22	mg/L	0.001	< 0.001			83	55	120			

QC SUMMARY

Oil & Grease

Method: MOE E3401 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-019

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Oil & Grease (total)	GCM0133-JUL22	mg/L	2	<2	NSS	20	112	75	125			

Oil & Grease-AV/MS

Method: MOE E3401/SM 5520F | Internal ref.: ME-CA-[ENV]GC-LAK-AN-019

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Oil & Grease (animal/vegetable)	GCM0133-JUL22	mg/L	4	< 4	NSS	20	NA	70	130			
Oil & Grease (mineral/synthetic)	GCM0133-JUL22	mg/L	4	< 4	NSS	20	NA	70	130			

pH

Method: SM 4500 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	EWL0105-JUL22	No unit	0.05	NA	0		100			NA		

QC SUMMARY

Phenols by SFA

Method: SM 5530B-D | Internal ref.: ME-CA-[ENVISFA-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
4AAP-Phenolics	SKA0085-JUL22	mg/L	0.002	<0.002	8	10	109	80	120	96	75	125

Polychlorinated Biphenyls

Method: MOE E3400/EPA 8082A | Internal ref.: ME-CA-[ENVIGC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Polychlorinated Biphenyls (PCBs) - Total	GCM0106-JUL22	mg/L	0.0001	<0.0001	NSS	30	88	60	140	NSS	60	140

QC SUMMARY

Semi-Volatile Organics

Method: EPA 3510C/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
3,3-Dichlorobenzidine	GCM0099-JUL22	mg/L	0.0005	< 0.0005	NSS	30	94	30	130	NSS	30	130
7Hdibenzo(c,g)carbazole	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	98	50	140	NSS	50	140
Anthracene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	90	50	140	NSS	50	140
Benzo(a)anthracene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	91	50	140	NSS	50	140
Benzo(a)pyrene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	88	50	140	NSS	50	140
Benzo(b+j)fluoranthene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	88	50	140	NSS	50	140
Benzo[e]pyrene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	97	50	140	NSS	50	140
Benzo(ghi)perylene	GCM0116-JUL22	mg/L	0.0002	< 0.0002	NSS	30	92	50	140	NSS	50	140
Benzo(k)fluoranthene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	93	50	140	NSS	50	140
Bis(2-ethylhexyl)phthalate	GCM0116-JUL22	mg/L	0.002	< 0.002	NSS	30	100	50	140	NSS	50	140
Chrysene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	91	50	140	NSS	50	140
di-n-Butyl Phthalate	GCM0116-JUL22	mg/L	0.002	< 0.002	NSS	30	106	50	140	NSS	50	140
Dibenzo(a,h)anthracene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	88	50	140	NSS	50	140
Dibenzo(a,i)pyrene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	79	50	140	NSS	50	140
Dibenzo(a,j)acridine	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	90	50	140	NSS	50	140
Fluoranthene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	93	50	140	NSS	50	140
Indeno(1,2,3-cd)pyrene	GCM0116-JUL22	mg/L	0.0002	< 0.0002	NSS	30	93	50	140	NSS	50	140
Pentachlorophenol	GCM0116-JUL22	mg/L	0.0005	< 0.0005	NSS	30	30	50	140	NSS	50	140
Perylene	GCM0116-JUL22	mg/L	0.0005	< 0.0005	NSS	30	95	50	140	NSS	50	140
Phenanthrene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	91	50	140	NSS	50	140

QC SUMMARY

Semi-Volatile Organics (continued)

Method: EPA 3510C/8270D | Internal ref.: ME-CA-[ENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Pyrene	GCM0116-JUL22	mg/L	0.0001	< 0.0001	NSS	30	91	50	140	NSS	50	140

Suspended Solids

Method: SM 2540D | Internal ref.: ME-CA-[ENVIEWL-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Suspended Solids	EWL0127-JUL22	mg/L	2	< 2	0	10	98	90	110	NA		

Total Nitrogen

Method: SM 4500-N C/4500-NO3- F | Internal ref.: ME-CA-[ENVISFA-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Kjeldahl Nitrogen	SKA0076-JUL22	as N mg/L	0.5	<0.5	5	10	97	90	110	103	75	125

QC SUMMARY

Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-[ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,2,2-Tetrachloroethane	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	95	60	130	97	50	140
1,2-Dichlorobenzene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	98	60	130	99	50	140
1,4-Dichlorobenzene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	98	60	130	97	50	140
Benzene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	102	50	140
Chloroform	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	101	50	140
cis-1,2-Dichloroethene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	103	60	130	102	50	140
Ethylbenzene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	101	50	140
m-p-xylene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	99	50	140
Methylene Chloride	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	99	50	140
o-xylene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	99	50	140
Tetrachloroethylene (perchloroethylene)	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	101	50	140
Toluene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	103	50	140
trans-1,3-Dichloropropene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	100	60	130	103	50	140
Trichloroethylene	GCM0109-JUL22	mg/L	0.0005	<0.0005	ND	30	101	60	130	103	50	140

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS	Insufficient sample for analysis.
RL	Reporting Limit.
↑	Reporting limit raised.
↓	Reporting limit lowered.
NA	The sample was not analysed for this analyte
ND	Non Detect

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.
"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.
Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

This report supersedes all previous versions.

-- End of Analytical Report --

Request for Laboratory Services and CHAIN OF CUSTODY

SGS Industries & Environment - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

No: 032678 Page 1 of 1

Laboratory Information Section - Lab use only

Received By: Nicole Brigant
Received Date: July / 6 / 22 (mm/dd/yy)
Received Time: 17 : 00 (hr : min)
Received By (signature):
Custody Seal Present: Yes ☑ No ☐
Custody Seal Intact: Yes ☑ No ☐
Cooling Agent Present: Yes ☑ No ☐ Type: Ice
Temperature Upon Receipt (°C) 9.9.9
LAB LIMS#: CA40030-JUL22

REPORT INFORMATION

Company: DS Consultants Ltd
Contact: Meysam Jafari
Address: 6221 Hwy 7, Unit 16, Vaughn, ON
Phone: 647-831-5596
Fax:
Email: Meysam.jafari@dsconsultants.ca

INVOICE INFORMATION

☐ (same as Report Information)
Company: DS Consultants Ltd.
Contact: Accounting
Address: 6221 Hwy 7, Unit 16, Vaughn, ON
Phone: 905-204-9393
Email: Accounting@dsconsultants.ca

Quotation #:
P.O. #:
Project #: 22-217-100
Site Location/ID: 3400 Dufferin St, Toronto

TURNAROUND TIME (TAT) REQUIRED

☑ Regular TAT (5-7days)
TAT's are quoted in business days (exclude statutory holidays & weekends). Samples received after 6pm or on weekends: TAT begins next business day

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days
PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☐ O.Reg 153/04 ☐ O.Reg 406/19
☐ Table 1 ☐ Res/Park Soil Texture: ☐ Coarse
☐ Table 2 ☐ Ind/Com ☐ Medium/Fine
☐ Table 3 ☐ Agri/Other
☐ Table _____ Appx. _____
Soil Volume ☐ <350m3 ☐ >350m3

Other Regulations:
☐ Reg 347/558 (3 Day min TAT)
☐ PWQO ☐ MMER
☐ CCME ☐ Other:
☐ MISA _____
☐ ODWS Not Reportable *See note

Sewer By-Law:
☑ Sanitary
☑ Storm
Municipality: Toronto

RECORD OF SITE CONDITION (RSC) ☐ YES ☐ NO

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	# OF BOTTLES	MATRIX	Field Filtered (Y/N)	M&I: Metals & Inorganics (incl CrVI, CN, Hg pH,(B(HWS),EC,SAR–soil) (Cl, Na–water)	M&I: Full Metals Suite (ICP metals plus B(HWS–soil only) Hg, CrVI	M&I: ICP Metals only Sb,As,Ba,Be,B,Cd, Cr,Co,Cu,Pb,Mo,Ni,Se,Ag,Tl,U,V,Zn	SVOC: PAHs only	SVOC: SVOCs all incl PAHs, ABNs, CPs	PCB: PCBs Total ☐ Aroclor ☐	PHC: F1-F4 + BTEX	PHC: F1-F4 only no BTEX	VOC: VOCs all incl BTEX	VOC: BTEX only	Pest: Pesticides Organochlorine or specify other	Other: Toronto Sanitary Storm Sewer use ✓	Other	Other	Other	Other: Sewer Use: Specify pkg:	Other: Water Characterization Pkg General ☐ Extended ☐	SPLP: Specify tests	TCLP: Specify tests	COMMENTS:
1	BH 22-5	07/06/22	AM	18	GW	N												✓								Non-filtered sample
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

SPLP: ☐ Metals ☐ VOC ☐ 1,4-Dioxane ☐ OCP ☐ ABN
TCLP: ☐ M&I ☐ VOC ☐ PCB ☐ B(a)P ☐ ABN ☐ Ignit.

Observations/Comments/Special Instructions

Sampled By (NAME): Kartik McKeown Signature: Kartik Date: 07/06/22 (mm/dd/yy)
Relinquished by (NAME): Kartik McKeown Signature: Kartik Date: 07/06/22 (mm/dd/yy)

Pink Copy - Client
Yellow & White Copy - SGS

Revision #: 1.6
Date of Issue: 02 May 2022

Appendix D: MECP Water Wells Records

Hydrogeological Investigation - Proposed Residential Buildings, 3400 Dufferin Street and 8 Jane Osler Blvd, Toronto, ON												
TOWNSHIP C	**UTM**	**E**	**N**	**DATE CNTR**	**CASING**	**WATER**	**PUMP TEST**	**WELL USI**	**SCREEN**	**WELL**	**1**	**FORMATION**
NORTH YORK B	17 W	623835	4842066	2013-07 7230						7218673	(C25359) A161856 P	
NORTH YORK B	17 W	624300	4842673	2015-10 6607	2			MO	0024 13	7252533	(Z219971) A192811	SAND SOFT 0004 GREY CLAY SILT SOFT 0023 GREY CLAY SILT TILL 0037
NORTH YORK B	17 W	624424	4842593	2012-01 7241	1.75			MT	0025 10	7179989	(Z145423) A128455	SAND SILT DNSE 0022 GREY SAND SILT WBRG 0035
NORTH YORK B	17 W	624065	4842689	2013-01 7048						7195692	(Z100951) A115256	
NORTH YORK B	17 W	624047	4842552	2013-02 7241	2			DE MO	0014 10	7198077	(Z165402) A117553	BRWN SILT 0016 GREY SILT CLAY 0024
NORTH YORK B	17 W	624661	4842523	2013-02 7241	2			MT	0014 10	7198078	(Z165403) A117552	BRWN SILT 0016 GREY SILT CLAY 0024
NORTH YORK B	17 W	624046	4842590	2013-02 7241	2			MT	0014 10	7198079	(Z165401) A117551	BRWN SILT 0016 GREY SILT CLAY 0024
NORTH YORK B	17 W	624057	4842451	2013-06 7147						7203970	(C19711) A137363 P	
NORTH YORK B	17 W	623692	4842586	2012-01 7241	1.25			MT	0016 10	7179561	(Z145413) A128450	CLAY DNSE 0014 GREY CLAY SILT DNSE 0026
NORTH YORK B	17 W	623692	4842586	2012-01 7241	1.25			MT	0026 10	7179560	(Z145414) A128449	CLAY DNSE 0014 GREY CLAY SILT DNSE 0026
NORTH YORK B	17 W	624111	4842402	2013-07 7230						7218681	(C25341) A161849 P	
NORTH YORK B	17 W	624332	4842209	2014-03 6946						7219027	(C24513) A147259 P	
NORTH YORK B	17 W	624279	4842166	2013-07 6902						7219316	(C21750) A130409 P	
NORTH YORK B	17 W	623785	4842148	2014-05 7247	0.75			MT	0010 5	7222994	(Z179648) A156007	SILT LOOS 0004 BRWN CLAY SAND 0015
NORTH YORK B	17 W	624112	4842400	2014-09 6988						7232217	(C24803) A161849 A	
NORTH YORK B	17 W	623834	4842064	2014-09 6988						7232232	(C24804) A161856 A	
NORTH YORK B	17 W	624293	4842166	2015-05 7147						7242241	(C28770) A175790 P	

NORTH YORK B	17 W	624020	4842487	2013-07 7147						7205401	(C22656) A137363 P	
NORTH YORK B	17 W	623659	4842355	2010-09 7241	1			MT	0008 10	7154054	(Z122672) A108617	BRWN SAND 0010 BRWN SILT CLAY 0018
NORTH YORK B	17 W	624244	4842100	2006-01 7241	1.22				0014 10	6929936	(Z34249) A035940 A	BRWN SAND SILT 0004 BRWN CLAY SAND 0008 GREY CLAY SILT 0024
NORTH YORK B	17 W	623706	4842400	2006-05 7147	1.97			NU	0007 10	6930320	(Z49533) A041538	BLCK 0001 BRWN FILL 0001 BRWN CLAY 0017
NORTH YORK B	17 W	624552	4842751	2008-10 7215				TH	0005 9	7118523	(Z90054) A079239	BRWN GRVL SAND LOOS 0005 BRWN SILT TILL 0010 GREY SAND SILT 0014
NORTH YORK B	17 W	624155	4842482	2010-03 6946	2.04	9		MO	0025 10	7143592	(Z109113) A094476	BRWN SILT SAND LOOS 0002 GREY SILT STNS LOOS 0012 GREY SILT DNSE 0034
NORTH YORK B	17 W	623926	4842181	2010-07 7241	5.19			MT	0003 3	7149492	(Z118953) A102955	BRWN SAND GRVL FILL 0002 BRWN SILT CLAY DNSE 0005 GREY CLAY SILT DNSE 0006
NORTH YORK B	17 W	623947	4842146	2010-07 7241	5.19				0004 3	7149493	(Z118940) A102880	BRWN SAND GRVL FILL 0002 BRWN SILT CLAY DNSE 0005 GREY CLAY SILT DNSE 0007
NORTH YORK B	17 W	623691	4842369	2010-09 7241	1.5			MT	0009 10	7154034	(Z122692) A108614	BRWN SILT SAND 0008 GREY CLAY SILT 0019
NORTH YORK B	17 W	624669	4842592	2012-01 7241	1.75			MT	0022 10	7179988	(Z145422) A128454	BRWN GRVL SAND LOOS 0007 BRWN SAND SILT 0021 GREY CLAY SILT WBRG 0032
NORTH YORK B	17 W	623657	4842329	2010-09 7241	1.5			MT	0007 5	7154036	(Z122690) A108616	GREY SILT CLAY WBRG 0012
NORTH YORK B	17 W	624262	4842693	2015-09 6607	2			MO	0034 11	7252546	(Z219972) A192806	BRWN SAND SOFT 0001 GREY CLAY SILT SOFT 0023 GREY CLAY SILT TILL 0045
NORTH YORK B	17 W	623650	4842497	2010-09 7241	1.25			MT	0004 10	7154055	(Z122671) A108710	BRWN SAND GRVL 0004 GREY SILT CLAY 0010 GREY SILT TILL 0014

NORTH YORK B	17 W	624174	4842744	2011-11 6607	2	FR		MO	0050 10	7173071	(Z130533) A115262	BRWN LOAM SAND SOFT 0003 BRWN SILT SAND SOFT 0025 BRWN SILT CLAY DNSE 0035 GREY SILT SAND DNSE 0055 GREY SILT SAND HARD 0060
NORTH YORK B	17 W	624065	4842689	2011-10 6607	1.25	FR 0055		MO	0050 10	7174761	(Z130526) A115256	BRWN SAND GRVL SOFT 0003 GREY CLAY SILT DNSE 0025 GREY CLAY SILT HARD 0050 GREY SILT CLAY DNSE 0055 GREY SAND SILT DNSE 0060
NORTH YORK B	17 W	623719	4842591	2012-02 7241				MT		7177741	(Z146581) A128449 A	
NORTH YORK B	17 W	623719	4842591	2012-02 7241				MT		7177742	(Z146560) A128450 A	
NORTH YORK B	17 W	623719	4842591	2012-02 7241				MT		7177743	(Z146559) A108652 A	
NORTH YORK B	17 W	623722	4842383	2012-01 7241	1.25			MT	0030 10	7179517	(Z145453) A108652	BRWN SAND FILL 0002 BRWN CLAY SILT DNSE 0012 GREY CLAY SILT DNSE 0030
NORTH YORK B	17 W	623695	4842338	2010-09 7241	1.5			MT	0010 10	7154035	(Z122693) A108615	BRWN SILT SAND 0005 GREY SILT CLAY WBRG 0020
NORTH YORK B	17 W	623908	4842629	2020-09 7241						7369722	(Z345166) A302568 P	
NORTH YORK B	17 W	623942	4842380	2019-06 6988						7343116	(C40788) A256466 P	
NORTH YORK B	17 W	624140	4842818	2019-11 7644	2	UT 0025	///:	MT	0020 10	7353453	(Z327010) A284917	BLCK ---- HARD 0001 BRWN FILL SAND GRVL 0015 GREY SILT TILL CLAY 0030
NORTH YORK B	17 W	624250	4842818	2019-12 7644	2	UT 0029	///:	OT	0015 10	7353454	(Z329363) A284926	BLCK ---- HARD 0001 BRWN SAND GRVL FILL 0010 BRWN TILL CLAY SILT 0025
NORTH YORK B	17 W	624033	4842550	2019-11 7215						7363563	(C47297) A284416 P	
NORTH YORK B	17 W	624034	4842551	2019-09 7215						7363564	(C45935) A269274 P	
NORTH YORK B	17 W	624023	4842468	2020-08 7215						7367621	(Z333664) A295058 P	

NORTH YORK B	17 W	624183	4842610	2020-08 6607	2		///:	MO	0045 10	7368516	(2AYD27F6) A300643	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0030 GREY SAND SILT DNSE 0055
NORTH YORK B	17 W	624183	4842576	2020-08 6607	2		///:	MO	0055 10	7368520	(AIJ2NATF) A300634	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0035 GREY SAND SILT DNSE 0065
NORTH YORK B	17 W	624113	4842608	2020-08 6607	2		///:	MO	0055 10	7368523	(J3HC8DQ2) A300642	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0035 GREY SAND SILT DNSE 0065
NORTH YORK B	17 W	624058	4842638	2020-08 6607	2		///:	MO	0055 10	7368525	(MCN3Y4OG) A300644	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0035 GREY SAND SILT DNSE 0065
NORTH YORK B	17 W	624162	4842563	2020-08 6607	2		///:	MO	0055 10	7368534	(X34KOMVY) A293743	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0035 GREY SAND SILT DNSE 0065
NORTH YORK B	17 W	623880	4842606	2020-09 7241						7369723	(Z345165) A302569 P	
NORTH YORK B	17 W	623927	4842614	2020-09 7241						7369724	(Z345135) A302638 P	
NORTH YORK B	17 W	623859	4842584	2020-09 7241						7369725	(Z345136) A302639 P	
NORTH YORK B	17 W	624183	4842610	2020-08 6607	2		///:	MO	0055 10	7372896	(R6MNFG7L) A300625	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0035 GREY SAND SILT DNSE 0065
NORTH YORK B	17 W	624262	4842053	2021-02 7282	2		///:	MO	0025 10	7385323	(UAIKQMSY) A310401	BRWN FILL 0002 BRWN TILL SAND 0010 GREY TILL 0035
NORTH YORK B	17 W	624290	4842015	2021-02 7282	2		///:	MO	0045 5	7385324	(SDG8V2QL) A310397	BRWN FILL 0002 BRWN TILL SAND 0010 GREY TILL 0050
NORTH YORK B	17 W	624287	4842021	2021-02 7282	2		///:	MO	0020 10	7385325	(EQS88ZG6) A310395	BRWN FILL 0002 BRWN TILL SAND 0010 GREY TILL 0030
NORTH YORK B	17 W	624281	4842011	2021-02 7282	2		///:	MO	0025 10	7385326	(OV3C4KPZ) A310400	BRWN FILL 0002 BRWN TILL SAND 0010 GREY TILL 0030

NORTH YORK B	17 W	624286	4841970	2021-02 7282	2		///:	MO	0025 10	7385327	(73ZH4KJF) A310382	BRWN FILL 0002 BRWN TILL SAND 0010 GREY TILL 0030
NORTH YORK B	17 W	624322	4842039	2021-02 7282	2		///:	MO	0025 10	7385328	(S8N2H7OP) A310398	BRWN FILL 0002 BRWN TILL SAND 0010 GREY TILL 0030
NORTH YORK B	17 W	624330	4842003	2021-02 7282	2		///:	MO	0007 5	7385329	(U7PBFWIO) A310399	BRWN SAND GRVL 0010 GREY TILL GRVL 0012
NORTH YORK B	17 W	624288	4842134	2021-05 7360	2		///:	MO	0035 10	7389719	(ZMLZKDER) A317657	GRVL SAND FILL 0005 BRWN CLAY SLTY 0015 GREY TILL HARD 0035 GREY CLAY 0045
NORTH YORK B	17 W	624153	4842602	2020-08 6607	2		///:	MO	0055 10	7368532	(RH8VICWO) A300641	BRWN SILT CLAY FILL 0009 GREY CLAY SAND DNSE 0035 GREY SAND SILT DNSE 0065
NORTH YORK B	17 W	623993	4842576	2017-02 7247	2	UT 0018		TH MO	0010 10	7297815	(Z258650) A202355	BRWN SILT CLAY FILL 0005 BRWN SILT CLAY TILL 0020
NORTH YORK B	17 W	624625	4842595	2016-03 7147						7259991	(C32533) A175748 P	
NORTH YORK B	17 W	624077	4842629	2016-03 6032						7281575	(C29035) A202475 P	
NORTH YORK B	17 W	623664	4842218	2017-02 7241	1			TH MO	0004 10	7281833	(Z245481) A185472	BLCK CMTD 0002 BRWN SAND SILT GRVL 0014 GREY
NORTH YORK B	17 W	623655	4842285	2017-02 7241	1.25			TH MO	0010 10	7281889	(Z253375) A211211	BRWN SAND GRVL 0003 BRWN SILT CLAY TILL 0011 GREY SILT CLAY TILL 0020
NORTH YORK B	17 W	623646	4842284	2017-02 7241	1.25			TH MO	0010 10	7281890	(Z253374) A185463	BRWN SAND GRVL 0003 BRWN SILT CLAY TILL 0011 GREY SILT CLAY TILL 0020
NORTH YORK B	17 W	623683	4842211	2017-02 7241	1.25			TH MO	0010 10	7281891	(Z253376) A185470	BRWN SAND GRVL 0003 BRWN SILT CLAY TILL 0010 GREY SILT CLAY TILL 0020
NORTH YORK B	17 W	623673	4842204	2017-02 7241	1.25			TH MO	0005 10	7281892	(Z251094) A217290	BRWN SAND GRVL 0003 BRWN SILT SAND TILL 0010 GREY SILT CLAY TILL 0015
NORTH YORK B	17 W	624034	4842586	7147						7286239	(C37221) A175748 P	

NORTH YORK B	17 W	624315	4842065	2018-07 7215						7337045	(C42102) A253495 P	
NORTH YORK B	17 W	624055	4842452	2020-10 7215						7389894	(C49446) P	
NORTH YORK B	17 W	624285	4843052	2017-11 7383	2	UK 0007		TH MO	0020 10	7300018	(Z269794) A226422	FILL SILT CLAY 0030
NORTH YORK B	17 W	624315	4842973	2017-11 7383	2			TH MO	0010 10	7300019	(Z269795) A226467	FILL SILT CLAY 0020
NORTH YORK B	17 W	624367	4842958	2017-11 7383	1			TH MO	0010 10	7300020	(Z269796) A238821	FILL SILT CLAY 0020
NORTH YORK B	17 W	624543	4842657	2017-03 7464	1.97			MO	0015 10	7301215	(Z234247) A208263	BRWN SAND 0005 BRWN SILT 0015 GREY TILL 0025
NORTH YORK B	17 W	624320	4842591	2017-09 7464						7303222	(C39915) A233453 P	
NORTH YORK B	17 W	624030	4842535	2018-02 7147						7307057	(C40474) A166520 P	
NORTH YORK B	17 W	623994	4842607	7147	1.97	UT 0005		MO	0009 10	7322827	(Z271411) A247300	BRWN FILL 0002 BRWN SILT SAND SAND 0007 GREY SILT SAND 0009 GREY CLAY SILT 0018
NORTH YORK B	17 W	623980	4842395	2018-10 6988						7331247	(C40760) A242856 P	
NORTH YORK B	17 W	624277	4842118	2019-03 7360	2	UT 0035	///:	MO	0035 10	7331387	(Z309329) A266697	BLCK ---- 0004 BRWN GRVL 0005 BRWN CLAY SLTY 0016 GREY STNS LOOS 0024 GREY CLAY STNS 0045
NORTH YORK B	17 W	624319	4842055	2019-03 7360	2	UT 0025	///:	MO	0030 15	7331388	(Z309330) A266696	BLCK ---- 0004 GREY CLAY 0007 BLCK FILL 0025 GREY CLAY STNS 0045
YORK BOROUGH	17 W	624349	4842074	2017-05 7464						7289081	(C37192) A224776 P	
YORK BOROUGH	17 W	624030	4842535	2017-06 7147						7291951	(C38284) A166520 P	