15 Denison Avenue, Toronto, Ontario

M5T 2M4

Hydrogeological Investigation

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1 Introduction

1.1 Project Description

EXP Services Inc. (EXP) was retained by CreateTO to prepare a Hydrogeological Investigation Report associated with the proposed development located at 15 Denison Avenue, Toronto, Ontario (hereinafter referred to as the 'Site').

The Site is currently occupied by a city of Toronto parking lot (Toronto Parking Authority). Final development plan for the Site is not currently known; however, CTO envisions that the Site will be redeveloped with an eight (8) storey building with two (2) levels of underground parking occupying the entire Site area. The Site location plan is shown on Figure 1.

EXP conducted a Preliminary Geotechnical Investigation and Environmental Site Assessment (ESA) in conjunction with this investigation. The pertinent information gathered from the noted investigations is utilized for this report.

1.2 Project Objectives

The main objectives of the Hydrogeological Investigation are as follows:

- Establish the local hydrogeological settings within the Site;
- Evaluate construction dewatering flow rates and potential impacts;
- Assess preliminary long-term foundation sub-drain discharge volumes;
- Assess groundwater quality for parameters listed in City of Toronto Sanitary and Storm Sewer By-Law;
- Prepare a Hydrogeological Investigation Report; and,
- Complete the Hydrological Review Summary Form, as per City of Toronto requirements.

1.3 Scope of Work

To achieve the investigation objectives, EXP has completed the following scope of work:

- Reviewed available geological and hydrogeological information for the Site;
- Develop and conduct Single Well Response Tests (SWRT) on all five (5) monitoring wells to evaluate hydraulic properties of the saturated stratigraphic units at the Site.
- Collected one (1) groundwater sample from a selected monitoring well for laboratory testing of the City of Toronto Sanitary and Storm Sewer By-Law parameters;
- Completed seven (7) monitoring events in a three-month monitoring program at the Site, as per the City's requirement;
- Evaluated the information collected during the field investigation program, including borehole geological information, SWRT results, groundwater level measurements and groundwater water quality;
- Prepared the Site plan, cross section, geological mapping, and groundwater contour mapping for the Site;
- Estimated construction dewatering flow rates (Short Term);
- Estimated sub-drain discharge volumes (Long Term);

- Assessed potential impacts and recommend mitigation measures;
- Prepared a Hydrogeological Investigation Report; and
- Completed the Hydrological Review Summary Form (HRSF), as required by the City of Toronto

The Hydrogeological Investigation was prepared in accordance with the Ontario Water Resources Act, Ontario Regulation 387/04, and Toronto Municipal Code 681-Sewers. The scope of work outlined above was made to assess dewatering and did not include a review of Environmental Site Assessments (ESA).

1.4 Review of Previous Reports

The following reports were reviewed as part of this Hydrogeological Investigation:

- EXP Services Inc. (February 9, 2022), Geotechnical Investigation, Proposed Residential Development, 15 Denison Avenue, Toronto, ON, prepared for CreateTo.

Any past and/or future geotechnical, hydrogeological, environmental and risk assessments, and updated development/architectural plans should be provided to update this hydrogeological report prior to submission of permits and approvals by the municipalities and agencies.

2 Hydrogeological Setting

2.1 Regional Setting

2.1.1 Regional Physiography

The Site is within a physiographic region known as the Iroquois Plain. The physiographic landform is named Bevelled Till Plains. The South Slope lies to the north of the Iroquois Plain (Chapman & Putnam, 2007).

The Iroquois Plain was created along the shores of former Lake Iroquois, an ancient glacial lake. The noted Plain primarily consists of shallow water sandy deposits.

The topography of the Iroquois Plain is relatively flat with a gradual slope to the south, toward Lake Ontario.

2.1.2 Regional Geology and Hydrogeology

The surficial geology can be described as undifferentiated older till and stratified deposits (Ministry of Northern Development and Mines, 2012). The surficial geology of the Site and surrounding areas is shown on Figure 2.

Based on the available regional geology maps, the subsurface stratigraphy of the Site from top to bottom is summarized in Table 2-1 (TRCA, 2008 and Oak Ridge Moraine Groundwater Program, 2022). The overburden thickness is approximately 16 m.

Table 2-1: Summary of Subsurface Stratigraphy

Stratigraphic Unit	General Description	Top Elevation of Stratigraphic Unit
Sunnybrook Formation (Aquitard)	This lithologic unit was deposited near an ice sheet. It predominately consists of silt and clay.	93-94
Scarborough Formation (Aquifer)	This geology unit is interpreted as deposits of a fluvial-deltaic system fed by large braided melt-water rivers draining from an ice sheet. It consists of peat sand overlaying silt and clay deposits.	89
Georgian Bay Formation	Bedrock primarily consists of interbedded shale, limestone, dolostone and siltstone. It belongs to the Upper Ordovician, (Ministry of Northern Development and Mines, 2012).	78

Regional groundwater across the area flows southeast, towards Lake Ontario (Oak Ridge Moraine Groundwater Program, 2022). Local deviation from the regional groundwater flow pattern may occur in response to changes in topography and/or soils, as well as the presence of surface water features and/or existing subsurface infrastructure.

2.1.3 Existing Water Well Survey

Water Well Records (WWRs) from the database maintained by the Ministry of the Environment, Conservation and Parks (MECP) were reviewed to determine the number of water wells within a 500-m buffer form the Site centroid. The locations of the MECP WWR are shown on Figure 3. A summary of the WWR is included in Appendix A.

The MECP WWR database indicates a total of two-hundred and twenty-seven (227) off site well records. The offsite wells are located at an approximate distance of 32.9 meters or greater from the Site centroid. The well records include monitoring and test holes, water supply well, and/or classified as abandoned or listed with unknown use.

One (1) offsite water supply well (Well ID:7152346) is identified at an approximate distance of 461 m from the Site centroid. Since the area is municipally serviced, it is unlikely that the noted water supply well is still active. The noted well is highlighted in Appendix A.

The reported depth to groundwater for all well records vary between 0.3 and 13.4 meters below ground surface (mbgs).

2.2 Site Setting

2.2.1 Site Topography

The Site is in an urban land use setting. The topography is considered relatively flat with a regional gradual southeasterly slope towards Lake Ontario.

As indicated on the borehole logs (Appendix B), the surface elevation of the Site ranges from 95.15 to 95.76 meters above sea level (masl).

2.2.2 Local Surface Water Features

The Site is within the Lake Ontario Waterfront. No surface water features exist onsite. The nearest surface water feature is Lake Ontario, approximately located 1.43 kilometers southeast of the Site boundary.

2.2.3 Local Geology and Hydrogeology

A summary of subsurface soil stratigraphy is provided in the following paragraphs. The soil descriptions are based on the geotechnical investigation report (EXP, 2022). They are summarized for the hydrogeological interpretations. As such, the information provided in this section shall not be used for construction design purposes.

The detailed soil profiles encountered in each borehole and the results of moisture content determinations are presented on the attached borehole logs (Appendix B). The interpreted geological cross-section is provided in Figure 5. The soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect approximate transition zones for the Hydrogeological Investigation and shall not be interpreted as exact planes of geological change.

The "Notes on Sample Description" preceding the borehole logs form an integral part of the log and should be read in conjunction with this report. The following is a brief description of the soil conditions encountered during the investigation.

Based on the results of the geotechnical investigation, the general subsurface soil stratigraphy consists of the following units from top to bottom:

Pavement Structure

The boreholes encountered surficial pavement structure comprising 150 to 165 mm of asphaltic concrete over of 350 to 535 mm granular material.

Fill

Fill was encountered below the pavement structure in all boreholes and generally consisted of silty sand to sandy silt with trace to some gravel. Brick fragments were noted within the fill in Borehole 2. Moisture content ranged from 5 to 10%, indicating a moist condition. The brown fill extended to depths of about 1.4 to 2.1 m below existing grade.

Sandy Silt Till

A sandy silt till deposit was encountered below the fill in Boreholes 1 and 3. This deposit extended to depths of about 2.1 to 2.9 m below existing grade. The sandy silt till was brown in colour and contained trace clay and gravel. The moist sandy silt till existed in a compact state of compactness with moisture contents between 9 and 10%.

Clayey Silt Till

Below the fill in Boreholes 2, 4 and 5 and the sandy silt till in Boreholes 1 and 3, a clayey silt till deposit was encountered and extended to depths of about 5.9 to 6.4 m below existing grade. The brown/grey to grey clayey silt till contained trace gravel and was stiff to very stiff in consistency. Moisture contents ranged from 12 to 17%, indicating moist to very moist conditions.

Silt Till

A silt till deposit was encountered at depths of about 16.6 to 20.7 m in Boreholes 1, 3 and 4, extending to depths of about 14.9 to 15.2 m below existing grade in Boreholes 3 to 5 and to the termination depth of boreholes at about 9.8 to 13.8 m below existing grade in Boreholes 1 and 2. This grey silt till contained trace to some clay and sand and trace gravel. This deposit existed in a dense to very dense state of compactness. Numerous sand seams/layers were noted in this silt till deposit. Moisture contents ranged from 9 to 13%, indicating moist conditions.

Shale Bedrock

Weathered shale bedrock was encountered in Boreholes 3 to 5 and the contact surface was encountered at about 14.9 to 15.2 m below the existing ground surface, corresponding to approximately Elevation 80.2 to 80.5 m, identified by increased drilling resistance and the visual classification of the recovered samples. It should be noted that the upper zone of the bedrock is generally completely to highly weathered. The distinction between completely weathered shale and the overlying strata, particularly if the latter contains abundant shale fragments, is not always clear and consequently, some of the soils resting on the surface of the bedrock might be very weak or completely weathered rock. As such, the contact elevations should not be interpreted as exact planes of bedrock since the auger will frequently penetrate some distance into the weathered rock before noticeable resistance is encountered.

3 Results

3.1 Monitoring Well Details

Total of eight (8) monitoring wells were installed across the Site. Five (5) wells, including MW 1 through MW 5 were installed as part of the Geotechnical Investigations. Moreover, three (3) wells, including MW 107, through MW 109 were installed as part of Environmental Site Assessment (ESA). The details of monitoring network are described as follows:

- Seven (7) shallow monitoring wells, including MW 1 through MW5 as well as MW 107 and MW 109 were installed to an approximate depth of 9.3 mbgs;
- One (1) deep well labeled as MW 108 was installed to an approximate depth of 15.2 mbgs;
- Each monitoring well is equipped with a 50-mm (2-inch) diameter PVC casing. The well screen is either 1.5 meters or 3 meters in length; and;
- Each well is equipped with a flush mount well protective casing.

Borehole logs and monitoring well installation details are provided in Appendix B. The monitoring well locations are shown on Figure 4.

3.2 Water Level Monitoring

As part of the Hydrogeological Investigation, static water levels in the monitoring wells were recorded in seven (7) monitoring events between January 11 and April 14, 2022. A summary of all static water level data as it relates to the elevation survey is provided in Appendix C.

The water levels recorded for the shallow wells ranged from 86.65 masl (8.93 mbgs at MW 2 on January 13, 2022) to 92.18 masl (3.4 mbgs at MW 4 on February 11, 2022). The water level records for the deep well (MW 108) ranged from 82.81 masl (12.76 mbgs on March 1, 2022) to 84.57 masl (11 mbgs on March 16, 2022).

One (1) map was created for the Site to show groundwater contours of the shallow water-bearing zone (Figures 6). Accordingly, the groundwater flow direction in the shallow zone is interpreted to be southwest of the Site, towards Lake Ontario.

Groundwater levels are expected to show seasonal fluctuations and vary in response to prevailing climate conditions. This may also affect the direction and rate of flow. It is recommended to conduct seasonal groundwater level measurements to provide more information on seasonal groundwater level fluctuations.

3.3 Hydraulic Conductivity Testing

Seven (7) Single Well Response Tests (SWRT's) were completed on monitoring wells MW 1 through MW 5 on January 11 and 13, 2022, as well as MW 107 through MW 109 on March 16, 2022 . However, the test results for MW 1 could not be used for this assessment. The tests were completed to estimate the saturated hydraulic conductivity (K) of the soils at the well screen depths.

The static water level within each monitoring well was measured prior to the start of testing. In advance of performing SWRTs, each monitoring well underwent development to remove fines introduced into the screens following construction. The development process involved purging of the monitoring wells to induce the flow of fresh formation water through the screen. Each monitoring well was permitted to fully recover prior to performing SWRTs. Water level displacement in each tested well was measured manually and electronically. A data-logger was installed in each well and set to record water displacements in one (1) second interval.

Hydraulic conductivity values were calculated from the SWRT and constant rate test data as per Hvorslev's solution included in the Aqtesolv Pro. V.4.5 software package. The semi-log plots for normalized drawdown versus time are included in Appendix D. A summary of the hydraulic conductivities (K-values) estimated from the SWRTs are provided in Table 3-1.

Table 3-1: Summary of Hydraulic Conductivity Testing

Monitoring Well	Well Depth (mbgs)	Screen Interval (mbgs)		Screened Lithology	Estimated Hydraulic Conductivity (m/s)
		from	to		
MW2	9.15	6.15	9.15	Silt Till	1.5E-07
MW3	9.32	6.32	9.32	Silt Till	1.2E-07
MW4	9.3	6.3	9.3	Silt Till	3.7E-07
MW5	9.35	6.35	9.35	Silt Till	1.8E-07
MW 107	9.23	6.23	9.23	Clayey Silt Till	5.2E-08
MW 108	15.2	12.2	15.2	Sandy Silt Till	1.7E-08
MW 109	9.16	6.16	9.16	Clayey Silt Till	8.1E-07
				Highest Estimated K Value	8.1E-07
				Geometric Mean of Estimated K Values	1.4E-07

Note:
mbgs: meter below ground surface
masl: meter above mean sea level
*based on geotechnical borehole logs (EXP, 2022)

SWRTs provide K-estimates of the geological formation surrounding the well screens and may not be representative of bulk formation hydraulic conductivity. As shown in Table 3-2, the highest K-value of the tested water-bearing zone is 8.1E-7 m/s, and the geometric mean of the K-values is 1.4E-7 m/s.

3.4 Groundwater Quality

To assess the suitability for discharging pumped groundwater into the sewers owned by the City of Toronto during dewatering activities, one (1) groundwater sample was collected from monitoring well MW 4 on January 13, 2022, using a peristaltic pump. Prior to collecting the noted water sample, approximately three (3) standing well volumes of groundwater were purged from the referred well. The samples were collected unfiltered and placed into 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 for analysis to Bureau Veritas Laboratory, a CALA certified independent laboratory in Mississauga, Ontario. Analytical results are provided in Appendix D. Table 3-2 summarizes exceedance(s) of the Sanitary (Table 1) and Storm (Table 2) Sewer Use By-Law parameters.

When comparing the chemistry of the collected groundwater samples to the City of Toronto Sanitary and Combined Sewer Discharge Criteria (Table 1), the concentrations of Toluene, Ethylbenzene, and Total Xylenes exceeded the applicable criteria.

When comparing the chemistry of the collected groundwater samples to the City of Toronto Storm Sewer Discharge Criteria (Table 2), the concentrations of Total Suspended Solids, Total Manganese, Total Phosphorus, Benzene, Toluene, Ethylbenzene, and Total Xylenes exceeded the applicable guidelines.

Reporting detection limits (RDLs) were below the Sewer Use By-Law parameter criteria of Tables 1 and 2.

Table 3-2: Summary of Analytical Results for the Water Sample Collected for the Hydrogeological Investigation

Parameter	Units	City of Toronto Sanitary and Combined Sewer Discharge Limit (Table 1)	City of Toronto Storm Sewer Discharge Limit (Table 2)	Concentration MW 4 January 13, 2022
Total Suspended Solids (TSS)	mg/L	350	15	**78**
Total Manganese (Mn)	mg/L	5	0.05	**0.724**
Total Phosphorous (P)	mg/L	10	0.4	**0.46**
Benzene	mg/L	0.01	0.002	**0.0034**
Toluene	mg/L	0.016	0.002	**0.0576**
Ethylbenzene	mg/L	0.16	0.002	**0.208**
Total Xylenes	mg/L	1.4	0.0044	**2.71**

Notes:
Bold and Underlined – Exceeds City of Toronto Sanitary and Combined Sewer Discharge Limit (Table 1).
Bold – Exceeds City of Toronto Storm Sewer Discharge Limit (Table 2).

Table 3-3: Summary of Analytical Results for the Water Samples Collected for ESA

Parameters Exceeded the City of Toronto's Sanitary and Combined Sewer Criteria (Table 1)	Parameters Exceeded the City of Toronto's Strom Sewer By-Law Criteria (Table 2)
Toluene, Ethylbenzene, Total Xylenes	Benzene, Toluene, Ethylbenzene, Total Xylenes

The water quality results obtained for the ESA were also compared to the City of Toronto's Sewer By-Law criteria. Accordingly, the concentrations of Toluene, Ethylbenzene, and Total Xylenes exceeded the Sanitary and Combined Sewer By-Law criteria; whereas., the concentrations of Benzene, Toluene, Ethylbenzene, and Total Xylenes exceeded the Strom Sewer By-Law guideline. A summary of the analytical results is presented in Table 3-3. The CoA for ESA water samples are provided in Appendix D. It should be noted that the ESA water samples were collected based on the MECP's guidelines.

For the short-term dewatering system (construction phase), it is anticipated that TSS levels and some other parameters (for example, BTEX, and Total Metals) in the pumped groundwater may become elevated and exceed both, Sanitary and Storm Sewer Use By-Law limits. To control the concentration of TSS and associated metals, it is recommended that a suitable treatment method be implemented (filtration or decantation facilities and/ or any other applicable treatment system) during construction dewatering activities to discharge to the applicable sewer system. The specifications of the treatment system will need to be adjusted to the reported water quality results by the treatment contractor/process engineer.

The water quality results presented in this report may not be representative of the long-term condition of groundwater quality onsite. As such, regular water quality monitoring is recommended for the post-construction phase, as required by the City.

An agreement to discharge into the sewers owned by the City of Toronto will be required prior to releasing dewatering effluent.

The Environmental Site Assessment Report(s) shall be reviewed for more information on the groundwater quality conditions at the Site.

4 Dewatering Assessment

It is our understanding that the proposed development consists of an eight (8)-storey building with two (2) levels of underground structures. Based on the geotechnical report, the proposed structure is anticipated to be supported on a conventional spread and strip footings (EXP, 2022) Table 4-1 presents the assumptions used to calculate the dewatering rate for the Site.

Table 4-1 Construction and Long-Term Dewatering Estimate Assumptions

Input Parameter	Assumption	Units	Notes
Ground Surface Elevation	95.76	masl	The highest groundwater elevation (EXP, 2022)
Maximum Anticipated Groundwater Elevation	94.28	masl	The highest recorded groundwater elevation of 92.18 masl (3.40 mbgs at MW 4 on February 11, 2022) across the Site plus 2.1 m to account for seasonal fluctuations as per the City's Foundation Drainage Guidelines (City of Toronto, 2021)
Number of Subgrade Levels	2 Levels	-	
Lowest Top of Slab Elevation	89.7	masl	Assumed to be 1.5 m above the proposed lowest footing elevation.
Lowest Footing Elevation	88.2	masl	Based on the geotechnical report (EXP, 2022)
Construction Dewatering Elevation Target	87.2	masl	Assumed to be approximately 1.0 m below the lowest footing elevation
Bottom Elevation of Water-Bearing Zone	80.2	masl	Lowest top elevation of bedrock shown on BH 5 (EXP, 2022)
Excavation Area (Length x Width)	2,400 (60 x 40)	m^2 (m x m)	Approximate area (length x width) of Site for the proposed development
Hydraulic Conductivity (K)	8.1E-7	m/s	Highest estimated K-value for overburden
Specific Yield	0.05	1	Assumed

As of January 1, 2022, discharging groundwater from a foundation drainage to the City's storm or combined sewer system is prohibited, unless the discharging is for infiltrating stormwater under certain conditions (Foundation Drainage Guidelines, City of Toronto, 2021). Based on the assumptions shown in Table 4-1 above, the lowest slab elevation is anticipated to be below the maximum anticipated groundwater elevation, and as such the proposed structure must be watertight.

4.1 Dewatering Flow Rate Estimate and Zone of Influence

The Dupuit-Forcheimer equation for radial flow to both sides of an excavation through an unconfined aquifer resting on a horizontal impervious surface was used to obtain a flow rate estimate. Dewatering flow rate is expressed as follows:

$$Q_w = \frac{\pi K(H^2 - h^2)}{Ln\left[\frac{R_o}{r_e}\right]}$$

$$r_e = \frac{a+b}{\pi} \qquad R_o = R_{cj} + r_e$$

Where:

Qw = Rate of pumping (m^3/sec)
X = Length of excavation (m)
K = Hydraulic conductivity (m/sec)
H = Hydraulic head beyond the influence of pumping (static groundwater elevation) (m)
h = Hydraulic head above the base of aquifer in an excavation (m)
R_0 = Radius of Influence (m)
R_{cj} = Cooper Jacob Radius of Influence (m)
r_e = Equivalent perimeter (m)
a = Length of the excavation area (m)
b = Width of the excavation area (m)

It is expected that the initial dewatering rate will be higher to remove groundwater from 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, primarily from storage, resulting in lower seepage rates into the excavation.

4.2 Cooper-Jacob's Radius of Influence

The radius of influence (Rcj) for the construction dewatering was calculated based on Cooper-Jacob equation. This equation is used to predict the distance at which the drawdown resulting from pumping is negligible.

The estimated radius of influence due to pumping is based on Cooper-Jacob formula as follows:

$$\mathrm{R}_{cj} = \sqrt{2.25KDt/s}$$

Where:

Ro = Estimated radius of influence (m)
D = Aquifer thickness (original saturated thickness) (m)
K = Hydraulic conductivity (m/sec)
S = Storage coefficient
t = Duration of pumping (s)

4.3 Stormwater

Additional pumping capacity may be required to maintain dry conditions within the excavation during and following significant precipitation events. Therefore, the dewatering rates at the Site should also include removing stormwater from the excavation.

A 15 mm precipitation event was utilized for estimating the stormwater volume. The calculation of the stormwater volume is included in Appendix E.

The estimate of the stormwater volume only accounts for direct precipitation into the excavation. The dimensions of the excavation are considered in the dewatering calculations. Runoff which originated outside of the excavation's footprint is excluded and it should be directed away from the excavation.

During precipitation events greater than 15 mm (ex: 100-year storm), measures should be taken by the contractor to retain stormwater onsite in a safe manner to not exceed the allowable water taking and discharge limits, as necessary. A two (2) and a one hundred (100) year storm event over a 24-hour period are 56.2 and 122.6 mm, respectively

4.4 Results of Dewatering Rate Estimates

4.4.1 Construction Dewatering Rate Estimate

For this assessment, it was assumed that the proposed construction plans include an excavation with shoring extending to the Site boundaries. EXP should be retained to review the assumptions outlined in this section, should the assumed shoring design change. The short-term (construction) dewatering calculation is presented in Appendix E.

Pits (elevator, sump pits) are assumed to have the same excavation depth and dewatering target as the main excavation; deeper pits may require localized dewatering and revised dewatering estimates. Based on the assumptions provided in this report, the results of the dewatering rate estimate can be summarized as follows:

Table 4-2 Summary of Construction Dewatering Rate

Peak Dewatering Flow Rate Collection Volume and Zone of Influence		
Description	Units	With 2 Levels of Underground Parking (L/day)
Construction Dewatering Rate (without safety factor or precipitation)	L/day	43,000
From Precipitation Event of 15 mm in one day	L/day	36,000
With Factor of Safety of 2 (excluding precipitation) for permit	L/day	86,000
With Factor of Safety of 2 (including precipitation) for designs, and budgeting	L/day	122,000
Radius of influence (Rcj) from sides of excavation (m)	m	36

The peak dewatering flow rates does not account for flow from utility beddings and variations in hydrogeological properties beyond those encountered during this investigation.

Local dewatering may be required for pits (elevator pits, sump pits, raft), if these extend deeper than the dewatering target and for localized areas with permeable, soft, or wet soil conditions. Local dewatering is not considered to be part of this assessment, but contractor should be ready to install additional system to manage such conditions. Dewatering estimates should be reviewed once the pit dimensions are available.

All grading around the perimeter of the excavation should be graded away from the shoring the systems and ramp/site access to redirect runoff away from excavation.

The dewatering assumptions are based on using shoring system without open cuts and sloped excavations.

The contractor is responsible for the design of the dewatering systems (depth of wells, screen length, number of wells, spacing sand pack around screens, prevent soil loss etc.) to ensure that dry conditions are always maintained within the excavation at all costs.

Dewatering should be monitored using dedicated monitoring wells within and around the perimeter of the excavation, and these wells should be monitored using manual measurements and with electronic data loggers; records should be maintained on site to track dewatering progress. Discharge rates should be monitored using calibrated flow meters and records of dewatering progress, and daily precipitation should be maintained as per MECP's requirements.

4.4.2 Post-Construction Dewatering Considerations

As of January 1, 2022, discharging groundwater from a foundation drainage to the City's storm or combined sewer system is prohibited, unless the discharging is for infiltrating stormwater under certain conditions (Foundation Drainage Guidelines, City of Toronto, 2021). Based on the assumptions in this report, the lowest slab elevation is anticipated to be below the maximum anticipated groundwater elevation, and since the installation of foundation drainage is not permitted, the proposed structure must be watertight.

4.5 MECP Water Taking Permits

4.5.1 Short-Term Discharge Rate (Construction Phase)

In accordance with the Ontario Water Resources Act, if the water taking for the construction dewatering is more than 50,000 L/day but less than 400,000 L/day, then an online registration in the Environmental Activity and Sector Registry (EASR) with the MECP will be required. If groundwater dewatering rates onsite exceed 400,000 L/day, a Category 3 Permit to Take Water (PTTW) will be required from the MECP.

As of July 1, 2021, an amendment of O. Reg. 63/16 has come into effect and replaced the former subsection 7 (5) such that the EASR water taking limit of 400,000 L/day would apply to groundwater takings of each dewatered work area only, excluding stormwater. It is recognized that the maximum flow estimate calculated with a high K-value, provides a conservative estimate to account for higher-than-expected flow rates during construction dewatering. The dewatering estimate including a safety factor and excluding precipitation is stated below. Based on the MECP construction dewatering an EASR will be required to facilitate the construction dewatering program of the Site.

Table 4-3: MECP Construction Dewatering Flow Rate

Scenario	Flow Rate (L/day
MECP Construction Dewatering Flow Rate **With Safety Factor** of 2 (excluding rainwater collection)	86,000

A Discharge Plan (dewatering sketch, sewer discharge agreement) must be developed and applied for any discharges from the Site. Monitoring of both water quantity and water quality must be carried out for the entire duration of the construction dewatering phase. During this phase, the Discharge Plan and the daily water taking records must be available onsite.

The EASR, Discharge Plan, hydrogeological investigation report, and geotechnical assessment of settlements must also be available at the construction Site during the entire construction dewatering. EXP should be notified immediately about any changes to the construction dewatering schedule or design, since the EASR will need to be updated to reflect these modifications. Altogether, the hydrogeological report, EASR, Discharge Plan and geotechnical assessment constitute the Water Taking Plan which needs to be available onsite during the construction dewatering.

5 Environmental Impact

5.1 Surface Water Features

The Site is within the Lake Ontario Waterfront. No surface water features exist onsite. The nearest surface water feature is Lake Ontario, approximately located 1.43 kilometers southeast of the Site boundary.

Due to the limited extent of zone of influence and the wide distance to the nearest surface water feature, no detrimental impacts on surface water features are expected during construction activities.

5.2 Groundwater Sources

Well Records from the MECP Water Well Record (WWR) Database were reviewed to determine the presence and number of water supply wells within a 500 m radius of the Site boundaries. Given that the dewatering zone of influence is limited, no dewatering related impact is expected on the water wells in the area.

5.3 Geotechnical Considerations

As per the MECP technical requirement for EASRs, the geotechnical assessment of the stability of the soils due to water taking (ex: settlement, soil loss, subsidence, etc.) is required. The water taking should not have unacceptable interference on soils and underground structures (foundations, utilities, etc.).

A letter related to geotechnical issues as it pertains to the Site is required to be completed under a separate cover.

5.4 Groundwater Quality

It is our understanding that the potential effluent from the dewatering system during the construction will be released to the municipal sewer system. As such, the quality of groundwater discharge is required to conform the City of Toronto Sewer Use By-Law.

For the short-term dewatering system (construction phase), it is anticipated that TSS levels and some other parameters (for example, BTEX and Total Metals) in the pumped groundwater may become elevated and exceed both, Sanitary and Storm Sewer Use By-Law limits. To control the concentration of TSS and associated metals, it is recommended that a suitable treatment method be implemented (filtration or decantation facilities and/ or any other applicable treatment system) during construction dewatering activities to discharge to the applicable sewer system. The specifications of the treatment system will need to be adjusted to the reported water quality results by the treatment contractor/process engineer.

Dewatering (short and long-term) may induce migration of contaminants within the zone of influence and beyond due to changing hydraulic gradients, hydrogeological conditions beyond Site boundaries and preferential pathways in utility beddings etc. The water quality sampling conducted as part of this assessment was performed under static conditions. As a result, monitoring may be required during dewatering activities (short and long-term) to monitor potential migration, and this should be performed more frequently during early dewatering stages.

The water quality results presented in this report may not be representative of the long-term condition of groundwater quality onsite. As such, regular water quality monitoring is recommended for the post-construction phase as required by the City.

An agreement to discharge into the sewers owned by the City of Toronto will be required prior to releasing dewatering effluent.

The Environmental Site Assessment Report(s) shall be reviewed for more information on the groundwater quality conditions at the Site.

5.5 Well Decommissioning

In conformance with Regulation 903 of the Ontario Water Resources Act, the installation and eventual decommissioning of any dewatering system wells or monitoring wells must be completed by a licensed well contractor. This will be required for all wells that are no longer in use.

6 Conclusions and Recommendations

Based on the findings of the Hydrogeological Investigation, the following conclusions and recommendations are provided:

- When comparing the chemistry of the collected groundwater samples to the City of Toronto Sanitary and Combined Sewer Discharge Criteria (Table 1), the concentrations of Toluene, Ethylbenzene, and Total Xylenes exceeded the applicable criteria.
- When comparing the chemistry of the collected groundwater samples to the City of Toronto Storm Sewer Discharge Criteria (Table 2), the concentrations of Total Suspended Solids, Total Manganese, Total Phosphorus, Benzene, Toluene, Ethylbenzene, and Total Xylenes exceeded the applicable guidelines. .
- Based on the assumptions outlined in this report, the estimated peak dewatering rate for proposed construction activities is approximately 122,000 L/day. This is the rate which will be required to be discharged to the municipal sewer system.
- Based on the assumptions outlined in this report, the estimated peak MECP dewatering rate for proposed construction activities is approximately 86,000 L/day. As the dewatering flow rate estimate is between 50,000 L/day and 400,000 L/day, an EASR will be required to facilitate the construction dewatering program for the Site.
- As of January 1, 2022, discharging groundwater from the foundation drainage to the City's storm or combined sewer system is prohibited, unless the discharging is considered only for infiltrated stormwater under certain conditions. As the maximum anticipated groundwater elevation is estimated to be above the lowest slab elevation of the proposed building, and the installation of a sub-drain system to control and discharge groundwater to the sewer system is not permitted, the proposed underground structure must be watertight.
- The construction dewatering estimate is based on the assumptions outlined in this report. Any variations in hydrogeological conditions beyond those encountered as part of this preliminary investigation may significantly influence the discharge volumes.
- For the short-term dewatering system (construction phase), it is anticipated that TSS levels and some other parameters (for example, BTEX and Total Metals) in the pumped groundwater may become elevated and exceed both, Sanitary and Storm Sewer Use By-Law limits. To control the concentration of TSS and associated metals, it is recommended that a suitable treatment method be implemented (filtration or decantation facilities and/ or any other applicable treatment system) during construction dewatering activities to discharge to the applicable sewer system. The specifications of the treatment system will need to be adjusted to the reported water quality results by the treatment contractor/process engineer.
- As per the MECP technical requirement for EASRs, the geotechnical assessment of the stability of the soils due to water taking (ex: settlement, soil loss, subsidence etc.) is required. The water taking should not have unacceptable interference on soils and underground structures (foundations, utilities etc.). A letter related to geotechnical issues as it pertains to the Site is required to be completed under a separate cover.
- An agreement to discharge into the sewers owned by the City of Toronto will be required prior to releasing dewatering effluent.
- The EASR registration allows construction dewatering discharge of up to 400,000 L/day. A Discharge Plan (dewatering sketch, sewer discharge agreement) must be developed and applied for any discharges from the Site. The Discharge Plan and monitoring for both water quantity and water quality must be carried at the Site during the entire construction dewatering phase. The daily water taking records must be maintained onsite for the entire construction dewatering phase. The EASR, Discharge Plan, hydrogeological investigation report, and geotechnical assessment of settlements must always also be available at the construction Site for the entire construction dewatering. EXP should be notified immediately about any changes to the construction dewatering schedule or design, since EASR will need to be updated to

reflect these modifications. The hydrogeological report, EASR, Discharge Plan and geotechnical assessment constitutes the Water Taking Plan which needs to be available onsite for the duration of construction dewatering.

- In conformance with Regulation 903 of the Ontario Water Resources Act, the installation and eventual decommissioning of any dewatering system wells or monitoring wells must be completed by a licensed well contractor. This will be required for all wells that are no longer in use.

The conclusions and recommendations provided above should be reviewed in conjunction with the entirety of the report. They assume that the present design concept described throughout the report will proceed to construction. This report is solely intended for the construction and long-term dewatering assessments. Any changes to the design concept may result in a modification to the recommendations provided in this report.

7 Limitations

This report is based on a limited investigation designed to provide information to support an assessment of the current hydrogeological conditions within the study area. The conclusions and recommendations presented within this report reflect Site conditions existing at the time of the assessment. EXP must be contacted immediately, if any unforeseen Site conditions are experienced during construction activities. This will allow EXP to review the new findings and provide appropriate recommendations to allow the construction to proceed in a timely and cost-effective manner.

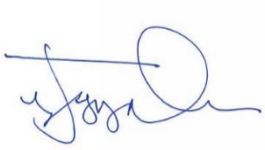
Our undertaking at EXP, therefore, is to perform our work within limits prescribed by our clients, with the usual thoroughness and competence of the geoscience/engineering profession. No other warranty or representation, either expressed or implied, is included or intended in this report.

This report was prepared for the exclusive use of CreateTO. This report may not be reproduced in whole or in part, without the prior written consent of EXP, or used or relied upon in whole or in part by other parties for any purposes whatsoever. Any use which a third party makes of this report, or any part thereof, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that this information is satisfactory for your purposes. Should you have any questions or comments, please do not hesitate to contact this office.

Sincerely,

EXP Services Inc.



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Environmental Services

8 References

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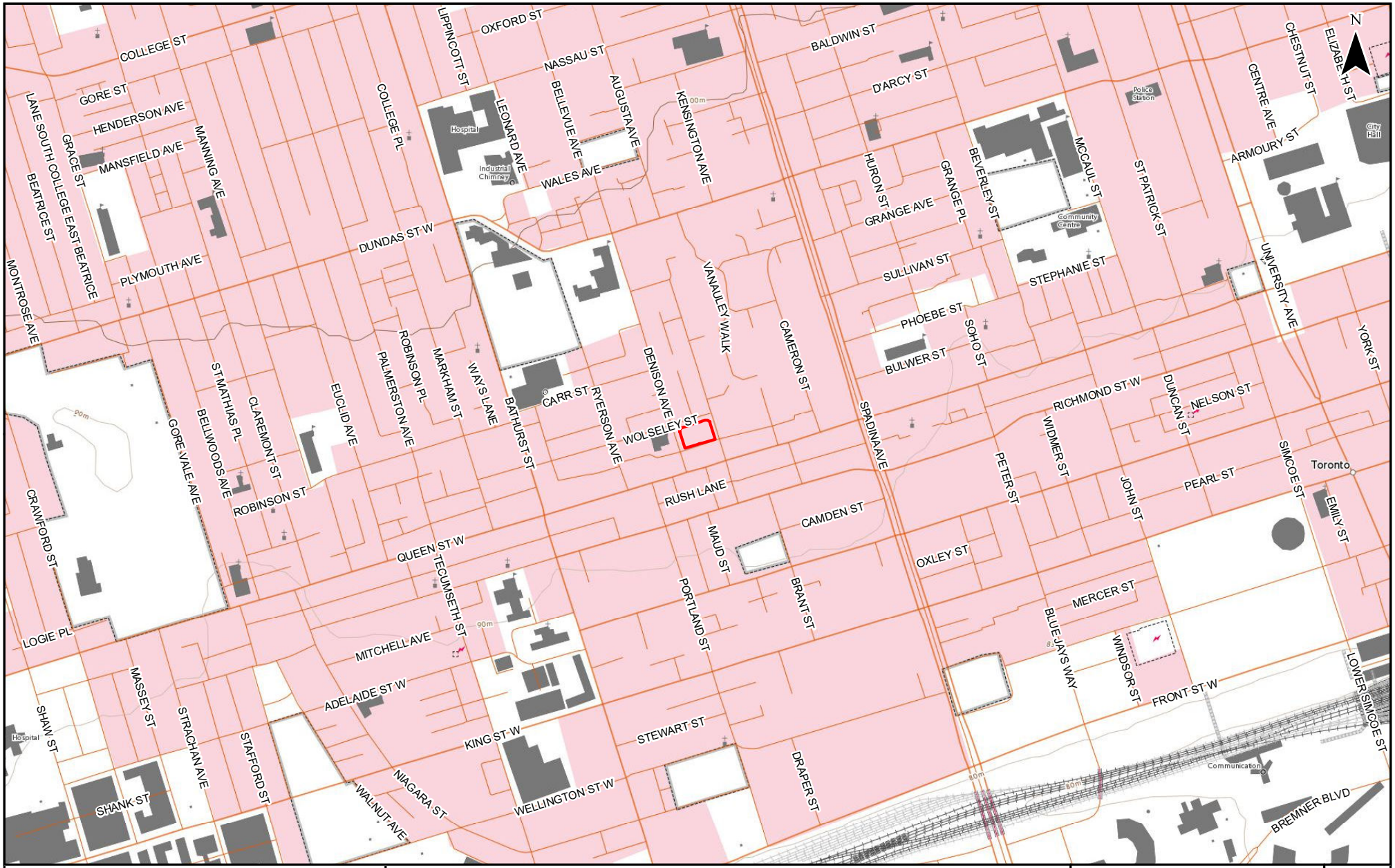
Figures



SCALE:

0 100 200 300 400 500 m

LEGEND:

APPROXIMATE SITE BOUNDARY

SITE LOCATION PLAN

FIGURE: 1

HYDROGEOLOGICAL INVESTIGATION
15 DENISON AVENUE
TORONTO, ONTARIO

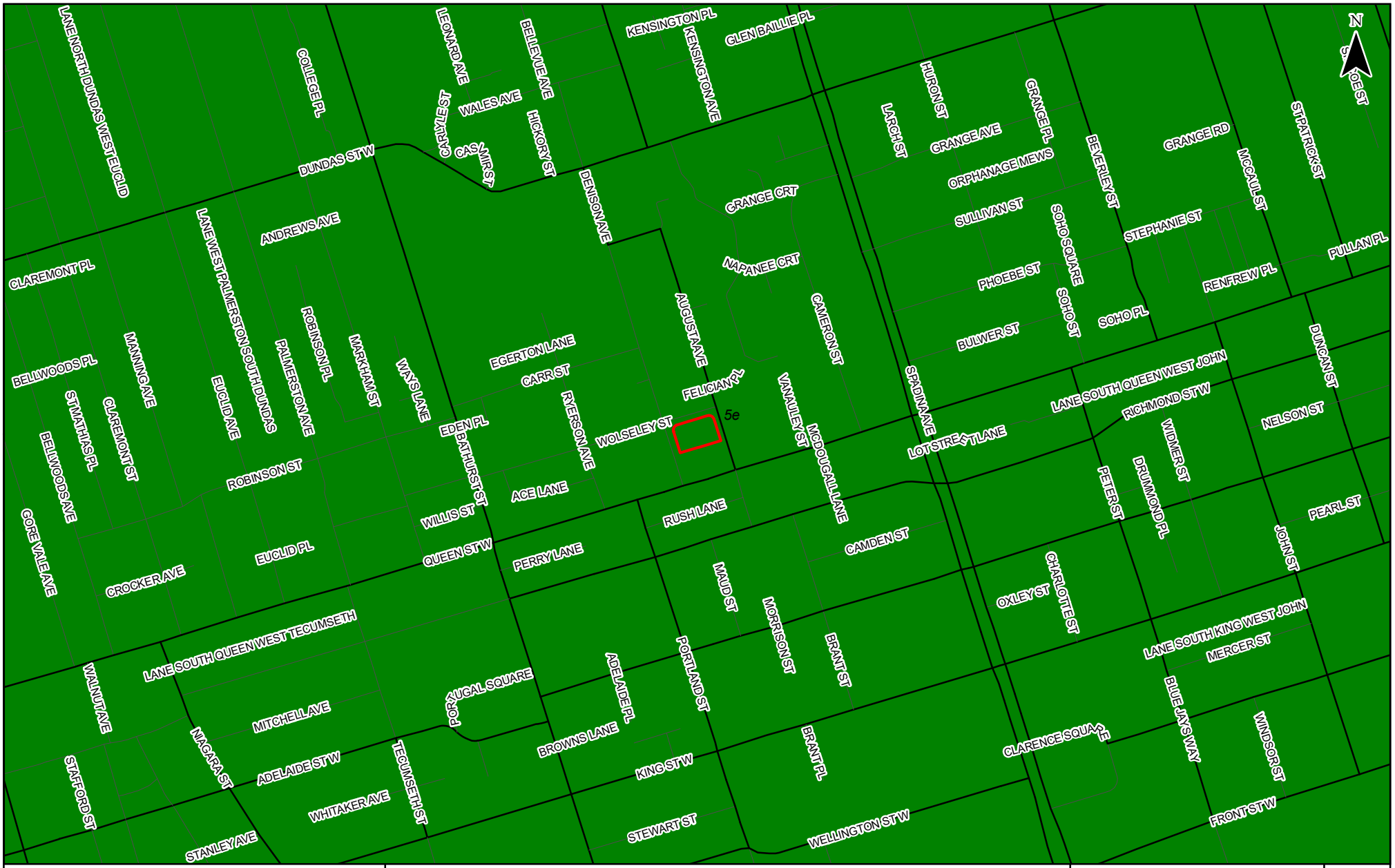
exp.

DRAWN BY: JA

CHECKED BY: FC

PROJECT NUMBER: BRM-21018382-A0

DATE: JANUARY 2022



SCALE:

0 100 200 300 400 500 m

SOURCE:

BASED ON ONTARIO GEOLOGICAL SURVEY DATA PUBLISHED IN 2010

exp.

DRAWN BY:	CHECKED BY:
AC	FC

LEGEND:

- APPROXIMATE SITE BOUNDARY
- 5E: UNDIFFERENTIATED OLDER TILL AND STRATIFIED SEDIMENT

SURFICIAL GEOLOGY

FIGURE: 2

HYDROGEOLOGICAL INVESTIGATION
15 DENISON AVENUE
TORONTO, ONTARIO

PROJECT NUMBER: BRM-21018382-A0

DATE: JANUARY 2022

SCALE:

0 80 160 240 320 400 m

SOURCE:

BASED ON GOOGLE EARTH IMAGERY DATED 2020,
AVAILABLE WELL RECORD INFORMATION AS OF SEPTEMBER 2019

exp.

DRAWN BY:	CHECKED BY:
AC	FC

LEGEND:

- MONITORING WELL / TEST HOLE
- WATER SUPPLY WELL
- ABANDONED WELL
- UNCLASSIFIED / UNFINISHED WELL
- APPROXIMATE SITE BOUNDARY
- 500 m ZONE

MECP WATER WELL RECORDS MAP

FIGURE: 3

HYDROGEOLOGICAL INVESTIGATION
15 DENISON AVENUE
TORONTO, ONTARIO

PROJECT NUMBER: BRM-21018382-A0

DATE: JANUARY 2022

SCALE:

0 4 8 12 16 20 m

LEGEND:

- BOREHOLE / MONITORING WELL (EXP ENVIRONMENTAL, 2022)
- BOREHOLE / MONITORING WELL (EXP GEOTECHNICAL, 2022)
- CROSS SECTION AXIS
- APPROXIMATE SITE BOUNDARY

exp.

DRAWN BY:	CHECKED BY:
JA	FC

BOREHOLE / MONITORING WELL LOCATION PLAN

FIGURE: 4

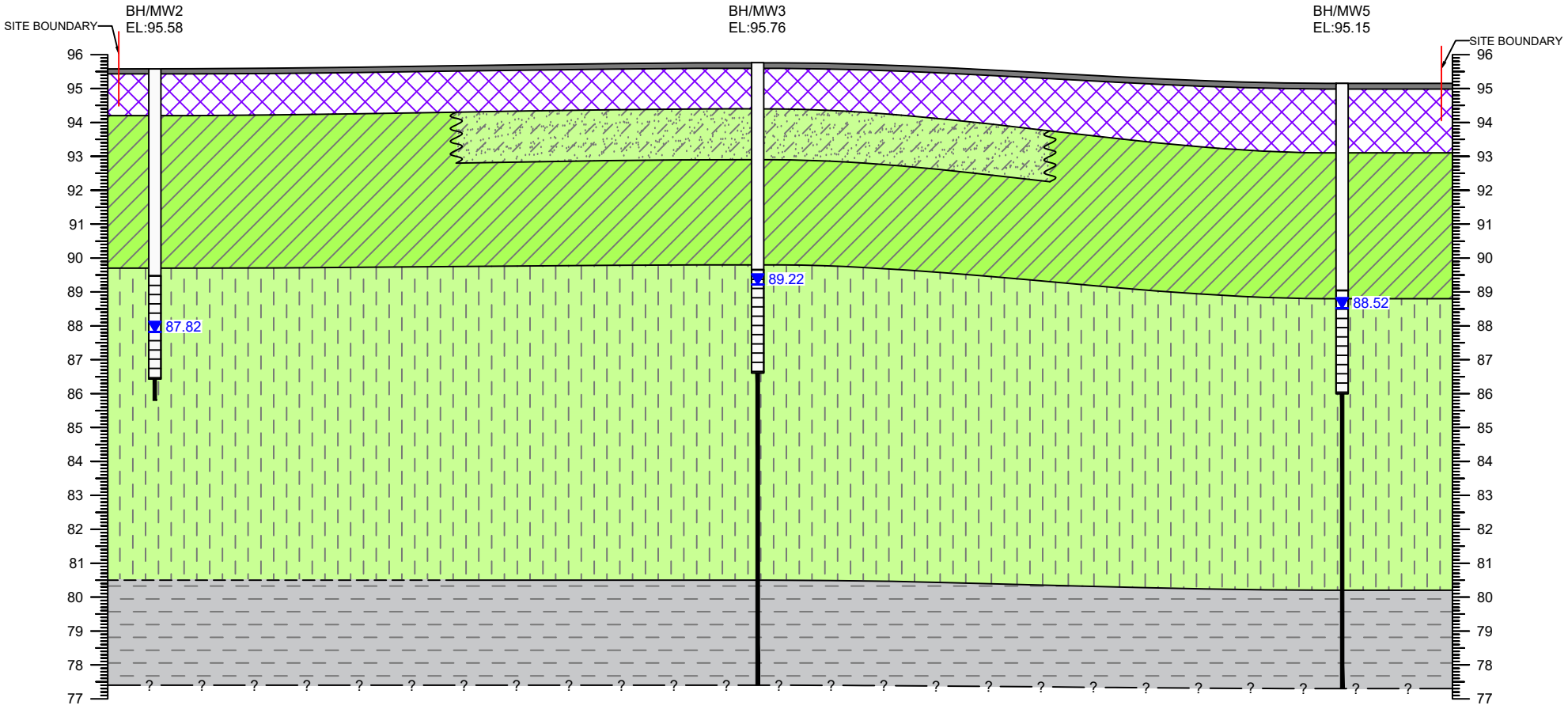
HYDROGEOLOGICAL INVESTIGATION
15 DENISON AVENUE
TORONTO, ONTARIO

PROJECT NUMBER: BRM-21018382-A0

DATE: JANUARY 2022

A
NORTHWEST

A'
SOUTHEAST



VERTICAL SCALE: AS SHOWN

HORIZONTAL SCALE: 0 3 6 9 12 15 m

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LEGEND:

- ASPHALT
- FILL
- CLAYEY SILT TILL
- SILT TILL
- SANDY SILT TILL
- SHALE BEDROCK
- GROUNDWATER ELEVATION (masl) AS MEASURED ON JANUARY 13, 2022

TITLE AND LOCATION:

CROSS SECTION A-A'

HYDROGEOLOGICAL INVESTIGATION
15 DENISON AVENUE
TORONTO, ONTARIO

PROJECT NO.: GTR-21018382-A0	DWN.: JA
SCALE: AS NOTED	CK: PS
DATE: FEBRUARY 2022	FIG. NO.: 5

B:\21000000\21018382-A0 - 15 Denison Avenue, Toronto, ON\GIS\HG\Cross Sections\GTR-21018382-A0.dwg

NOTE: GROUNDWATER ELEVATION AT BH/MW3 WAS NOT USED FOR GROUNDWATER CONTOUR ANALYSIS DUE TO ANOMALOUS MEASUREMENT.

SCALE:

0 4 8 12 16 20 m

LEGEND:

- BOREHOLE / MONITORING WELL (EXP ENVIRONMENTAL, 2022)
- BOREHOLE / MONITORING WELL (EXP GEOTECHNICAL, 2022)
- xx.xx GROUNDWATER ELEVATION (m asl) AS MEASURED ON JANUARY 13, 2022
- GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION
- APPROXIMATE SITE BOUNDARY

exp.

DRAWN BY:	CHECKED BY:
AC	FC

GROUNDWATER CONTOUR PLAN

FIGURE: 6

HYDROGEOLOGICAL INVESTIGATION
15 DENISON AVENUE
TORONTO, ONTARIO

PROJECT NUMBER: BRM-21018382-A0

DATE: JANUARY 2022

Appendix A – MECP WWR Summary Table

Off-Site																
BORE_HOLE_ID	WELL_ID	DATE	EAST83	NORTH83	ELEVATION (m ASL)	LOCATION ACCURACY	STREET	CITY	DISTANCE TO SITE CENTROID (m)	CONSTRUCTION METHOD	WELL DEPTH (m bgs)	WATER FOUND (m bgs)	CASING DIAMETER (cm)	1st USE	2nd USE	FINAL STATUS
11180133	6928286	10/1/2004	629095	4833910	90.4	margin of error : 10 - 30 m	505 RICHMOND STREET WEST	TORONTO	194	Boring	4.5	2.9	5.0			Observation Wells
11765514	7042825	2/27/2007	629084	4833891	90.1	margin of error : 10 - 30 m	505 RICHMOND ST WEST	TORONTO	207	Boring	6.0	2.0	5.1			Observation Wells
1001534671	7102357	2/8/2008	629404	4833842	88.1	margin of error : 10 - 30 m	96 SPADINA AVENUE	TORONTO	464	PIONJAR	4.9			Not Used		Observation Wells
1001659122	7108273	4/17/2008	629250	4833871	89.9	margin of error : 10 - 30 m	424 ADELAIDE WEST	Toronto	322	Rotary (Convent.)	5.2		5.1	Test Hole		
1001934792	7117183	12/4/2008	629073	4833805	88.7	margin of error : 30 m - 100 m	355 KING ST. WEST	TORONTO	285	PIONJAR	3.5		3.2	Not Used		Observation Wells
1002019282	7119516	1/6/2009	629296	4833735	87.8	margin of error : 10 - 30 m	5 MALLORY GARDENS	Toronto	452	Direct Push	6.1		2.5	Monitoring and Test Hole		Monitoring and Test Hole
1002735836	7117363	7/10/2008	629151	4833908	90.0	margin of error : 30 m - 100 m	120 PEARL ST.	Toronto	226	BORING	7.5		5.9	Other		
1002763378	7132526	9/23/2009	628832	4833962	91.8	margin of error : 30 m - 100 m	524 QUEEN ST. WEST	TORONTO	213	DIRECT PUSH	4.0			Monitoring and Test Hole		Monitoring and Test Hole
1002984483	7145255	5/11/2010	628813	4833999	92.4	margin of error : 30 m - 100 m	623 QUEEN ST. WEST	Toronto	212	Direct Push	4.6		2.5	Monitoring and Test Hole		Monitoring and Test Hole
1002984485	7145256	5/11/2010	628823	4833988	92.1	margin of error : 30 m - 100 m	623 QUEEN STREET WEST	Toronto	207	Direct Push	4.6		3.2	Monitoring and Test Hole		Monitoring and Test Hole
1002984487	7145257	5/11/2010	628824	4833974	91.9	margin of error : 30 m - 100 m	623 QUEEN STREET WEST	Toronto	213	Direct Push	4.3		3.2	Monitoring and Test Hole		Monitoring and Test Hole
1002984713	7145310	4/15/2010	629041	4833977	92.0	margin of error : 30 m - 100 m	520 RICHMOND STREET WEST	Toronto	111	Direct Push	5.5		3.2	Monitoring and Test Hole		Monitoring and Test Hole
1002984715	7145311	4/15/2010	629057	4833952	91.4	margin of error : 30 m - 100 m	520 RICHMOND STREET WEST	Toronto	140	Direct Push	5.5		3.2	Monitoring and Test Hole		Monitoring and Test Hole
1003024292	7146658	5/26/2010	628989	4833629	87.4	margin of error : 30 m - 100 m	620 KING ST W	Toronto	454	Auger	6.7	4.9	3.2	Monitoring		Observation Wells
1003044094	7146988	6/3/2010	629066	4833982	91.9	margin of error : 30 m - 100 m	520 RICHMOND STREET WEST	Toronto	117	Direct Push	6.4		2.5	Monitoring and Test Hole		Monitoring and Test Hole
1003044096	7146989	6/3/2010	629066	4833984	91.9	margin of error : 30 m - 100 m	520 RICHMOND STREET WEST	Toronto	115	Direct Push	6.7		2.5	Monitoring and Test Hole		Monitoring and Test Hole
1003044098	7146990	6/3/2010	629064	4833985	91.9	margin of error : 30 m - 100 m	520 RICHMOND STREET WEST	Toronto	113	Direct Push	5.2		2.5	Monitoring and Test Hole		Monitoring and Test Hole
1003044100	7146991	6/3/2010	629062	4833982	91.9	margin of error : 30 m - 100 m	520 RICHMOND STREET WEST	TORONTO	115	Direct Push	5.2		2.5	Monitoring and Test Hole		Monitoring and Test Hole
1003346230	7152346	8/16/2010	628623	4834338	98.9	margin of error : 30 m - 100 m	ALEXANDRA PARK BATHURST ST.	TORONTO	461	Rotary (Convent.)	11.6	11.6	15.9	Dewatering		Water Supply
1003352906	7153339	10/8/2010	629106	4833662	87.0	margin of error : 10 - 30 m	572 KING ST. WEST	TORONTO	432	Boring	9.1		5.0		Monitoring	Observation Wells
1003507081	7162985	4/28/2011	629384	4834190	91.5	margin of error : 10 - 30 m	43 BULWER AVE	TORONTO	392	Rotary (Convent.)	7.6		5.1	Test Hole		Test Hole
1003516500	7163732	4/27/2011	629280	4834163	91.9	margin of error : 10 - 30 m	170 SPADINA AVENUE	Toronto	284	DIRECT PUSH	6.1		3.8	Monitoring and Test Hole		Monitoring and Test Hole
1003516502	7163733	4/27/2011	629269	4834160	92.1	margin of error : 10 - 30 m	170 SPADINA AVENUE	Toronto	273	DIRECT PUSH	6.1		3.8	Monitoring and Test Hole		Monitoring and Test Hole
1003521240	7164323	5/7/2011	628918	4833827	90.1	margin of error : 10 - 30 m	555 RICHMOND ST. WEST	Toronto	271	Rotary (Convent.)	7.3		5.1	Test Hole		Test Hole
1003521244	7164325	4/29/2011	628943	4833801	89.8	margin of error : 10 - 30 m	555 RICHMOND ST. WEST	Toronto	289	Rotary (Convent.)	5.5		5.1	Test Hole		Test Hole
1003547312	7166989	7/20/2011	628929	4833742	89.0	margin of error : 10 - 30 m	KING ST W 620/622	Toronto	350	Rotary (Convent.)			5.1	Test Hole		Test Hole
1003558308	7168103	8/7/2011	628961	4833722	88.4	margin of error : 10 - 30 m	495 ADELAIDE ST W		364	Direct Push	5.8		3.2	Monitoring and Test Hole		Observation Wells
1003558310	7168104	8/7/2011	628948	4833764	89.0	margin of error : 10 - 30 m	495 ADELAIDS ST W	TORONTO	324	Direct Push	4.6		3.2	Monitoring and Test Hole		Observation Wells
1003758167	7180585	3/3/2012	629017	4833649	87.4	margin of error : 30 m - 100 m	20 MAUD ST	Toronto	434	Direct Push	5.2		5.1	Monitoring and Test Hole		Test Hole
1003758170	7180586	3/3/2012	629046	4833811	89.1	margin of error : 30 m - 100 m	20 MAUD ST	Toronto	274	Direct Push	5.5		5.1	Monitoring and Test Hole		Test Hole
1003758173	7180587		629025	4833613	86.8	margin of error : 30 m - 100 m	20 MAUD ST	Toronto	470	Direct Push	6.1		5.1	Monitoring and Test Hole		Test Hole
1003758182	7180590	3/3/2012	629003	4833648	87.5	margin of error : 30 m - 100 m	20 MAUD ST	Toronto	435	Direct Push	5.3		5.1	Monitoring and Test Hole		Test Hole
1003758489	7180615	3/3/2012	629012	4833645	87.4	margin of error : 30 m - 100 m	20 MAUD ST	Toronto	438	Direct Push	5.5		5.1	Monitoring and Test Hole		Test Hole
1004195194	7183422	2/17/2012	629127	4834347	94.9	margin of error : 30 m - 100 m	NAPANEE CR	Toronto	290	Direct Push	11.6		4.4	Monitoring		Observation Wells
1004195197	7183423	2/16/2012	629148	4834334	94.7	margin of error : 100 m - 300 m	ALEXANORIA PARK	Toronto	288	Auger	3.5		13.2	Monitoring and Test Hole		Test Hole
1004195200	7183424	2/17/2012	629051	4834110	93.8	margin of error : 100 m - 300 m	NAPANEE CT	Toronto	52	Direct Push	11.6		4.4	Monitoring		Observation Wells
1004214790	7192768	11/28/2012	629080	4833906	90.3	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	Toronto	191	DIRECT PUSH	4.9		3.2	Monitoring and Test Hole		Test Hole
1004214793	7192769	11/28/2012	629115	4833903	90.2	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	Toronto	210	DIRECT PUSH	1.7		3.2	Monitoring and Test Hole		Monitoring and Test Hole
1004214796	7192770	11/8/2012	629106	4833910	90.3	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	Toronto	199	DIRECT PUSH	4.9		3.2	Monitoring and Test Hole		Monitoring and Test Hole
1004253825	7197220	1/24/2013	629135	4833900	90.0	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	Toronto	223		5.2		5.1			
1004290493	7201358	4/24/2013	629148	4834507	96.0	margin of error : 30 m - 100 m	270 SPADINA AVE	Toronto	447	Boring	9.1	4.3	5.0	Monitoring		Observation Wells
1004300736	7201597	4/23/2013	629120	4833931	90.6	margin of error : 30 m - 100 m	60 BRANT STREET	Toronto	189	Direct Push	4.9		3.2	Monitoring and Test Hole		Test Hole
1004300739	7201598	4/23/2013	629123	4833927	90.5	margin of error : 30 m - 100 m	60 BRANT STREET	Toronto	194	Direct Push	4.9		3.2	Monitoring and Test Hole		Test Hole
1004329181	7202559	5/17/2013	629220	4834316	94.2	margin of error : 30 m - 100 m	283 SPADINA AVE	Toronto	316	Direct Push	3.7		3.2	Monitoring and Test Hole		Test Hole
1004329184	7202560	5/17/2013	629220	4834316	94.2	margin of error : 30 m - 100 m	29 BOYVIEW RIDGE	Toronto	316	Direct Push	4.4		3.2	Monitoring and Test Hole		Test Hole
1004329187	7202561	5/17/2013	629202	4834316	94.4	margin of error : 30 m - 100 m	283 SPADINA AVE	Toronto	304	Direct Push	4.6		3.2	Monitoring and Test Hole		Test Hole
1004490122	7205871	7/26/2013	628800	4834001	92.5	margin of error : 30 m - 100 m	544 QUEEN STREET WEST	Toronto	223	PIOMJAR	6.1		5.0	Monitoring		Observation Wells
1004502723	7206140		628877	4833859	90.2	margin of error : 30 m - 100 m	618 RICHMOND ST.	Toronto	259		16.8					
1004575294	7208246	9/4/2013	629276	4834012	90.9	margin of error : 30 m - 100 m	452 RICHMOND STREET WEST 458	Toronto	278	Boring	7.3		5.0	Monitoring		Observation Wells
1004698448	7215427	12/30/2013	629194	4833824	88.6	margin of error : 30 m - 100 m	444 ADELAIDE ST. W	TORONTO	319	Rotary (Convent.)	7.9		5.1	Monitoring		Observation Wells
1004702508	7215723	11/20/2013	628847	4833660	88.1	margin of error : 30 m - 100 m	111 BATHURST STREET	Toronto	452	Boring	7.6		5.2	Monitoring		Observation Wells
1004702511	7215724	11/20/2013	628847	4833659	88.0	margin of error : 30 m - 100 m	111 BATHURST STREET	Toronto	453	Boring	12.2		5.2	Monitoring		Observation Wells
1004735137	7219758	3/21/2014	629169	4834064	92.5	margin of error : 30 m - 100 m	BREMNER GATE	Toronto	163	Rotary (Convent.)	9.7		5.1	Monitoring		Observation Wells
1004836226	7221888	5/9/2014	629166	4834025	92.1	margin of error : 30 m - 100 m	1000 QUEEN ST W	Toronto	169	Direct Push	4.0		3.2	Monitoring and Test Hole		Test Hole
1004836229	7221889	5/9/2014	629164	4834037	92.3	margin of error : 30 m - 100 m	501 QUEEN ST W		163	Direct Push	3.7		3.2	Monitoring and Test Hole		
1005002831	7224783	7/2/2014	629150	4834151	93.6	margin of error : 30 m - 100 m	38 CAMERON ST.	Toronto	158	Boring	4.6		5.2	Monitoring		Observation Wells
1005002834	7224784	7/2/2014	629149	4834151	93.6	margin of error : 30 m - 100 m	38 CAMERON ST.	Toronto	157	Boring	10.7		5.2	Monitoring		Observation Wells
1005010616	7225001	7/2/2014	629151	4834225	94.2	margin of error : 30 m - 100 m	38 CAMERON ST.	TORONTO	202	Boring	10.7		5.2	Monitoring		Observation Wells
1005010619	7225002	7/2/2014	629182	4834205	93.7	margin of error : 30 m - 100 m	38 CAMERON ST.	TORONTO	213	Boring	12.2		5.2	Monitoring		Observation Wells
1005075313	7225440	7/13/2014	629401	4833794	87.6	margin of error : 30 m - 100 m	82 SPADINA AVENUE	Toronto	488	Rotary (Convent.)	5.8		5.1	Monitoring and Test Hole		Monitoring and Test Hole
1005075316	7225441	7/13/2014	629387	4833793	87.7	margin of error : 30 m - 100 m	82 SPADINA AVENUE	Toronto	478	Rotary (Convent.)	6.1		5.1	Monitoring and Test Hole		Monitoring and Test Hole
1005116760	7226815	7/30/2014	629361	4833830	88.2	margin of error : 30 m - 100 m	82 SPADINA AVE.	TORONTO	435	Direct Push	8.5		5.1	Monitoring and Test Hole		Observation Wells
1004720827	7217644	8/6/2013	628702	4833696		UTM very unreliable			493							
1004720830	7217645	8/6/2013	628697	4833700	89.0	margin of error : 30 m - 100 m			493							
1004720833	7217646	8/6/2013	628700	4833708		UTM very unreliable			485							
1005163297	7229312	8/10/2014	629134	4833943	90.7	margin of error : 30 m - 100 m	60 BRANT STREET	Toronto	189				15.9	Monitoring		Abandoned-Other
1005163303	7229313	9/10/2014	629143	4833910	90.0	margin of error : 30 m - 100 m	60 BRANT ST	Toronto	220				5.1	Monitoring		Abandoned-Other
1005163309	7229314	9/10/2014	629141	4833946	90.8	margin of error : 30 m - 100 m	60 BRANT STREET	Toronto	191				3.2	Monitoring		Abandoned-Other
11328229	6929260	6/8/2005	629430	4833878	88.2	margin of error : 30 m - 100 m	105 SPADINA AVE	TORONTO	470	Boring	4.9		5.0	Not Used		Test Hole
11329554	6928638	12/10/2004	628879	4833912	91.1	UTM very unreliable	154 PORTLAND STREET	TORONTO	214	Boring	6.1		5.0	Not Used		Test Hole
23047867	7047867	7/19/2007	629175	4833710	87.5	margin of error : 10 - 30 m	544 KING STREET WEST	TORONTO	409	Other Method	4.9		3.2	Not Used		Observation Wells
23051044	7051044	7/18/2007	629130	4833656	87.0	margin of error : 10 - 30 m			444	Boring	7.6		5.1			Observation Wells
1002452879	7123824	5/8/2009	629510	4834247	91.2	margin of error : 30 m - 100 m	300 QUEEN ST. WEST	Toronto	529	SHEET PUSH	8.8		4.0	Monitoring and Test Hole		Observation Wells
1002766307	7123824	5/8/2009	629510	4834247	91.2	margin of error : 30 m - 100 m	300 QUEEN ST. WEST	Toronto	529	DIRECT PUSH	8.8		4.0	Monitoring and Test Hole		Observation Wells
1003326568	7148388	6/16/2010	629504	4833954	88.4	margin of error : 30 m - 100 m	FRONT ST W 510-532	Toronto	513	DIRECT PUSH	6.0		4.0	Monitoring and Test Hole		Observation Wells
1003449316	7157243	11/23/2010	629374	4834112	90.7	margin of error : 10 - 30 m	445 RICHMOND ST W	Toronto	368	Boring	9.1		5.1	Monitoring		Observation Wells
1004567014	7157243	11/25/2010	629394	4834112		margin of error : 10 - 30 m	445 RICHMOND ST W	Toronto	388	BORING	9.1		5.1	Monitoring		Observation Wells
1004567023	7157243	11/25/2010	629394	4834101		margin of error : 10 - 30 m	445 RICHMOND ST W	Toronto	387	BORING	9.1		5.1	Monitoring		Observation Wells
11762572	7039756	12/5/2006	629271	4833946	90.2	margin of error : 10 - 30 m	32 CAMDEN ST	TORONTO	297	Other Method			5.1			Observation Wells
1005258976	7233736	11/7/2014	629108	4833931	90.7	margin of error : 30 m - 100 m	505 RICHMOND ST WEST	Toronto	182	DIRECT PUSH	3.7			Monitoring and Test Hole		Monitoring and Test Hole
1005258979	7233737	11/6/2014	629122	4833910	90.2	margin of error : 30 m - 100 m	505 RICHMOND ST WEST	Toronto	207	DIRECT PUSH	5.8			Monitoring and Test Hole		Monitoring and Test Hole
1005304031	7237052	11/10/2014	629105	4833918	90.4	margin of error : 30 m - 100 m	505 RICHMOND ST W	Toronto	192	Boring	6.1			Monitoring		Observation Wells
1005307878	7237611	1/15/2015	628952	4833827	89.9	margin of error : 30 m - 100 m	120 PORTLAND ST.	TORONTO	262	Direct Push	4.0			Monitoring and Test Hole		Monitoring and Test Hole
1005307881	7237612	1/14/2015	628971	4833825	89.8	margin of error : 30 m - 100 m	120 PORTLAND ST	TORONTO	260	Direct Push	4.3			Monitoring and Test Hole		Monitoring and Test Hole
1005307884	7237613	1/14/2015	628969	4833804	89.5	margin of error : 30 m - 100 m	120 PORTLAND ST	TORONTO	281	Direct Push	4.3			Monitoring and Test Hole		Monitoring and Test Hole

Off-Site																
BORE_HOLE_ID	WELL_ID	DATE	EAST83	NORTH83	ELEVATION (m ASL)	LOCATION ACCURACY	STREET	CITY	DISTANCE TO SITE CENTROID (m)	CONSTRUCTION METHOD	WELL DEPTH (m bgs)	WATER FOUND (m bgs)	CASING DIAMETER (cm)	1st USE	2nd USE	FINAL STATUS
1005307887	7237614	1/14/2015	628958	4833811	89.8	margin of error : 30 m - 100 m	120 PORTLAND ST	TORONTO	276	Direct Push	4.3			Monitoring and Test Hole		Monitoring and Test Hole
1005307890	7237615	1/15/2014	628963	4833807	89.7	margin of error : 30 m - 100 m	120 PORTLAND ST	TORONTO	279	Direct Push	4.3			Monitoring and Test Hole		Monitoring and Test Hole
1005312478	7238251	1/16/2015	629014	4833808	89.2	margin of error : 30 m - 100 m	119 PORTLAND AVE	TORONTO	275	Rotary (Convent.)	6.7			Test Hole		Test Hole
1005347489	7241174	3/22/2015	628994	4833861	90.2	margin of error : 30 m - 100 m	139 PORTLAND ST	Toronto	222	Boring	7.3			Monitoring		Observation Wells
1005386646	7242123	4/22/2015	628970	4833578	86.7	margin of error : 30 m - 100 m	613 KING STREET WEST	TORONTO	506	Direct Push	4.6			Monitoring and Test Hole		Observation Wells
1005386649	7242124	4/22/2015	628969	4833572	86.6	margin of error : 30 m - 100 m	613 KING ST. WEST	TORONTO	512	Direct Push	4.6			Monitoring and Test Hole		Observation Wells
1005386664	7242125	4/22/2015	628973	4833576	86.6	margin of error : 30 m - 100 m	613 KING STREET WEST	TORONTO	508	Direct Push	4.6			Monitoring and Test Hole		Observation Wells
1005477493	7244487	5/22/2015	628923	4833885	90.8	margin of error : 30 m - 100 m	543 RICHMOND ST. W	TORONTO	215	Boring	9.8			Monitoring		Observation Wells
1005815152	7252924	10/23/2015	628785	4833825	90.3	margin of error : 30 m - 100 m	153 BATHURST STREET	Toronto	340	Boring	7.6			Monitoring		Observation Wells
1005822861	7253185	10/9/2015	629108	4833907	90.2	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	Toronto	203	Diamond	14.9			Monitoring		Observation Wells
1005871054	7256351	12/15/2015	629307	4833821	88.7	margin of error : 30 m - 100 m	391 ADELAIDE STREET W	Toronto	398	Boring	6.1	1.0		Monitoring		Observation Wells
1005873186	7256700	12/8/2015	628622	4834060	94.6	margin of error : 30 m - 100 m	216 BATHURST STREET	TORONTO	386	DIRECT PUSH	5.5			Monitoring and Test Hole		Monitoring and Test Hole
1005873189	7256701	12/8/2015	628655	4834068	94.6	margin of error : 30 m - 100 m	123 FRONT STREET SUITE 1100	Toronto	353	DIRECT PUSH	4.6			Monitoring and Test Hole		Monitoring and Test Hole
1005873192	7256702	12/8/2015	628658	4834067	94.6	margin of error : 30 m - 100 m	216 BATHURST STREET	Toronto	350	DIRECT PUSH	4.3			Monitoring and Test Hole		Monitoring and Test Hole
1005920497	7260564	2/4/2016	629202	4833865	89.5	margin of error : 30 m - 100 m	51 CAMDEN ST		292	Rotary (Convent.)	14.9			Monitoring and Test Hole		Test Hole
1005920500	7260565	2/8/2016	629183	4833884	89.7	margin of error : 30 m - 100 m	51 CAMDEN ST		265	Rotary (Convent.)	14.9			Monitoring		Observation Wells
1005953444	7262406	4/5/2016	629499	4833892	88.0	margin of error : 30 m - 100 m	353 ADELAIDE ST WEST	Toronto	527	Boring	13.7			Monitoring		Observation Wells
1006016698	7263660	4/20/2016	629339	4834157	91.4	margin of error : 30 m - 100 m	378 QUEEN STREET WEST	Toronto	340	Direct Push	1.8			Monitoring and Test Hole		Monitoring and Test Hole
1006016701	7263661	4/20/2016	629344	4834155	91.3	margin of error : 30 m - 100 m	378 QUEEN STREET WEST	Toronto	344	Direct Push	2.4			Monitoring and Test Hole		Monitoring and Test Hole
1006230681	7270459	5/10/2016	629227	4833901	90.0	margin of error : 30 m - 100 m	39 CAMDEN STREET	Toronto	285	Boring	14.3			Monitoring		Observation Wells
1006304641	7276847	11/7/2016	629114	4833602	86.4	margin of error : 30 m - 100 m	456 WELLINGTON ST W	Toronto	492		7.3			Monitoring and Test Hole		Monitoring and Test Hole
1006306915	7277192	10/13/2016	629191	4833694	87.4	margin of error : 30 m - 100 m	540 KING ST W	Toronto	430	Boring	17.1			Monitoring		Observation Wells
1005388001	7242230	5/15/2015	629140	4834198	94.2	margin of error : 30 m - 100 m	41 VANALLEY STREET	Toronto	176			1.4				Abandoned-Other
1003508947	7163052	3/16/2011	629193	4833736	87.8	margin of error : 10 - 30 m			393							
1003544538	7166534		629165	4833799	88.2	margin of error : 10 - 30 m			325							
1003578418	7169763	9/22/2011	629060	4834392	95.8	margin of error : 30 m - 100 m			314							
1003752800	7179273	11/3/2011	628820	4833694	88.1	margin of error : 30 m - 100 m			432							
1004232949	7195049	12/7/2012	629244	4833879	90.0	margin of error : 30 m - 100 m			312							
1004255869	7197535	2/1/2013	629069	4834067	93.1	margin of error : 30 m - 100 m			64							
1004265728	7198970	3/29/2012	629290	4834427	94.2	margin of error : 30 m - 100 m			445							
1004268848	7199449	5/29/2012	628687	4833877	91.3	margin of error : 30 m - 100 m			381							
1004317654	7202243	1/11/2013	629129	4834181	94.0	margin of error : 30 m - 100 m			156							
1004456924	7205402	7/10/2013	628801	4833844	90.5	margin of error : 30 m - 100 m			316							
1004600976	7209362	9/19/2013	629158	4834119	93.1	margin of error : 30 m - 100 m			155							
1005123812	7227340	8/27/2014	629236	4834253	93.7	margin of error : 30 m - 100 m			285							
1005180059	7230239	7/18/2014	629410	4833766	87.2	margin of error : 30 m - 100 m			512							
1005268497	7231955	2/29/2012	629051	4833971	91.8	margin of error : 10 - 30 m			120							
1005318848	7239232	12/4/2014	628977	4833661	87.9	margin of error : 30 m - 100 m			423							
1005704998	7248814	7/16/2015	628778	4834429	98.1	margin of error : 30 m - 100 m			415							
1005915391	7260059	3/24/2015	628675	4833864	91.0	margin of error : 30 m - 100 m			398							
1006000848	7263268	5/2/2016	628979	4833660	87.9	margin of error : 30 m - 100 m			424							
1006177439	7267977	2/24/2016	629195	4833907	90.0	margin of error : 30 m - 100 m			257							
1006234844	7270774	6/12/2015	629117	4834235	94.6	margin of error : 30 m - 100 m			188							
1006242699	7271201		629110	4834564	97.2	margin of error : 30 m - 100 m			492							
1006278786	7273981		629501	4834224	91.1	margin of error : 30 m - 100 m			514							
1006291570	7274842	7/14/2016	629165	4833645	86.9	margin of error : 30 m - 100 m			465							
1006306960	7277193	10/13/2016	629218	4833698	87.4	margin of error : 30 m - 100 m	540 KING ST W	Toronto	439	Boring	6.1			Monitoring		Observation Wells
1006306963	7277194	10/13/2016	629181	4833720	87.6	margin of error : 30 m - 100 m	540 KING ST W	Toronto	402	Boring	10.7			Monitoring		Observation Wells
1006306966	7277195	10/13/2016	629196	4833720	87.6	margin of error : 30 m - 100 m	540 KING ST W	Toronto	409	Boring	6.1			Monitoring		Observation Wells
1006306969	7277196	10/13/2016	629206	4833728	87.7	margin of error : 30 m - 100 m	540 KING ST W	Toronto	407	Boring	10.7			Monitoring		Observation Wells
1006325257	7278298	7/11/2016	629091	4833811	88.6	margin of error : 30 m - 100 m	450 ADELAIDE ST WEST	Toronto	284	Boring	10.7	1.8		Test Hole		Test Hole
1006347373	7280043	12/1/2016	629232	4833871	89.9	margin of error : 30 m - 100 m	35 CAMDEN STREET	Toronto	309	DIRECT PUSH	4.9			Monitoring and Test Hole		Monitoring and Test Hole
1006356015	7281530	5/16/2016	629252	4834019	91.2	margin of error : 30 m - 100 m	452 RICHMOND ST WEST	Toronto	253	Boring	13.7			Monitoring		Observation Wells
1006356075	7281550	9/14/2016	629264	4834037	91.2	margin of error : 30 m - 100 m	450 RICHMOND ST WEST	Toronto	261	Boring	15.2			Monitoring		Observation Wells
1006356078	7281551	9/16/2016	629233	4833960	90.6	margin of error : 30 m - 100 m	457 RICHMOND ST WEST	Toronto	257	Boring	13.7			Monitoring		Observation Wells
1006356885	7281730	11/27/2015	629090	4833814	88.7	margin of error : 30 m - 100 m	450 ADELAIDE AVE	Toronto	281	Boring		3.0		Test Hole		Test Hole
1006356888	7281731	11/27/2015	629070	4833827	89.0	margin of error : 30 m - 100 m	450 ADELAIDE AVE	Toronto	263	Boring		3.0		Test Hole		Test Hole
1006356891	7281732	11/27/2015	629071	4833854	89.4	margin of error : 30 m - 100 m	450 ADELAIDE AVE WEST	Toronto	237	Boring	5.2	3.0		Test Hole		Test Hole
1006357284	7281594	9/26/2016	629501	4834226	91.1	margin of error : 30 m - 100 m	300-308 QUEENS ST WEST	Toronto	514	Boring	9.1			Test Hole		Test Hole
1006357290	7281596	9/20/2016	629522	4834196	90.4	margin of error : 30 m - 100 m	300-308 QUEEN STREET W	Toronto	527	Boring	9.1	0.3		Test Hole		Test Hole
1006481145	7287056	2/14/2017	629400	4834187	91.4	margin of error : 30 m - 100 m	37 BULWER STREET	Toronto	406	Rotary (Convent.)	9.1			Test Hole	Monitoring	Monitoring and Test Hole
1006481161	7287057	2/17/2017	629408	4834211	91.7	margin of error : 30 m - 100 m	37 BULWER STREET	Toronto	421	Rotary (Convent.)	9.1	8.8		Test Hole	Monitoring	Monitoring and Test Hole
1006481164	7287058	2/16/2017	629381	4834186	91.4	margin of error : 30 m - 100 m	37 BULWER STREET	Toronto	388	Rotary (Convent.)	7.6			Test Hole	Monitoring	Monitoring and Test Hole
1006481167	7287059	2/16/2017	629392	4834190	91.4	margin of error : 30 m - 100 m	37 BULWER STREET	Toronto	399	Rotary (Convent.)	9.1			Test Hole	Monitoring	Monitoring and Test Hole
1006492753	7287424	2/9/2017	629022	4834212	95.1	margin of error : 30 m - 100 m	ALEXANDRA PARK AUGUSTA AVE		130	Boring	6.1			Monitoring		Observation Wells
1006492825	7287449	5/31/2016	629086	4833920	90.6	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	Toronto	181	Diamond	12.2			Monitoring		Observation Wells
1006494280	7287495		629032	4834061	93.0	margin of error : 30 m - 100 m	464 QUEEN ST W		33	Boring	11.6			Monitoring		Observation Wells
1006583805	7289187		629414	4834204	91.6	margin of error : 30 m - 100 m	334 QUEEN STREET WEST	Toronto	424	Boring	10.7	9.1		Monitoring		Observation Wells
1006607580	7289832	5/4/2017	629377	4834195	91.6	margin of error : 30 m - 100 m	364 QUEEN STREET WEST	TORONTO	386	Direct Push	8.5			Test Hole	Monitoring	Test Hole
1006610663	7289911	5/4/2017	629368	4834185	91.5	margin of error : 30 m - 100 m	364 QUEEN ST W	TORONTO	375		3.7			Test Hole	Monitoring	Observation Wells
1006610666	7289912	5/4/2017	629367	4834185	91.5	margin of error : 30 m - 100 m	364 QUEEN ST W	TORONTO	374		2.7			Test Hole	Monitoring	Observation Wells
1006718778	7294123	4/27/2017	629069	4833984	91.9	margin of error : 30 m - 100 m	520 RICHMOND ST. WEST		116	Rotary (Convent.)	14.9					Test Hole
1006732069	7295283	8/10/2017	628970	4833852	89.9	margin of error : 30 m - 100 m	135 PORTLAND ST		234	Boring	16.1			Monitoring		Observation Wells
1006790127	7298673	10/5/2017	629110	4833908	90.3	margin of error : 30 m - 100 m	505 RICHMOND STREET WEST	TORONTO	203	Air Percussion	17.5			Test Hole		Test Hole
1006975667	7304135	11/27/2017	628736	4833858		margin of error : 30 m - 100 m	553 RICHMOND STREET WEST	TORONTO	352	Rotary (Convent.)	16.2			Test Hole	Monitoring	Monitoring and Test Hole
1006975670	7304136	11/28/2017	628954	4833843		margin of error : 30 m - 100 m	553 RICHMOND STREET WEST	TORONTO	246	Rotary (Convent.)	13.7	13.4		Test Hole	Monitoring	Monitoring and Test Hole
1006982511	7305007	11/29/2017	629289	4833844		margin of error : 30 m - 100 m	391 ADELAIDE ST W	TORONTO	369	Boring	7.6			Monitoring		Observation Wells
1006982514	7305008	11/29/2017	629312	4833801		margin of error : 30 m - 100 m	391 ADELAIDE ST W	TORONTO	415	Boring	17.1			Monitoring		Observation Wells
1006982517	7305009	11/29/2017	629311	4833800		margin of error : 30 m - 100 m	391 ADELAIDE ST W	TORONTO	415	Boring	7.6			Monitoring		Observation Wells
1006982520	7305010	11/29/2017	629380	4833839		margin of error : 30 m - 100 m	391 ADELAIDE ST W	TORONTO	445	Boring	9.1			Monitoring		Observation Wells
1007001293	7307382	2/15/2018	629115	4833622		margin of error : 30 m - 100 m	555 KING ST W	Toronto	473	DIRECT PUSH	8.2			Test Hole	Monitoring	Monitoring and Test Hole
1007001296	7307383	2/15/2018	629117	4833618		margin of error : 30 m - 100 m	555 KING ST W	Toronto	478	DIRECT PUSH	8.5			Test Hole	Monitoring	Monitoring and Test Hole
1007001299	7307384	2/15/2018	629118	4833614		margin of error : 30 m - 100 m	555 KING ST W	Toronto	482	DIRECT PUSH	8.5			Test Hole	Monitoring	Monitoring and Test Hole
1007015140	7309144	6/25/2017	629111	4833768		margin of error : 30 m - 100 m	449 ADELAIDE W.	TORONTO	331	Boring	10.7			Monitoring		Observation Wells

Off-Site															
BORE_HOLE_ID	WELL_ID	DATE	EAST83	NORTH83	ELEVATION (m ASL)	LOCATION ACCURACY	STREET	CITY	DISTANCE TO SITE CENTROID (m)	CONSTRUCTION METHOD	WELL DEPTH (m bgs)	WATER FOUND (m bgs)	CASING DIAMETER (cm)	1st USE	2nd USE	FINAL STATUS
1007055521	7311111	3/26/2018	629313	4834246		margin of error : 30 m - 100 m	195 SPADINA AVE	TORONTO	347	Direct Push	5.5			Test Hole	Monitoring	Observation Wells
1007102107	7312354	4/5/2018	629259	4834210		margin of error : 30 m - 100 m	322.5 QUEEN ST W	Toronto	282	Boring	9.1			Test Hole	Monitoring	Test Hole
1007102213	7312358	4/5/2018	629462	4834222		margin of error : 30 m - 100 m	322 QUEEN ST W	Toronto	476	Boring	10.7	9.3		Monitoring	Test Hole	Observation Wells
1007135446	7314041	5/3/2018	629248	4833651		margin of error : 30 m - 100 m	189 KING ST SOUTH	Toronto	494	Boring	12.2			Test Hole	Municipal	Monitoring and Test Hole
1007135449	7314042	5/3/2018	629232	4833632		margin of error : 30 m - 100 m	511 KING ST WEST	Toronto	504	Boring	12.2			Test Hole	Monitoring	Monitoring and Test Hole
1007135545	7314043	5/4/2018	629177	4833600		margin of error : 30 m - 100 m	539 KING ST W	Toronto	512	Boring	12.2			Test Hole	Monitoring	Monitoring and Test Hole
1007135559	7314044	5/4/2018	629212	4833631		margin of error : 30 m - 100 m	511 KING ST W	Toronto	496	Boring	13.7			Test Hole	Monitoring	Monitoring and Test Hole
1007174941	7314799	5/3/2018	629230	4833962		margin of error : 10 - 30 m	471 RICHMOND ST W	Toronto	253	Boring	9.1			Monitoring		Observation Wells
1007233542	7315170		629192	4833653		margin of error : 30 m - 100 m	519 KING ST W	Toronto	468	Other Method	3.1			Monitoring		Observation Wells
1007233545	7315171		629150	4833649		margin of error : 30 m - 100 m	339 KING ST W	Toronto	457	Other Method	3.1			Monitoring		Observation Wells
1007246579	7315172		629235	4833619		margin of error : 30 m - 100 m		Toronto	517	Other Method	4.4			Monitoring		Observation Wells
1007246590	7315173		629245	4833668		margin of error : 30 m - 100 m		Toronto	478	Other Method	4.0			Monitoring		Observation Wells
1007246593	7315174		629278	4833656		margin of error : 30 m - 100 m	489 KING ST W	Toronto	505	Other Method	4.0					Observation Wells
1007246596	7315175		629269	4833630		margin of error : 30 m - 100 m	489 KING ST W	Toronto	523	Boring	8.2			Monitoring		Observation Wells
1007295861	7319917	9/1/2018	629490	4833898		margin of error : 30 m - 100 m	353 ADELAIDE	Toronto	517	Boring	12.2			Monitoring		Observation Wells
1007296193	7319926	7/19/2018	629146	4834270		margin of error : 30 m - 100 m	ALEXANDRA PARK		233	Rotary (Convent.)	14.3			Test Hole	Monitoring	Observation Wells
1007297780	7320105	8/9/2018	629467	4833895		margin of error : 30 m - 100 m	355 ADELAIDE ST W	Toronto	497	Boring	7.0			Test Hole	Monitoring	Test Hole
1007309474	7322197	10/18/2018	629487	4833880		margin of error : 30 m - 100 m	355 STREET WEST	TORONTO	521	Boring	11.3			Test Hole	Monitoring	Monitoring and Test Hole
1007316265	7322903	10/26/2018	629482	4833857		margin of error : 30 m - 100 m	355 ADELAIDE ST. W	TORONTO	526	Other Method	15.2			Test Hole		Test Hole
1007317378	7323179	7/24/2018	629051	4834506		margin of error : 30 m - 100 m	1 DUNDAS ST W	Toronto	426	Boring	14.0			Monitoring		Observation Wells
1007317381	7323180	7/24/2018	629022	4834505		margin of error : 30 m - 100 m	1 DUNDAS STREET WEST	Toronto	423	Boring	11.3			Monitoring		Observation Wells
1007317384	7323181	7/24/2018	629061	4834439		margin of error : 30 m - 100 m	VANAULEY WALK	Toronto	360	Boring	13.7			Monitoring		Observation Wells
1007317387	7323182	7/24/2018	629095	4834525		margin of error : 30 m - 100 m	525 DUNDAS STREET WEST	TORONTO	451	Boring	13.1			Monitoring		Observation Wells
1007317390	7323183	7/24/2018	629095	4834526		margin of error : 30 m - 100 m	525 DUNDAS ST W	TORONTO	452	Boring	6.4			Monitoring		Observation Wells
1007317393	7323184	7/24/2018	628973	4834386		margin of error : 30 m - 100 m	WHITE COURT PLACE	TORONTO	305	Boring	11.3			Monitoring		Observation Wells
1007317396	7323185	7/24/2018	629034	4834362		margin of error : 30 m - 100 m	11 AUGUSTA AVE.	TORONTO	281	Boring	11.3			Monitoring		Observation Wells
1007317399	7323186	7/24/2018	628927	4834465		margin of error : 30 m - 100 m	591 DUNDAS ST W	TORONTO	391	Boring	4.9			Monitoring		Observation Wells
1007317402	7323187	7/24/2018	628913	4834453		margin of error : 30 m - 100 m	593 DUNDAS ST W	TORONTO	382	Boring	13.7			Monitoring		Observation Wells
1007317405	7323188	7/24/2018	628866	4834417		margin of error : 30 m - 100 m	DUNDAS ST W	TORONTO	363	Boring	11.3			Monitoring		Observation Wells
1007317408	7323189	7/24/2018	628882	4834434		margin of error : 30 m - 100 m	DUNDAS ST W & DENISON AVE	TORONTO	373	Boring	13.1			Monitoring		Observation Wells
1007317411	7323190	7/24/2018	628864	4834456		margin of error : 30 m - 100 m	DUNDAS ST W & DENISON AVE	TORONTO	400	Boring	11.9			Monitoring		Observation Wells
1007317414	7323191	7/24/2018	629065	4834371		margin of error : 30 m - 100 m	18 VANAULEY WALK	TORONTO	294	Boring	11.3			Monitoring		Observation Wells
1007317417	7323192	7/24/2018	629090	4834272		margin of error : 30 m - 100 m	VANAULEY WALK	TORONTO	207	Boring	8.2			Monitoring		Observation Wells
1007317420	7323193	7/24/2018	629039	4834408		margin of error : 30 m - 100 m	170 VANAULEY WALK	TORONTO	327	Boring	12.2			Monitoring		Observation Wells
1007317423	7323194	7/24/2018	629104	4834509		margin of error : 30 m - 100 m	525 DUNDAS ST. W	TORONTO	437	Boring	12.5			Monitoring		Observation Wells
1007317531	7323230	8/1/2018	629348	4833864		margin of error : 30 m - 100 m	379 ADELAIDE ST W	TORONTO	405	Boring	17.1			Monitoring		Observation Wells
1007335896	7326808	11/15/2018	629061	4833948		margin of error : 30 m - 100 m	520 RICHMOND ST W	Toronto	145	Rotary (Convent.)	18.6			Test Hole	Monitoring	Observation Wells
1007335899	7326809	11/29/2018	629074	4833949		margin of error : 30 m - 100 m	520 RICHMOND ST W		149	Rotary (Convent.)	18.0			Test Hole		Test Hole
1007353301	7330653	1/17/2019	628703	4833886		margin of error : 30 m - 100 m			362	Direct Push	4.9	2.4		Monitoring		Observation Wells
1006350791	7280865	12/13/2016	629095	4834206	94.7	margin of error : 30 m - 100 m	53 AGUSTA AVE	Toronto	151							Abandoned-Other
1006712913	7292822	6/23/2017	628998	4833844	90.0	margin of error : 30 m - 100 m	135 PORTLAND ST.	TORONTO	239	Boring				Test Hole		Test Hole
1006712916	7292823	6/22/2017	628993	4833847	90.0	margin of error : 30 m - 100 m	135 PORTLAND ST.	TORONTO	236	Boring				Test Hole		Test Hole
1006712919	7292824	6/22/2017	628997	4833849	90.0	margin of error : 30 m - 100 m	135 PORTLAND ST.	TORONTO	234	Boring				Test Hole		Test Hole
1007402850	7329739	2/25/2019	629164	4833768		margin of error : 30 m - 100 m	KING ST WEST	Toronto	352	AUGER	6.1			Monitoring		Observation Wells
1007402853	7329740	2/25/2019	629192	4833682		margin of error : 30 m - 100 m	KING ST WEST	Toronto	441	AUGER	6.1			Monitoring		Observation Wells
1007415530	7331417	3/20/2019	629138	4833754		margin of error : 30 m - 100 m	MORISON STREET	Toronto	354	AUGER	6.1			Monitoring		Observation Wells
1007421896	7329984	1/9/2019	629485	4834199		margin of error : 30 m - 100 m	312 Queen St W	Toronto	492	Direct Push	6.4			Monitoring and Test Hole		Monitoring and Test Hole
1007421899	7329985	1/4/2019	629472	4834228		margin of error : 30 m - 100 m	312 Queen St W	Toronto	487	Direct Push	4.9			Monitoring and Test Hole		Monitoring and Test Hole
1007434709	7332844	3/11/2019	629495	4834124		margin of error : 30 m - 100 m	375 QUEEN ST W	Toronto	489	Rotary (Convent.)	7.6			Monitoring		Observation Wells
1007630009	7341221	4/12/2019	629460	4834179		margin of error : 30 m - 100 m	312/316 Queen Street West	Toronto	463	direct push	2.4			Monitoring and Test Hole		Monitoring and Test Hole
1006623505	7290204		629044	4833753	88.0	margin of error : 30 m - 100 m			332							
1006633935	7290561		629044	4833753	88.0	margin of error : 30 m - 100 m			332							
1006732190	7295300		629105	4834584	97.5	margin of error : 30 m - 100 m			511							
1006965955	7303112	10/18/2017	629189	4833717		margin of error : 30 m - 100 m			408							
1007009843	7308711	9/18/2017	629062	4833893		margin of error : 30 m - 100 m			197							
1007309528	7322215	4/18/2018	629241	4834124		margin of error : 30 m - 100 m			237							
1007329727	7325309	10/16/2018	629512	4833917		margin of error : 30 m - 100 m			531							
1007419932	7330989	6/14/2018	629083	4833708		margin of error : 30 m - 100 m			382							

Appendix B – Borehole Logs

Log of Borehole 1

Project No. GTR-21018382-A0 | Drawing No. 2

Project: Proposed Residential Development | Sheet No. 1 of 1

Location: 15 Denison Avenue, Toronto, Ontario

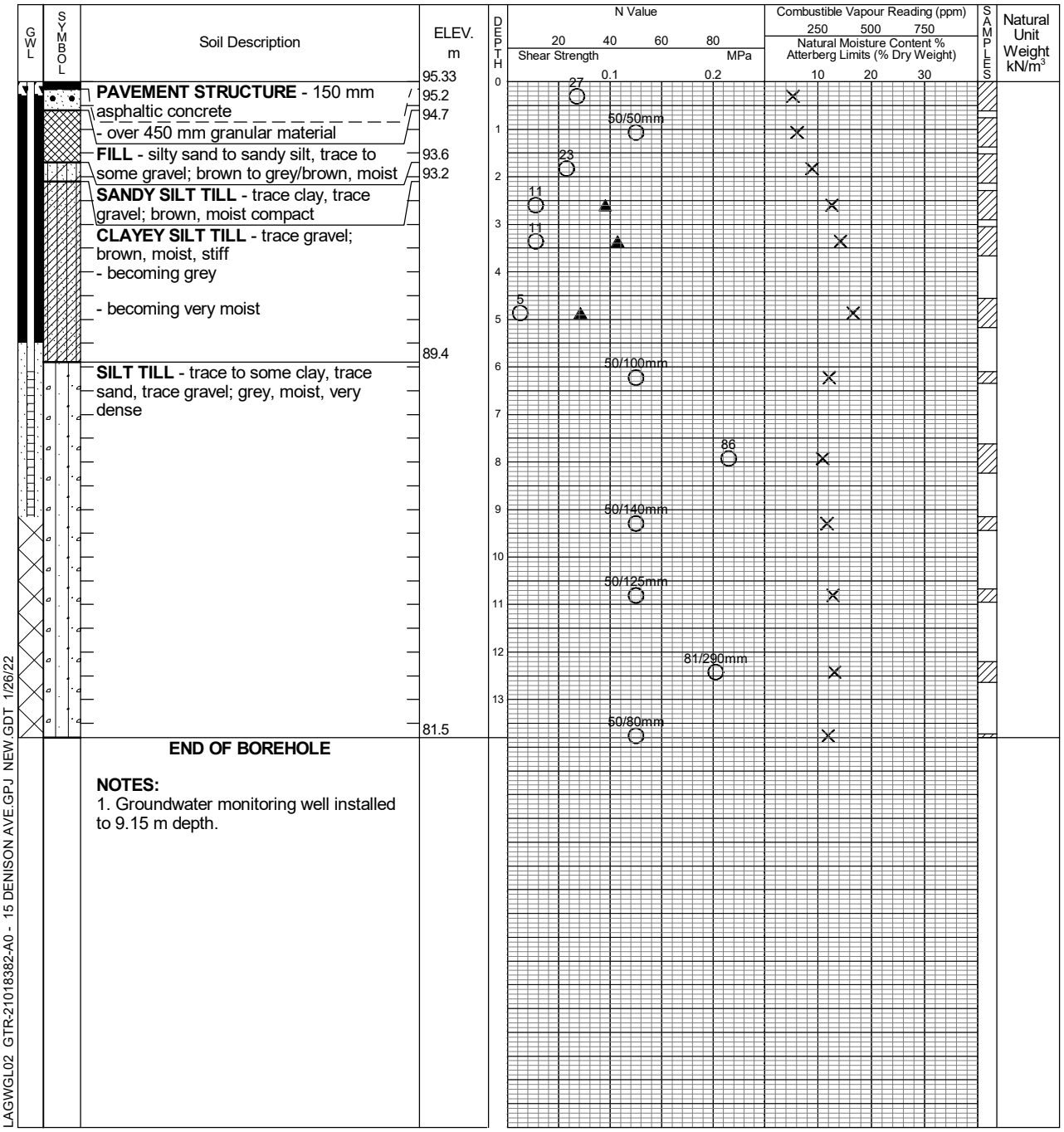
Date Drilled: December 6, 2021

Drill Type: M5T Truck Mount

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



PAVEMENT STRUCTURE - 150 mm asphaltic concrete
- over 450 mm granular material

FILL - silty sand to sandy silt, trace to some gravel; brown to grey/brown, moist

SANDY SILT TILL - trace clay, trace gravel; brown, moist compact

CLAYEY SILT TILL - trace gravel; brown, moist, stiff
- becoming grey
- becoming very moist

SILT TILL - trace to some clay, trace sand, trace gravel; grey, moist, very dense

END OF BOREHOLE

NOTES:
1. Groundwater monitoring well installed to 9.15 m depth.

LAGWGL02 GTR-21018382-A0 - 15 DENISON AVE.GPJ NEW GDT 1/26/22

Time	Water Level (m)	Depth to Cave (m)
On completion	N/A	Well
January 11, 2022	Dry	Well
January 13, 2022	8.55	Well
January 26, 2022	8.47	Well

Log of Borehole 2

Project No. GTR-21018382-A0 | Drawing No. 3

Project: Proposed Residential Development | Sheet No. 1 of 1

Location: 15 Denison Avenue, Toronto, Ontario

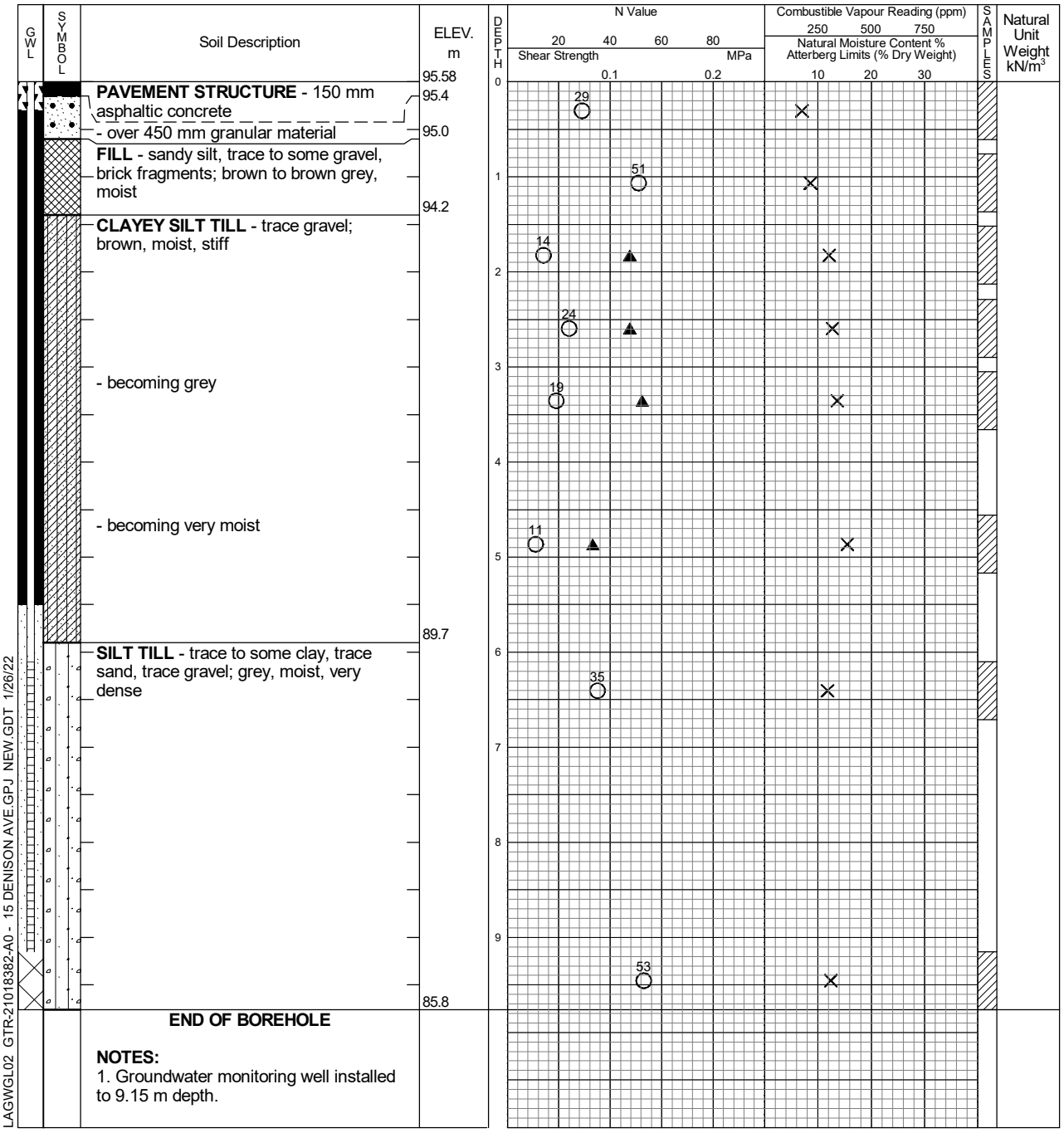
Date Drilled: December 11, 2021

Drill Type: M5T Truck Mount

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 GTR-21018382-A0 - 15 DENISON AVE.GPJ NEW.GDT 1/26/22

Time	Water Level (m)	Depth to Cave (m)
On completion	N/A	Well
January 11, 2022	8.93	Well
January 13, 2022	7.76	Well
January 26, 2022	7.56	Well

Log of Borehole 3

Project No. GTR-21018382-A0 | Drawing No. 4

Project: Proposed Residential Development | Sheet No. 1 of 1

Location: 15 Denison Avenue, Toronto, Ontario

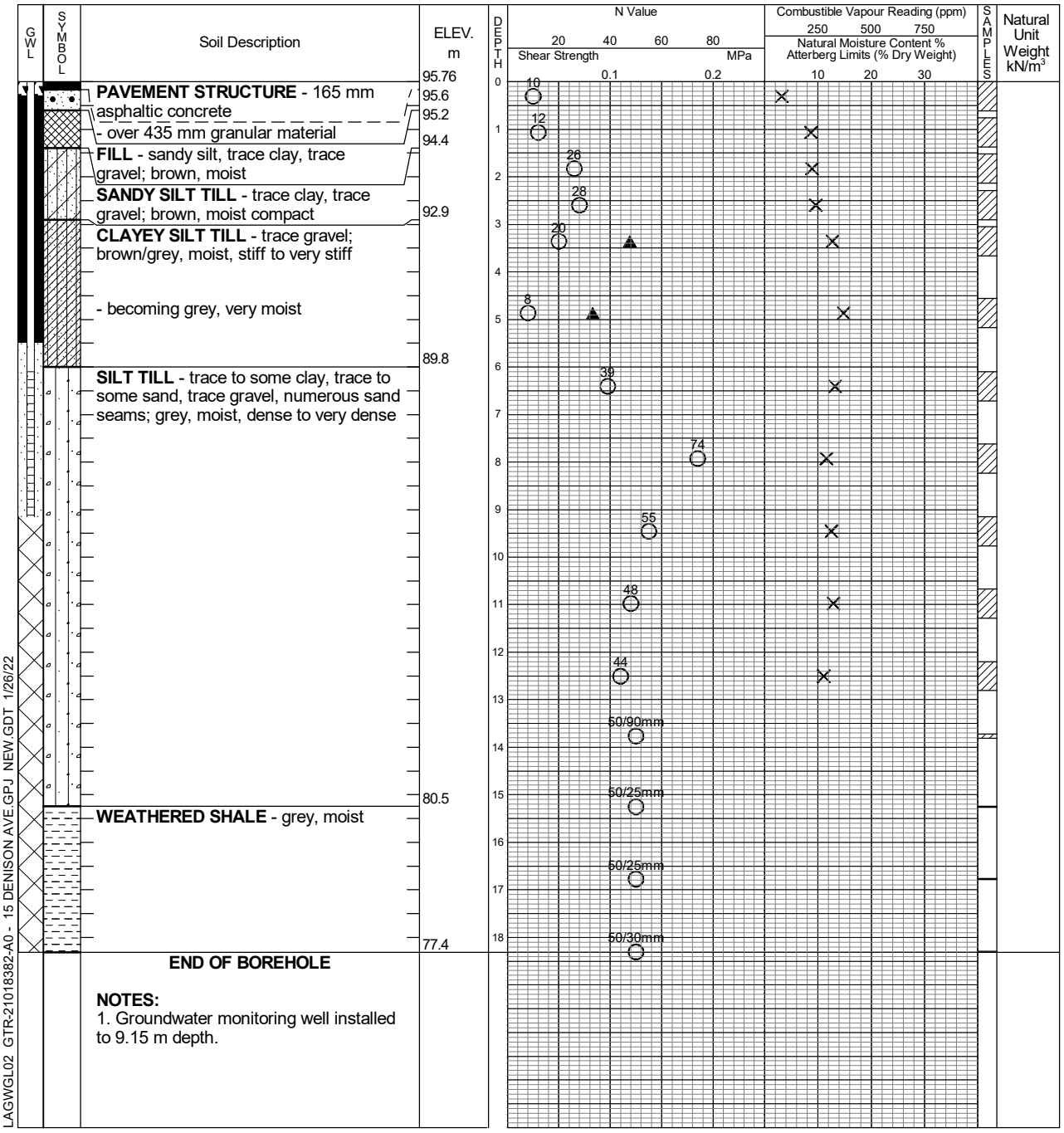
Date Drilled: June 23, 2021

Drill Type: M5T Truck Mount

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



NOTES:
1. Groundwater monitoring well installed to 9.15 m depth.

Time	Water Level (m)	Depth to Cave (m)
On completion	N/A	Well
January 11, 2022	6.99	Well
January 13, 2022	6.54	Well
January 26, 2022	6.17	Well

Log of Borehole 4

Project No. GTR-21018382-A0 | Drawing No. 5

Project: Proposed Residential Development | Sheet No. 1 of 1

Location: 15 Denison Avenue, Toronto, Ontario

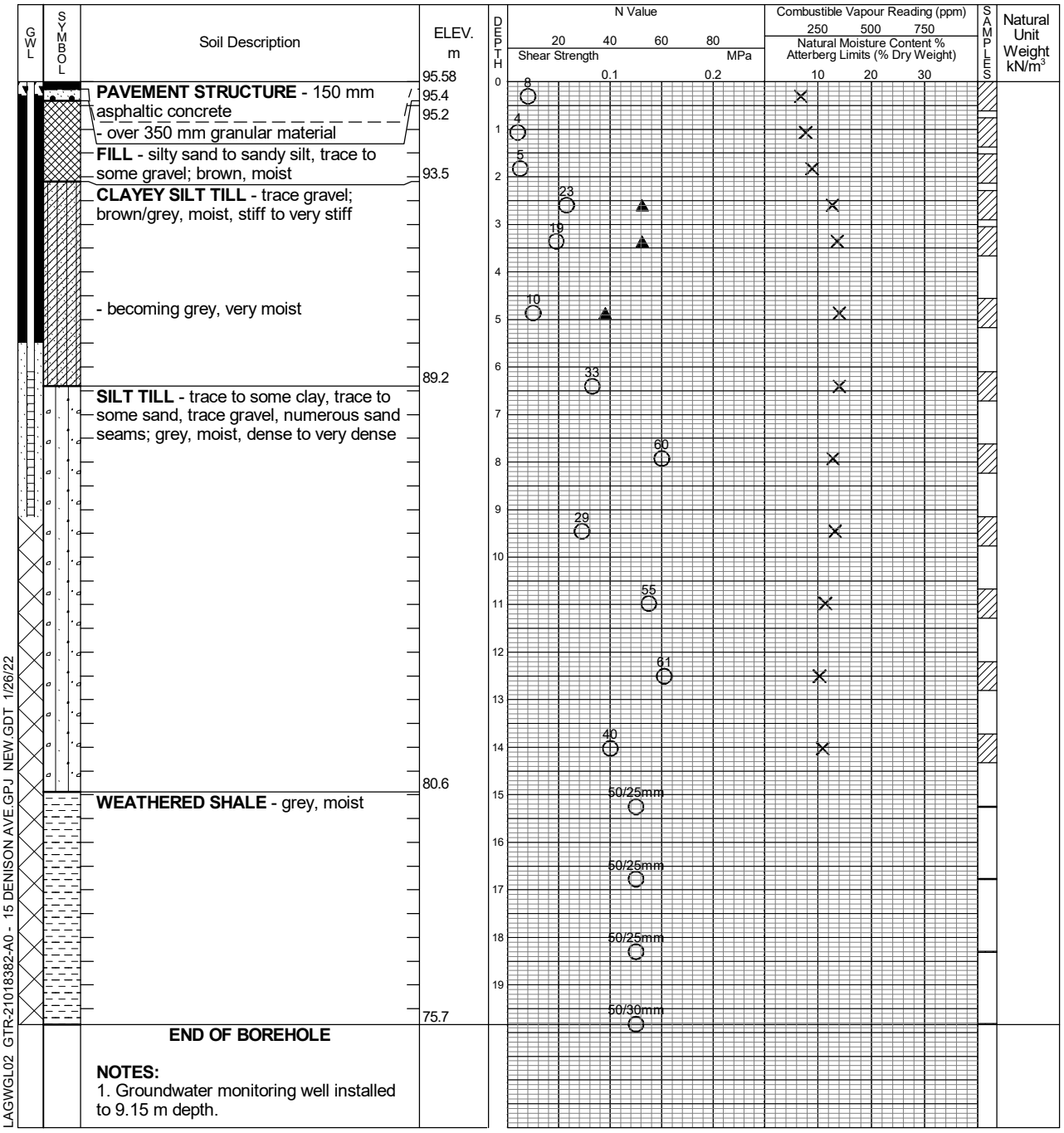
Date Drilled: June 23, 2021

Drill Type: M5T Truck Mount

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



PAVEMENT STRUCTURE - 150 mm asphaltic concrete

- over 350 mm granular material

FILL - silty sand to sandy silt, trace to some gravel; brown, moist

CLAYEY SILT TILL - trace gravel; brown/grey, moist, stiff to very stiff

- becoming grey, very moist

SILT TILL - trace to some clay, trace to some sand, trace gravel, numerous sand seams; grey, moist, dense to very dense

WEATHERED SHALE - grey, moist

END OF BOREHOLE

NOTES:
1. Groundwater monitoring well installed to 9.15 m depth.

LAGWGL02 GTR-21018382-A0 - 15 DENISON AVE.GPJ NEW GDT 1/26/22

Time	Water Level (m)	Depth to Cave (m)
On completion	N/A	Well
January 11, 2022	6.65	Well
January 13, 2022	6.65	Well
January 26, 2022	6.75	Well

Log of Borehole 5

Project No. GTR-21018382-A0 | Drawing No. 6

Project: Proposed Residential Development | Sheet No. 1 of 1

Location: 15 Denison Avenue, Toronto, Ontario

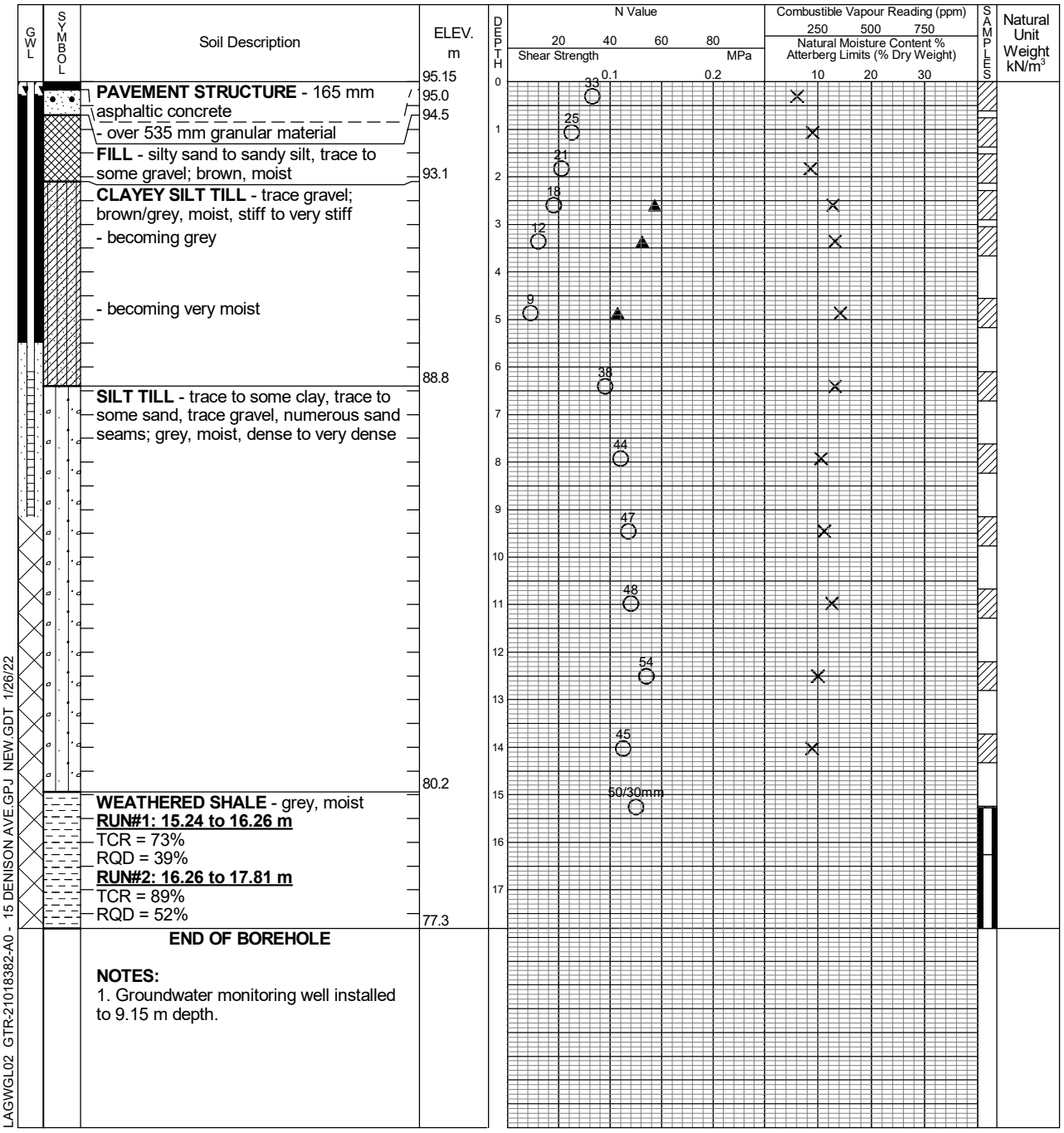
Date Drilled: June 22, 2021

Drill Type: M5T Truck Mount

Datum: Geodetic

Auger Sample ☒
SPT (N) Value ○ ▨
Dynamic Cone Test —
Shelby Tube ■
Field Vane Test ✚ S

Combustible Vapour Reading □
Natural Moisture ×
Plastic and Liquid Limit —○—
Undrained Triaxial at % Strain at Failure ⊕
Penetrometer ▲



PAVEMENT STRUCTURE - 165 mm asphaltic concrete
- over 535 mm granular material

FILL - silty sand to sandy silt, trace to some gravel; brown, moist

CLAYEY SILT TILL - trace gravel; brown/grey, moist, stiff to very stiff
- becoming grey
- becoming very moist

SILT TILL - trace to some clay, trace to some sand, trace gravel, numerous sand seams; grey, moist, dense to very dense

WEATHERED SHALE - grey, moist
RUN#1: 15.24 to 16.26 m
TCR = 73%
RQD = 39%
RUN#2: 16.26 to 17.81 m
TCR = 89%
RQD = 52%

END OF BOREHOLE

NOTES:
1. Groundwater monitoring well installed to 9.15 m depth.

LAGWGL02 GTR-21018382-A0 - 15 DENISON AVE.GPJ NEW.GDT 1/26/22

Time	Water Level (m)	Depth to Cave (m)
On completion	N/A	Well
January 11, 2022	7.68	Well
January 13, 2022	6.63	Well
January 26, 2022	4.75	Well

Log of Borehole BH/MW107

Project No. GTR-21018382-A0 Drawing No. 12

Project: Phase Two ESA Sheet No. 1 of 2

Location: 15 Denison Avenue, Toronto, ON

15 Denison Ave, Toronto

Date Drilled: February 9, 2022

Drill Type: Truckmount

Datum:

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Groundwater	Soil/Rock Symbol	Soil Description	ELEV. m
			95.24
		0.15 m of **ASPHALT**.	~95.1
		Brown, Granular Material **FILL**, trace rock, silt and sand, moist, no odour, no staining	
			~93.7
		Brown, Silt **FILL**, trace sand and red bricks, moist, no odour, no staining	
			~92.9
		Dark Brown, Clayey Silt Till, trace rock, moist, no odour, no staining	
			~92.2
		Dark Grey, Silty Clay Till, trace rock, moist, no odour, no staining	
			~89.1
		Grey, Clayey Silt Till, trace rock, glacial structure, moist, no odour, no staining	
			~86.0
		End of Borehole at 9.21 mbgs.	

SPT (N Value) 20 40 60 80
Shear Strength 100 200 kPa
Combustible Vapour Reading (ppm) 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight) 10 20 30

Depth (m): 0 1 2 3 4 5 6 7 8 9

H(0), I(0)

Sample

Natural Unit Weight kN/m³

Continued Next Page

Date	Water Level (m)	Hole Open to (m)
February 14, 2022	8.43	
February 22, 2022	6.895	

EXPLOGBRAMPTON BH LOGS_DENISON_SC.GPJ NEW.GDT 3/23/22

Log of Borehole BH/MW108

Project No. GTR-21018382-A0 Drawing No. 13

Project: Phase Two ESA Sheet No. 1 of 2

Location: 15 Denison Avenue, Toronto, ON

15 Denison Ave, Toronto

Date Drilled: February 9, 2022

Drill Type: Truckmount

Datum:

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Groundwater	Soil/Rock Symbol	Soil Description	ELEV. m	Depth (m)
			95.57	0
		0.15 m of **Asphalt**.	~95.4	
		Granular **FILL** with rock, traces of silt and sand, moist, no odour, no staining.		
		Brown **FILL** silt, traces of clay and rocks, moist, no odour, no staining.	~94.8	1
		Brown, Silty Sand Till, trace clay, moist, no odour, no staining	~93.4	2
		Grey, Silty Clay Till, moist to wet, no odour, no staining	~92.5	3
		Grey, clayey till, tarce silt, moist, no odour, no staining	~91.9	4
		Grey, Silty Sand Till, moist, no odour, no staining	~90.4	5
		Dark Grey, Sandy Silt Till, trace clay, moist, Slight odour, no staining	~89.5	6
		Dark Grey, Silty Sand Till, trace rock, moist, Strong odour, slight staining	~88.0	7
				8
				9
				10

SPT (N Value): 20 40 60 80
Shear Strength: 100 200 kPa
Combustible Vapour Reading (ppm): 25 50 75
Natural Moisture Content % Atterberg Limits (% Dry Weight): 10 20 30

H(0), I(0)

Sample

Natural Unit Weight kN/m³

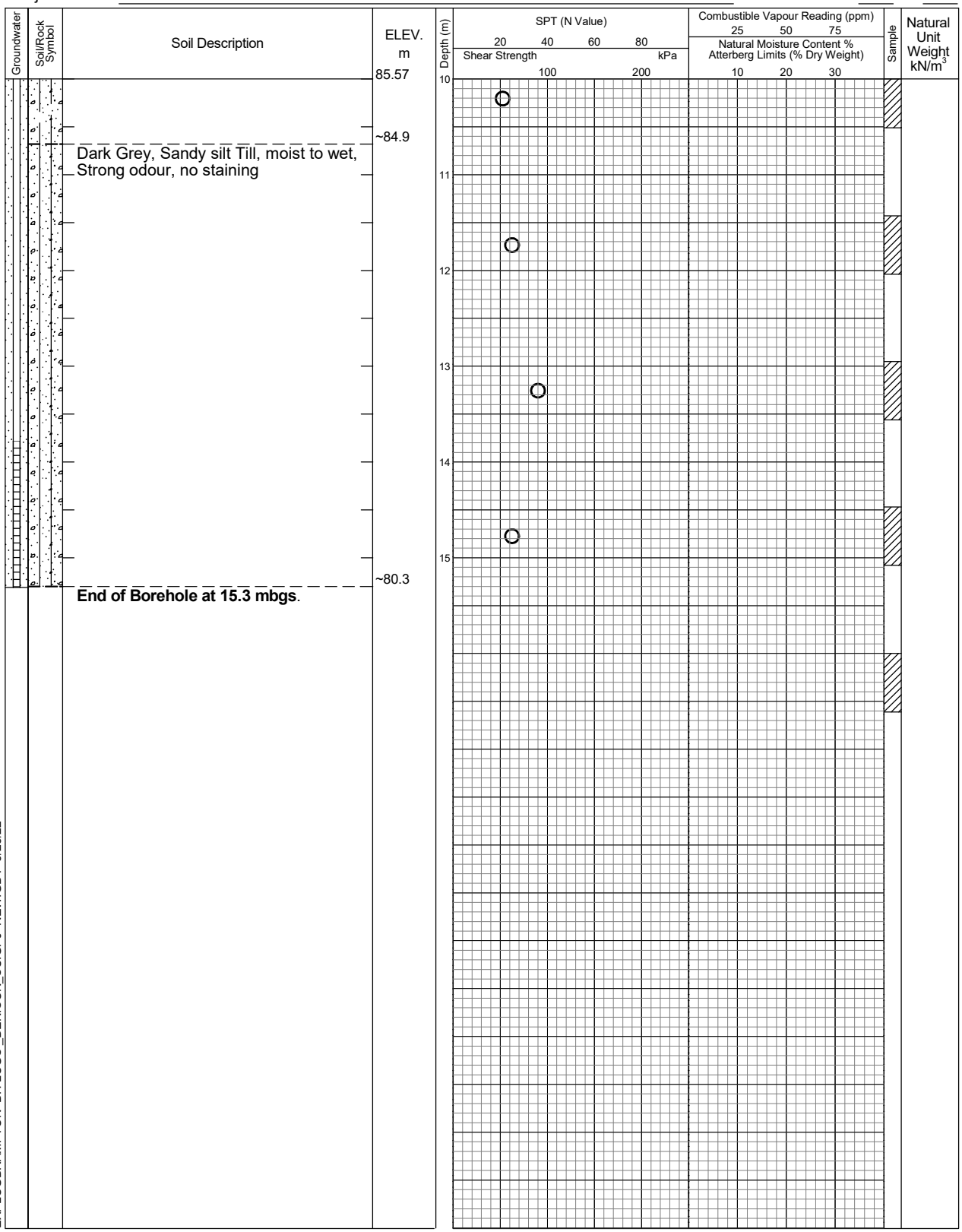
Continued Next Page

Date	Water Level (m)	Hole Open to (m)
February 14, 2022	12.64	
February 22, 2022	12.84	

Log of Borehole BH/MW108

Project No. GTR-21018382-A0 Drawing No. 13

Project: Phase Two ESA Sheet No. 2 of 2



EXPLOGBRAMPTON BH LOGS_DENISON_SC.GPJ NEW.GDT 3/23/22

Date	Water Level (m)	Hole Open to (m)
February 14, 2022	12.64	
February 22, 2022	12.84	

Log of Borehole BH/MW109

Project No. GTR-21018382-A0 Drawing No. 14

Project: Phase Two ESA Sheet No. 1 of 1

Location: 15 Denison Avenue, Toronto, ON

15 Denison Ave, Toronto

Date Drilled: February 7, 2022

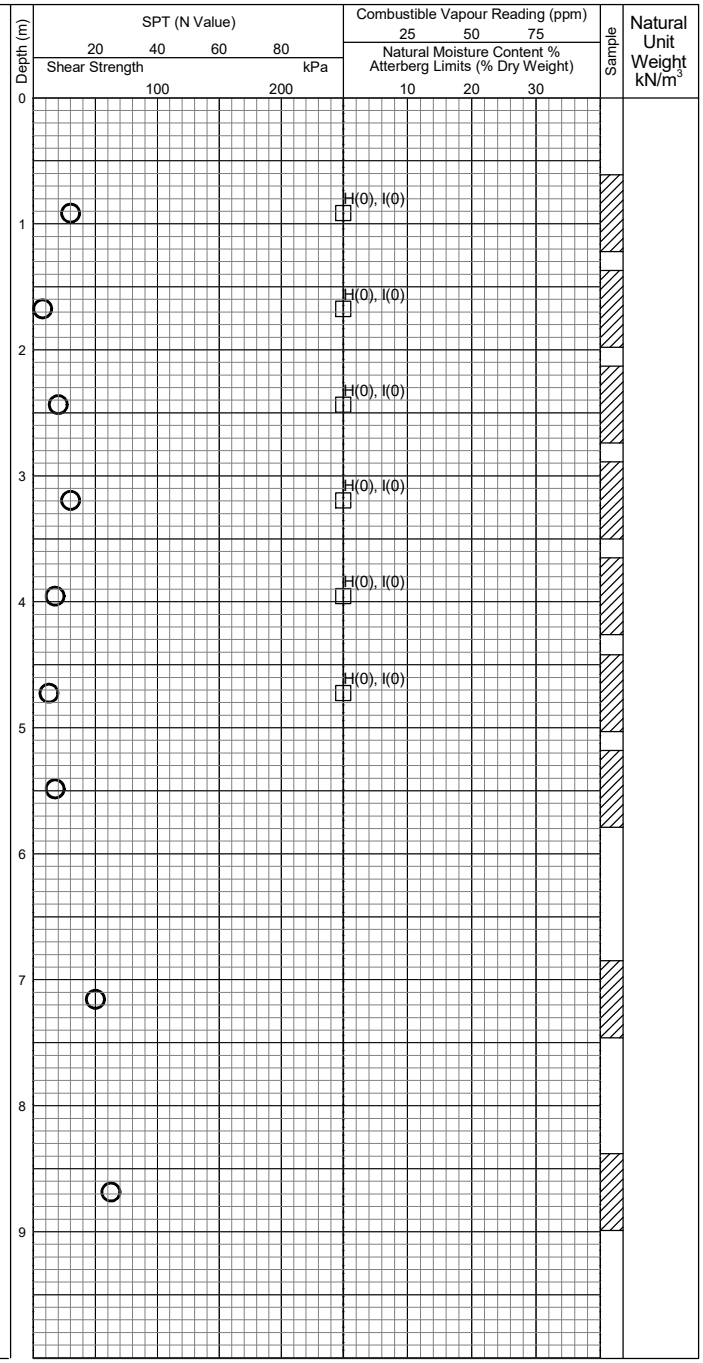
Drill Type: Truckmount

Datum:

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

Groundwater	Soil/Rock Symbol	Soil Description	ELEV. m
		0.15 m of **ASPHALT**.	95.64
		Brown, Granular Material **FILL**, trace rock, silt and clay, moist, no odour, slight staining	~95.5
		Brown, Silt **FILL**, trace sand, moist, no odour, slight staining	~94.1
		Dark Brown, Clayey Silt Till, trace rock, moist, no odour, no staining	~93.4
		Dark Grey, Silty Clay Till, trace rock, moist, no odour, no staining	~92.6
		Grey, Clayey Silt Till, moist, no odour, no staining	~89.6
		End of Borehole at 9.21 mbgs.	~86.4



Date	Water Level (m)	Hole Open to (m)
February 14, 2022	7.35	
February 22, 2022	6.30	

EXPLOGBRAMPTON BH LOGS_DENISON_SC.GPJ NEW.GDT 3/23/22

Appendix C – Groundwater Elevation Summary

Appendix C: Groundwater Elevation Summary

15 Denison Avenue, Toronto, Ontario
BRM-21018382-A0

Monitoring Well ID	Investigation/Company	Ground Surface Elevation (masl)	Approximate Full Well Depth (mbgs)	Minimum GW Elevation (masl)	Maximum GW Elevation (masl)	Depth	11-Jan-22	13-Jan-22	26-Jan-22	11-Feb-22	1-Mar-22	16-Mar-22	14-Apr-22
MW1	**Geotechnical (EXP, 2022)**	95.33	9.35	86.78	88.14	mbgs	DRY	8.55	8.47	8.07	7.64	7.19	7.33
						masl		86.78	86.86	87.26	87.69	88.14	88.00
MW2	**Geotechnical (EXP, 2022)**	95.58	9.15	86.65	90.74	mbgs	8.93	7.76	7.56	7.33	6.34	4.84	8.37
						masl	86.65	87.82	88.02	88.25	89.24	90.74	87.21
MW3	**Geotechnical (EXP, 2022)**	95.76	9.32	88.77	90.59	mbgs	6.99	6.54	6.17	5.60	5.51	5.50	5.17
						masl	88.77	89.22	89.59	90.16	90.25	90.26	90.59
MW4	**Geotechnical (EXP, 2022)**	95.58	9.30	88.54	92.18	mbgs	6.65	6.65	6.75	3.40	4.62	7.02	7.04
						masl	88.93	88.93	88.83	92.18	90.96	88.56	88.54
MW5	**Geotechnical (EXP, 2022)**	95.15	9.35	87.47	92.15	mbgs	7.68	6.63	4.75	3.57	3.17	3.00	3.18
						masl	87.47	88.52	90.40	91.58	91.98	92.15	91.97
MW107	**Phase 2 ESA (EXP, 2022)**	95.24	9.23	86.81	89.40	mbgs	-	-	-	8.43	6.41	6.04	5.84
						masl				86.81	88.83	89.20	89.40
MW108	**Phase 2 ESA (EXP, 2022)**	95.57	15.20	82.81	87.22	mbgs	-	-	-	12.66	12.76	11.00	8.35
						masl				82.91	82.81	84.57	87.22
MW109	**Phase 2 ESA (EXP, 2022)**	95.64	9.16	87.67	87.97	mbgs	-	-	-	7.91	7.67	7.83	7.97
						masl				87.73	87.97	87.81	87.67

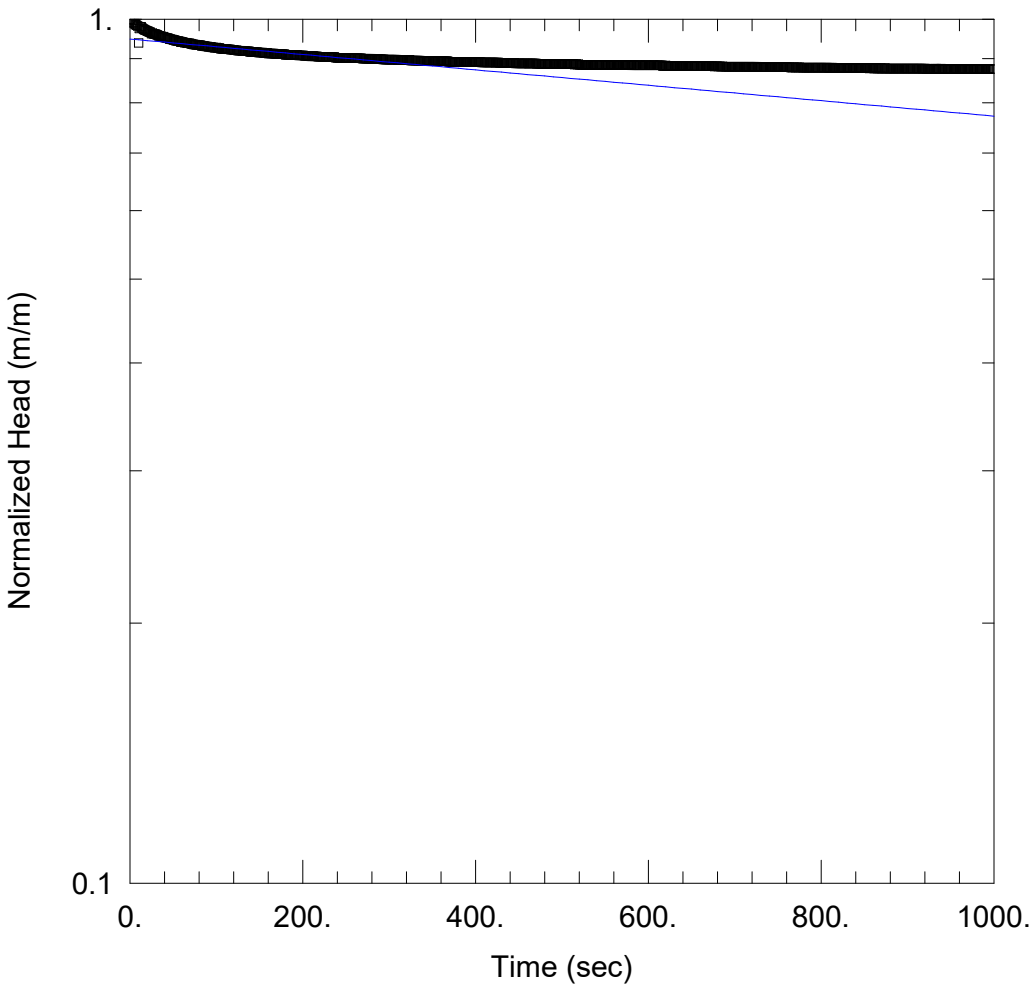
Notes:

mbTOP - meters below top of the pipe

mbgs - meters below ground surface

masl - meters above mean sea level

Appendix D – SWRT Procedures and Results



MW2_RISING HEAD SWRT

Data Set: \...\MW2.aqt
Date: 02/16/22 Time: 11:09:03

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018382-A0
Location: 15 Denison Ave
Test Well: MW2
Test Date: January 13, 2022

AQUIFER DATA

Saturated Thickness: 2.33 m Anisotropy Ratio (Kz/Kr): 1.

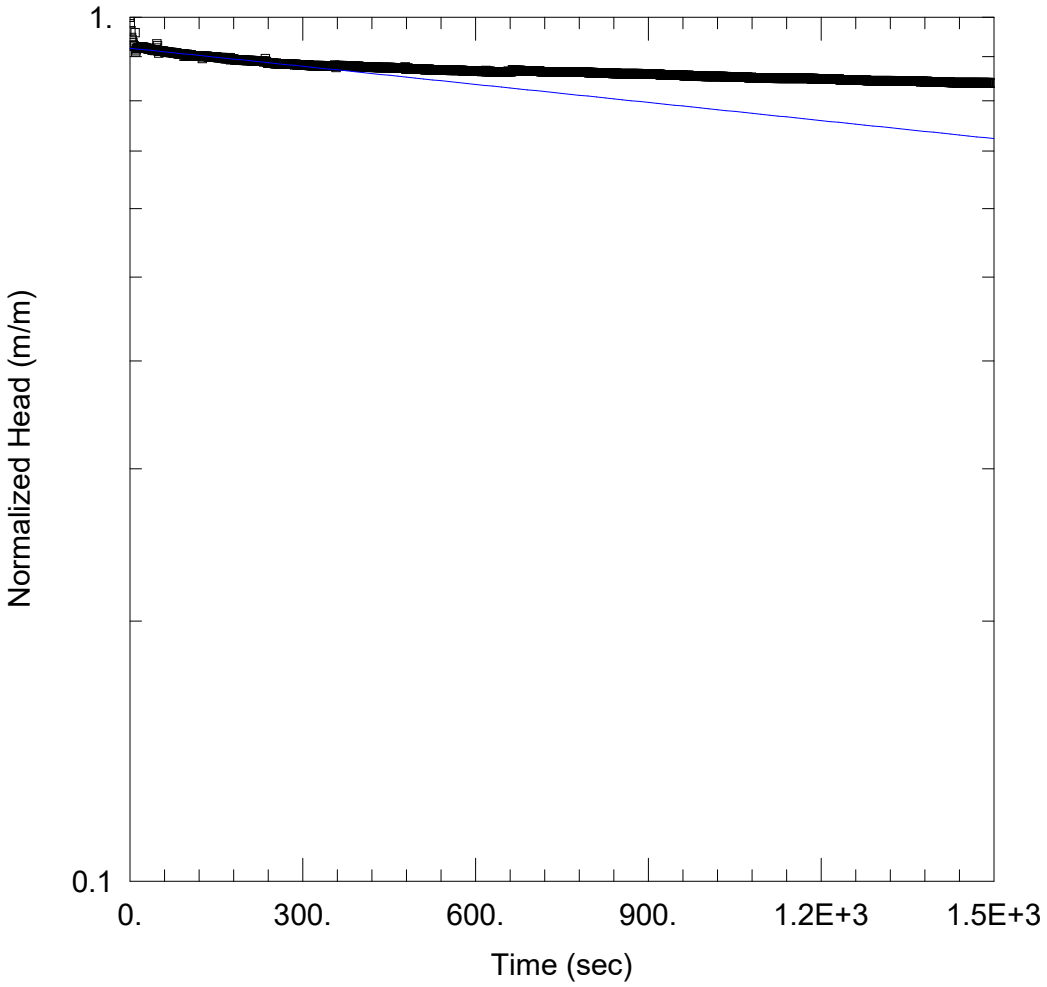
WELL DATA (MW2)

Initial Displacement: 1.007 m
Total Well Penetration Depth: 3. m
Casing Radius: 0.0254 m
Static Water Column Height: 2.33 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.507E-7 m/sec y0 = 0.9549 m



MW3_FALLING HEAD SWRT

Data Set: \...\MW3.aqt
Date: 02/16/22 Time: 11:32:30

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018382-A0
Location: 15 Denison Ave
Test Well: MW3
Test Date: January 11, 2022

AQUIFER DATA

Saturated Thickness: 2.33 m Anisotropy Ratio (Kz/Kr): 1.

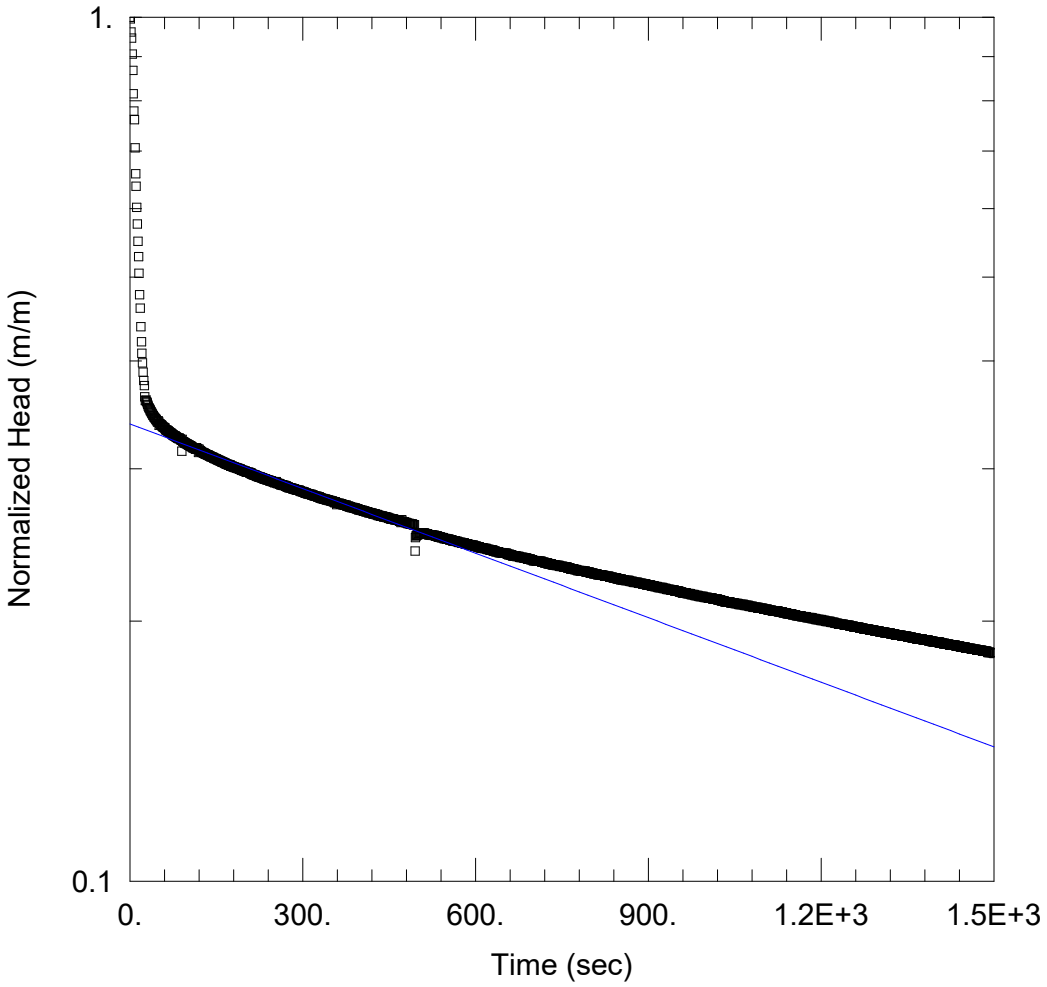
WELL DATA (MW3)

Initial Displacement: 0.643 m
Total Well Penetration Depth: 3. m
Casing Radius: 0.0254 m
Static Water Column Height: 2.33 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.178E-7 m/sec y0 = 0.5919 m



MW4_FALLING HEAD SWRT

Data Set: \...\MW4.aqt
Date: 02/16/22 Time: 11:35:44

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018382-A0
Location: 15 Denison Ave
Test Well: MW4
Test Date: January 11, 2022

AQUIFER DATA

Saturated Thickness: 2.65 m Anisotropy Ratio (Kz/Kr): 1.

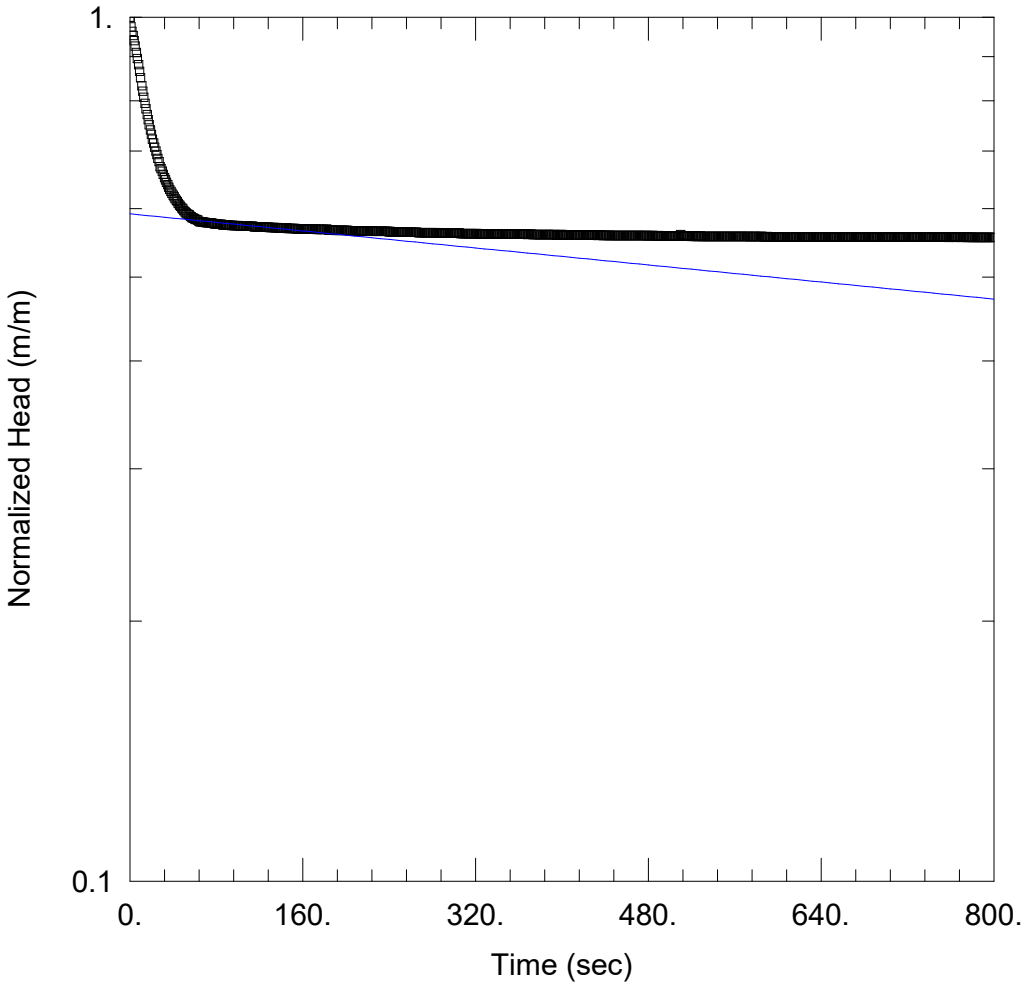
WELL DATA (MW4)

Initial Displacement: 1.962 m
Total Well Penetration Depth: 3. m
Casing Radius: 0.0254 m
Static Water Column Height: 2.65 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 3.699E-7 m/sec y0 = 0.6634 m



MW5_FALLING HEAD SWRT

Data Set: \...\MW5.aqt
Date: 02/16/22 Time: 11:39:52

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018382-A0
Location: 15 Denison Ave
Test Well: MW5
Test Date: January 13, 2022

AQUIFER DATA

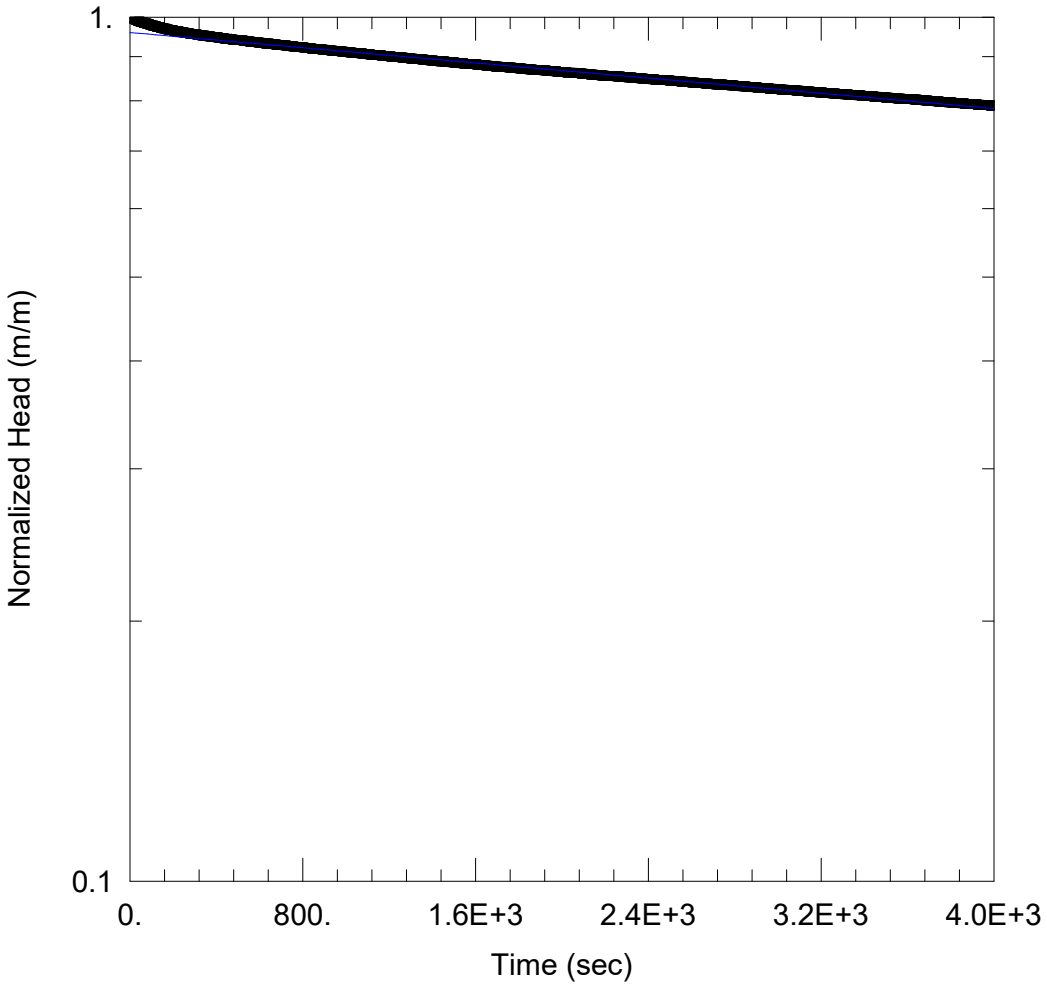
Saturated Thickness: 2.72 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW5)

Initial Displacement: 1.668 m
Total Well Penetration Depth: 3. m
Casing Radius: 0.0254 m
Static Water Column Height: 2.72 m
Screen Length: 3. m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 1.783E-7 m/sec
y0 = 0.9874 m



MW107 FALLING HEAD SWRT

Data Set: \...\MW107.aqt
Date: 03/23/22 Time: 16:07:52

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018328-A0
Location: 15 Denison Ave. Toronto
Test Well: MW107
Test Date: March 16 2022

AQUIFER DATA

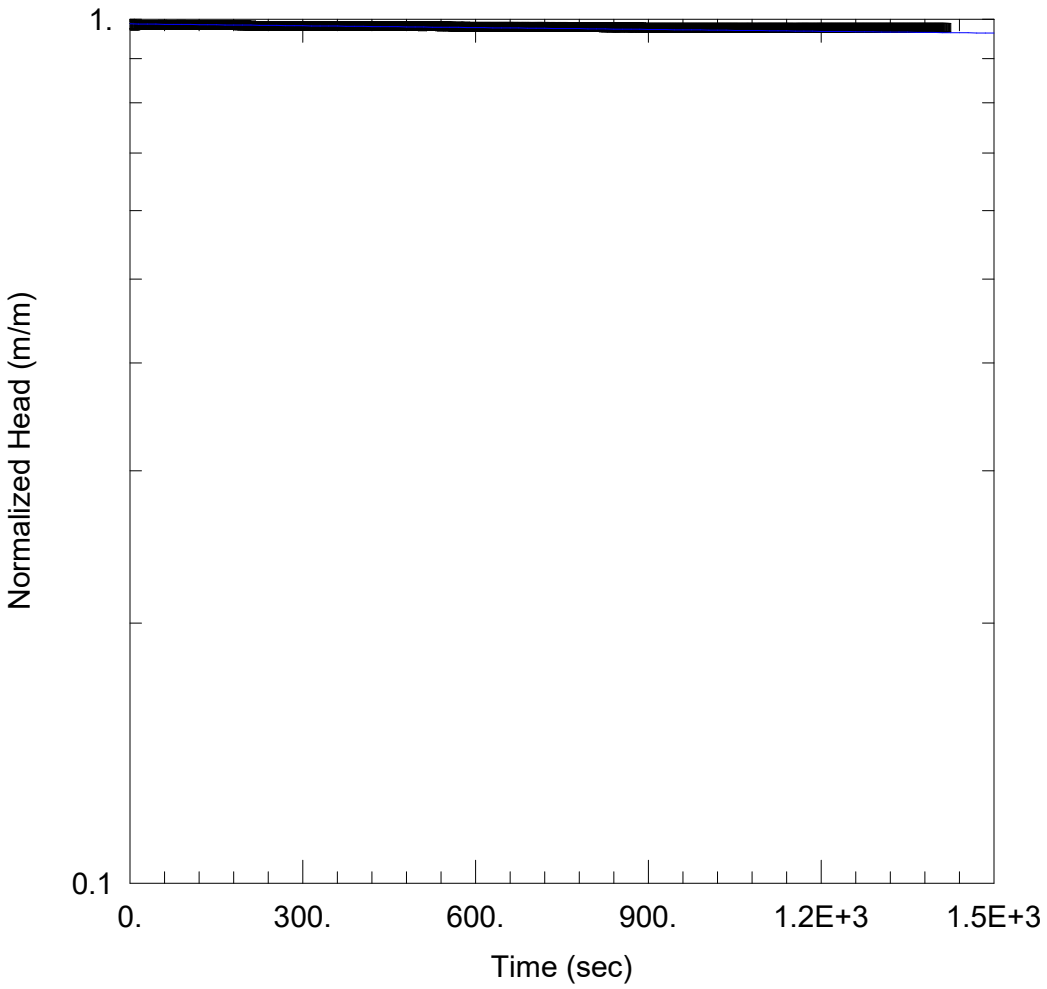
Saturated Thickness: 3.19 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW107)

Initial Displacement: 1.494 m
Total Well Penetration Depth: 3.19 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.19 m
Screen Length: 1.5 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 5.194E-8 m/sec
y0 = 1.434 m



MW108 FALLING HEAD SWRT

Data Set: \...\MW108.aqt
Date: 03/23/22 Time: 16:08:44

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018328-A0
Location: 15 Denison Ave. Toronto
Test Well: MW108
Test Date: March 16 2022

AQUIFER DATA

Saturated Thickness: 4.2 m Anisotropy Ratio (Kz/Kr): 1.

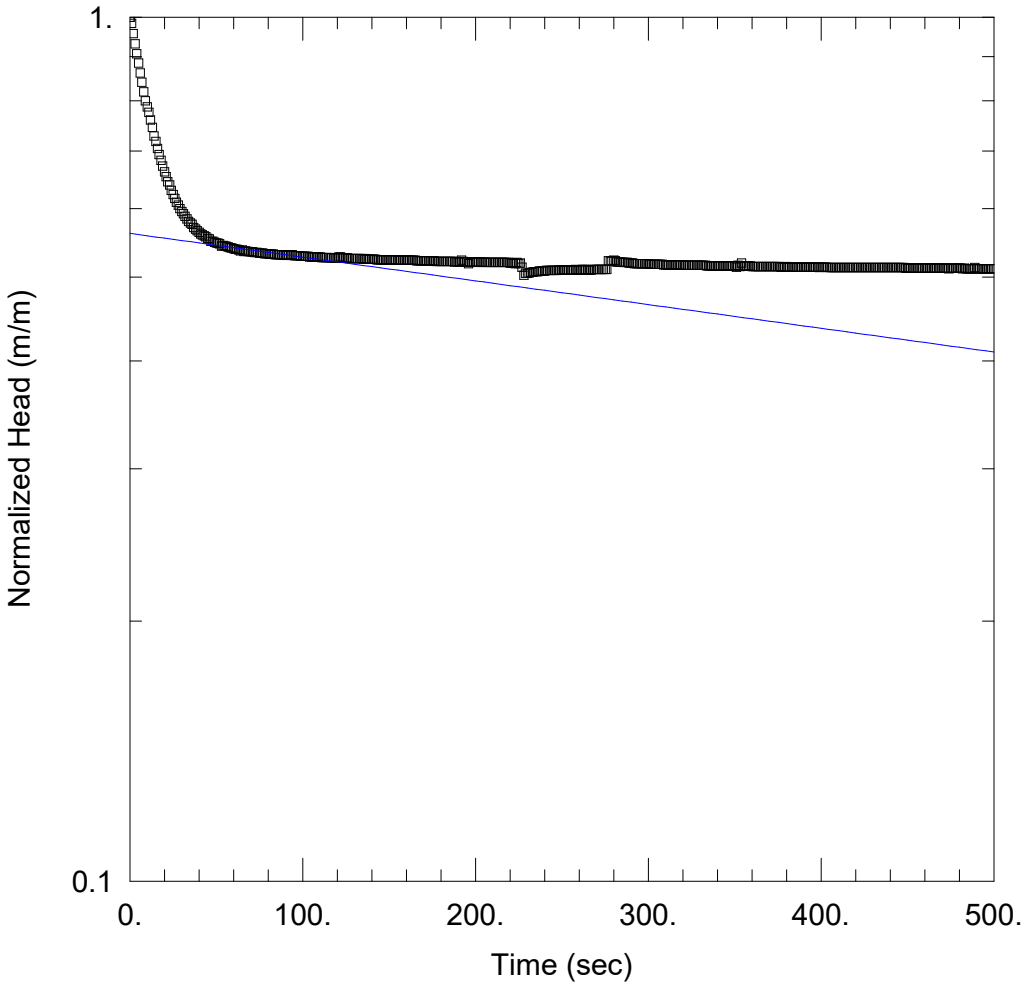
WELL DATA (MW108)

Initial Displacement: 1.003 m
Total Well Penetration Depth: 4.2 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.2 m
Screen Length: 1.5 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.681E-8 m/sec y0 = 0.9903 m



MW109 FALLING HEAD SWRT

Data Set: \...\MW109.aqt
Date: 03/23/22 Time: 16:18:22

PROJECT INFORMATION

Company: EXP Services Inc
Client: CreateTO
Project: GTR-21018328-A0
Location: 15 Denison Ave. Toronto
Test Well: MW109
Test Date: March 16 2022

AQUIFER DATA

Saturated Thickness: 1.33 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW109)

Initial Displacement: 1.279 m
Total Well Penetration Depth: 1.5 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.33 m
Screen Length: 1.5 m
Well Radius: 0.0254 m

SOLUTION

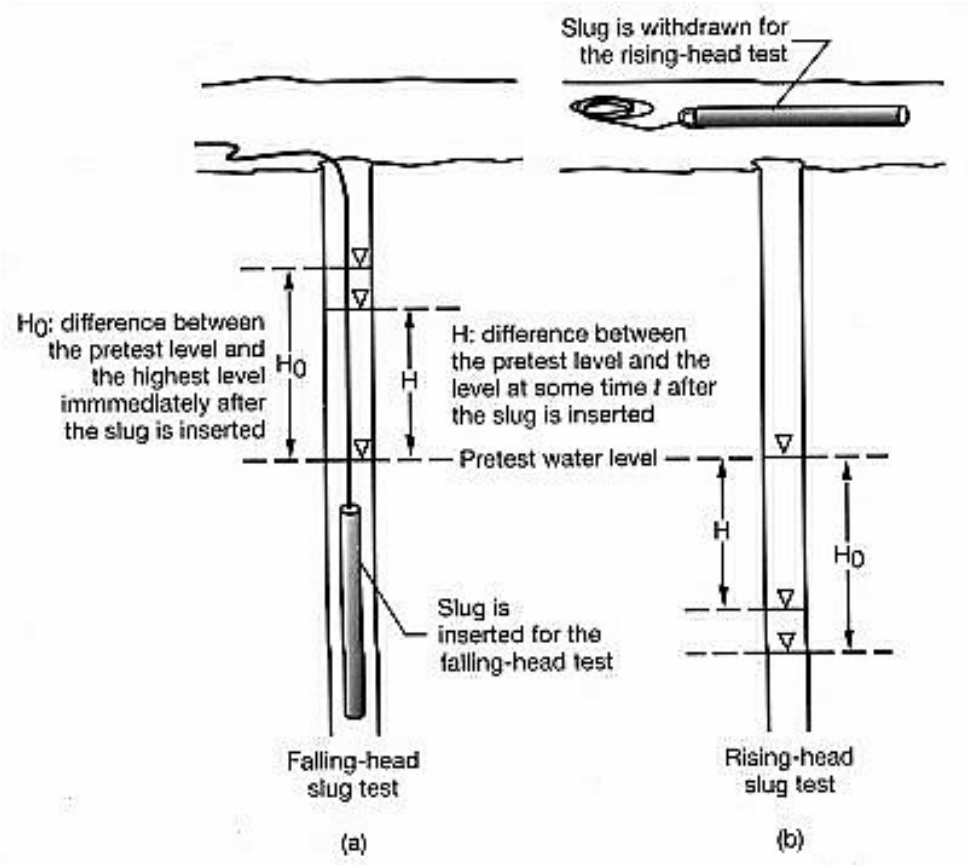
Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 8.124E-7 m/sec
y0 = 0.7187 m

Single Well Response Test Procedure

A Single Well Response Test (SWRT), also known as a bail test or a slug test, is conducted in order to determine the saturated hydraulic conductivity (K) of an aquifer. The method of the SWRT is to characterize the change of groundwater level in a well or borehole over time.

In order to ensure consistency and repeatability, all **exp** employees are to follow the procedure outlined in this document when conducting SWRTs.

The figure below depicts a schematic of a slug and bail test and the respective water level changes.



Initials ___

Slug Test Procedure

Equipment Required

- Copy of a signed health and safety plan
- Copy of the work program
- PPE as required by Site-Specific HASP
- Copy of the monitoring well location plan/site plan
- Waterproof pen and bound field note book
- SWRT field data Entry form
- Disposable gloves
- Duct tape
- Deionized water
- Alconox (phosphate free detergent)
- Spray bottles
- Electronic water level meter and spare batteries
- Solid PVC or stainless steel slug of known volume or clean water
- String (nylon)
- Water pressure transducer (data logger) and baro-logger
- Watch or stop watch with second hand
- Plastic sheeting

Testing Procedure

1. Remove cap from well and collect static water level
2. Remove waterra tubing/bailer and place in garbage bag. Record static water level measurement again.
3. Lower the slug into the well and record the dynamic water level.
4. Record the drawdown (for the slug test) at set five (5) second intervals for the first five (5) minutes, then reduce to every one (1) minute.
5. Continue recording the drawdown until 95% recovery is reached. To calculate this value: Find the difference between the dynamic water level and the static water level, then multiply by 95% (.95). Add the resulting value to the dynamic water level.

   (Static Water Level – Dynamic Water Level).95 + Static Water Level = 95% Recovery Value
6. Once complete, replace the waterra tubing/bailer and re-secure the well cap.

Note: If the well is deep, more than one slug may be inserted by attaching the slugs to a series.

Slugs must be washed with methanol, then lab grade soap, and then rinsed with de-ionized water after each use.

Based on the recorded observations, the hydraulic conductivity (in m/s) of the aquifer will be determined. In order to determine the hydraulic conductivity; the well diameter, radius of the borehole and length of the screen will also be required.

Bail Test Procedure

Equipment Required

- 20 L (5 gal) Graduated pail
- Stop watch or watch with seconds
- Garbage bags
- Water level meter
- Field sheets/log book
- Latex Gloves
- Bailer and Rope

Procedure

1. Remove cap from well and collect static water level.
2. If using a **bailer**:
    a. Affix the rope to the bailer.
    b. Remove the waterra tubing and place in garbage bag
    c. Record static water level measurement again.
    d. Record how much water was removed by either counting the number of full bailers or emptying removed water into a container.
    e. Quickly lower the bailer into the well and remove.
    f. Continue this process until the water level will reduce no further.
    g. Record the dynamic water level.
3. If using **waterra** to bail the water:
    a. Pump the water into graduated bucket until the water level will reduce no further.
    b. Record how much water has been removed.
    c. Record the dynamic water level.
4. Record the recovery at set five (5) second intervals for the first (5) minutes, then reduce to every one (1) minute.
5. Continue recording the drawdown/recovery until 95% recovery is reached.
6. Once complete, replace any waterra tubing that may have been removed from the well and re-secure the well cap.

Appendix E – Laboratory's Certificates of Analysis

AGAT Laboratories

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

CLIENT NAME: EXP SERVICES INC
1595 CLARK BLVD.
BRAMPTON, ON L6T4V1
(905) 793-9809
ATTENTION TO: francois Chartier
PROJECT: 15 Denison Ave
AGAT WORK ORDER: 22T853470
MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
ULTRA TRACE REVIEWED BY: Marc Paquet, Chimiste, AGAT Québec
WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer
DATE REPORTED: Jan 31, 2022
PAGES (INCLUDING COVER): 17
VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

E. Coli (Using MI Agar)

DATE RECEIVED: 2022-01-13

DATE REPORTED: 2022-01-31

				SAMPLE DESCRIPTION:	MW4
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2022-01-13 12:40
Parameter	**Unit**	**G / S**	**RDL**	**3424917**	
Escherichia coli	CFU/100mL	200		100	

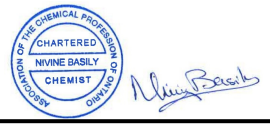
Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3424917 Escherichia coli RDL = 100 CFU/100mL.
RDL > 1 indicates dilutions of the sample.

The sample was diluted prior to filtration due to the presence of sediments.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Toronto Sanitary and Combined Sewer Use By-law - Organic

DATE RECEIVED: 2022-01-13

DATE REPORTED: 2022-01-31

					SAMPLE DESCRIPTION:	MW4
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2022-01-13 12:40
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**3424917**
Oil and Grease (animal/vegetable) in water	mg/L	150		0.5		<0.5
Oil and Grease (mineral) in water	mg/L	15		0.5		<0.5
Methylene Chloride	mg/L	2	0.0052	0.0030		<0.0030
trans-1,3-Dichloropropylene	mg/L	0.14	0.0056	0.0030		<0.0030
cis-1,2-Dichloroethylene	mg/L	4	0.0056	0.0020		<0.0020
Chloroform	mg/L	0.04	0.002	0.0020		<0.0020
Benzene	mg/L	0.01	0.002	0.0020		0.0034[B-A]
Tetrachloroethylene	mg/L	1	0.0044	0.0010		<0.0010
Toluene	mg/L	0.016	0.002	0.0020		0.0576[>A]
Trichloroethlyene	mg/L	0.4	0.0076	0.0020		<0.0020
Ethylbenzene	mg/L	0.16	0.002	0.0010		0.208[>A]
1,1,2,2-Tetrachloroethane	mg/L	1.4	0.017	0.0010		<0.0010
1,2-Dichlorobenzene	mg/L	0.05	0.0056	0.0010		<0.0010
1,4-Dichlorobenzene	mg/L	0.08	0.0068	0.0010		<0.0010
m & p-Xylene	mg/L			0.0020		1.79
o-Xylene	mg/L			0.0010		0.919
Xylenes (Total)	mg/L	1.4	0.0044	0.0002		2.71[>A]
PCBs	mg/L	0.001	0.0004	0.0002		<0.0002
Pentachlorophenol	mg/L	0.005	0.002	0.0001		<0.0001
Di-n-butyl phthalate	mg/L	0.08	0.015	0.0005		<0.0005
3,3'-Dichlorobenzidine	mg/L	0.002	0.0008	0.0005		<0.0005
Bis(2-Ethylhexyl)phthalate	mg/L	0.012	0.0088	0.0005		<0.0005
Total PAHs	mg/L	0.005	0.002	0.00030		<0.00030

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Toronto Sanitary and Combined Sewer Use By-law - Organic

DATE RECEIVED: 2022-01-13

DATE REPORTED: 2022-01-31

			SAMPLE DESCRIPTION:	MW4
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2022-01-13 12:40
Surrogate	**Unit**	**Acceptable Limits**		**3424917**
Toluene-d8	% Recovery	50-140		96
4-Bromofluorobenzene	% Recovery	50-140		82
Decachlorobiphenyl	%	50-140		96
2,4,6-Tribromophenol	%	50-140		74
2-Fluorophenol	%	50-140		105
Chrysene-d12	%	50-140		93
phenol-d6 surrogate	%	50-140		99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to City of Toronto Sanitary and Combined Sewers Discharge, B Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3424917 Dilution factor=10
VOC- The sample was diluted to keep the target compounds in the calibration range of the instrument and avoid contaminating the Purge and Trap system. The reporting detection limit has been corrected for the dilution factor used.
Oil and Grease animal/vegetable is a calculated parameter. The calculated value is the difference between Total O&G and Mineral O&G.
Total PAHs is calculated as sum of Anthracene, Benzo(a)pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Perylene, Phenanthrene and Pyrene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Nonylphenol and Nonylphenol Ethoxylates (Ontario, mg/L)

DATE RECEIVED: 2022-01-13

DATE REPORTED: 2022-01-31

					SAMPLE DESCRIPTION:	MW4
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2022-01-13 12:40
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**3424917**
Total Nonylphenol	mg/L	0.001	0.02	0.001		<0.001
NP1EO	mg/L			0.001		<0.001
NP2EO	mg/L			0.0003		<0.0003
Total Nonylphenol Ethoxylates	mg/L	0.01	0.2	0.001		<0.001

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to CIty of Toronto Storm Sewer Discharge, B Refers to City of Toronto Sanitary and Combined Sewers Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Montréal (unless marked by *)

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

BOD5

DATE RECEIVED: 2022-01-13 **DATE REPORTED: 2022-01-31**

			SAMPLE DESCRIPTION:	MW4
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2022-01-13 12:40
Parameter	**Unit**	**G / S**	**RDL**	**3424917**
Biochemical Oxygen Demand, Total	mg/L		2.00	9.00

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

Analysis performed at AGAT Halifax (unless marked by *)

Certified By: Iris Verástegui

AGAT Laboratories

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CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Toronto Sanitary and Combined Sewer Use By-law - Inorganics

DATE RECEIVED: 2022-01-13

DATE REPORTED: 2022-01-31

					SAMPLE DESCRIPTION:	MW4
					SAMPLE TYPE:	Water
					DATE SAMPLED:	2022-01-13 12:40
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**3424917**
pH	pH Units	6.0-11.5	6.0-9.5	NA		7.58
Fluoride	mg/L	10		0.05		<0.05
Total Kjeldahl Nitrogen	mg/L	100		0.10		7.68[<A]
Total Phosphorus	mg/L	10	0.4	0.02		0.46[B-A]
Total Cyanide	mg/L	2	0.02	0.002		0.002[<B]
Phenols	mg/L	1.0	0.008	0.001		0.001[<B]
Total Suspended Solids	mg/L	350	15	10		78[B-A]
Total Aluminum	mg/L	50		0.010		2.69[<A]
Total Antimony	mg/L	5		0.020		<0.020
Total Arsenic	mg/L	1	0.02	0.015		<0.015
Total Cadmium	mg/L	0.7	0.008	0.005		<0.005
Total Chromium	mg/L	4	0.08	0.020		<0.020
Chromium VI	mg/L	2	0.04	0.002		<0.002
Total Cobalt	mg/L	5		0.010		<0.010
Total Copper	mg/L	2	0.04	0.020		<0.020
Total Lead	mg/L	1	0.12	0.020		<0.020
Total Manganese	mg/L	5	0.05	0.020		0.724[B-A]
Total Mercury	mg/L	0.01	0.0004	0.0002		<0.0002
Total Molybdenum	mg/L	5		0.020		<0.020
Total Nickel	mg/L	2	0.08	0.030		<0.030
Total Selenium	mg/L	1	0.02	0.002		0.003[<B]
Total Silver	mg/L	5	0.12	0.020		<0.020
Total Tin	mg/L	5		0.020		<0.020
Total Titanium	mg/L	5		0.010		0.146[<A]
Total Zinc	mg/L	2	0.04	0.020		0.026[<B]

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to City of Toronto Sanitary and Combined Sewers Discharge, B Refers to CIty of Toronto Storm Sewer Discharge
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

AGAT Laboratories

5835 COOPERS AVENUE
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Exceedance Summary

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: francois Chartier

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Inorganics	Total Manganese	mg/L	0.05	0.724
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Inorganics	Total Phosphorus	mg/L	0.4	0.46
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Inorganics	Total Suspended Solids	mg/L	15	78
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Organic	Benzene	mg/L	0.002	0.0034
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Organic	Ethylbenzene	mg/L	0.002	0.208
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Organic	Toluene	mg/L	0.002	0.0576
3424917	MW4	ON Toronto SM	Toronto Sanitary and Combined Sewer Use By-law - Organic	Xylenes (Total)	mg/L	0.0044	2.71
3424917	MW4	ON Toronto SN	Toronto Sanitary and Combined Sewer Use By-law - Organic	Ethylbenzene	mg/L	0.16	0.208
3424917	MW4	ON Toronto SN	Toronto Sanitary and Combined Sewer Use By-law - Organic	Toluene	mg/L	0.016	0.0576
3424917	MW4	ON Toronto SN	Toronto Sanitary and Combined Sewer Use By-law - Organic	Xylenes (Total)	mg/L	1.4	2.71

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

PROJECT: 15 Denison Ave

SAMPLING SITE:Toronto

AGAT WORK ORDER: 22T853470

ATTENTION TO: francois Chartier

SAMPLED BY:EC

Microbiology Analysis

RPT Date: Jan 31, 2022			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
E. Coli (Using MI Agar)															
Escherichia coli	3424917	3424917	100	100	0.0%										

Certified By:

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Trace Organics Analysis

RPT Date: Jan 31, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Toronto Sanitary and Combined Sewer Use By-law - Organic															
Oil and Grease (animal/vegetable) in water	3418162		< 0.5	< 0.5	NA	< 0.5	106%	70%	130%	110%	70%	130%	104%	70%	130%
Oil and Grease (mineral) in water	3418162		< 0.5	< 0.5	NA	< 0.5	78%	70%	130%	78%	70%	130%	80%	70%	130%
Methylene Chloride	3432229		<0.0003	<0.0003	NA	< 0.0003	103%	50%	140%	113%	60%	130%	74%	50%	140%
trans-1,3-Dichloropropylene	3432229		<0.0003	<0.0003	NA	< 0.0003	99%	50%	140%	95%	60%	130%	120%	50%	140%
cis-1,2-Dichloroethylene	3432229		<0.0002	<0.0002	NA	< 0.0002	73%	50%	140%	83%	60%	130%	111%	50%	140%
Chloroform	3432229		<0.0002	<0.0002	NA	< 0.0002	101%	50%	140%	111%	60%	130%	102%	50%	140%
Benzene	3432229		<0.0002	<0.0002	NA	< 0.0002	107%	50%	140%	92%	60%	130%	113%	50%	140%
Tetrachloroethylene	3432229		<0.0001	<0.0001	NA	< 0.0001	102%	50%	140%	84%	60%	130%	84%	50%	140%
Toluene	3432229		<0.0002	<0.0002	NA	< 0.0002	85%	50%	140%	112%	60%	130%	98%	50%	140%
Trichloroethlyene	3432229		<0.0002	<0.0002	NA	< 0.0002	100%	50%	140%	98%	60%	130%	93%	50%	140%
Ethylbenzene	3432229		<0.0001	<0.0001	NA	< 0.0001	95%	50%	140%	77%	60%	130%	88%	50%	140%
1,1,2,2-Tetrachloroethane	3432229		<0.0001	<0.0001	NA	< 0.0001	109%	50%	140%	102%	60%	130%	100%	50%	140%
1,2-Dichlorobenzene	3432229		<0.0001	<0.0001	NA	< 0.0001	104%	50%	140%	107%	60%	130%	106%	50%	140%
1,4-Dichlorobenzene	3432229		<0.0001	<0.0001	NA	< 0.0001	78%	50%	140%	118%	60%	130%	101%	50%	140%
m & p-Xylene	3432229		<0.0002	<0.0002	NA	< 0.0002	94%	50%	140%	95%	60%	130%	106%	50%	140%
o-Xylene	3432229		<0.0001	<0.0001	NA	< 0.0001	97%	50%	140%	109%	60%	130%	81%	50%	140%
PCBs	3424917	3424917	< 0.0002	< 0.0002	NA	< 0.0002	104%	50%	140%	94%	50%	140%	107%	50%	140%
Pentachlorophenol	3433861		< 0.0005	< 0.0005	NA	< 0.0001	95%	50%	140%	73%	50%	140%	93%	50%	140%
Di-n-butyl phthalate	3433861		< 0.0005	< 0.0005	NA	< 0.0005	78%	50%	140%	75%	50%	140%	105%	50%	140%
3,3'-Dichlorobenzidine	3433861		< 0.0005	< 0.0005	NA	< 0.0005	96%	30%	130%	96%	30%	130%	86%	30%	130%
Bis(2-Ethylhexyl)phthalate	3433861		< 0.0005	< 0.0005	NA	< 0.0005	105%	50%	140%	90%	50%	140%	98%	50%	140%

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

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Ultra Trace Analysis

RPT Date: Jan 31, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Nonylphenol and Nonylphenol Ethoxylates (Ontario, mg/L)															
Total Nonylphenol	1	3416235	0.025	0.022	12.8%	< 0.001	NA	60%	140%	88%	60%	140%	NA	60%	140%
NP1EO	1	3416235	0.001	0.001	NA	< 0.001	NA	60%	140%	82%	60%	140%	NA	60%	140%
NP2EO	1	3416235	0.0009	0.0009	NA	< 0.0003	NA	60%	140%	77%	60%	140%	NA	60%	140%

Certified By:

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

Water Analysis

RPT Date: Jan 31, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Toronto Sanitary and Combined Sewer Use By-law - Inorganics															
pH	3425519		7.51	7.53	0.3%	NA	101%	90%	110%						
Fluoride	3424634		<0.05	<0.05	NA	< 0.05	97%	70%	130%	96%	80%	120%	92%	70%	130%
Total Kjeldahl Nitrogen	3428678		<0.10	<0.10	NA	< 0.10	103%	70%	130%	100%	80%	120%	102%	70%	130%
Total Phosphorus	3428678		<0.02	<0.02	NA	< 0.02	82%	70%	130%	104%	80%	120%	96%	70%	130%
Total Cyanide	3415604		<0.002	<0.002	NA	< 0.002	75%	70%	130%	96%	80%	120%	96%	70%	130%
Phenols	3425068		0.001	<0.001	NA	< 0.001	98%	90%	110%	99%	90%	110%	106%	80%	120%
Total Suspended Solids	3433463		<10	<10	NA	< 10	100%	80%	120%						
Total Aluminum	3426355		0.026	0.030	NA	< 0.010	103%	70%	130%	107%	80%	120%	99%	70%	130%
Total Antimony	3426355		<0.020	<0.020	NA	< 0.020	103%	70%	130%	103%	80%	120%	105%	70%	130%
Total Arsenic	3426355		<0.015	<0.015	NA	< 0.015	99%	70%	130%	99%	80%	120%	105%	70%	130%
Total Cadmium	3426355		<0.005	<0.005	NA	< 0.005	102%	70%	130%	102%	80%	120%	106%	70%	130%
Total Chromium	3426355		<0.020	<0.020	NA	< 0.020	100%	70%	130%	103%	80%	120%	101%	70%	130%
Chromium VI	3428571		<0.002	<0.002	NA	< 0.002	106%	70%	130%	109%	80%	120%	100%	70%	130%
Total Cobalt	3426355		<0.010	<0.010	NA	< 0.010	98%	70%	130%	89%	80%	120%	99%	70%	130%
Total Copper	3426355		<0.020	<0.020	NA	< 0.020	95%	70%	130%	98%	80%	120%	97%	70%	130%
Total Lead	3426355		<0.020	<0.020	NA	< 0.020	102%	70%	130%	101%	80%	120%	101%	70%	130%
Total Manganese	3426355		0.058	0.063	NA	< 0.020	98%	70%	130%	84%	80%	120%	102%	70%	130%
Total Mercury	3428571		<0.0002	<0.0002	NA	< 0.0002	100%	70%	130%	104%	80%	120%	100%	70%	130%
Total Molybdenum	3426355		<0.020	<0.020	NA	< 0.020	98%	70%	130%	91%	80%	120%	102%	70%	130%
Total Nickel	3426355		<0.030	<0.030	NA	< 0.030	97%	70%	130%	90%	80%	120%	100%	70%	130%
Total Selenium	3426355		<0.002	<0.002	NA	< 0.002	102%	70%	130%	98%	80%	120%	100%	70%	130%
Total Silver	3426355		<0.020	<0.020	NA	< 0.020	97%	70%	130%	92%	80%	120%	98%	70%	130%
Total Tin	3426355		<0.020	<0.020	NA	< 0.020	105%	70%	130%	106%	80%	120%	106%	70%	130%
Total Titanium	3426355		<0.010	<0.010	NA	< 0.010	94%	70%	130%	102%	80%	120%	103%	70%	130%
Total Zinc	3426355		0.275	0.256	7.2%	< 0.020	103%	70%	130%	101%	80%	120%	88%	70%	130%

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

BOD5

Biochemical Oxygen Demand, Total	3426440		2570	2870	10.8%	< 2	93%	70%	130%	NA			NA		

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

Certified By: Iris Verástegui

AGAT Laboratories

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 22T853470

PROJECT: 15 Denison Ave

ATTENTION TO: francois Chartier

SAMPLING SITE:Toronto

SAMPLED BY:EC

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Oil and Grease (animal/vegetable) in water	VOL-91-5011	EPA SW-846 1664A & SM 5520	BALANCE
Oil and Grease (mineral) in water	VOL-91-5011	EPA SW-846 1664A & SM 5520	BALANCE
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans-1,3-Dichloropropylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis-1,2-Dichloroethylene	VOL-91-5001	modified from EPA SW-846 5230B & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethlyene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	CALCULATION
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
PCBs	ORG-91-5112	modified from EPA SW-846 3510C & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW846 3510C & 8082A	GC/ECD
Pentachlorophenol	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Di-n-butyl phthalate	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
3,3'-Dichlorobenzidine	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Total PAHs	ORG-91-5114	modified from EPA 3510C and EPA 8270E	CALCULATION
2,4,6-Tribromophenol	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
2-Fluorophenol	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS

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SAMPLING SITE:Toronto

SAMPLED BY:EC

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chrysene-d12	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
phenol-d6 surrogate	ORG-91-5114	modified from EPA 3510C and EPA 8270E	GC/MS
Ultra Trace Analysis			
Total Nonylphenol	TOX-151-19003F	ASTM D7065-6	LCMSMS
NP1EO	TOX-151-19003F	ASTM D7065-6	LCMSMS
NP2EO	TOX-151-19003F	ASTM D7065-6	LCMSMS
Total Nonylphenol Ethoxylates	TOX-19003F	ASTM D7065-6	LCMSMS

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PROJECT: 15 Denison Ave

ATTENTION TO: francois Chartier

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SAMPLED BY:EC

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Biochemical Oxygen Demand, Total	INOR-121-6023	SM 5210 B	INCUBATOR
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Fluoride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Total Kjeldahl Nitrogen	INOR-93-6048	modified from EPA 351.2 and SM 4500-NORG D	LACHAT FIA
Total Phosphorus	INOR-93-6022	modified from SM 4500-P B and SM 4500-P E	SPECTROPHOTOMETER
Total Cyanide	INOR-93-6051	modified from MOECC E3015; SM 4500-CN- A, B, & C	TECHNICON AUTO ANALYZER
Phenols	INOR-93-6072	modified from SM 5530 D	LACHAT FIA
Total Suspended Solids	INOR-93-6028	modified from EPA 1684,ON MOECC E3139,SM 2540C,D	BALANCE
Total Aluminum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Antimony	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Arsenic	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Cadmium	MET -93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Chromium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Chromium VI	INOR-93-6073	modified from SM 3500-CR B	LACHAT FIA
Total Cobalt	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Copper	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Lead	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Manganese	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Total Molybdenum	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Nickel	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Selenium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Silver	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Tin	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Titanium	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS
Total Zinc	MET-93-6103	modified from EPA 200.8, 3005A, 3010A & 6020B	ICP-MS

AGAT Laboratories MI-Di

5835 Coopers Avenue
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Ph: 905.712.5100 Fax: 905.712.5122
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Laboratory Use Only
Work Order #: 22T853470
Cooler Quantity: 1 large
Arrival Temperatures: 6.8 6.9 7.2
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: Rice Bez

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Exp Services Inc
Contact:
Address: 1595 Clark Blvd, Brampton, ON L6T 4V1
Phone: 1.905.793.9800 Fax:
Reports to be sent to:
1. Email: Francois.chartier@exp.com
2. Email: Edwin.Chessell

Regulatory Requirements:

(Please check all applicable boxes)

- ☐ Regulation 153/04 — Table (Indicate One): ☐Ind/Com ☐Res/Park ☐Agriculture; Soil Texture (Check One): ☐Coarse ☐Fine
- ☐ Excess Soils R406 — Table (Indicate One)
- ☐ Regulation 558
- ☐ CCME
- ☒ Sewer Use ☒Sanitary ☒Storm — Region: Toronto
- ☐ Prov. Water Quality Objectives (PWQO)
- ☐ Other (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on Certificate of Analysis ☐ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 15 Denison Ave
Site Location: Toronto
Sampled By: EC
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Sample Matrix Legend

B	Biota
GW (circled)	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Invoice Information:

Bill To Same: Yes ☒ No ☐
Company:
Contact:
Address:
Email:

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	BTEX, F1-F4 PHCs	Analyze F4G if required ☐ Yes ☐ No	PAHs	PCBs	VOC	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐M&I ☐VOCs ☐ABNs ☐B(a)P ☐PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐Metals ☐VOCs ☐SVOCs	Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Toronto Sanitary + Storm Sewer By law						Potentially Hazardous or High Concentration (Y/N)
MW4	1/13/22	12:40 PM		GW	- Please include COC in final Report													✓						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						

'22 JAN 13 4:24 PM

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Edwin Chessell	1/13/22	4:15pm	NEAL G		

Page ____ of ____

Nº: T 128998

AGAT Laboratories

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CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: EXP SERVICES INC
1595 CLARK BLVD.
BRAMPTON, ON L6T4V1
(905) 793-9809

ATTENTION TO: Bruce Watling

PROJECT: GTR-210183382-A0

AGAT WORK ORDER: 21T849562

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager

DATE REPORTED: Mar 24, 2022

PAGES (INCLUDING COVER): 21

VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

		SAMPLE DESCRIPTION:		MW3	MW4	MW5	MW55 Dup
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2021-12-24 12:00	2021-12-24 12:00	2021-12-24 12:00	2021-12-24 12:00
Parameter	**Unit**	**G / S**	**RDL**	**3397286**	**3397294**	**3397295**	**3397296**
Naphthalene	µg/L	1400	0.20	<0.20	48.8	<0.20	<0.20
Acenaphthylene	µg/L	1.8	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L	600	0.20	<0.20	0.29	<0.20	<0.20
Fluorene	µg/L	400	0.20	<0.20	0.27	<0.20	<0.20
Phenanthrene	µg/L	580	0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L	130	0.20	<0.20	0.78	<0.20	<0.20
Pyrene	µg/L	68	0.20	<0.20	0.62	<0.20	<0.20
Benzo(a)anthracene	µg/L	4.7	0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.75	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.4	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.81	0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.52	0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	1800	0.20	<0.20	41.0	<0.20	<0.20
Sediment				No	No	No	No
Surrogate	**Unit**	**Acceptable Limits**					
Naphthalene-d8	%	50-140		108	105	93	93
Acridine-d9	%	50-140		87	80	101	91
Terphenyl-d14	%	50-140		74	78	98	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3397286-3397296 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

					SAMPLE DESCRIPTION:	**FIELD BLANK**
					SAMPLE TYPE:	**Water**
					DATE SAMPLED:	**2021-12-24 12:00**
Parameter	**Unit**	**G / S: A**	**G / S: B**	**G / S: C**	**RDL**	**3397309**
Benzene	µg/L	2	10	44	0.20	<0.20[<A]
Toluene	µg/L	2	16	18000	0.20	<0.20[<A]
Ethylbenzene	µg/L	2	160	2300	0.10	<0.10[<A]
m & p-Xylene	µg/L				0.20	<0.20
o-Xylene	µg/L				0.10	<0.10
Xylenes (Total)	µg/L			4200	0.20	<0.20[<C]
F1 (C6 - C10)	µg/L			750	25	<25[<C]
F1 (C6 to C10) minus BTEX	µg/L			750	25	<25[<C]
F2 (C10 to C16)	µg/L			150	100	<100[<C]
F3 (C16 to C34)	µg/L			500	100	<100[<C]
F4 (C34 to C50)	µg/L			500	100	<100[<C]
Gravimetric Heavy Hydrocarbons	µg/L				500	NA
Sediment						No

Surrogate	**Unit**	**Acceptable Limits**	
Toluene-d8	% Recovery	60-140	95.0
Terphenyl	% Recovery	60-140	77

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2021-12-29 **DATE REPORTED: 2022-03-24**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to CIty of Toronto Storm Sewer Discharge, B Refers to City of Toronto Sanitary and Combined Sewers Discharge, C Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3397309 The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: 

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)

DATE RECEIVED: 2021-12-29 **DATE REPORTED: 2022-03-24**

						SAMPLE DESCRIPTION:	MW3	MW4	MW5	MW55 Dup
						SAMPLE TYPE:	Water	Water	Water	Water
						DATE SAMPLED:	2021-12-24 12:00	2021-12-24 12:00	2021-12-24 12:00	2021-12-24 12:00
Parameter	**Unit**	**G / S: A**	**G / S: B**	**G / S: C**	**RDL**		**3397286**	**3397294**	**3397295**	**3397296**
F1 (C6-C10)	µg/L			750	25		<25[<C]	30000[>C]	353[<C]	291[<C]
F1 (C6 to C10) minus BTEX	µg/L			750	25		<25[<C]	27200[>C]	341[<C]	278[<C]
F2 (C10 to C16)	µg/L			150	100		<100[<C]	79000[>C]	<100[<C]	<100[<C]
F2 (C10 to C16) minus Naphthalene	µg/L				100		<100	79000	<100	<100
F3 (C16 to C34)	µg/L			500	100		<100[<C]	<100[<C]	<100[<C]	<100[<C]
F3 (C16 to C34) minus PAHs	µg/L				100		<100	<100	<100	<100
F4 (C34 to C50)	µg/L			500	100		<100[<C]	<100[<C]	<100[<C]	<100[<C]
Gravimetric Heavy Hydrocarbons	µg/L				500		NA	NA	NA	NA
Sediment							No	No	No	No
Surrogate	**Unit**		**Acceptable Limits**							
Toluene-d8	% Recovery		50-140				77.2	73.5	119	79.5
Terphenyl	% Recovery		60-140				62	109	65	62

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to CIty of Toronto Storm Sewer Discharge, B Refers to City of Toronto Sanitary and Combined Sewers Discharge, C Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3397286-3397296 The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopnikolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

				SAMPLE DESCRIPTION:		MW3		MW4		MW5	MW55 Dup
				SAMPLE TYPE:		Water		Water		Water	Water
				DATE SAMPLED:		2021-12-24 12:00		2021-12-24 12:00		2021-12-24 12:00	2021-12-24 12:00
Parameter	Unit	G / S: A	G / S: B	G / S: C	RDL	3397286	RDL	3397294	RDL	3397295	3397296
Dichlorodifluoromethane	µg/L			4400	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
Vinyl Chloride	µg/L			0.5	0.34	<0.34[<C]	1.70	<1.70	0.34	<0.34[<C]	<0.34[<C]
Bromomethane	µg/L			5.6	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
Trichlorofluoromethane	µg/L			2500	0.80	<0.80[<C]	4.00	<4.00[<C]	0.80	<0.80[<C]	<0.80[<C]
Acetone	µg/L			130000	2.0	<2.0[<C]	10.0	<10.0[<C]	2.0	<2.0[<C]	<2.0[<C]
1,1-Dichloroethylene	µg/L			1.6	0.60	<0.60[<C]	3.00	<3.00	0.60	<0.60[<C]	<0.60[<C]
Methylene Chloride	µg/L	5.2	2000	610	0.60	<0.60[<A]	3.00	<3.00[<A]	0.60	<0.60[<A]	<0.60[<A]
trans- 1,2-Dichloroethylene	µg/L			1.6	0.40	<0.40[<C]	2.00	<2.00	0.40	<0.40[<C]	<0.40[<C]
Methyl tert-butyl ether	µg/L			190	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
1,1-Dichloroethane	µg/L			320	0.60	<0.60[<C]	3.00	<3.00[<C]	0.60	<0.60[<C]	<0.60[<C]
Methyl Ethyl Ketone	µg/L			470000	2.0	<2.0[<C]	10.0	<10.0[<C]	2.0	<2.0[<C]	<2.0[<C]
cis- 1,2-Dichloroethylene	µg/L			1.6	0.40	<0.40[<C]	2.00	<2.00	0.40	<0.40[<C]	<0.40[<C]
Chloroform	µg/L	2	40	2.4	0.40	<0.40[<A]	2.00	<2.00[<A]	0.40	0.69[<A]	0.55[<A]
1,2-Dichloroethane	µg/L			1.6	0.40	<0.40[<C]	2.00	<2.00	0.40	<0.40[<C]	<0.40[<C]
1,1,1-Trichloroethane	µg/L			640	0.60	<0.60[<C]	3.00	<3.00[<C]	0.60	<0.60[<C]	<0.60[<C]
Carbon Tetrachloride	µg/L			0.79	0.40	<0.40[<C]	2.00	<2.00	0.40	<0.40[<C]	<0.40[<C]
Benzene	µg/L	2	10	44	0.40	<0.40[<A]	2.00	4.25[A-B]	0.40	<0.40[<A]	<0.40[<A]
1,2-Dichloropropane	µg/L			16	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
Trichloroethylene	µg/L			1.6	0.40	<0.40[<C]	2.00	<2.00	0.40	<0.40[<C]	<0.40[<C]
Bromodichloromethane	µg/L			85000	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
Methyl Isobutyl Ketone	µg/L			140000	2.0	<2.0[<C]	10.0	<10.0[<C]	2.0	<2.0[<C]	<2.0[<C]
1,1,2-Trichloroethane	µg/L			4.7	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
Toluene	µg/L	2	16	18000	0.40	<0.40[<A]	2.00	56.0[B-C]	0.40	2.18[A-B]	2.37[A-B]
Dibromochloromethane	µg/L			82000	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
Ethylene Dibromide	µg/L			0.25	0.20	<0.20[<C]	1.00	<1.00	0.20	<0.20[<C]	<0.20[<C]
Tetrachloroethylene	µg/L	4.4	1000	1.6	0.40	<0.40[<C]	2.00	<2.00[<A]	0.40	<0.40[<C]	<0.40[<C]
1,1,1,2-Tetrachloroethane	µg/L			3.3	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
Chlorobenzene	µg/L			630	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
Ethylbenzene	µg/L	2	160	2300	0.20	<0.20[<A]	1.00	217[B-C]	0.20	0.76[<A]	0.88[<A]

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

				SAMPLE DESCRIPTION:		MW3		MW4		MW5	MW55 Dup
				SAMPLE TYPE:		Water		Water		Water	Water
				DATE SAMPLED:		2021-12-24 12:00		2021-12-24 12:00		2021-12-24 12:00	2021-12-24 12:00
Parameter	**Unit**	**G / S: A**	**G / S: B**	**G / S: C**	**RDL**	**3397286**	**RDL**	**3397294**	**RDL**	**3397295**	**3397296**
m & p-Xylene	µg/L				0.40	<0.40	2.00	1820	0.40	5.32	6.05
Bromoform	µg/L			380	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
Styrene	µg/L			1300	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
1,1,2,2-Tetrachloroethane	µg/L	17	1400	3.2	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
o-Xylene	µg/L				0.20	<0.20	1.00	717	0.20	3.65	4.13
1,3-Dichlorobenzene	µg/L			9600	0.20	<0.20[<C]	1.00	<1.00[<C]	0.20	<0.20[<C]	<0.20[<C]
1,4-Dichlorobenzene	µg/L	6.8	80	8	0.20	<0.20[<A]	1.00	<1.00[<A]	0.20	<0.20[<A]	<0.20[<A]
1,2-Dichlorobenzene	µg/L	5.6	50	4600	0.20	<0.20[<A]	1.00	<1.00[<A]	0.20	<0.20[<A]	<0.20[<A]
1,3-Dichloropropene	µg/L			5.2	0.30	<0.30[<C]	0.30	<0.30[<C]	0.30	<0.30[<C]	<0.30[<C]
Xylenes (Total)	µg/L	4.4	1400	4200	0.20	<0.20[<A]	0.20	2540[B-C]	0.20	8.97[A-B]	10.2[A-B]
n-Hexane	µg/L			51	0.40	<0.40[<C]	2.00	<2.00[<C]	0.40	<0.40[<C]	<0.40[<C]
Surrogate	**Unit**		**Acceptable Limits**								
Toluene-d8	% Recovery		50-140			96	**10**	95	**2**	97	94
4-Bromofluorobenzene	% Recovery		50-140			99	**10**	106	**2**	104	100

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

				SAMPLE DESCRIPTION:		TRIP BLANK
				SAMPLE TYPE:		Water
				DATE SAMPLED:		2021-12-22 12:00
Parameter	Unit	G / S: A	G / S: B	G / S: C	RDL	3397319
Dichlorodifluoromethane	µg/L			4400	0.20	<0.20[<C]
Vinyl Chloride	µg/L			0.5	0.17	<0.17[<C]
Bromomethane	µg/L			5.6	0.20	<0.20[<C]
Trichlorofluoromethane	µg/L			2500	0.40	<0.40[<C]
Acetone	µg/L			130000	1.0	<1.0[<C]
1,1-Dichloroethylene	µg/L			1.6	0.30	<0.30[<C]
Methylene Chloride	µg/L	5.2	2000	610	0.30	<0.30[<A]
trans- 1,2-Dichloroethylene	µg/L			1.6	0.20	<0.20[<C]
Methyl tert-butyl ether	µg/L			190	0.20	<0.20[<C]
1,1-Dichloroethane	µg/L			320	0.30	<0.30[<C]
Methyl Ethyl Ketone	µg/L			470000	1.0	<1.0[<C]
cis- 1,2-Dichloroethylene	µg/L			1.6	0.20	<0.20[<C]
Chloroform	µg/L	2	40	2.4	0.20	<0.20[<A]
1,2-Dichloroethane	µg/L			1.6	0.20	<0.20[<C]
1,1,1-Trichloroethane	µg/L			640	0.30	<0.30[<C]
Carbon Tetrachloride	µg/L			0.79	0.20	<0.20[<C]
Benzene	µg/L	2	10	44	0.20	<0.20[<A]
1,2-Dichloropropane	µg/L			16	0.20	<0.20[<C]
Trichloroethylene	µg/L			1.6	0.20	<0.20[<C]
Bromodichloromethane	µg/L			85000	0.20	<0.20[<C]
Methyl Isobutyl Ketone	µg/L			140000	1.0	<1.0[<C]
1,1,2-Trichloroethane	µg/L			4.7	0.20	<0.20[<C]
Toluene	µg/L	2	16	18000	0.20	<0.20[<A]
Dibromochloromethane	µg/L			82000	0.10	<0.10[<C]
Ethylene Dibromide	µg/L			0.25	0.10	<0.10[<C]
Tetrachloroethylene	µg/L	4.4	1000	1.6	0.20	<0.20[<C]
1,1,1,2-Tetrachloroethane	µg/L			3.3	0.10	<0.10[<C]
Chlorobenzene	µg/L			630	0.10	<0.10[<C]
Ethylbenzene	µg/L	2	160	2300	0.10	<0.10[<A]

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

				SAMPLE DESCRIPTION:		**TRIP BLANK**
				SAMPLE TYPE:		**Water**
				DATE SAMPLED:		**2021-12-22 12:00**
Parameter	**Unit**	**G / S: A**	**G / S: B**	**G / S: C**	**RDL**	**3397319**
m & p-Xylene	µg/L				0.20	<0.20
Bromoform	µg/L			380	0.10	<0.10[<C]
Styrene	µg/L			1300	0.10	<0.10[<C]
1,1,2,2-Tetrachloroethane	µg/L	17	1400	3.2	0.10	<0.10[<C]
o-Xylene	µg/L				0.10	<0.10
1,3-Dichlorobenzene	µg/L			9600	0.10	<0.10[<C]
1,4-Dichlorobenzene	µg/L	6.8	80	8	0.10	<0.10[<A]
1,2-Dichlorobenzene	µg/L	5.6	50	4600	0.10	<0.10[<A]
1,3-Dichloropropene	µg/L			5.2	0.30	<0.30[<C]
Xylenes (Total)	µg/L	4.4	1400	4200	0.20	<0.20[<A]
n-Hexane	µg/L			51	0.20	<0.20[<C]
Surrogate	**Unit**		**Acceptable Limits**			
Toluene-d8	% Recovery		50-140			98
4-Bromofluorobenzene	% Recovery		50-140			100

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2021-12-29 **DATE REPORTED: 2022-03-24**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to CIty of Toronto Storm Sewer Discharge, B Refers to City of Toronto Sanitary and Combined Sewers Discharge, C Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3397286 Dilution factor=2
The sample was diluted because it was foamy. The reporting detection limit has been corrected for the dilution factor used.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

3397294 Dilution factor=10
The sample was diluted to keep the target compounds in the calibration range of the instrument and avoid contaminating the Purge and Trap system. The reporting detection limit has been corrected for the dilution factor used.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

3397295-3397296 Dilution factor=2
The sample was diluted because it was foamy. The reporting detection limit has been corrected for the dilution factor used.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

3397319 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

O. Reg. 153(511) - All Metals (Water)

DATE RECEIVED: 2021-12-29

DATE REPORTED: 2022-03-24

				SAMPLE DESCRIPTION:		MW3	MW4	MW5	MW55 Dup
				SAMPLE TYPE:		Water	Water	Water	Water
				DATE SAMPLED:		2021-12-24 12:00	2021-12-24 12:00	2021-12-24 12:00	2021-12-24 12:00
Parameter	Unit	G / S: A	G / S: B	G / S: C	RDL	3397286	3397294	3397295	3397296
Dissolved Antimony	µg/L			20000	1.0	<1.0[<C]	<1.0[<C]	1.2[<C]	1.2[<C]
Dissolved Arsenic	µg/L			1900	1.0	3.1[<C]	2.6[<C]	3.2[<C]	2.8[<C]
Dissolved Barium	µg/L			29000	2.0	712[<C]	494[<C]	183[<C]	181[<C]
Dissolved Beryllium	µg/L			67	0.5	<0.5[<C]	<0.5[<C]	<0.5[<C]	<0.5[<C]
Dissolved Boron	µg/L			45000	10.0	711[<C]	382[<C]	215[<C]	215[<C]
Dissolved Cadmium	µg/L			2.7	0.20	<0.20[<C]	<0.20[<C]	<0.20[<C]	<0.20[<C]
Dissolved Chromium	µg/L			810	2.0	<2.0[<C]	<2.0[<C]	<2.0[<C]	<2.0[<C]
Dissolved Cobalt	µg/L			66	0.50	1.76[<C]	<0.50[<C]	1.31[<C]	1.41[<C]
Dissolved Copper	µg/L			87	1.0	<1.0[<C]	<1.0[<C]	<1.0[<C]	<1.0[<C]
Dissolved Lead	µg/L			25	0.50	<0.50[<C]	<0.50[<C]	<0.50[<C]	<0.50[<C]
Dissolved Molybdenum	µg/L			9200	0.50	25.0[<C]	1.21[<C]	88.9[<C]	93.3[<C]
Dissolved Nickel	µg/L			490	1.0	5.0[<C]	<1.0[<C]	4.4[<C]	4.7[<C]
Dissolved Selenium	µg/L			63	1.0	3.7[<C]	3.3[<C]	5.0[<C]	4.1[<C]
Dissolved Silver	µg/L			1.5	0.20	<0.20[<C]	<0.20[<C]	<0.20[<C]	<0.20[<C]
Dissolved Thallium	µg/L			510	0.30	<0.30[<C]	<0.30[<C]	<0.30[<C]	<0.30[<C]
Dissolved Uranium	µg/L			420	0.50	3.12[<C]	<0.50[<C]	4.63[<C]	4.63[<C]
Dissolved Vanadium	µg/L			250	0.40	0.65[<C]	0.48[<C]	1.18[<C]	1.28[<C]
Dissolved Zinc	µg/L			1100	5.0	5.4[<C]	<5.0[<C]	13.5[<C]	19.2[<C]
Mercury	µg/L			0.29	0.02	<0.02[<C]	<0.02[<C]	<0.02[<C]	<0.02[<C]
Chromium VI	µg/L	40	2000	140	2.000	<2.000[<A]	<2.000[<A]	<2.000[<A]	3.41[<A]

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to CIty of Toronto Storm Sewer Discharge, B Refers to City of Toronto Sanitary and Combined Sewers Discharge, C Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

3397286-3397296 Metals analysis completed on a filtered sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Exceedance Summary

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Bruce Watling

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
3397294	MW4	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	F1 (C6 to C10) minus BTEX	µg/L	750	27200
3397294	MW4	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	F1 (C6-C10)	µg/L	750	30000
3397294	MW4	ON T3 NPGW CT	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	F2 (C10 to C16)	µg/L	150	79000
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Benzene	µg/L	2	4.25
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Ethylbenzene	µg/L	2	217
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Toluene	µg/L	2	56.0
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Benzene	µg/L	2	4.25
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Ethylbenzene	µg/L	2	217
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Toluene	µg/L	2	56.0
3397294	MW4	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Xylenes (Total)	µg/L	4.4	2540
3397294	MW4	ON Toronto SN	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Ethylbenzene	µg/L	160	217
3397294	MW4	ON Toronto SN	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Toluene	µg/L	16	56.0
3397294	MW4	ON Toronto SN	O. Reg. 153(511) - VOCs (Water)	Ethylbenzene	µg/L	160	217
3397294	MW4	ON Toronto SN	O. Reg. 153(511) - VOCs (Water)	Toluene	µg/L	16	56.0
3397294	MW4	ON Toronto SN	O. Reg. 153(511) - VOCs (Water)	Xylenes (Total)	µg/L	1400	2540
3397295	MW5	ON Toronto SM	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Toluene	µg/L	2	2.18
3397295	MW5	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Toluene	µg/L	2	2.18
3397295	MW5	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Xylenes (Total)	µg/L	4.4	8.97
3397296	MW55 Dup	ON Toronto SM	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)	Toluene	µg/L	2	2.37
3397296	MW55 Dup	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Toluene	µg/L	2	2.37
3397296	MW55 Dup	ON Toronto SM	O. Reg. 153(511) - VOCs (Water)	Xylenes (Total)	µg/L	4.4	10.2

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

Trace Organics Analysis

RPT Date: Mar 24, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6-C10)	3397312		<25	<25	NA	< 25	106%	60%	140%	111%	60%	140%	108%	60%	140%
F2 (C10 to C16)	3391892		< 100	< 100	NA	< 100	120%	60%	140%	60%	60%	140%	61%	60%	140%
F3 (C16 to C34)	3391892		< 100	< 100	NA	< 100	118%	60%	140%	78%	60%	140%	65%	60%	140%
F4 (C34 to C50)	3391892		< 100	< 100	NA	< 100	93%	60%	140%	108%	60%	140%	105%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	3301752		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	78%	50%	140%	77%	50%	140%
Acenaphthylene	3301752		< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	82%	50%	140%	107%	50%	140%
Acenaphthene	3301752		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	71%	50%	140%	81%	50%	140%
Fluorene	3301752		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	92%	50%	140%	92%	50%	140%
Phenanthrene	3301752		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	88%	50%	140%	85%	50%	140%
Anthracene	3301752		< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	93%	50%	140%	78%	50%	140%
Fluoranthene	3301752		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	96%	50%	140%	93%	50%	140%
Pyrene	3301752		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	96%	50%	140%	99%	50%	140%
Benzo(a)anthracene	3301752		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	94%	50%	140%	96%	50%	140%
Chrysene	3301752		< 0.10	< 0.10	NA	< 0.10	86%	50%	140%	114%	50%	140%	84%	50%	140%
Benzo(b)fluoranthene	3301752		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	76%	50%	140%	92%	50%	140%
Benzo(k)fluoranthene	3301752		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	92%	50%	140%	78%	50%	140%
Benzo(a)pyrene	3301752		< 0.01	< 0.01	NA	< 0.01	78%	50%	140%	105%	50%	140%	101%	50%	140%
Indeno(1,2,3-cd)pyrene	3301752		< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	108%	50%	140%	105%	50%	140%
Dibenz(a,h)anthracene	3301752		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	75%	50%	140%	72%	50%	140%
Benzo(g,h,i)perylene	3301752		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	85%	50%	140%	105%	50%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	3301752		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	78%	50%	140%	77%	50%	140%
Acenaphthylene	3301752		< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	82%	50%	140%	107%	50%	140%
Acenaphthene	3301752		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	71%	50%	140%	81%	50%	140%
Fluorene	3301752		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	92%	50%	140%	92%	50%	140%
Phenanthrene	3301752		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	88%	50%	140%	85%	50%	140%
Anthracene	3301752		< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	93%	50%	140%	78%	50%	140%
Fluoranthene	3301752		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	96%	50%	140%	93%	50%	140%
Pyrene	3301752		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	96%	50%	140%	99%	50%	140%
Benzo(a)anthracene	3301752		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	94%	50%	140%	96%	50%	140%
Chrysene	3301752		< 0.10	< 0.10	NA	< 0.10	86%	50%	140%	114%	50%	140%	84%	50%	140%
Benzo(b)fluoranthene	3301752		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	76%	50%	140%	92%	50%	140%
Benzo(k)fluoranthene	3301752		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	92%	50%	140%	78%	50%	140%
Benzo(a)pyrene	3301752		< 0.01	< 0.01	NA	< 0.01	78%	50%	140%	105%	50%	140%	101%	50%	140%
Indeno(1,2,3-cd)pyrene	3301752		< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	108%	50%	140%	105%	50%	140%
Dibenz(a,h)anthracene	3301752		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	75%	50%	140%	72%	50%	140%
Benzo(g,h,i)perylene	3301752		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	85%	50%	140%	105%	50%	140%

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Quality Assurance

CLIENT NAME: EXP SERVICES INC
AGAT WORK ORDER: 21T849562
PROJECT: GTR-210183382-A0
ATTENTION TO: Bruce Watling
SAMPLING SITE:15 Denison Ave., Toronto, ON
SAMPLED BY:Vanessa Faita

Trace Organics Analysis (Continued)

RPT Date: Mar 24, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	3382820		< 0.20	< 0.20	NA	< 0.20	56%	50%	140%	102%	50%	140%	69%	50%	140%
Vinyl Chloride	3382820		< 0.17	< 0.17	NA	< 0.17	106%	50%	140%	90%	50%	140%	76%	50%	140%
Bromomethane	3382820		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	107%	50%	140%	101%	50%	140%
Trichlorofluoromethane	3382820		< 0.40	< 0.40	NA	< 0.40	92%	50%	140%	77%	50%	140%	65%	50%	140%
Acetone	3382820		< 1.0	< 1.0	NA	< 1.0	93%	50%	140%	106%	50%	140%	104%	50%	140%
1,1-Dichloroethylene	3382820		< 0.30	< 0.30	NA	< 0.30	96%	50%	140%	75%	60%	130%	106%	50%	140%
Methylene Chloride	3382820		< 0.30	< 0.30	NA	< 0.30	90%	50%	140%	97%	60%	130%	80%	50%	140%
trans- 1,2-Dichloroethylene	3382820		< 0.20	< 0.20	NA	< 0.20	115%	50%	140%	93%	60%	130%	96%	50%	140%
Methyl tert-butyl ether	3382820		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	94%	60%	130%	110%	50%	140%
1,1-Dichloroethane	3382820		< 0.30	< 0.30	NA	< 0.30	84%	50%	140%	90%	60%	130%	86%	50%	140%
Methyl Ethyl Ketone	3382820		< 1.0	< 1.0	NA	< 1.0	102%	50%	140%	98%	50%	140%	105%	50%	140%
cis- 1,2-Dichloroethylene	3382820		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	76%	60%	130%	78%	50%	140%
Chloroform	3382820		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	77%	60%	130%	85%	50%	140%
1,2-Dichloroethane	3382820		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	74%	60%	130%	88%	50%	140%
1,1,1-Trichloroethane	3382820		< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	83%	60%	130%	74%	50%	140%
Carbon Tetrachloride	3382820		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	105%	50%	140%
Benzene	3382820		< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	92%	60%	130%	112%	50%	140%
1,2-Dichloropropane	3382820		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	82%	60%	130%	106%	50%	140%
Trichloroethylene	3382820		< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	116%	60%	130%	89%	50%	140%
Bromodichloromethane	3382820		< 0.20	< 0.20	NA	< 0.20	70%	50%	140%	76%	60%	130%	74%	50%	140%
Methyl Isobutyl Ketone	3382820		< 1.0	< 1.0	NA	< 1.0	95%	50%	140%	98%	50%	140%	104%	50%	140%
1,1,2-Trichloroethane	3382820		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	94%	60%	130%	106%	50%	140%
Toluene	3382820		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	86%	60%	130%	79%	50%	140%
Dibromochloromethane	3382820		< 0.10	< 0.10	NA	< 0.10	100%	50%	140%	81%	60%	130%	74%	50%	140%
Ethylene Dibromide	3382820		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	91%	60%	130%	96%	50%	140%
Tetrachloroethylene	3382820		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	72%	60%	130%	90%	50%	140%
1,1,1,2-Tetrachloroethane	3382820		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	78%	60%	130%	77%	50%	140%
Chlorobenzene	3382820		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	102%	60%	130%	106%	50%	140%
Ethylbenzene	3382820		< 0.10	< 0.10	NA	< 0.10	88%	50%	140%	97%	60%	130%	117%	50%	140%
m & p-Xylene	3382820		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	109%	60%	130%	100%	50%	140%
Bromoform	3382820		< 0.10	< 0.10	NA	< 0.10	100%	50%	140%	71%	60%	130%	82%	50%	140%
Styrene	3382820		< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	88%	60%	130%	104%	50%	140%
1,1,2,2-Tetrachloroethane	3382820		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	103%	60%	130%	117%	50%	140%
o-Xylene	3382820		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	85%	60%	130%	120%	50%	140%
1,3-Dichlorobenzene	3382820		< 0.10	< 0.10	NA	< 0.10	79%	50%	140%	113%	60%	130%	108%	50%	140%
1,4-Dichlorobenzene	3382820		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	96%	60%	130%	101%	50%	140%
1,2-Dichlorobenzene	3382820		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	104%	60%	130%	94%	50%	140%
n-Hexane	3382820		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	102%	60%	130%	90%	50%	140%

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Quality Assurance

CLIENT NAME: EXP SERVICES INC
AGAT WORK ORDER: 21T849562
PROJECT: GTR-210183382-A0
ATTENTION TO: Bruce Watling
SAMPLING SITE:15 Denison Ave., Toronto, ON
SAMPLED BY:Vanessa Faita

Trace Organics Analysis (Continued)

RPT Date: Mar 24, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Water)															
Benzene	3397312		<0.20	<0.20	NA	< 0.20	99%	60%	140%	104%	60%	140%	88%	60%	140%
Toluene	3397312		<0.20	<0.20	NA	< 0.20	81%	60%	140%	104%	60%	140%	75%	60%	140%
Ethylbenzene	3397312		<0.10	<0.10	NA	< 0.10	90%	60%	140%	87%	60%	140%	100%	60%	140%
m & p-Xylene	3397312		<0.20	<0.20	NA	< 0.20	94%	60%	140%	99%	60%	140%	111%	60%	140%
o-Xylene	3397312		<0.10	<0.10	NA	< 0.10	100%	60%	140%	116%	60%	140%	84%	60%	140%
F1 (C6 - C10)	3397312		<25	<25	NA	< 25	106%	60%	140%	111%	60%	140%	108%	60%	140%

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

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

Water Analysis

RPT Date: Mar 24, 2022			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Water)															
Dissolved Antimony	3397286	3397286	<1.0	<1.0	NA	< 1.0	97%	70%	130%	99%	80%	120%	92%	70%	130%
Dissolved Arsenic	3397286	3397286	3.1	2.4	NA	< 1.0	91%	70%	130%	93%	80%	120%	100%	70%	130%
Dissolved Barium	3397286	3397286	712	689	3.3%	< 2.0	100%	70%	130%	98%	80%	120%	99%	70%	130%
Dissolved Beryllium	3397286	3397286	<0.5	<0.5	NA	< 0.5	103%	70%	130%	95%	80%	120%	100%	70%	130%
Dissolved Boron	3397286	3397286	711	725	1.9%	< 10.0	105%	70%	130%	103%	80%	120%	107%	70%	130%
Dissolved Cadmium	3397286	3397286	<0.20	<0.20	NA	< 0.20	96%	70%	130%	99%	80%	120%	91%	70%	130%
Dissolved Chromium	3397286	3397286	<2.0	<2.0	NA	< 2.0	95%	70%	130%	98%	80%	120%	95%	70%	130%
Dissolved Cobalt	3397286	3397286	1.76	1.50	NA	< 0.50	92%	70%	130%	95%	80%	120%	93%	70%	130%
Dissolved Copper	3397286	3397286	<1.0	<1.0	NA	< 1.0	93%	70%	130%	105%	80%	120%	89%	70%	130%
Dissolved Lead	3397286	3397286	<0.50	<0.50	NA	< 0.50	101%	70%	130%	92%	80%	120%	89%	70%	130%
Dissolved Molybdenum	3397286	3397286	25.0	24.9	0.4%	< 0.50	100%	70%	130%	97%	80%	120%	97%	70%	130%
Dissolved Nickel	3397286	3397286	5.0	4.9	NA	< 1.0	92%	70%	130%	94%	80%	120%	91%	70%	130%
Dissolved Selenium	3397286	3397286	3.7	3.8	NA	< 1.0	100%	70%	130%	95%	80%	120%	95%	70%	130%
Dissolved Silver	3397286	3397286	<0.20	<0.20	NA	< 0.20	95%	70%	130%	95%	80%	120%	81%	70%	130%
Dissolved Thallium	3397286	3397286	<0.30	<0.30	NA	< 0.30	98%	70%	130%	96%	80%	120%	94%	70%	130%
Dissolved Uranium	3397286	3397286	3.12	2.98	4.6%	< 0.50	99%	70%	130%	99%	80%	120%	101%	70%	130%
Dissolved Vanadium	3397286	3397286	0.65	0.72	NA	< 0.40	93%	70%	130%	95%	80%	120%	97%	70%	130%
Dissolved Zinc	3397286	3397286	5.4	<5.0	NA	< 5.0	95%	70%	130%	97%	80%	120%	104%	70%	130%
Mercury	3397286	3397286	<0.02	<0.02	NA	< 0.02	101%	70%	130%	99%	80%	120%	99%	70%	130%
Chromium VI	3397286	3397286	<2.000	<2.000	NA	< 2	102%	70%	130%	108%	80%	120%	102%	70%	130%

Comments: NA Signifies Not Applicable
Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluorene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Sediment			
Benzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Toluene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID

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Method Summary

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PROJECT: GTR-210183382-A0

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F1 (C6-C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	P&T GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

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

AGAT Laboratories

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

Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T849562

PROJECT: GTR-210183382-A0

ATTENTION TO: Bruce Watling

SAMPLING SITE:15 Denison Ave., Toronto, ON

SAMPLED BY:Vanessa Faita

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Antimony	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Beryllium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cobalt	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Molybdenum	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Selenium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Silver	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Thallium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Uranium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Vanadium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Chromium VI	INOR-93-6034	modified from SM 3500-CR B	LACHAT FIA

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 21T849562

Cooler Quantity:

Arrival Temperatures: 3.8 | 3.4 | 3.7

Custody Seal Intact: ☐ Yes ☒ No ☐ N/A

Notes: on ice

Report Information:

Company: EXP SERVICES INC.
Contact: JASON SLIDDERS.
Address: 1595 CLARK BLVD.
BRAMPTON, ON. L6T 4V1
Phone: 905 793 9800 EXT 2529 Fax:
Reports to be sent to:
1. Email: JASON.SLIDDERS@EXP.COM.
2. Email:

Regulatory Requirements:

(Please check all applicable boxes)

☒ Regulation 153/04
Table _____ *Indicate One*
☐ Ind/Com
☒ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☐ Coarse
☒ Fine

☐ Excess Soils R406
Table _____ *Indicate One*

☐ Regulation 558

☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
_____ *Region*

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
_____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: GTR-2101838-2-AO
Site Location: 15 DENISON AVE, TORONTO, ON.
Sampled By: VANESSA FAITA.
AGAT Quote #: PO: GTR-2101838-2-AO
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company: EXP SERVICES INC.
Contact: JASON SLIDDERS.
Address: 1595 CLARK BLVD, BRAMPTON, L6T 4V1
Email: JASON.SLIDDERS@EXP.COM.

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
MW3	24/12/2021	PM	14	GW		Y	X		X	X		X					
MW4	24/12/2021	PM	14	GW		Y	X		X	X		X					
MW5	24/12/2021	PM	14	GW		Y	X		X	X		X					
MW5DUP	24/12/2021	PM	14	GW		Y	X		X	X		X					
FIELD BLANK	24/12/2021	PM	5	GW					X								
TRIP BLANK			3	GW								X					

21 DEC 28 8:18 AM

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
VANESSA FAITA	24/12/2021	3:35 p			

Page 1 of 1

N°: T 129646

Document ID: DIV-78 1511.021

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: March 9, 2021

Appendix F – Construction Flow Rate Calculations

APPENDIX E: Short-Term Flow Rate

15 Denison Avenue, Toronto, Ontario
BRM-21018382-A0

Table E-1: Flow from Under-Slab Drain System

Parameters	Symbols	Unit	Value
Geological Formation	-	-	Glacial Deposit
Ground Elevation	-	mASL	95.76
Lowest Top Slab Elevation	-	mASL	89.70
Highest Groundwater Elevation	-	mASL	94.28
Lowest Footing Elevation	-	mASL	88.20
Base of the Water-Bearing Zone	-	mASL	80.20
Height of Static Water Table Above the Base of the Water-Bearing Zone	**H**	m	14.08
Dewatering Target Elevation	-	mASL	87.20
Height of Target Water Level Above the Base of Water-Bearing Zone	**h_w**	m	7.00
Hydraulic Conductivity	**K**	m/s	8.1E-07
Length of Excavation	-	m	60.00
Width of Excavation	-	m	40.00
Equivalent Radius (equivalent perimeter)	**r_e**	m	31.83
Method to Calculate Radius of Influence	-	-	**Cooper-Jacob**
Time (30 days)	**t**	s	2592000
Specific Yield	**Sy**		0.05
Cooper-Jacob's Radius of Influence from Sides of Excavation	**Rcj**	m	36
Radius of Influence	**Ro**	m	68
Dewatering Flow Rate (unconfined radial flow component)	**Q**	m^3/day	43
Factor of Safety	**fs**	-	2.00
Dewatering Flow Rate (multiplied by factor of safety)	**Q.fs**	m^3/day	86
Precipitation Event	-	mm/day	15
Volume from Precipitation	-	m^3/day	36
Dewatering Flow Rate **Without Safety Factor** (including stormwater collection)	-	m^3/day	79
Dewatering Flow Rate **With Safety Factor** (including stormwater collection)	-	m^3/day	122

Notes:
mASL - meters above sea level

Analytical Solution for Estimating Radial Flow from an Unconfined Aquifer to a Fully-Penetrating Excavation

$$Q_w = \frac{\pi K(H^2 - h^2)}{Ln\,[\frac{R_o}{r_e}]}$$

(Based on the Dupuit-Forcheimer Equation)

$$r_e = \frac{a+b}{\pi} \qquad R_o = R_{cj} + r_e \qquad \mathrm{R}_{cj} = \sqrt{2.25KDt/S}$$

Where:

Q_w = Flow rate per unit length of excavation (m^3/s)

K = Hydraulic conductivity (m/s)

H = Height of static water table above base of water-bearing zone (m)

h_w = Height of target water level above the base of water-bearing zone (m)

Rcj=Cooper Jacob Radius of Influence (m)

R_o=Radius of influence (m)

re=Equivalent perimeter (m)

Appendix G – Oak Ridges Moraine Groundwater Program

Thickness of Overburden_15 Denison Avenue, Toronto

Legend

- ORMGP Boundary
- ORM Plan Boundary
- Niagara Escarpment Plan Boundary
- Canadian Shield
- Niagara Escarpment
- Quaternary Sediment Thickness Contour
- Contour (1m)
- Contour (2m)
- Contour (5m)
- Contour (10m)
- Contour (25m)
- Contour (50m)
- Quaternary Sediment Thickness (Depth t (ORMGP)

0.1 0 0.04 0.1 Km

1: 1,688

Map Compiled by the Oak Ridges Moraine Groundwater Program.101 Exchange Avenue, Vaughan, Ontario, M3N 1S4

This map is for information purposes only and the Oak Ridges Moraine Groundwater Program takes no responsibility for, nor guarantees, the accuracy of all the information contained within the map.

SOURCE: ORMGP, 2022; MNRF, 2022;

PROJECTION: WGS_1984_Web_Mercator_Auxiliary_Sphere

DATE PRINTED: February 4, 2022

Top of Sunnybrook_15 Denison Avenue, Toronto

Legend

- ORMGP Boundary
- ORM Plan Boundary
- Niagara Escarpment Plan Boundary
- Canadian Shield
- Niagara Escarpment
- Sunnybrok Drift (or equiv.) Contour (all c
- Contour (1m)
- Contour (2m)
- Contour (5m)
- Contour (10m)
- Contour (25m)
- Contour (50m)
- Top of Sunnybrok Drift (or equiv.) (mASL

York Region

0.1 0 0.04 0.1 Km

1: 1,688

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DATE PRINTED: February 4, 2022

Top of Scarborough_15 Denison Avenue, Toronto

Legend

- ORMGP Boundary
- ORM Plan Boundary
- Niagara Escarpment Plan Boundary
- Canadian Shield
- Niagara Escarpment
- Scarborough Fm. Contour (1m)
- Contour (1m)
- Contour (2m)
- Contour (5m)
- Contour (10m)
- Contour (25m)
- Contour (50m)
- Top of Scarborough Fm. (mASL)

0.1 0 0.04 0.1 Km

1: 1,688

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SOURCE: ORMGP, 2022; MNRF, 2022;

PROJECTION: WGS_1984_Web_Mercator_Auxiliary_Sphere

DATE PRINTED: February 4, 2022

Top of Bedrock_15 Denison Avenue, Toronto

Legend

- ORMGP Boundary
- ORM Plan Boundary
- Niagara Escarpment Plan Boundary
- Canadian Shield
- Niagara Escarpment
- **Bedrock Contour (1m)**
- Contour (1m)
- Contour (2m)
- Contour (5m)
- Contour (10m)
- Contour (25m)
- Contour (50m)
- **Bedrock (mASL)**

0.1 0 0.04 0.1 Km

1: 1,688

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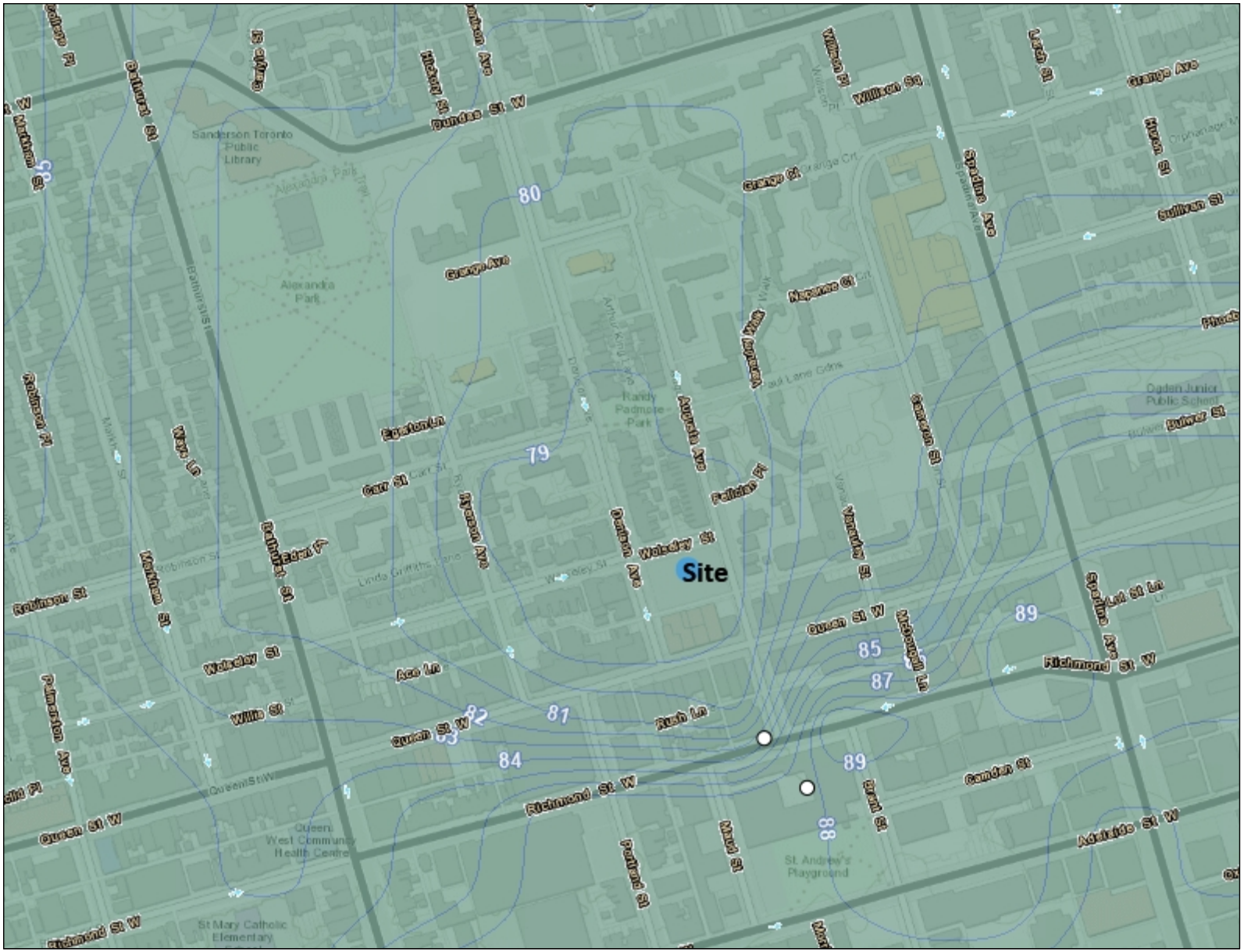
DATE PRINTED: February 4, 2022

Groundwater Contour Map_15 Denison Avenue, Toronto



Legend

- ORMGP Boundary
- ORM Plan Boundary
- Niagara Escarpment Plan Boundary
- Shallow Wells (<20 m deep)
- Deep Wells (>40 m deep)
- Water Bodies
- Streams (Strahler > Class 3)
- Water Table Contour (1m)
- Contour (1m)
- Contour (2m)
- Contour (5m)
- Contour (10m)
- Contour (25m)
- Contour (50m)
- Water Table 0 (WT0) (mASL)

York Region

0.3 0 0.17 0.3 Km

1: 6,754

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PROJECTION: WGS_1984_Web_Mercator_Auxiliary_Sphere

DATE PRINTED: February 4, 2022