FCR (Park Lawn) LP and CPPIB
Park Lawn Canada Inc.

2150 Lake Shore

Hydrological Review

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Executive Summary

This hydrological review has been prepared in accordance with the requirements for a Hydrological Review set out by the City of Toronto[1].

The current Master Plan features a range of land uses including a new public park, and a diverse mix of residential, retail, service, entertainment and employment uses and a range of building types. Fifteen towers are proposed on the site with heights ranging from 16 to 70 storeys. The current Master Plan includes 6 phases, each of which includes a basement ranging from 3 to 5 levels to a minimum basement slab elevation of +65.5 meters above sea level (masl) approximately 20 meters below ground surface (mbgs).

Analysis of groundwater discharge has been carried out for each individual development phase (1 to 6) and collectively for phases 1 to 5. The initial analysis has been carried out using available data as discussed in this report and considers an open excavation. Assumptions have been made regarding the benefit of the proposed secant pile perimeter wall and the associated reduction in groundwater discharge based on local experience (i.e., a minimum of 25% of the anticipated discharge without the secant pile perimeter wall). These results are presented in Table 8 and show groundwater discharge ranging from 13 to 18 m^3/day for individual development phases, with a combined total of 91 m^3/day for all basements.

Based on the current design approach for the basements – secant pile perimeter walls – and the anticipated groundwater inflows, a Private Water Drainage System (PWDS) including drainage below the basement floor and perimeter drainage is suitable. Ministry of Environment (MOE) Permit to Take Water (PTTW) will be required where dewatering volume exceeds 50,000 L/days (50. m^3/day). In addition, Private Water Discharge permit is also required by City of Toronto to discharge water to the municipal storm sewer system. Based on the initial analysis carried out, it is anticipated that PTTW will be required.

This report is based on previous ground investigation work carried out at the site and a review of historical records within and surrounding the site. Although ground investigations have been carried out within the site, ground investigation has yet to be completed specifically for the current proposed development. As a result, analysis in this report is based on available field and lab testing and does not include data obtained from slug tests, pumping tests, or long-term groundwater monitoring. Gaps in the available data for further design stages will be addressed by further site investigation and analysis. The results of these further investigations can be provided to the City of Toronto if required.

[1] Refer to the following City of Toronto website for more detail <https://www.toronto.ca/wp-content/uploads/2018/08/97bb-Hydrological-Review-August-2018.pdf>.

Contents

1 Introduction

1.1 Proposed Development

In October 2019, FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc. ('the Owners') made an application for an Official Plan Amendment (OPA) in support of a proposed Master Plan for the redevelopment of the 27.7 acre / 11.2 hectare site located on the northeast corner of Park Lawn Road and Lake Shore Boulevard West, municipally known as 2150-2194 Lake Shore Boulevard West and 23 Park Lawn Road site ("the site" or "2150 Lake Shore") as shown in Figure 1.

Figure 1 - Site Location and Boundary

The original Master Plan proposal envisioned a vibrant, mixed-use, transit-oriented redevelopment of the site. The Master Plan included a new Park Lawn GO Station, related TTC transit improvements, a fine-grained network of new streets and connections, a range of new open spaces including a new public park, and a diverse mix of residential, retail, service, entertainment and employment uses.

The current Master Plan features the same variety of land uses with a range of building types that blend forms and uses, and respond to the distinct geometry of the proposed street and block pattern. Fifteen towers are proposed on the site with heights ranging from 16 to 70 storeys, with the tallest towers generally clustered near the GO Station. The towers feature generous separation distances and are interspersed with a range of standalone mid-rise and low-rise building typologies to create a sense of place and urban fabric that appears to have evolved over time.

The current Master Plan includes 6 phases, each of which includes a basement. Phases 1 to 5 include three (3) levels of basement with the lowest basement slab

located at +68.7 masl. Phase 6 includes five (5) levels of basement with the lowest basement slab located at +65.5 masl.

1.2 Scope and Limitations

Arup was retained by FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc to prepare a Hydrological Review for the Zoning By-law Amendment application.

This review has been prepared in accordance with the following:

- Ontario Water Resources Act
- Ontario Regulation 64/16
- Ontario Regulation 387/04
- Toronto Municipal; Code, Chapter 681 - Sewers

This report is based on previous ground investigation work at the site. There are gaps in some of the specific requirements from City of Toronto checklist as ground investigation has yet to be carried out at the site for the proposed development. These will be addressed by further site investigation and analysis to inform further design stages. The results of these further investigations can be provided to the City of Toronto if required.

This report summarizes the findings from available relevant investigations and provides an assessment on geology, physical hydrology, a site-specific hydrological model, analysis of available groundwater information, and an analytical assessment of anticipated groundwater inflow into basements.

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Arup's responsibility is limited to a review of the available information at the time of writing this report. The information presented includes assessment of data and to some degree of interpretation of data. Ground and groundwater information may vary between and beyond boreholes.

2 Study Area

The site is located at 2150 Lake Shore Boulevard West (postal code M8V 1A3), in the Etobicoke-Lakeshore area of the Toronto City District of Etobicoke-York. The site is approximately 11.2 hectares and polygonal but broadly triangular in shape. Bounded to the northwest by CN railway line and the Gardener Expressway eastbound off ramp, bounded to the east by Lake Shore Boulevard West, and the southwest by Park Lawn Road.

2.1 Topography

The site is generally flat, with existing elevation across the site typically ranging from approximately +84 masl and +86 masl. Beyond the typical ranges, the site elevation increases several metres at the northern boundary due to fill slopes associated with the adjacent the Canada National Railway and the Gardener Expressway east bound off ramp. Beyond the typical ranges, the site elevation reduces in the southern corner. It should be noted that significant grading to form the final formation level for the proposed development.

2.2 Hydrology

The site is located within the Humber Bay area between the Humber River approximately 800 m to the northeast, and Mimco Creek, approximately 210 m to the southwest, roughly parallel but beyond Park Lawn Road. Lake Ontario is located approximately 250 m to 300 m to the southeast beyond existing residential developments and parklands. The road along the southeastern boundary of the site, Lake Shore Boulevard West, marks the approximate location of the former lakeshore (Toronto Transportation Commission – Contour Map of Toronto District, 1921). This indicates that the existing developments and parkland to the southeast of Lake Shore Boulevard West are largely located on reclaimed land. Historical maximum water levels of Lake Ontario are +75.91 masl and +75.81 masl in 2019 and 2017 respectively.

3 Geology

3.1 Published Geological Information

The map of Quaternary Geology of Toronto and the Surrounding Area (1980), an excerpt of which is presented as Figure 1, indicates that the site is underlain by Older Lake Deposits of silt and clay. Beneath the Older Lake Deposits there is potential for presence of the Older Till consisting of silty clay to silt and clayey sand. Beneath the Quaternary Deposits the bedrock is formed of shale, interbedded with siltstone and occasional limestone.

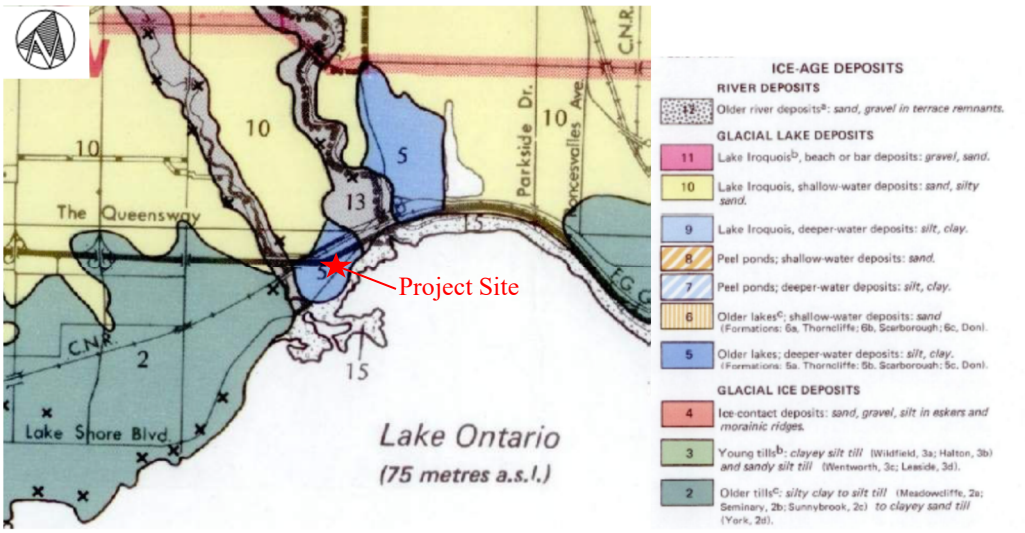

Figure 2: Regional Geology of Project Site (Quaternary Geology of Toronto and the Surrounding Area, 1980)

3.2 Relevant Reports and Information

A summary of locations of boreholes discussed in the section and used in determining geology and physical hydrology conditions within the study area are presented in drawing LSB-ARP-XX-XX-DR-GE-10000 – see Appendix A.

3.2.1 Relevant Existing Reports

A search of ground investigation information within the site and surrounding area has been carried out using the following resources:

- Ontario Ministry of Transport Foundation Library;
- Ontario Geotechnical Boreholes. Maintained by Ontario Geological Survey (OGS) and the Ministry of Natural Resources (MNR);

- Ontario Well Database. Maintained by the Ministry of the Environment Conservation and Parks; and
- Existing Toronto Development Projects Planning Applications.

Table 1, below, summarizes reports and boreholes that have been considered in preliminary determination of the site-specific geological and physical hydrology conditions.

Table 1 - Summary of Available Ground Investigation Reports

Source	Document Type	Relevant Boreholes
Ontario Ministry of Transport Foundation Library	Foundation Investigation Report – 30M11-094 (1970)	BH9 and BH10
	Foundation Investigation Report – 30M11-097 (1970)	BH107 and BH109
Ontario Geotechnical Boreholes (Maintained by OGS and MNR)	Summary of borehole details including completion date, strata summary, and ground water depth.	604058, 604070, 604069, 655256, 655257, 604066, 604068, 604067, 604054, 604053
Ontario Well Records Database	Summary of borehole details including completion date, strata summary, and ground water depth.	7285078, 7285077, 7285076, 7263502, 7263501, 7263500, 7259674, 7240357, 7240318, 7240317, 7240313, 7240312, 7240311, 7239937, 7239893, 7239892, 7239725, 7238437, 7238436, 7238435, 7237317, 7237316, 7237315, 7237314, 7237313, 7228463, 7228462, 7228461, 7228460, 7228459, 7228458, 7228457, 7228456, 7228455, 7224069, 7224067, 7224066, 7222642, 7222641, 7222640, 7221374, 7220952, 7217527, 7217526, 7213513, 7213512, 7213466, 7213439, 7213438, 7213437, 7210364, 7208830, 7208829, 7207615, 7207614, 7207613, 7207612, 7207611, 7207610, 7207609, 7206537, 7206536, 7206535, 7206534, 7205802, 7205677, 7204521, 7203995, 7198955, 7198107, 7198106, 7198105, 7195874, 7195873, 7195661, 7193857, 7193856, 7188200, 7188199, 7188198, 7182493, 7181302, 7174363, 7174362, 7174361, 7174360, 7174359, 7174358, 7174357, 7154076, 7137708, 7123282, 7108871, 7046382, 6928586,

Source	Document Type	Relevant Boreholes
Toronto Development Projects Planning Applications	Preliminary Geotechnical Investigation for Proposed High-rise Buildings 2161 to 2165 Lake Shore Boulevard West.	BH13-1 BH13-2 BH13-3 BH13-4

3.2.2 Site Specific Reports

Three site specific geotechnical/environmental reports have been provided:

- Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)
- Phase 1 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)
- Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)
- Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (SPL, 2013)
- Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario (Golder, 2015).
- Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (Golder, 2015)
- Phase Two Conceptual Site Model, Technical Memorandum, 2150 Lake Shore Boulevard West, Toronto, Ontario (Golder, 2019)

Table 2 below, summarizes the boreholes that have been taken from the above-mentioned documents in order to aid in preliminary determination of the site-specific geological and hydrogeological conditions.

Table 2 - Summary of Site-Specific Ground Investigation Reports

Date	Source	Document Type	Relevant Boreholes and Test Pits
February 2013	Conestoga-Rovers & Associates	Preliminary Geotechnical Investigation, 2150 Lake Shore	MW1-13, MW2-13, MW3-13, MW4-13, MW5-13, MW6-13, MW7-13, MW8-13, MW9-13

Date	Source	Document Type	Relevant Boreholes and Test Pits
		Boulevard West Toronto, Ontario	
February 2013	Conestoga-Rovers & Associates	Phase 1 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	BH2-04, BH3-04, BH4-04, BH5-04, BH6-04, BH7-04, BH8-04, BH9-04, BH10-04, BH11-04, BH1, BH2, MW1-04, MW2-04, MW3-04, MW5-04, MW6-04, BH201-05, BH202-05, BH203-05, BH204-05 and BH205-05
July 2013	Conestoga-Rovers & Associates	Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	BH1-13, BH2-13, BH3-13, BH4-13, BH5-13, BH6-13, BH101-13, BH102-13, BH103-13, BH104-13, BH105-13, BH106-13, BH107-13, BH108-13, BH109-13, BH110-13, BH111-13, BH112-13, BH113-13, BH114-13, BH201-13, BH202-13, BH203-13, BH204-13, BH205-13, BH206-13, BH207-13, BH208-13, BH209-13, BH210-13, BH211-13, BH212-13
December 2013	SPL Consultants	Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	BHI-1, BHI-2, BHI-3, BHI-4, BHI-5, BHI-6, BHI-7, BHI-8, BHI-9A, BHI-10, BHI-11, BHI-12, BHI-13, BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11, BH12, BH13, BH14, BH15, BH16, BH17, BH18, BH19, BH20, BH21, BH22, BH23, BH24, BH25, BH26, BH27, BH28, BH29, BH30, BH31, BH32, BH33, BH34, BH35, BH36, BH37, BH38, BH39, BH40, BH41, BH42, BH43, BH44, BH45, BH46, BH47, BH48, BH49, BH50, BH51, BH52, BH53, BH54, BH55, BH56, BH57, BH58, BH59, BH60, BH61, BH62, BH63, BH64, BH65, BH66, BH67, BH68
January 2015	Golder Associates	Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario	BH15-1, BH15-2, BH15-3, BH15-4, BH15-5
January 2015	Golder Associates	Phase 2 Environmental Site	MW14-1, MW14-3, MW14-4, MW14-5 MW14-6, MW14-7

Date	Source	Document Type	Relevant Boreholes and Test Pits
		Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario	

3.3 Summary of Strata

The ground and groundwater conditions at the site are interpreted from the site-specific reports and available borehole/well records from within the site. The historical reports from the surrounding area, including adjacent sites, are considered as supporting information, which have been reviewed to confirm the interpreted ground and groundwater conditions and, to identify any potential unfavourable ground conditions not identified from investigations within the site.

Fill

Fill (including topsoil and asphalt) was recorded in the majority of the boreholes within the site. The fill was typically recorded as loose to compact silty sand and sand and gravel, and/or firm to stiff silty clay, with occasional traces of rootlets in the upper 2 m. Fill was typically recorded from ground surface to 2.6 mbgs (+81.36 masl), but up 6.6 m and 10.8 m (+81.29 masl) where associated with the fill slope to the north of the site. Mean average thickness was 2.3 m.

Old Lake Deposits

Old Lake Deposits were recorded in the majority of the boreholes within the site. The old lake deposits were typically recorded as firm to very stiff, silty clay and sandy silt, occasionally silty sand. Old lake deposits were typically recorded between 2.6 m and 7.4 m depth (+81.36 masl and +77.5 masl), but occasionally up to 12 m depth (+75.06 masl). A mean average thickness of 5.7 m was recorded.

Till

Till was recorded intermittently in boreholes within the site. Where encountered the glacial till was typically recorded as very stiff to hard, clayey silt with sand and gravel. Where encountered, depth of till was typically recorded between 6.5 m and 8.0 m (+80 masl and +77.5 masl). A mean average thickness of 3.0 m was recorded.

Shale Bedrock

Shale bedrock was encountered in the majority of the boreholes. The shale was frequently recorded as clay shale with occasional weathered and/or fractured in the upper 0.3 m to 1.2 m. Beyond the upper weathered/fractured zone, RQD values are typically recorded between 50% and 90%, but also ranging from 0% to 100%. Depth to shale bedrock (including the weathered/fractured zone) was recorded between 4.1 m and 15.0 m below ground, with a mean average depth of 7.7 m.

Elevation of shale bedrock was 70.7 masl and 82.6 masl, with a mean average of 78.2 masl.

4 Physical Hydrology

4.1 Hydraulic Conductivity

Table 3, below, presents anticipated permeability values based on descriptions within boreholes legs, available particle size distribution data, and experience of similar ground conditions in the area.

Table 3 - Anticipated Permeability

Strata	Anticipated Strata Thickness (m)	Typical Hydraulic Conductivity (m/s)
Fill	2.3	$1x10^{-6}$ to $1x10^{-7}$
Old Lake Deposits (silty clay/clayey silt)	5.5	$1x10^{-7}$ to $1x10^{-8}$
Till (silty clay/clayey silt)	3.0	$1x10^{-9}$ to $1x10^{-8}$
Upper Weathered/Fractured Shale	0.7	$1x10^{-7}$ to $1x10^{-8}$
Shale	>100m*	$1x10^{-10}$ to $1x10^{-8}$
Note: *Thickness of the shale has not been proven, however the Georgian Bay shale is anticipated to be around 200 m in thickness (Westgate et al., 1999).		

Based on the above permeabilities, it is expected that the old lake deposits and till will act as aquitards to the overlying soils. As a result, it is anticipated that perched groundwater will be present within the fill overlying the old lake deposits, and/or within the old lake deposits overlying the till.

4.2 Groundwater Levels

Available groundwater information from existing site-specific reports has been reviewed and is summarized below. Table 4, below, presents the groundwater levels recorded in the site-specific investigation reports listed in Table 2.

Table 4 - Summary of Measured Groundwater Readings

Well ID	Strata Screened	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Measured Groundwater Depth (mbgs)	Measured Groundwater Elevation (masl)	Date of Measurement
MW14-6	Fill/Silt	0.6	2.9	1.28	82.7*	16 Dec 2014
MW14-4	Silty Sand	1.8	3.7	2.63	81.81*	16 Dec 2014
BH1	Silt	6.1	9.1	3.25	-	22 Oct 2004
BH2	Silt/Silty Clay	4.9	7.5	5.45	-	22 Oct 2004
MW1-13	Silt/Silty Clay	2.7	6.4	0.68	84.27	4 Mar 2013
MW3-13	Silt/Silty Clay	3.7	7.3	2.90	81.93	4 Mar 2013
MW6-13	Silt/Silty Clay	3.0	6.7	0.45	85.75	4 Mar 2013
MW9-13	Silt/Silty Clay	2.7	6.4	2.74	81.7	4 Mar 2013
MW7-13	Silty Clay	3.4	7.0	2.52	84.2	4 Mar 2013
MW4-13	Silty Clay/ weathered Shale Bedrock	1.8	5.2	1.44	82.76	4 Mar 2013
MW2-13	Shale Bedrock	12.5	15.4	9.93	71.53	4 Mar 2013
MW8-13	Shale Bedrock	8.5	10.7	7.94	76.04	4 Mar 2013
MW5-13	Shale Bedrock	11.6	15.4	11.53	73.51	4 Mar 2013
BH1	Silt/Sand	1.8	3.7	2.30	81.80	9 Jan 2017
BH11	Silty Clay/ weathered Shale Bedrock	2.8	4.6	1.60	78.87	9 Jan 2017
BH14	Silty Clay/ weathered Shale Bedrock	5.5	7.4	2.30	81.86	9 Jan 2017
BH19	Silty Clay/ weathered Shale Bedrock	6.4	8.2	7.96	75.05	9 Jan 2017
BH32	Silt/Clay	3.7	5.5	2.93	81.80	9 Jan 2017
BH39	Silty Clay/ weathered Shale Bedrock	5.8	7.6	4.14	80.15	9 Jan 2017

Well ID	Strata Screened	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Measured Groundwater Depth (mbgs)	Measured Groundwater Elevation (masl)	Date of Measurement
BH45	Silty Clay/ weathered Shale Bedrock	3.5	4.7	2.26	81.55	9 Jan 2017
BH52	Clayey SILT	5.8	7.0	3.62	82.54	9 Jan 2017
BH57	Clayey SILT	6.4	8.2	4.31	83.16	9 Jan 2017
BH62	Clayey SILT	4.8	6.7	2.52	82.22	9 Jan 2017
BH65	Clayey SILT	4.9	6.7	3.72	80.31	9 Jan 2017
BH68	BH Log does not indicate GW installation	-	-	5.95	78.18	9 Jan 2017
BH8	Silty Clay / weathered Shale Bedrock	4.9	6.7	3.36	80.67	9 Jan 2017
BH9	Silty Clay / Till	4.3	6.1	2.16	80.39	9 Jan 2017
MW1-04	Silt clay FILL / TILL	1.5	4.6	15.17	84.45	9 Jan 2017
MW14-5	sandy SILT / silty CLAY	1.2	4.6	5.28	81.34	9 Jan 2017
MW2-04	SILT	1.5	4.6	15.33	84.32	9 Jan 2017
MW5-04	SILT / Sandy SILT	1.5	4.6	15.57	84.28	9 Jan 2017
MW6-04	FILL / SILT	0.9	4.0	15.43	84.41	9 Jan 2017
MW9-13	Clay-Silt	2.7	6.4	2.93	81.51	9 Jan 2017

Notes:

* Indicates that no surface elevation was provided with the borehole log, and this has been estimated based on adjacent boreholes.

Where elevation could not be estimated a '-' is indicated.

The groundwater monitoring data presented above shows monitoring installations within surficial soils and bedrock. From within the soils, groundwater depth is recorded between 0.45 m and 2.9 m (Elevations of +85.75 masl +81.7 masl) with a mean average of 1.8 m (+83.1 masl). From within the shale bedrock, groundwater depth is recorded between 7.94 m and 11.53 m (Elevations of +76.04 masl +71.53 masl) with a mean average of 1.8 m (+73.69 masl). This observation of separate groundwater regimes indicates perched groundwater within the surficial soils resulting from low permeability soil units slowing infiltration to reach the water table below.

4.3 Groundwater Flow

Given the anticipated low permeability of both the superficial deposits and bedrock at the site, groundwater flow is likely to be limited.

It is anticipated that regional groundwater flow will be largely controlled by Lake Ontario to the southeast and locally influenced by Mimico Creek towards the southwest. At present, no long-term groundwater monitoring is available, however Golder's Phase 2 Conceptual Site Model (2019) provides mapped groundwater contours at the site based on their recorded of groundwater levels. These groundwater contours are shown in Figure 3 below and show groundwater flow in a southeasterly direction through the surficial deposits towards Lake Ontario.

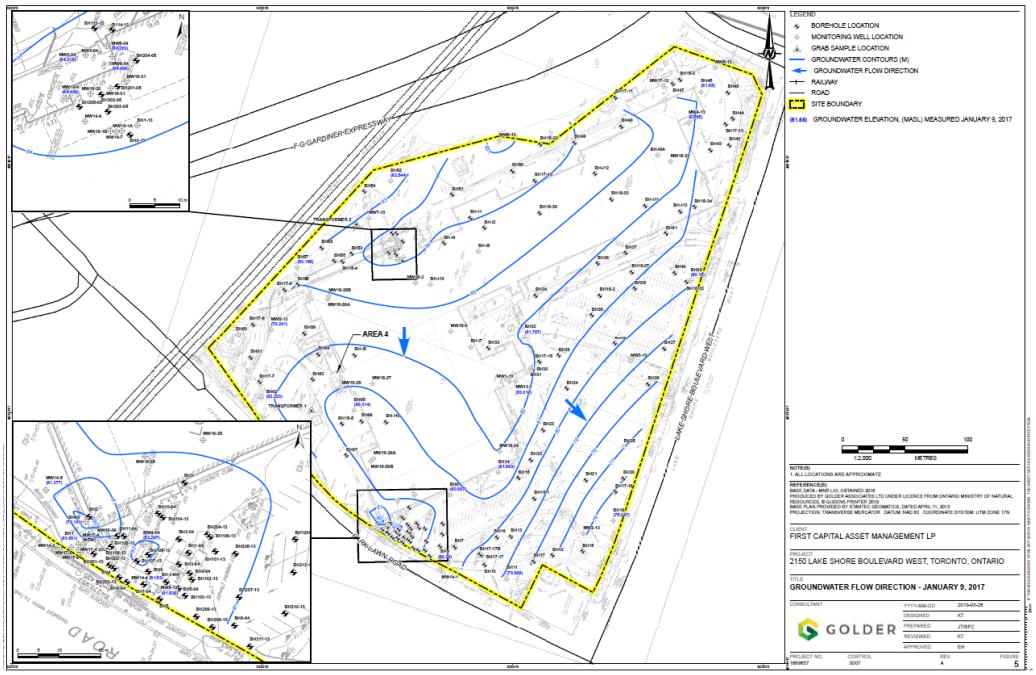

Figure 3 Groundwater contours (January 2017) extracted from Golder (2019).

4.4 Pumping Tests

Although pumping tests have not been carried out at the time of writing this report, an analytical assessment of anticipated groundwater discharge from basements has been carried out in order to estimate discharge volumes. Results of the assessments are presented in Section 5.

4.5 Groundwater Quality

A review of historical information has indicated that the site has had a number of historical land uses. 2150 Lake Shore Boulevard West was historically used as farmland. Within the site there have been five brickyards operating, the largest until

the 1930s, making bricks from local sandy clay. Other early industries included Carson Cement Block and Humber Coal and Supply. Environmental Assessments for the site (Golder, 2019) also highlighted past land uses with potentially contaminating activities that included use or storage of the following: solvents, sulphuric acid, hydrocarbons, PCBs, and metals. The site has also been used for storage of ammunition from World War II and as a sanitary landfill.

Following demolition of the Cookie factory structure, soil remediation was carried out in 2018 to target a number of identified contaminants, whilst further delineation of remaining contaminants was carried out. Remediation included excavation and removal of identified 'hot spots' and disused storage tanks. Groundwater quality testing was carried out as part of the Environmental Site Assessment and noted that the reported concentrations for contaminants discussed above were subsequently within applicable site condition standards (Golder, 2019).

The City of Toronto Sewers By-Law (Municipal Code, Chapter 681) sets limits on what can be discharged into the sewer system (Table 1 – Limits for Sanitary and Combined Sewers Discharge; and Table 2 – Limits for Storm Sewer Discharge). Although this information is not currently available for the site, further groundwater quality sampling and testing for the purpose of groundwater discharge will be carried out as part of further investigation at the site. This data can be provided to the City of Toronto if required.

5 Groundwater Extraction and Discharge

5.1 Proposed Basements

Figure 4 below presents the current basement layout with different phases shown. It is currently understood that the basements will be formed using perimeter secant pile walls and basement slabs with permanent drainage. The use of a secant pile wall is expected to significantly reduce the volume of groundwater inflow into the basements that will be picked up by a drainage system, allowing for a drained solution rather than permanent groundwater extraction or a fully waterproofed design. The permanent groundwater drainage system will be designed at the detailed design stage. Foundations for the towers are expected to be within the shale bedrock which was encountered between 70.7 masl and 82.6 masl.

Figure 4 - Basement Phase Layout

It is understood at the time of writing this report that basement phases may be excavated sequentially, and therefore not all basements may be excavated at the same time. Because of this, groundwater inflow has been provided for each basement individually, but also for phase 1 to 5 as a single basement for the purposes of long-term consideration. The basement for Phase 6 is considered separately owing to its relative isolation and increased depth.

5.2 Analytical Assessment

At the time of writing this report, pumping tests and long-term groundwater monitoring data was not available. As a result, analytical assessment to determine the volume of groundwater inflow into basements, and therefore groundwater discharge has been carried out based on anticipated permeability values from soil descriptions in borehole logs, particle size distribution data, and experience with similar local ground conditions. The analytical assessment of dewatering has used the equivalent well method as detailed below. For the analysis, groundwater level has been assumed to be 1 m below ground surface.4.1

5.2.1 Effective Radius

In order to determine anticipated groundwater inflow into the basements using analytical methods, the basement footprints must first be converted to an effective radius. This approach is presented by Mansur & Kauffman (1962) and is outlined below.

$$r_e = \sqrt{\frac{ab}{\pi}}$$

Where:

r_e = Effective Radius

a = Width of excavation

b = Length of excavation

Equivalent well radius has been determined for each basement, and for basements 1-5 combined.

Table 5 - Effective Radius

Basement Phase	Measured Perimeter (m)	Effective Radius (m)
Phase 1	502	71
Phase 2	590	83

Basement Phase	Measured Perimeter (m)	Effective Radius (m)
Phase 3	597	84
Phase 4	443	62
Phase 5	365	51
Phase 6	250	35
Phase 1-5	1280	181
Note: the above measured perimeter values discount 'shared perimeter' between different phases (e.g., the shared perimeter between Phase 1 and Phase 3 seen in Figure 4)		

5.2.2 Radius of Influence

Zone of influence has been calculated using the Sichardt method for unconfined aquifers. This method uses an empirical approach based on drawdown and permeability.

$$R_0 = Cs\sqrt{K}$$

Where:

R_0 = Radius of influence

C = Shape factor

s = Drawdown

K = Hydraulic conductivity

Anticipated final formation level above the basements is anticipated to vary between approximately +85.5 masl and +89 masl with the current design of the proposed basements anticipated to vary between approximately +65.5 masl and +73 masl. With consideration for the thickness and permeability of each deposit, characteristic permeability value for the soil within which the basements are to be constructed has been determined for analysis. For the purposes of analysing ground water inflow, boundary elevation was set at +55 m (approximately 10 m below the bottom of the lowest basement).

Based on the above, mean average anticipated permeability for the analyzed area is between $2.0x10^{-8}$ m/s and $2.0x10^{-7}$ m/s. Based on recorded groundwater elevations, for the purposes of analysis groundwater was assumed to be 1 m below ground surface. Table 6 presents the maximum radius of influence

Table 6 - Radius of Influence

Basement Phase	Anticipated Groundwater Drawdown within the Excavation (m)	Maximum Radius of Influence (m)
Phase 1	17.5	94
Phase 2	16	104
Phase 3	17.5	107
Phase 4	17	84
Phase 5	14	71
Phase 6	20.5	62
Phase 1-5	16.5	200

It should be noted that the radius of influence has been calculated assuming the groundwater inflow into the basement is through unimpeded strata, and no benefit is taken from the earth retaining structure.

5.2.3 Drainage and Discharge

Anticipated groundwater flow into the basement excavation has been calculated using the approach presented by Mansur and Kauffman (1962) for unconfined aquifers. This method uses an empirical approach based on drawdown with an excavation, hydraulic conductivity, radius of influence, and radius of excavation.

$$Q = \pi K \frac{(H^2 - h_w^2)}{1n\left(\frac{2R_0}{r_w}\right)}$$

Where:

Q = Total discharge

K = Hydraulic conductivity

H = Height of water table at radius of influence

h_w = Height of water table within well (excavation)

R_0 = Radius of influence

R_w = radius of well (excavation)

Based on the above the following discharge volumes have been determined for the case where groundwater is allowed to enter the excavation unimpeded (i.e. no

benefit taken from the anticipated secant pile wall around the boundary of basements).

Table 7 - Anticipated Groundwater Discharge

Basement Phase	Minimum Anticipated Groundwater Discharge (m^3/d) (unfactored)	Maximum Anticipated Groundwater Discharge (m^3/d) (unfactored)	Maximum Anticipated Groundwater Discharge (m^3/d) (factored)
Phase 1	5	47	70
Phase 2	4	41	62
Phase 3	5	49	73
Phase 4	4	38	57
Phase 5	3	34	51
Phase 6	3	34	51
Phase 1-5	21	209	313
Note: Factored groundwater discharge includes a Factor of Safety of 1.5			

In addition to the anticipated groundwater discharge presented above, consideration should be made for large rainfall events that may result in a considerable amount of additional water being required to be pumped from excavations.

5.3 Private Water Drainage Systems

For the proposed development it is understood that current design includes secant pile walls around the perimeter of the basements. This construction technique, although not fully waterproof, is expected to significantly reduce groundwater inflow into the basements and therefore reduce the required discharge of groundwater.

Considering the above construction approach, it is recommended that a sub-floor Private Water Drainage System (PWDS) be included in the design together with perimeter drainage to capture groundwater inflow.

5.4 Groundwater Discharge Assessment

During the construction of the basements it is anticipated that the groundwater level will have to be lowered below the bottom of the proposed excavation. Based on the analysis in the above sections, it is anticipated that for preliminary design purposes of temporary works (i.e., during construction) a factored groundwater discharge is anticipated to range between 51 m^3/d and 73 m^3/d for each basement. Full details are presented in Table 7

Quantifying the volume of groundwater entering the basement with a perimeter secant pile wall in place remains difficult due to the influence of construction quality and detailing during the detailed design stage. However, based on local experience it is recommended that for initial design purposes the PWDS should consider at a minimum 25% of the factored anticipated groundwater discharge presented in Table 7. Results of groundwater discharge considering the benefit of the secant pile perimeter wall are presented in Table 8, below. As design progresses, on-site permeability testing should be carried out to further refine the anticipated groundwater discharge volumes.

Table 8 – Anticipated Groundwater Discharge with Secant Pile Perimeter Wall

Basement Phase	**Maximum Anticipated Groundwater Discharge (m^3/d) with Secant Pile Perimeter Wall (factored)**
Phase 1	18
Phase 2	15
Phase 3	18
Phase 4	14
Phase 5	13
Phase 6	13
Phase 1-5	78
Note: Factored groundwater discharge includes a Factor of Safety of 1.5 Above groundwater discharge assumes 25% of factored analysis result due to benefit of secant pile wall.	

5.5 Groundwater Permitting

5.5.1 Permit to Take Water

Permit to Take Water (PTTW) requirements for construction site dewatering are set out in the Environmental Protection Act and as amended in O.Reg.63/16 and discussed in the Water Taking Environmental Activity and Sector Registry (EASR) User Guide. In accordance with these regulations two types of PTTW are available:

1. Where anticipated groundwater taking is between 50,000 L/day and 400,000 L/day (50 m^3/day and 400 m^3/day) a PTTW obtained through an online application is required.
2. Where anticipated groundwater taking exceeds 400,000 L/day (400 m^3/day) a full PTTW is required.

The maximum anticipated groundwater discharge during construction activities was estimated to be between 51 m^3/d (51,000 L/d) and 73 m^3/d (73,000 L/d) for

each basement or 364 m^3/d (364,000 L/d) collectively. Therefore, a PTTW obtained through an online application with the MECP is expected to be sufficient.

The maximum anticipated groundwater discharge from the PWDS was estimated to be between 13 m^3/d (13,000 L/d) and 18 m^3/d (18,000 L/d) for each basement or 91 m^3/d (91,000 L/d) collectively. Therefore, a PTTW obtained through an online application with the MECP is expected to be sufficient. It is however recommended that in-situ permeability testing be carried out on site to refine the anticipated groundwater volumes. Records of groundwater discharge during construction phase should also be reviewed in order to verify long term PWDS and PTTW requirements.

5.5.2 Water Discharge Permits

In addition to the PTTW, water discharge permits are required during construction phase and operation phase of the building prior to discharge of any collected groundwater or rainwater into the City sewer system. During construction phase this includes obtained groundwater and collected rainwater, whilst during operation phase, this includes water collected by the PWDS.

A Long-Term Private Water Discharge Approval (LTPWDA) will be required where discharge of water from the PWDS into the sanitary/combined sewer is anticipated. Where granted, this type of approval will need to be renewed yearly. Section 2 and Section 4 of the Toronto Municipal Code Chapter 681 Sewers details requirements for discharge approval.

5.6 Review of Taking and Discharging Impacts

A review of the impacts of groundwater taking and discharge on the natural environmental and City sewage works has been carried out. Anticipated volumes of water to be taken and discharged are presented in the above sections, and fall within requirements for City permitting (PTTW and LTPWDA). As discussed in Section 4.5 groundwater quality sampling and testing for the purpose of groundwater discharge will be carried out as part of further investigation at the site. This data can be provided to the City of Toronto if required.

The site is located within the Humber Bay area between the Humber River approximately 800 m to the northeast, and Mimco Creek, approximately 210 m to the southwest, roughly parallel but beyond Park Lawn Road. Lake Ontario is located approximately 250 m to 300 m to the south. Table 6 presents the anticipated radius of influence resulting from taking water and indicates that all surface water features re located beyond the radius of influence.

Based on the available information, an initial review indicates that settlement of the surrounding area resulting from taking over water is expected to be insignificant – in part because of the shallow depths to rock and in part because of the existing soil

conditions. Detailed assessment will be carried out during further design stages of the project.

6 Proposed Mitigation and Monitoring

A monitoring and mitigation plan will be required prior to commencement of construction dewatering. It is anticipated that this plan will be developed in conjunction with the dewatering contractor, and will involve:

- Monitoring of background water levels at the site, either by using existing groundwater monitoring boreholes or by installing new wells.
- Identification of sensitive receptors, including offsite groundwater abstractions and sensitive structures (buildings, infrastructure, major utilities, etc.).
- Installation of groundwater monitoring wells and instrumentation to monitor ground movements, where appropriate, between the dewatering site and sensitive receptors.
- Setting trigger and action levels these monitoring points.
- Developing mitigation plans outlining how to control or mitigate against excessive drawdown, for example by recharging groundwater.

7 Summary and Further Work

This hydrological review has been prepared in accordance with the requirements for a Hydrological Review set out by the City of Toronto.

The current Master Plan features a range of land uses including a new public park, and a diverse mix of residential, retail, service, entertainment and employment uses and a range of building types. Fifteen towers are proposed on the site with heights ranging from 16 to 70 storeys. The current Master Plan includes 6 phases, each of which includes a basement ranging from 3 to 5 levels to a minimum basement slab elevation of +65.5 masl (approximately 20 mbgs).

Analysis of groundwater discharge has been carried out for each individual development phase (1 to 6) and collectively for phases 1 to 5. The initial analysis has been carried out using available data as discussed in this report and considers an open excavation (Table 7). Assumptions have been made regarding the benefit of the proposed secant pile perimeter wall and the associated reduction in groundwater discharge based on local experience (I.e. a minimum of 25% of discharge without the secant pile perimeter wall). These results are presented in

Table 8 and show groundwater discharge ranging from 13 to 18 m^3/day for individual development phases.

Based on the current design approach for the basements – secant pile perimeter walls – a Private Water Drainage System (PWDS) including drainage below the basement floor and perimeter drainage is suitable.

This report is based on previous ground investigation work carried out at the site and a review of historical records within and surrounding the site. Although ground investigations have been carried out within the site, ground investigation has yet to be completed specifically for the current proposed development. As a result, analysis in this report is based on available field and lab testing and does not include data obtained from slug tests, pumping tests, or long-term groundwater monitoring. Gaps in the available data for further design stages will be addressed by further site investigation and analysis. The results of these further investigations can be provided to the City of Toronto if required.

References

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Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)

Phase 1 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)

Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (CRA, 2013)

Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (SPL, 2013)

Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario (Golder, 2015).

Phase 2 Environmental Site Assessment, 2150 Lake Shore Boulevard West Toronto, Ontario (Golder, 2015)

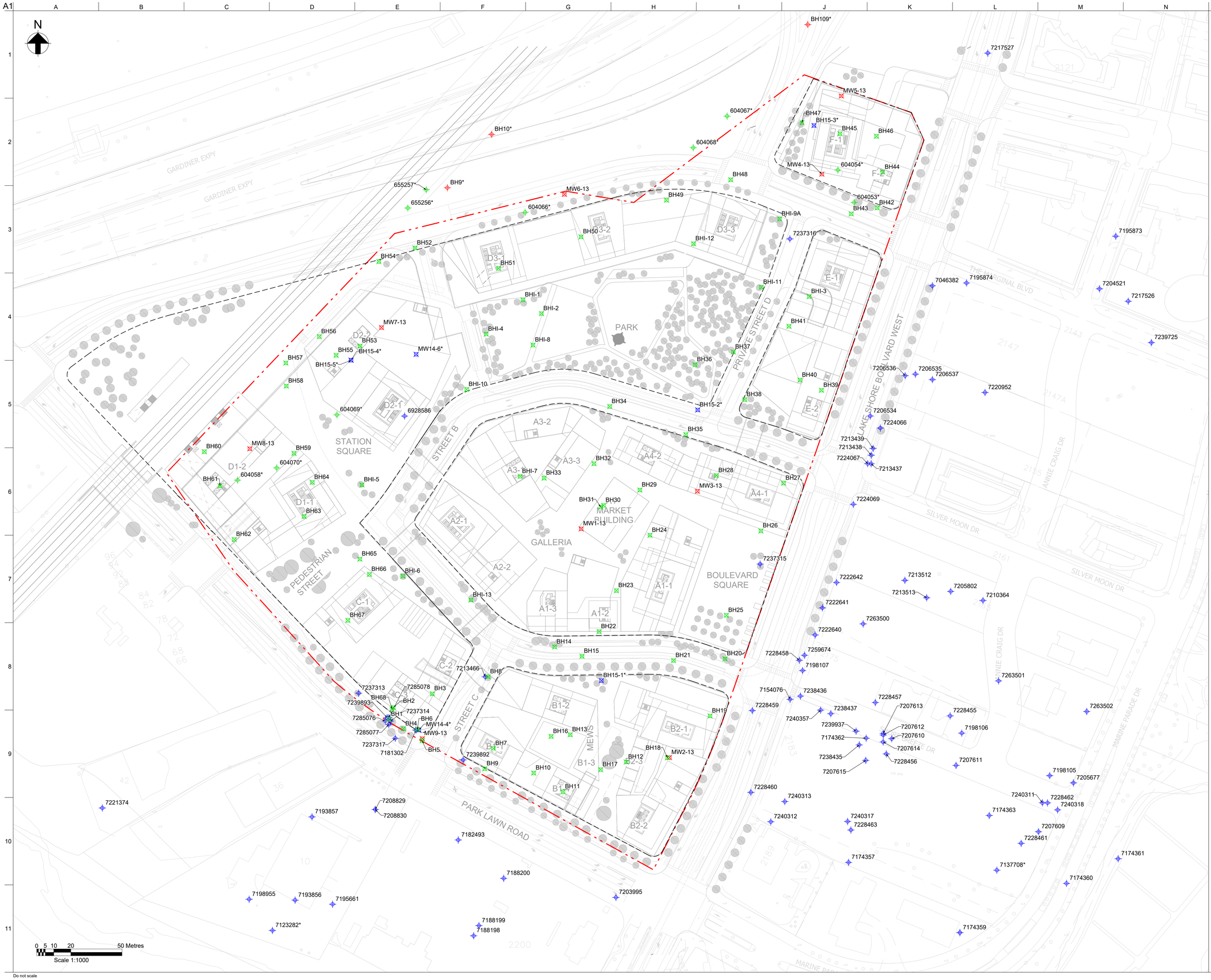
Phase Two Conceptual Site Model, Technical Memorandum, 2150 Lake Shore Boulevard West, Toronto, Ontario (Golder, 2019)

Toronto Transportation Commission, (1921). Contour Map of Toronto District,

Westgate. J.A., von Bitter, P.H., Eyles, N., McAndrew. J.H., Timmer. V., Howard. K.W.F., (1999). Physical Setting: A Story of Changing Environments Through Time. In: Special Places: The Past, Present, and Future of the Ecosystems of the Toronto Region. Royal Canadian Institute. University of British Columbia Press pg 10-31.

Appendix A

Borehole Location Plan



Notes

1. All coordinates are in metres and referenced to Zone 10 of the Ontario Coordinate System, NAD (North American Datum) 1927, 1968 adjustment, 3 degree MTM (NAD 27 MTM 3 degrees Zone 10).
2. All dimensions are in metres unless noted otherwise.
3. This drawing represents 3rd party data and it has been produced for information only, to orientate the geotechnical and hydrological studies for this development.

Legend

- Site Boundary
- Borehole Location Source: Golder (2014)
- Borehole Location Source: CRA (2013)
- Borehole Location Source: SPL (2013)
- Borehole Location Source: MTO Foundations Library
- Borehole Location Source: Ontario Well Database
- Borehole Location Source: Ontario Geotechnical Boreholes Database

NOTE:
THIS DRAWING CONTAINS EXTENSIVE USE OF COLOUR LINE WORK AND MUST BE PLOTTED IN COLOUR.

Rev	Date	By	Chkd	Appd
01	15/05/20	AR	LS	HJ

For planning submission

ARUP

Arup Canada Inc.
121 Bloor Street East
Suite 900
Toronto ON M4W 3M5
Canada
www.arup.com

Client
FCR (Park Lawn) LP and
CPPIB Park Lawn Canada Inc.

Project Title
2150 Lake Shore

Drawing Title
Borehole Location Plan

Scale at A1 1:1000

Role Geotechnics

Suitability Detailed Masterplan

Arup Job No **264635**

Rev **01**

Name
LSB-ARP-XX-XX-DR-GE-10000

Do not scale

Appendix B

Relevant Borehole Logs

PROJECT: 1417422

RECORD OF BOREHOLE: 15-1

SHEET 1 OF 1

LOCATION: As Per Figure 2

BORING DATE: January 5, 2015

DATUM: -

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	SHEAR STRENGTH Cu, kPa (20 40 60 80); nat V. +, rem V. ⊕; Q - ●, U - ○	WATER CONTENT PERCENT Wp, W, Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE											
		ASPHALT		0.00									
		FILL - (SP/GP) SAND and GRAVEL, some silt, asphalt fragments; dark brown; non-cohesive, moist, compact		0.13	1	SS	12						
1		FILL - (CL) SILTY CLAY, some sand, trace organics rootlets, cohesive, w<PL, firm to stiff		0.61	2	SS	7						
2					3	SS	10						
	Power Auger 70 mm I. D. Hollow Stem Augers	(CL) sandy SILTY CLAY, trace to some gravel; brown, turning grey (TILL); cohesive, w<PL to w~PL, stiff to very stiff		2.13	4	SS	17						
3					5	SS	11						
4													
5					6	SS	10						
6		(CI) SILTY CLAY, some sand, some gravel; grey (TILL); cohesive, w~PL, firm		5.49	7A	SS	4					MH	
		Highly weathered, grey SHALE Bedrock		6.50	7B								
		END OF BOREHOLE		6.60									
7		NOTE:											
		1. Borehole open and dry at completion of drilling.											
8													
9													
10													

DEPTH SCALE 1 : 50

LOGGED: BC/SR

CHECKED: JET

Golder Associates

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PROJECT: 1417422

RECORD OF BOREHOLE: 15-2

SHEET 1 OF 1

LOCATION: As Per Figure 2

BORING DATE: January 5, 2015

DATUM: -

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	SHEAR STRENGTH Cu, kPa (20 40 60 80); nat V. +, rem V. ⊕; Q - ●, U - ○	WATER CONTENT PERCENT Wp, W, Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE											
		ASPHALT		0.00									
		FILL - (SP/GP) SAND and GRAVEL, trace silt; grey; non-cohesive, moist, loose		0.15	1A	SS	4						
				0.46	1B								
1		(CL) sandy SILTY CLAY, trace to some gravel; brown (TILL), with sand seams			2	SS	21						
2		brown; cohesive, w<PL, stiff to very stiff			3	SS	25						
	Power Auger 70 mm I. D. Hollow Stem Augers				4	SS	16						
3													
4					5	SS	17						
					6A								
5		- Becoming grey at a depth of 4.8 m			6B	SS	9						
6					7	SS	50/ 0.08						
		Highly weathered, grey SHALE Bedrock		6.32									
7													
					8	SS	50/ 0.08						
8		END OF BOREHOLE		7.75									
		NOTE:											
		1. Borehole open and dry at completion of drilling.											
9													
10													

DEPTH SCALE 1 : 50

LOGGED: BC

CHECKED: JET

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PROJECT: 1417422

LOCATION: As Per Figure 2

RECORD OF BOREHOLE: 15-3

SHEET 1 OF 1

BORING DATE: January 5, 2015

DATUM: -

HAMMER TYPE: AUTOMATIC

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	SHEAR STRENGTH Cu, kPa (20 40 60 80) nat V. + rem V. ⊕ Q - ● U - ○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	WATER CONTENT PERCENT Wp W WI (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE											
0	Power Auger 70 mm I. D. Hollow Stem Augers	ASPHALT		0.00									
		FILL - (SP/GP) SAND and GRAVEL, some silt; brown; non-cohesive, moist, compact		0.10	1	SS	27						
1		(CL) sandy SILTY CLAY, some gravel; brown (TILL); cohesive, w<PL, stiff to very stiff		0.61	2	SS	13						
2					3	SS	26						
3					4	SS	26						
		- Becoming grey at a depth of 4.0 m			5	SS	25						
4					6A	SS	42						
5		Highly weathered, grey SHALE Bedrock		4.93	6B								
6					7	SS	50/ 0.05						
		END OF BOREHOLE		6.30									
7		NOTE: 1. Water level measured at 6.3 m below ground surface at the completion of drilling.											
8													
9													
10													

DEPTH SCALE 1 : 50

Golder Associates

LOGGED: BC

CHECKED: JET

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PROJECT: 1417422

LOCATION: As Per Figure 2

RECORD OF BOREHOLE: 15-4

SHEET 1 OF 1

BORING DATE: January 5, 2015

DATUM: -

HAMMER TYPE: AUTOMATIC

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	SHEAR STRENGTH Cu, kPa (20 40 60 80) nat V. + rem V. ⊕ Q - ● U - ○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	WATER CONTENT PERCENT Wp W WI (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE											
0	Power Auger 70 mm I. D. Hollow Stem Augers	ASPHALT		0.00									
		FILL - (SP/GP) SAND and GRAVEL, some silt, asphalt fragments; grey to black; non-cohesive, moist, compact		0.10	1A	SS	10						
					1B								
1		FILL - (CL) SILTY CLAY, trace sand and gravel, cohesive, w~PL, firm		0.76	2	SS	7						
2		(ML/CL) CLAYEY SILT to SILTY CLAY, trace sand, with frequent sand and silt seams; brown; cohesive, w>PL, firm		1.37	3	SS	8						
3		- Becoming grey at a depth of 3.0 m			4	SS	4					MH	
					5	SS	4						
4													
5		Highly weathered, grey SHALE Bedrock		4.72	6A	SS	50/ 0.10						
					6B								
6					7	SS	50/ 0.10						
		END OF BOREHOLE		6.20									
7		NOTE: 1. Water level measured at 2.1 m below ground surface at the completion of drilling.											
8													
9													
10													

DEPTH SCALE 1 : 50

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LOGGED: BC/SR

CHECKED: JET

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PROJECT: 1417422

RECORD OF BOREHOLE: 15-5

SHEET 1 OF 1

LOCATION: As Per Figure 2

BORING DATE: January 5, 2015

DATUM: -

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (20 40 60 80) nat V. + rem V. ⊕ Q - ● U - ○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE									
0	Power Auger 70 mm I. D. Hollow Stem Augers	ASPHALT		0.00							
		FILL - (SP/GP) SAND and GRAVEL, some silt; grey to brown; non-cohesive, moist, compact		0.10	1A	SS	13				
		(ML/CL) CLAYEY SILT to SILTY CLAY, trace sand, with sand and silt seams; brown; cohesive, w<PL to w>PL, very soft to firm		0.46	1B						
1					2	SS	6				
2					3	SS	6			MH	
					4	SS	6				
3		- Becoming grey at a depth of 3.0 m			5	SS	9				
4											
5					6	SS	WH				
		Highly weathered, grey SHALE Bedrock		5.49							
6					7	SS	50/ 0.03				
		END OF BOREHOLE		6.27							
7		NOTE:									
		1. Water level measured at 5.0 m below ground surface at the completion ot drilling.									
8											
9											
10											

DEPTH SCALE
1 : 50

Golder Associates

LOGGED: BC/SR
CHECKED: JET

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PROJECT: 1417422

RECORD OF BOREHOLE: MW14-4

SHEET 1 OF 1

LOCATION: N ; E

BORING DATE: December 10, 2014

DATUM:

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [%LEL] ND = Not Detected (20 40 60 80) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] ND = Not Detected (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE									
0	Truck Mount Geo Probe 7822 PT 50 mm D.O. Steel Casing	Hydrovacuumed		0.00							Concrete; SAND
1											Bentonite
2											Sand
		(SM) Silty SAND; brown-grey; cohesive, moist, compact		2.44	1	DO		ND			Screen
3					2	DO					
4		END OF BOREHOLE		3.96							1. Groundwater level was measured at 2.63 m below ground surface on December 16, 2014.
5											
6											
7											
8											
9											
10											

DEPTH SCALE
1 : 50

Golder Associates

LOGGED: EW
CHECKED:

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PROJECT: 1417422
LOCATION: N ; E

RECORD OF BOREHOLE: MW14-5

BORING DATE: December 10, 2014

SHEET 1 OF 1
DATUM:

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [%LEL] (ND = Not Detected) 20 40 60 80	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] (ND = Not Detected) 20 40 60 80	HYDRAULIC CONDUCTIVITY, k, cm/s 10^{-6} 10^{-5} 10^{-4} 10^{-3}	WATER CONTENT PERCENT Wp W Wl 10 20 30 40	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE											
0	Truck Mount Geo Probe 7822 PT 50 mm D.O. Steel Casing	Hydrovac (no sampling)		0.00									Concrete
1													Bentonite
2													Sand
3		(ML) Sandy SILT, trace clay; brown to grey; moist		3.05	1	DO	-	ND					Screen
4		(Cl) SILTY CLAY, trace sand; grey-brown; wet		3.81	2	DO	-						
5				4.57									
6													
7													
8													
9													
10													

DEPTH SCALE
1 : 50

Golder Associates

LOGGED: EW
CHECKED:

GTA-BHS 001 S:\CLIENTS\FCAM\2150_LAKESHORE_TORONTO\02_DATA\GINT\1417422.GPJ GAL-MIS.GDT 1/12/15

PROJECT: 1417422
LOCATION: N ; E

RECORD OF BOREHOLE: MW14-6

BORING DATE: December 11, 2014

SHEET 1 OF 1
DATUM:

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [%LEL] (ND = Not Detected) 20 40 60 80	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] (ND = Not Detected) 20 40 60 80	HYDRAULIC CONDUCTIVITY, k, cm/s 10^{-6} 10^{-5} 10^{-4} 10^{-3}	WATER CONTENT PERCENT Wp W Wl 10 20 30 40	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE											
0	Truck Mount Geo Probe 6620 PT 305 mm D.O. Steel Casing	CONCRETE		0.00									Concrete
1		FILL - (SM) SAND, with silt; grey; wet		0.20	1	DO	-	ND					Bentonite
					2	-	-	ND					Sand
2					3	DO	-						
					4	DO	-	ND					Screen
3		(SC) SILT, some clay, trace sand; grey; non-cohesive, wet		2.44	5	DO	-	ND					
					6	DO	-	ND					
4		END OF BOREHOLE		3.66									1. Groundwater Level was measured at 1.28 m below ground surface on December 16, 2014.
5													
6													
7													
8													
9													
10													

DEPTH SCALE
1 : 50

Golder Associates

LOGGED: EW
CHECKED:

GTA-BHS 001 S:\CLIENTS\FCAM\2150_LAKESHORE_TORONTO\02_DATA\GINT\1417422.GPJ GAL-MIS.GDT 1/21/15

PROJECT: 1417422
LOCATION: N ; E

RECORD OF BOREHOLE: MW14-7

BORING DATE: December 11, 2014

SHEET 1 OF 1
DATUM:

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [%LEL] ND = Not Detected	HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] ND = Not Detected	HYDRAULIC CONDUCTIVITY, k, cm/s / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE										
0	Wheel Mounted Geo Probe 420 m 305 mm D.O. Steel Casing	CONCRETE		0.00								Concrete
		FILL - (SW) SAND, some silt; brown with grey; moist		0.30	1	DO	ND					Bentonite
1		(MH) SILT, some clay, trace sand; grey; cohesive, moist		0.61	2	DO	ND					Sand
2					3	DO	ND					
					4	DO	ND					Screen
3					5	DO	ND					
					6	DO	ND					
4		END OF BOREHOLE		3.66								
5												
6												
7												
8												
9												
10												

DEPTH SCALE
1 : 50

Golder Associates

LOGGED: EW
CHECKED:

GTA-BHS 001 S:\CLIENTS\FCAM\2150_LAKESHORE_TORONTO\02_DATA\GINT\1417422.GPJ GAL-MIS.GDT 1/12/15

REFERENCE No.: 081211

ENCLOSURE No.: 1

BOREHOLE REPORT

BOREHOLE No.: MW1-13
ELEVATION: 84.95 m

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen
CHECKED BY: S. Shahangian
DATE (START): January 28, 2013
DATE (FINISH): January 28, 2013

LEGEND
- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		84.95		GROUND SURFACE						
	0.10	84.85		TOPSOIL : 100 mm						
				SP-SAND (FILL), very loose, fine grained, poorly graded, brown, moist		SS-1	80	15	2-2-2-3	4
	0.76	84.19		CL-SILTY CLAY, stiff, grey, moist		SS-2	62	13	6-7-7-8	14
				firm, very moist		SS-3	50	21	6-3-3-3	6
	2.29	82.66		ML-SILT, trace clay, loose, light brown, moist		SS-4	100	17	3-3-6-7	9
				compact		SS-5	100	17	5-6-9-11	15
						SS-6	80	16	5-7-14-14	21
						SS-7A	50	21	3-3-4-4	7
	4.88	80.07		CL-SILTY CLAY, firm, grey, moist		SS-7B		20		--
				trace sand, soft, wet		SS-8	100	27	2-2-2-2	4
				Gr : 0%, Sa : 5%, Si : 50%, Cl : 45%						
	6.10	78.85		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), with clay, grey		SS-9	30	19	100/ 150mm	100
						SS-10	30	17	100/ 150mm	100
	7.32	77.63		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, grey		RUN-1	80	--	26	--
						RUN-2	90	--	50	--

Shear test (Cu) △ Field
Sensitivity (S) □ Lab
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

0.30 m
WL 0.68 m 3/4/2013
Bentonite Seal
2.70 m
Sand
Screen
6.40 m
Bentonite Seal

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 1

BOREHOLE REPORT

BOREHOLE No.: MW1-13
ELEVATION: 84.95 m
Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 28, 2013 DATE (FINISH): January 28, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		84.95		GROUND SURFACE						
				100 mm of highly fractured rock with clay at 8.92 m depth		RUN-3	100	--	62	--
	10.52	74.43		END OF BOREHOLE ● **Borehole terminated at 10.52 m bgs** ● **Borehole dry to 7.3 m bgs** ● **'bgs' denotes below ground surface** ● **Gr, Sa, Si and Cl denotes Gravel, Sand, Silt and Clay respectively** **Ground Water Measurements : (Surface elevation : 84.95 m)** **Date 3/4/2013 Depth (m) 0.68 Elev. (m) 84.27**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

10.52 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 2

BOREHOLE REPORT

BOREHOLE No.: MW2-13
ELEVATION: 81.46 m
Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 29, 2013 DATE (FINISH): January 29, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		81.46		GROUND SURFACE						
	0.08	81.38		ASPHALT : 75 mm						
				ML-SILT, some clay, very loose, light brown, moist		SS-1	100	20	6-2-2-3	4
	0.91	80.55		CL-SILTY CLAY, trace sand, stiff, low plasticity, grey, moist Gr : 0%, Sa : 4%, Si : 81%, Cl : 15%		SS-2	62	20	3-5-6-8	11
						SS-3	100	17	2-2-6-8	8
						SS-4	100	17	3-5-8-8	13
						SS-5	100	16	4-5-8-9	13
	3.81	77.65		ML-SILT, trace clay, compact, grey, moist		SS-6	100	17	4-6-7-9	13
	4.88	76.58		CL-SILTY CLAY, trace sand and gravel, stiff, plastic, grey, moist soft, very moist to wet		SS-7	62	15	2-4-6-6	10
						SS-8	62	24	3-1-3-2	4
	6.40	75.06		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred). grey. very moist to wet		SS-9	75	5	3-11-44-67	55
	6.86	74.60		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone,siltstone, fissile, thinly-bedded to thinly laminated, grey 0.3 m highly fractured rock (horizontal & vertical fractures) at 6.89 m depth 25.4 mm clay seam at 7.16 m depth 50 mm vertical fracture at 7.32 m depth 50 mm fracture with clay at 7.37 m depth 50 mm vertical fracture at 7.52 m depth 76 mm highly fractured rock with clay at 7.77 m depth		RUN-1	70	--	0	--
						RUN-2	90	--	45	--

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
W_p W_l Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

0.30 m
Bentonite Seal

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

REFERENCE No.: 081211 ENCLOSURE No.: 2

BOREHOLE No.: MW2-13
ELEVATION: 81.46 m

BOREHOLE REPORT

Page: 2 of 2

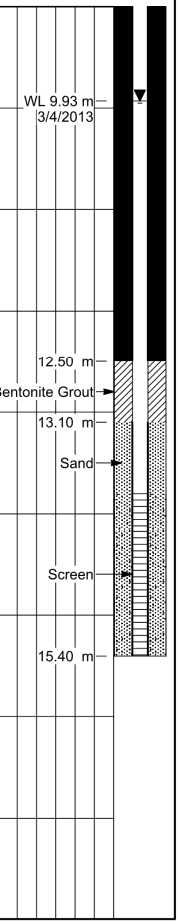
CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 29, 2013 DATE (FINISH): January 29, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		81.46		GROUND SURFACE						
				100 mm fractured rock with clay at 8.01 m depth 13 mm clay seam at 9.04 m depth 25.4 mm limestone 9.23 m depth		RUN-3	100	--	86	--
						RUN-4	100	--	85	--
						RUN-5	100	--	64	--
						RUN-6	100	--	58	--
	15.34	66.12		END OF BOREHOLE ● **Borehole terminated at 15.34 m bgs** ● **Borehole dry to 6.9 m bgs** ● **'bgs' denotes below ground surface** ● **Gr, Sa, Si and Cl denotes Gravel, Sand, Silt and Clay respectively** **Ground Water Measurements :** **(Surface elevation : 81.46 m)** **Date 3/4/2013 Depth (m) 9.93 Elev. (m) 71.53**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90



SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

REFERENCE No.: 081211 ENCLOSURE No.: 3

BOREHOLE No.: MW3-13
ELEVATION: 84.83 m

BOREHOLE REPORT

Page: 1 of 2

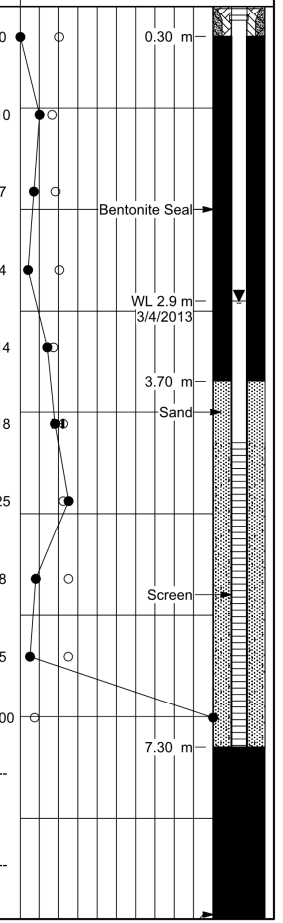
CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 31, 2013 DATE (FINISH): January 31, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		84.83		GROUND SURFACE						
	0.15	84.68		TOPSOIL : 150 mm ML-SILT (FILL), trace clay, very loose to compact, brown, moist, highly oxidized		SS-1	50	20	0-0-0-4	0
						SS-2	100	17	5-5-5-5	10
						SS-3	62	18	4-4-3-2	7
	2.13	82.70		trace sand, black/grey, brick fragments CL-SILTY CLAY, soft, low plasticity, brown, moist		SS-4	100	20	2-1-3-4	4
	3.35	81.48		CL-ML-SILTY CLAY/CLAYEY SILT, brown, moist, stiff to very stiff		SS-5	77	17	3-6-8-12	14
						SS-6	92	22	5-6-12-14	18
				trace clay		SS-7	72	22	10-12-13-14	25
	5.18	79.65		CL-SILTY CLAY, firm, plastic, grey, very moist to wet		SS-8	30	25	3-4-4-4	8
						SS-9	82	25	3-2-3-4	5
	6.86	77.97		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), with clay inclusion, grey		SS-10		7	85-36-70-70/ 125mm	100
	7.40	77.43		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, fine grained siltstone, fissile, thinly-bedded to thinly laminated, grey 130 mm of highly fractured rock at 7.42 m depth 40 mm clay lens at 7.53 m depth horizontal fracture with clay infill at 7.8 m depth		RUN-1	90	--	38	--
						RUN-2	100	--	65	--

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90



SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

REFERENCE No.: 081211 ENCLOSURE No.: 3

BOREHOLE No.: MW3-13
ELEVATION: 84.83 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 31, 2013 DATE (FINISH): January 31, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		84.83		GROUND SURFACE						
				80 mm highly fractured rock with clay at 7.98 m depth 80 mm of fractured rock horizontal fracture 50 mm fractured rock 80 mm fractured rock at 10.14 m depth		RUN-3	100	--	76	--
	10.61	74.22		END OF BOREHOLE ● **Borehole terminated at 10.61 m bgs** ● **Borehole dry upon completion** ● **'bgs' denotes below ground surface** **Ground Water Measurements :** **(Surface elevation : 84.83 m)** **Date Depth (m) Elev. (m)** **3/4/2013 2.90 81.93**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

Bentonite Seal
10.61 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

REFERENCE No.: 081211 ENCLOSURE No.: 4

BOREHOLE No.: MW4-13
ELEVATION: 84.20 m

BOREHOLE REPORT

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 1, 2013 DATE (FINISH): February 1, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		84.20		GROUND SURFACE						
	0.15	84.05		ASPHALT : 125 mm						
				SW-GW SAND & GRAVEL (FILL), compact, brown, moist, cobbles		SS-1	82	4	10-11-11-9	22
	0.91	83.29		ML-SILT, trace clay, loose, dark brown, moist		SS-2	82	22	4-4-5-4	9
				very moist to wet, slightly dilatant, slightly oxidized		SS-3	100	21	3-4-4-5	8
	2.29	81.91		CL-SILTY CLAY, trace sand, stiff, low plasticity, brown, moist Gr : 0%, Sa : 2%, Si : 69%, Cl : 29%		SS-4	82	23	5-5-7-8	12
						SS-5	100	31	3-4-5-7	9
	4.12	80.08		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), with clay inclusion, grey		SS-6	72	10	24-15-25-30	40
						SS-7	50	8	13-14-25/ 75mm	100
	5.18	79.02		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, grey 100 mm section of limestone at 5.82 m depth 13 mm horizontal and vertical fracture 5.84 m depth 40 mm horizontal fracture with clay infill at 6.23 m depth 13 mm clay seam at 6.33 m depth 25 mm highly fractured rock at 6.36 m depth 50 mm vertical fracture at 6.4 m depth 13 mm horizontal and vertical fracture at 6.89 m depth 13 mm highly fractured rock at 6.91 m depth		RUN-1	100	--	60	--
						RUN-2	80	--	45	--
						RUN-3	100	--	30	--
	8.23	75.97		END OF BOREHOLE ● **Borehole terminates at 8.23 m bgs** ● **Borehole dry to 5.2 m bgs**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%)
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

0.30 m
Bentonite Seal
WL 1.44 m 3/4/2013
1.80 m
Sand
Screen
5.20 m
Bentonite Seal
8.20 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 4

BOREHOLE No.: MW4-13
ELEVATION: 84.20 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 1, 2013 DATE (FINISH): February 1, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N	Shear test (Cu) △ Field, Sensitivity (S) ☐ Lab, ○ Water content (%), W_p W_l Atterberg limits (%), ● "N" Value (blows / 12 in.-30 cm) 10 20 30 40 50 60 70 80 90
		84.20		GROUND SURFACE							
				● 'bgs' denotes below ground surface **● Gr, Sa, Si and Cl denotes Gravel, Sand, Silt and Clay respectively** **Ground Water Measurements :** **(Surface elevation : 84.20 m)** **Date Depth (m) Elev. (m)** **3/4/2013 1.44 82.76**							

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 5

BOREHOLE No.: MW5-13
ELEVATION: 85.04 m

BOREHOLE REPORT

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 4, 2013 DATE (FINISH): February 4, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N	Shear test (Cu) △ Field, Sensitivity (S) ☐ Lab, ○ Water content (%), W_p W_l Atterberg limits (%), ● "N" Value (blows / 12 in.-30 cm) 10 20 30 40 50 60 70 80 90
		85.04		GROUND SURFACE							
	0.10	84.94		TOPSOIL : 100 mm							
				ML-SILT, trace clay, loose, brown, moist, oxidized		SS-1	50	18	3-3-3-5	6	0.30 m
						SS-2	50	18	3-2-3-4	5	
						SS-3	50	15	2-3-2-4	5	
				compact, highly oxidized		SS-4	62	16	10-12-15-23	27	
				grey		SS-5	100	14	8-12-13-13	25	
	3.66	81.38		CL-SILTY CLAY, stiff, plastic, grey, moist		SS-6	100	22	4-5-6-6	11	
				firm, plastic, very moist		SS-7	100	27	2-3-3-3	6	
				soft, very moist to wet Gr : 1%, Sa : 7%, Si : 45%, Cl : 47%		SS-8	100	28	2-1-2-3	3	Bentonite Seal
	6.40	78.64		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred). with clay inclusion, grey		SS-9	82	13	20-8-17-23/ 75mm	25	
	7.21	77.83		80 mm of highly fractured rock							
				SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, grey 100 mm of highly fractured rock at 7.37 m depth 25 mm clay seam at 8.26 m depth 13 mm clay seam at 8.31 m depth 25 mm clay seam at 8.59 m depth 25 mm clay seam at 8.72 m depth		RUN-1	75	--	0	--	
						RUN-2	100	--	74	--	

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

REFERENCE No.: 081211 ENCLOSURE No.: 5

BOREHOLE No.: MW5-13
ELEVATION: 85.04 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 4, 2013 DATE (FINISH): February 4, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		85.04		GROUND SURFACE						
				80 mm vertical fracture at 8.84 m depth 25 mm highly horizontal and vertical fractures at 9.33 m depth 25 mm vertical fracture at 9.76 m depth 25 mm clay seam at 10.06 m depth 25 mm clay seam at 10.52 m depth vertical fracture at 10.57 m depth 25 mm vertical fracture at 10.9 m depth		RUN-3	100	--	70	--
						RUN-4	96	--	90	--
						RUN-5	100	--	86	--
				50 mm fracture at 13.75 m depth 50 mm vertical fracture at 14.21 m depth		RUN-6	100	--	77	--
50.61	15.39	69.65		END OF BOREHOLE ● **Borehole terminates at 15.39 m bgs** ● **Borehole dry to 7.2 m bgs** ● **'bgs' denotes below ground surface** ● **Gr, Sa, Si and Cl denotes Gravel, Sand, Silt and Clay respectively** **Ground Water Measurements :** **(Surface elevation : 85.04 m)** **Date 3/4/2013 Depth (m) 11.53 Elev. (m) 73.51**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) W_p W_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/14/13

REFERENCE No.: 081211 ENCLOSURE No.: 6

BOREHOLE No.: MW6-13
ELEVATION: 86.20 m

BOREHOLE REPORT

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 5, 2013 DATE (FINISH): February 5, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		86.20		GROUND SURFACE						
0.08	0.08	86.12		TOPSOIL : 75 mm						
				SM-SILTY SAND (FILL), trace clay, loose, brown, moist, oxidized		SS-1	82	42	4-2-6-6	8
0.61	0.61	85.59		ML-SILT, trace sand, compact, brown, moist, oxidized		SS-2	62	--	5-6-7-8	13
1.22	1.22	84.98		CL-SILTY CLAY, stiff, plastic, grey, moist		SS-3	100	19	4-4-5-5	9
						SS-4	100	16	3-5-7-11	12
2.74	2.74	83.46		ML-SILT, trace clay, compact, grey, moist		SS-5	100	20	4-5-6-10	11
						SS-6	92	18	5-10-16-10	26
4.57	4.57	81.63		CL-SILTY CLAY, stiff, low plasticity, grey, moist		SS-7	100	20	2-4-5-8	9
				trace silt, firm, plastic, very moist		SS-8	92	21	2-3-3-4	6
						SS-9	100	27	2-2-3-55/ 125mm	5
6.55	6.55	79.65		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), with clay inclusion, grey						
7.30	7.30	78.90		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, grey 76 mm highly fractured rock with clay at 8.16 m depth 50 mm highly fractured rock at 8.59 m depth		RUN-1	70	--	50	--

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) W_p W_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 6

BOREHOLE No.: MW6-13
ELEVATION: 86.20 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 5, 2013 DATE (FINISH): February 5, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		86.20		GROUND SURFACE						
				101 mm fractured rock at 9.23 m depth with clay infill at 9.5 m depth with clay infill at 9.65 m depth 25 mm fracture with clay at 9.86 m depth 100 mm highly fractured rock at 9.94 m depth		RUN-2	100	--	50	--
	10.36	75.84		152 mm vertical fracture at 10.06 m depth						
				END OF BOREHOLE ● **Borehole terminates at 10.36 m bgs** ● **Borehole dry to 7.3 m bgs** ● **'bgs' denotes below ground surface**						
				Ground Water Measurements : **(Surface elevation : 86.20 m)** **Date Depth (m) Elev. (m)** **3/4/2013 0.45 87.75**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

10.36 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 7

BOREHOLE No.: MW7-13
ELEVATION: 86.72 m

BOREHOLE REPORT

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 6, 2013 DATE (FINISH): February 6, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		86.72		GROUND SURFACE						
	0.08	86.64		TOPSOIL : 75 mm						
				SM-SILTY SAND (FILL), trace clay, trace gravel, brown, moist, dense		SS-1	82	14	32-25-9-11	34
	0.61	86.11		ML-SILT (FILL), trace clay, compact, brown, moist		SS-2	100	16	5-5-7-8	12
						SS-3	100	16	5-7-10-11	17
	2.59	84.13		Sandy CL-SILTY CLAY, stiff to very stiff, low plasticity, grey, moist		SS-4	100	15	5-8-10-13	18
						SS-5	100	15	5-7-8-10	15
						SS-6	100	16	3-5-7-12	12
						SS-7	100	12	5-7-16-17	23
						SS-8	100	22	10-5-9-7	14
				firm, plastic		SS-9	50	18	2-3-5-6	8
	6.86	79.86		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), grey		SS-10	50	5	60/ 125mm	100
	7.32	79.40		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, soft, grey 25 mm horizontal and vertical fracture at 7.5 m depth 76 mm horizontal and vertical fracture at 8.33 m depth 76 mm horizontal and vertical fracture at		RUN-1	100	--	70	--

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)

10 20 30 40 50 60 70 80 90

0.30 m
Bentonite Seal
WL 2.52 m 3/4/2013
3.40 m
Sand
Screen
7.00 m
Bentonite Seal

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 7

BOREHOLE No.: MW7-13
ELEVATION: 86.72 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 6, 2013 DATE (FINISH): February 6, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		86.72		GROUND SURFACE						
				8.72 m depth clay lens at 8.99 m depth		RUN-2	100	--	70	--
				50 mm highly fractured rock at 10.09 m depth						
	10.52	76.20		25 mm horizontal and vertical fracture at 10.42 m depth						
				END OF BOREHOLE ● **Borehole terminates at 10.52 m bgs** ● **Borehole dry to 7.3 m depth** ● **'bgs' denotes below ground surface** **Ground Water Measurements :** **(Surface elevation : 86.72 m)** **Date Depth (m) Elev. (m)** **3/4/2013 2.52 84.20**						

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

10.52 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 8

BOREHOLE No.: MW8-13
ELEVATION: 83.98 m

BOREHOLE REPORT

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 8, 2013 DATE (FINISH): February 8, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		83.98		GROUND SURFACE						
	0.15	83.83		ASPHALT : 125 mm						
				SW-GW SAND AND GRAVEL (FILL), loose, brown, moist, trace cobbles		SS-1	62	5	22-6-3-3	9
	0.91	83.07		ML-SILT, trace clay, loose, grey, very moist to wet, dilatant		SS-2	100	23	2-2-3-4	5
				trace sand, wet, dilatant, very loose		SS-3	62	23	2-1-2-4	3
	2.29	81.69		CL-SILTY CLAY, soft, plastic, grey, very moist to wet		SS-4	100	26	2-2-1-3	3
						SS-5	100	29	2-1-2-3	3
	3.81	80.17		trace sand and gravel, soft, plastic		SS-6	100	27	2-1-3-4	4
						SS-7	100	17	2-2-4-5	6
	5.34	78.64				SS-8		--	59/15mm	100
	5.60	78.38		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), grey						
				SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, grey		RUN-1	75	--	75	--
						RUN-2	100	--	96	--
				61 cm of horizontal and vertical rock at 7.77 m depth 50 mm vertical fracture at 8.03 m depth 25 mm of clay at 8.23 m depth		RUN-3	95	--	60	--

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) w_p w_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

0.30 m
Bentonite Seal
WL 7.94 m
3/4/2013
8.50 m
Sand

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 8

BOREHOLE No.: MW8-13
ELEVATION: 83.98 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): February 8, 2013 DATE (FINISH): February 8, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		83.98		GROUND SURFACE						
						RUN-4	100	--	95	--
						RUN-5	100	--	100	--
						RUN-6	100	--	100	--
				76 mm vertical fracture at 13.62 m depth						
	13.90	70.08								

END OF BOREHOLE

- **Borehole terminates at 13.90 m bgs**
- **Borehole dry to 5.6 m depth**
- **'bgs' denotes below ground surface**

Ground Water Measurements :
(Surface elevation : 83.98 m)

Date	Depth (m)	Elev. (m)
3/4/2013	7.94	76.04

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) W_p W_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

Screen
10.70 m
Bentonite Seal
13.90 m

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 9

BOREHOLE No.: MW9-13
ELEVATION: 84.44 m

BOREHOLE REPORT

Page: 1 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 30, 2013 DATE (FINISH): January 30, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N
		84.44		GROUND SURFACE						
	0.10	84.34		ASPHALT : 100 mm						
				SP-SAND (FILL), compact, brown, moist		SS-1	72	7	11-11-8-8	19
	1.22	83.22		ML-SILT, trace clay, compact, brown, moist some clay, loose		SS-2	62	14	4-5-7-11	12
						SS-3	92	21	5-3-5-6	8
	2.29	82.15		CL-SILTY CLAY, soft, plastic, brown, moist		SS-4	62	23	3-2-2-2	4
	3.20	81.24		ML-SILT, trace clay, compact, brown, moist some clay		SS-5	100	20	4-5-8-9	13
						SS-6	100	23	3-5-8-11	13
	4.57	79.87		CL-SILTY CLAY, stiff, low plasticity, grey, moist Gr : 0%, Sa : 0%, Si : 70%, Cl : 30% firm, plastic, very moist to wet		SS-7	82	22	3-4-5-5	9
						SS-8	100	20	3-4-3-4	7
						SS-9	92	30	2-3-2-3	5
	6.86	77.58		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), grey		SS-10	100	3	26-71-50/ 125mm	100
	7.40	77.04		SHALE (GEORGIAN BAY FORMATION), with interbedded limestone, siltstone, fissile, thinly-bedded to thinly laminated, grey highly fractured with clay at 7.47 m depth 25 mm horizontal fracture at 7.97 m depth		RUN-1	100	--	80	--
						RUN-2	100	--	83	--

Shear test (Cu) △ Field ☐ Lab
Sensitivity (S)
○ Water content (%)
Atterberg limits (%) W_p W_l
● "N" Value (blows / 12 in.-30 cm)
10 20 30 40 50 60 70 80 90

0.30 m
Bentonite Seal
2.70 m
WL 2.74 m
3/4/2013
Sand
Screen
6.40 m
Bentonite Seal

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

REFERENCE No.: 081211 ENCLOSURE No.: 9

BOREHOLE No.: MW9-13
ELEVATION: 84.44 m

BOREHOLE REPORT

Page: 2 of 2

CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 30, 2013 DATE (FINISH): January 30, 2013

LEGEND

- PQ - PQ size continue coring
- ST - SHELBY TUBE
- RC - ROCK CORE
- WATER LEVEL

Depth (bgs) Feet	Depth (bgs) Metres	Elevation (m)	Stratigraphy	DESCRIPTION OF SOIL AND BEDROCK	State	Type and Number	Recovery %	Moisture Content	Blows per 6 in. / 15 cm or RQD	Penetration Index/SCR N	Shear test (Cu) Sensitivity (S) ○ Water content (%) Atterberg limits (%) ● "N" Value (blows / 12 in.-30 cm) △ Field ☐ Lab 10 20 30 40 50 60 70 80 90
		84.44		GROUND SURFACE							
				13 mm clay seam at 9.65 m depth 40 mm highly fractured rock at 9.87 m depth 13 mm clay seam at 9.91 m depth 40 mm horizontal fracture with clay infill at 10.09 m depth 13 mm highly fractured rock at 10.14 m depth		RUN-3	100	--	64	--	
	10.55	73.89									10.55 m

END OF BOREHOLE

- **Borehole terminates at 10.55 m bgs**
- **Borehole dry to 7.4 m depth**
- **'bgs' denotes below ground surface**
- **Gr, Sa, Si and Cl denotes Gravel, Sand, Silt and Clay respectively**

Ground Water Measurements :
(Surface elevation : 84.44 m)

Date	Depth (m)	Elev. (m)
3/4/2013	2.74	81.70

SOIL LOG WITH GRAPH+WELL 081211-INSCRA.GPJ INSPEC_SOL.GDT 3/12/13

STRATIGRAPHIC LOG

Page 1 of 1

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO
HOLE DESIGNATION: BH2-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	ASPHALT	0.09			
	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, brown, dry				
0.5	ML/CL - SILTY CLAY, firm to stiff, mottled gray/olive, moist	0.61	1	0.00 - 1.22	5
1.0					
1.5	- wet to saturated at 1.52m BGS				
2.0	- thin silty sand seams (less than 1cm thick), gray, slight petroleum hydrocarbon odour at 1.83m BGS		2	1.22 - 2.44	2
2.5					
3.0			3	2.44 - 3.35	42
3.5	- moist to wet at 3.20m BGS - gray with brown mottling, no odour at 3.35m BGS		4	3.35 - 4.27	11.5
4.0					
4.5	- silt, with clay, with sand, mottled brown/olive, moist to wet at 4.42m BGS		5	4.27 - 5.18	28
5.0	ML - SILT (WATERLAIN), stiff, gray, moist	5.03			
	END OF TEST PIT @ 5.18m BGS	5.18			
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH3-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	ASPHALT	0.15			
0.5	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry	0.61	1	0.00 - 1.22	4
1.0	ML/CL - SILTY CLAY, stiff, dark gray, dry to moist, sligt petroleum hydrocarbon odour				
1.5	- soft, wet at 1.22m BGS				
2.0			2	1.22 - 2.44	148
2.5	- moderate to strong petroleum hydrocarbon odour at 2.13m BGS				
3.0	- thin sand silt seams (less than 1cm thick), moderate to strong petroleum hydrocarbon odour at 2.44m BGS		3	2.44 - 3.35	78
3.5	- slight odour at 2.74m BGS				
4.0	- no odour at 3.05m BGS		4	3.35 - 4.27	2
4.5					
5.0	- soft, very moist to wet at 4.57m BGS		5	4.27 - 5.18	1
5.5	END OF TEST PIT @ 5.18m BGS	5.18			
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH4-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	ASPHALT	0.15			
0.5	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry - with silt, trace gravel at 0.46m BGS		1	0.00 - 1.22	7
1.0	ML/CL - SILTY CLAY, stiff, dark gray, moist, black staining, petroleum hydrocarbon odour	0.76			
1.5	- soft, mottled brown/gray, saturated, strong petroleum hydrocarbon odour at 1.52m BGS				
2.0			2	1.22 - 2.44	19
2.5	- trace sand, moderate to slight odour at 2.74m BGS				
3.0	- stiff, moist, no odour at 3.20m BGS		3	2.44 - 3.35	334
3.5					
4.0	- soft to firm, very moist to wet at 3.81m BGS - stiff, moist at 4.11m BGS		4	3.35 - 4.27	4
4.5	END OF TEST PIT @ 4.27m BGS	4.27			
5.0					
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH5-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	ASPHALT	0.15			
	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry				
0.5	- sand, with silt, compact, poorly graded, brown, moist at 0.61m BGS		1	0.00 - 1.22	1
1.0		1.22			
	ML/CL - SILTY CLAY, stiff, mottled brown/gray, moist				
1.5	- wet at 1.52m BGS				
			2	1.22 - 2.44	34
2.0	- gray, some brown mottling, moderate petroleum hydrocarbon odour at 1.98m BGS				
2.5	- gray, saturated, strong petroleum hydrocarbon odour at 2.44m BGS				
			(3)	2.44 - 3.35	125
3.0					
3.5	- slight odour at 3.35m BGS				
	- no odour at 3.81m BGS		4	3.35 - 4.27	2
4.0					
	END OF TEST PIT @ 4.27m BGS	4.27			
4.5					
5.0					
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (3)

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH6-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	SAND and GRAVEL (FILL), compact to dense, coarse grained, brown, dry				
0.5	SAND (FILL), loose, fine to medium grained, massive, light brown, dry, no odour	0.46	1	0.00 - 1.22	1.4
1.0	ML/CL - SILTY CLAY, stiff, low plasticity, massive, gray with black mottling, dry to moist	1.01			
	- slight to moderate petroleum hydrocarbon odour at 1.22m BGS				
1.5	- trace sand, soft, gray, saturated, strong petroleum hydrocarbon odour at 1.52m BGS				
			(2)	1.22 - 2.44	13.5
2.0					
2.5					
			3	2.44 - 3.35	–
3.0					
3.5	- moist, slight petroleum hydrocarbon odour at 3.35m BGS				
	- stiff, mottled gray/brown, no odour at 3.66m BGS				
4.0			4	3.35 - 4.27	2.5
	END OF TEST PIT @ 4.27m BGS	4.27			
4.5					
5.0					
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (2)

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH7-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
0	SAND and GRAVEL (FILL), compact, coarse grained, well graded, light brown/gray, dry		1	0.00 - 1.22	0
0.5					
1.0	SAND (FILL), loose, medium grained, poorly graded, brown, dry to moist	0.76			
1.5			2	1.22 - 2.44	0
2.0					
2.5	- silty sand, dense, dilatent, saturated at 2.44m BGS - black petroleum hydrocarbon staining, strong petroleum hydrocarbon odour at 2.74m BGS				
3.0			(3)	2.44 - 3.66	15.5
3.5					
4.0			(4)	3.66 - 4.72	0
4.5	SANDY SILT, stiff, brown, moist, no odour	4.27			
	END OF TEST PIT @ 4.57m BGS	4.72			
5.0					
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH8-04
DATE COMPLETED: 22 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
0	ASPHALT/CONCRETE				
	SILTY CLAY (FILL), with gravel, stif, mottled gray/brown, dry to moist	0.21	1	0.00 - 1.22	0
0.5					
1.0	ML/CL - SILTY CLAY, stiff, olive, moist, no odour	1.07			
1.5	- soft to firm, dilatent, brown, very moist, no odour at 1.52m BGS		2	1.22 - 2.44	0
2.0					
2.5	- stiff, moist at 2.74m BGS				
3.0			3	2.44 - 3.35	0
3.5					
4.0			4	3.35 - 4.27	0
4.5	END OF TEST PIT @ 4.27m BGS	4.27			
5.0					
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH9-04
DATE COMPLETED: 23 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	ASPHALT	0.09			
	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry				
0.5	- with silt at 0.30m BGS	0.46			
	ML/CL - SILTY CLAY, firm to stiff, dark gray, moist, no odour		1	0.00 - 1.22	0
1.0					
1.5					
	- soft, brown mottling, very moist to wet at 1.83m BGS		2	1.22 - 2.44	0
2.0	- sandy seam (10cm thick), light gray at 2.13m BGS				
2.5	- saturated at 2.44m BGS				
			3	2.44 - 3.35	0
3.0					
3.5	- small sand seams (less than 1cm thick), dark gray/black, no odour at 3.35m BGS				
			4	3.35 - 4.27	0
4.0	- mottled gray/brown at 4.27m BGS				
4.5					
			5	4.27 - 5.33	0
5.0					
	END OF TEST PIT @ 5.33m BGS	5.33			
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH10-04
DATE COMPLETED: 23 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	ASPHALT	0.09			
	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry				
0.5	SAND (FILL), compact, medium grained, poorly graded, brown, moist	0.46	1	0.00 - 1.22	0
1.0					
1.5		1.52			
	ML/CL - SILTY CLAY, stiff, brown with gray mottling, moist		2	1.22 - 2.44	0
2.0					
2.5	- thin gray sand seams (less than 1cm thick), moderate petroleum hydrocarbon odour at 2.59m BGS				
			(3)	2.44 - 3.35	330
3.0					
3.5	- stiff, mottled brown/gray, no odour at 3.51m BGS				
			4	3.35 - 4.27	30
4.0	- soft, dilatent, saturated at 4.27m BGS				
4.5	- gray at 4.42m BGS				
			(5)	4.27 - 5.18	9
5.0					
	END OF TEST PIT @ 5.18m BGS	5.18			
5.5					
6.0					
6.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC LOG

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH11-04
DATE COMPLETED: 23 January 2004
DRILLING METHOD: DIRECT-PUSH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE PID (ppm)
	CONCRETE	0.15			
	SANDY SILT (FILL), stiff, brown, moist		1	0.00 - 1.22	4
	- saturated at 1.37m BGS				
	- black staining, strong petroleum hydrocarbon odour at 1.68m BGS		2	1.22 - 2.44	670
	- no staining at 2.29m BGS				
	- moist to dry, strong petroleum hydrocarbon odour at 2.59m BGS				
	- moderate odour at 3.05m BGS		3	2.44 - 3.35	150
	- sand seam (approximately 10cm thick), saturated at 3.35m BGS				
			4	3.35 - 4.27	120
	ML - SILT (WATERLAIN), with clay to clayey, with sand, soft, high plasticity, gray, very moist	4.11			
			5	4.27 - 5.18	60
	- trace clay, low plasticity, saturated at 5.18m BGS				
			6	5.18 - 6.10	25
	- soft, high plasticity, dilatent, very moist at 6.10m BGS				
			7	6.10 - 6.86	13
	- shale fragments in spoon tip at 6.71m BGS				
	END OF TEST PIT @ 6.86m BGS	6.86			

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

TEST PIT LOG 32985-01.GPJ CRA_CORP.GDT 21/5/04

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: MW1-04
DATE COMPLETED: January 20, 2004
DRILLING METHOD: 4 1/4" ID HSA
FIELD PERSONNEL: B. IOTZOV

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT	0.46	CONCRETE SEAL					
	SILT and CLAY (FILL), soft, gray, wet to saturated, no odour		BENTONITE CHIPS	1		17	8	0
				2		33	4	0
			203mm ø BOREHOLE					
				3		42	1	0
			WELL SCREEN SAND PACK					
				4		8	3	0
	SILT (TILL), with clay to clayey, trace sand, soft, high plasticity, laminated, gray, saturated	3.96		5		58	3	0
				6		50	20	0
			BENTONITE CHIPS					
	SHALE (BEDROCK), gray	5.33		7		0	>50	–
	END OF BOREHOLE @ 5.49m BGS	5.49						

WELL DETAILS
Screened interval:
1.52 to 4.57m BGS
Length: 3.05m
Diameter: 51mm
Slot Size: 10
Material: SCH 40 PVC
Seal:
0.30 to 1.22m BGS
Material: BENTONITE CHIPS
Sand Pack:
1.22 to 4.72m BGS
Material: #1 SILICA SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

OVERBURDEN LOG 32985-01.GPJ CRA_CORP.GDT 1/31/05

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: MW2-04
DATE COMPLETED: January 21, 2004
DRILLING METHOD: 4 1/4" ID HSA
FIELD PERSONNEL: B. IOTZOV

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS
	ASPHALT	
0.5	SAND (FILL), dense, brown, moist	0.46
	- silt, with sand, laminated, mottled gray/green at 0.61m BGS	0.76
1.0	SILT, trace sand, trace gravel, firm, laminated, mottled gray/green, moist	
1.5		
2.0		
	- wet at 2.29m BGS	
2.5		
3.0		
	- moist at 3.35m BGS	
3.5		
4.0		
4.5	- with gravel at 4.57m BGS	
5.0	END OF BOREHOLE @ 4.97m BGS	4.97
5.5		
6.0		
6.5		

MONITOR INSTALLATION: CONCRETE SEAL; BENTONITE CHIPS; 203mm ϕ BOREHOLE; WELL SCREEN SAND PACK; BENTONITE CHIPS

WELL DETAILS
Screened interval:
1.52 to 4.57m BGS
Length: 3.05m
Diameter: 51mm
Slot Size: 10
Material: SCH 40 PVC
Seal:
0.30 to 1.22m BGS
Material: BENTONITE CHIPS
Sand Pack:
1.22 to 4.57m BGS
Material: #1 SILICIA SAND

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1		75	16	0
2		60	18	0
3		8	3	0
4		65	4	0
5		65	23	0
6			12	0
7			>62	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-01.GPJ CRA_CORP.GDT 1/31/05

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: MW3-04
DATE COMPLETED: January 21, 2004
DRILLING METHOD: 4 1/4" ID HSA
FIELD PERSONNEL: B. IOTZOV

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS
	ASPHALT	
0.5	SAND and GRAVEL (FILL), dense, gray/brown, slight petroleum hydrocarbon odour	0.30
1.0	SAND and SILT (TILL), firm, gray	0.91
	- saturated at 1.22m BGS	
1.5		
2.0		
2.5		
3.0		
	- trace gravel, trace sand, trace clay at 3.66m BGS	
3.5		
4.0		
4.5	ML - SILT (TILL), trace sand, trace gravel, stiff, medium plasticity, laminated, gray/olive, moist to wet	4.27
	- with sand, with gravel at 4.88m BGS	
5.0	END OF BOREHOLE @ 5.18m BGS	5.18
5.5		
6.0		
6.5		

MONITOR INSTALLATION: CONCRETE SEAL; BENTONITE CHIPS; 203mm ϕ BOREHOLE; WELL SCREEN SAND PACK; BENTONITE CHIPS

WELL DETAILS
Screened interval:
1.52 to 4.57m BGS
Length: 3.05m
Diameter: 51mm
Slot Size: 10
Material: SCH 40 PVC
Seal:
0.30 to 1.22m BGS
Material: BENTONITE CHIPS
Sand Pack:
1.22 to 4.72m BGS
Material: #1 SILICA SAND

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1		56	41	0
2		0	13	--
3		50	2	0
4		38	4	0
5		100	4	0
6		88	9	0
7		71	17	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-01.GPJ CRA_CORP.GDT 1/31/05

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: MW5-04
DATE COMPLETED: December 22, 2004
DRILLING METHOD: DIRECT-PUSH/ 4 1/4" ID HSA
FIELD PERSONNEL: N. REDWOOD/ J. O'NEIL

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT	0.20	CONCRETE SEAL					
	GRAVEL (FILL), with sand, trace silt, loose, fine to coarse grained, well graded, brownish grey, moist	0.38						
0.5	SAND (FILL), trace silt, compact, fine to medium grained, poorly graded, brown with oxidation, moist to wet, no odours		BENTONITE CHIPS	1	P/S	75		0.6
	- grey with dark grey mottling, wet, no odours at 0.76m BGS	0.97	RISER PIPE					
1.0	ML - SILT, with to trace clay, trace sand, firm to stiff, slightly to non-plastic, grey with green mottling, vegetative debris, moist							
1.5	- with sand, fine grained, trace oxidation, no vegetative debris at 1.22m BGS			NR-03				3.2
	- trace sand, coarse grained, grey, oxidation mottling, moist to wet, sheen, strong petroleum hydrocarbon odour, black grease from 1.52 to 1.83m BGS			2	P/S	75		0.6
2.0			203 mm ø BOREHOLE					
2.5	- with clay, green mottling at 2.44m BGS		SAND PACK	NR-04				
3.0	- black vegetative debris at 3.05m BGS		WELL SCREEN	3	P/S	75		1.4
	SM/ML - SANDY SILT, slightly cohesive, fine grained, non plastic, slightly dilatent, grey, moist to wet,	3.20						
3.5	- not dilatent, moist at 3.51m BGS							
4.0	- sand seam for 102mm, with silt, fine grained, grey at 4.11m BGS			4	P/S	75		1.0
4.5		4.57	MACROCORE SAMPLE HOLE					
	ML - SILT (TILL), with clay, trace gravel, trace sand, hard, well graded, fine to coarse grained, cohesive, plastic, grey, moist							
5.0	END OF BOREHOLE @ 4.57m BGS	4.88						
5.5								
6.0								
6.5								

WELL DETAILS
Screened interval:
1.52 to 4.57m BGS
Length: 3.05m
Diameter: 51mm
Slot Size: 10
Material: SCH 40 PVC
Seal:
0.30 to 0.91m BGS
Material: BENTONITE CHIPS
Sand Pack:
0.91 to 4.57m BGS
Material: #2 SILICA SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

OVERBURDEN LOG 32985-01.GPJ CRA_CORP.GDT 1/31/05

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-01
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: MW6-04
DATE COMPLETED: December 22, 2004
DRILLING METHOD: DIRECT-PUSH/ 4 1/4" ID HSA
FIELD PERSONNEL: N. REDWOOD/ J. O'NEIL

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT	0.15	CONCRETE SEAL					
	GRAVEL (FILL), trace to with sand, trace silt, loose, well graded, small to coarse grained, grey, moist	0.20						
0.5	SAND (FILL), with gravel, trace silt, fine to coarse grained, brown, moist		BENTONITE CHIPS	1	P/S	50		0.8
	- no gravel, loose, fine grained, wet, oxidized at 0.61m BGS		RISER PIPE					
1.0	- grey, black mottling at 1.07m BGS							
1.5	- trace to with silt, dilatant at 1.37m BGS							
				2	P/S	75		0.2
2.0			203 mm ø BOREHOLE					
	- dark grey, slight staining, slight odours at 2.13m BGS	2.29	SAND PACK					
2.5	ML - SILT, trace to with clay, trace sand, stiff, fine grained, slightly cohesive, brittle, grey with green mottling, moist, oxidized		WELL SCREEN					
	- clayey, plastic, cohesive, sticky, moist to wet at 2.74m BGS			NR-02				
3.0				3	P/S	75		0.2
3.5	- medium to coarse sand veneer, brown, wet at 3.25m BGS							
	- trace fine sand veneers, grey at 3.51m BGS							
4.0	- grey, no mottling, moist at 3.96m BGS			4	P/S	75		1.3
4.5	- trace gravel at 4.57m BGS							
	ML- SILT (TILL), with clay, trace to with sand, trace gravel, stiff, fine to coarse grained, cohesive, plastic grey, moist	4.72	MACROCORE SAMPLE HOLE					
5.0	- trace clay, sticky, plastic, very cohesive, moist to wet at 4.88m BGS	5.18		5	P/S	75		1.1
5.5	SHALE - bedrock, grey, brittle, moist							
	END OF BOREHOLE @ 5.64m BGS	5.64						
6.0								
6.5								
7.0								

WELL DETAILS
Screened interval:
0.91 to 3.96m BGS
Length: 3.05m
Diameter: 76mm
Slot Size: 10
Material: SCH 40 PVC
Seal:
0.30 to 0.61m BGS
Material: BENTONITE CHIPS
Sand Pack:
0.61 to 3.96m BGS
Material: # SILICA SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ( )

OVERBURDEN LOG 32985-01.GPJ CRA_CORP.GDT 1/31/05

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-02
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH201-05
DATE COMPLETED: November 14, 2005
DRILLING METHOD: 2" PERCUSSION/BOSCH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE Eagle (ppm)
	CONCRETE FLOOR SLAB	0.10					
	GRANULAR FILL, no odour or staining		SS-1		5		0
			SS-2		100		0
	SM/ML - SILTY SAND, soft to firm, dark grey, saturated, faint petroleum hydrocarbon odour	1.37	S-BH201-4.5-6				0
			SS-3				0
	ML/CL - CLAYEY SILT, firm to stiff, dark grey, moist, no odour	2.51					
	END OF BOREHOLE @ 2.59m BGS	2.59					
	Note: Borehole was backfilled with bentonite chips and a concrete surface.						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-02.GPJ CRA_CORP.GDT 1/6/06

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-02
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH202-05
DATE COMPLETED: November 14, 2005
DRILLING METHOD: 2" PERCUSSION/BOSCH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE Eagle (ppm)
	CONCRETE FLOOR SLAB	0.15					
	GRANULAR FILL	0.38	S-BH202-0.5-2.5				10
	ML/SM - SILTY SAND/SANDY SILT, compact/firm, fine grained, dark grey, moist, mild petroleum hydrocarbon odour - dark grey/black staining, stronger petroleum hydrocarbon odour from 0.61 to 0.76m BGS		SS-1		20		
			SS-2				
			S-BH202-2.5-5		10		5
	- strong petroleum hydrocarbon odour, some sheen on soil surface at 1.37m BGS - wet/saturated, dilatant, moderate petroleum hydrocarbon odour, fainter with depth at 1.52m BGS - seams of silty clay, grey, stiff, moist from 1.52 to 2.59m BGS		SS-3		0		0
	END OF BOREHOLE @ 2.59m BGS	2.59					
	Note: Borehole was backfilled with bentonite chips and a concrete surface. Borehole was redrilled from 1.5 to 2.3 m bgs.						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-02.GPJ CRA_CORP.GDT 1/6/06

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-02
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH203-05
DATE COMPLETED: November 14, 2005
DRILLING METHOD: 2" PERCUSSION/BOSCH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE Eagle (ppm)
	CONCRETE FLOOR SLAB	0.15					
	GRANULAR FILL, no staining or odour		S-BH203-0.5-2.5				0
0.5	SM - SAND with silt, compact, fine to medium grained, brown, moist, some black coal clasts - silty, dark grey, wet/saturated, dilatant, faint petroleum hydrocarbon odour at 0.76m BGS	0.46	SS-1		15		
1.0			SS-2		100		0
1.5	END OF BOREHOLE @ 1.52m BGS	1.52					
	Note: Borehole was backfilled with bentonite chips and a concrete surface.						
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-02.GPJ CRA_CORP.GDT 1/6/06

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-02
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH204-05
DATE COMPLETED: November 14, 2005
DRILLING METHOD: 2" PERCUSSION/BOSCH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE Eagle (ppm)
	CONCRETE FLOOR SLAB						
	- no recovery, very soft, spoons appear saturated from 0.20 to 0.76m BGS	0.20					
0.5			SS-1		0		
	ML/SM - SILTY SAND, soft, fine grained, brown, saturated, dilatant						
1.0			SS-2				
			S-BH204-2.5-4.5		20		5
1.5	- dark grey, faint petroleum hydrocarbon odour, some staining/sheen on soil at 1.37m BGS						5
	CL/ML - CLAYEY SILT, stiff, grey, moist, no odour or staining		SS-3		100		
2.0							5
	END OF BOREHOLE @ 2.29m BGS	2.29					
2.5	Note: Borehole was backfilled with bentonite chips and a concrete surface.						
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-02.GPJ CRA_CORP.GDT 1/6/06

STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: UST CLOSURE SERVICES
PROJECT NUMBER: 32985-02
CLIENT: KRAFT CANADA INC.
LOCATION: 2150 LAKESHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH205-05
DATE COMPLETED: November 14, 2005
DRILLING METHOD: 2" PERCUSSION/BOSCH
FIELD PERSONNEL: K. PETER

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	Eagle (ppm)
	CONCRETE FLOOR SLAB	0.15					
0.5	SM/ML - SILTY SAND, compact to dense, fine grained, brown, moist, no odour or staining		SS-1		70		0
1.0	- saturated, grey, trace clay at 1.07m BGS		SS-2 S-BH205-2.5-5		100		0
1.5	END OF BOREHOLE @ 1.52m BGS	1.52					
	Note: Borehole was backfilled with bentonite chips and a concrete surface.						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ◯

OVERBURDEN LOG 32985-02.GPJ CRA_CORP.GDT 1/6/06

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m 'N'	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100	SHEAR STRENGTH (kPa) ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w_L	WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 175 mm of reinforced concrete															
0 2	**FILL** sand and silt, trace gravel, saturated		1AU	NDIST												
			1BU	NDIST												
0 9	**SILTY CLAY** grey, wet		2AU	NDIST												
			2BU	NDIST												
			3AU	NDIST												
			3BU	NDIST												
			4AU	NDIST												
			4BU	NDIST												
	trace gravel		5AU	NDIST												
5 2	**SHALE** weathered shale															
5 5	**END OF BOREHOLE** 1. Sample refusal at 5.5 m. 2. Borehole backfilled with bentonite upon completion.															

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-2

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w_L / WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 230 mm of reinforced concrete													
0 2	**FILL** sand and silt, grey/brown, moist		1A	U	N/D									
0.6	**CLAYEY SILT** trace sand, grey/brown, moist		1B	U	N/D									
1 2	**SILTY CLAY** trace sand, trace gravel, grey, wet		2A	U	N/D									
			2B	U	N/D									
			3A	U	N/D									
			3B	U	N/D									
			4A	U	N/D									
			4B	U	N/D									
	trace grave, trace sand		5A	U	N/D									
5 5	**END OF BOREHOLE** 1. Sample refusal at 5.5 m. 2. Borehole backfilled with bentonite upon completion.													

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-3

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lke Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/05/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w_L / WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 150 mm of reinfoced concrete													
0 2	**FILL** sand, trace gravel, trace silt, brown, moist		1A	U	N/D									
0 9	**SILTY CLAY** trace sand, trace gravel, brown, moist		1B	U	N/D									
1 2	**SILT** some clay, trace sand, trace gravel, brown, moist		2A	U	N/D									
			2B	U	N/D									
2.4	**SILTY CLAY** brown, moist		3A	U	N/D									
			3B	U	N/D									
			4A	U	N/D									
			4B	U	N/D									
4 9	**END OF BOREHOLE** 1. Sample refusal at 4.9 m. 2. Borehole backfilled with bentonite upon completion													

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 1.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-4

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013
REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 230 mm of reinforced concrete											
0 2	**FILL** sand and silt, brown/grey,moist		1A	U	DIST							
			1B	U	DIST							
			2A	U	DIST							
1 8	**SILTY CLAY** grey, saturated		2B	U	DIST							
			3A	U	DIST							
	wet		3B	U	DIST							
			4A	U	DIST							
	trace weathered shale		4B	U	DIST							
			5A	U	DIST							
5 5	**END OF BOREHOLE** 1. Sample refusal at 5.5 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-5

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/07/2013
REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 150 mm of reinforced concrete											
0 2	**FILL** sand, trace silt, brown, moist		1A	U	DIST							
0.6	**SILTY CLAY** trace sand, brown, moist		1B	U	DIST							
			2A	U	DIST							
			2B	U	DIST							
	grey, wet saturated		3A	U	DIST							
	wet		3B	U	DIST							
			4A	U	DIST							
	trace gravel		4B	U	DIST							
			5A	U	DIST							
			5B	U	DIST							
6.1	**END OF BOREHOLE** 1. Sample refusal at 6.6 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-6

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/07/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa): ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L: WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0.0	**CONCRETE**											
0.2	150 mm of reinforced concrete **FILL** sand, trace silt, gravel, brown, moist		1A	UNDIST								
			1B	UNDIST								
1.4	**SILT** trace clay, grey, moist		2A	UNDIST								
1.8	**CLAYEY SILT** grey, moist		2B	UNDIST								
			3A	UNDIST								
			3B	UNDIST								
3.7	**SILTY CLAY** grey, moist		4A	UNDIST								
			4B	UNDIST								
	wet		5A	UNDIST								
			5B	UNDIST								
			6A	UNDIST								
6.7	**END OF BOREHOLE** 1. Sample refusal at 6.7 m. 2. Borehole backfilled with bentonite upon completion.											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-7

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa): ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L: WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0.0	**CONCRETE**											
0.2	150 mm of reinforced concrete **FILL** sand and clayey silt, brown/grey		1A	UNDIST								
			1B	UNDIST								
1.1	**SILT** some clay, brown, moist		2A	UNDIST								
			2B	UNDIST								
2.4	**SILTY CLAY** grey, wet		3A	UNDIST								
			3B	UNDIST								
			4A	UNDIST								
			4B	UNDIST								
	saturated		5A	UNDIST								
			5B	UNDIST								
			6A	UNDIST								
6.2	**END OF BOREHOLE** 1. Sample refusal at 6.2 m. 2. Borehole backfilled with sand to 5.8 m. 3. 30mm-diameter monitoring well installed. 4. Water encountered at 3.4 mbg on Nov 6, 2013.											

W. L. 3.4 mBGL
Jun 11, 2013

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-8

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013
REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 250 mm of reinforced-concrete											
0 2	**FILL** silt, grey/brown, moist		1A	UNDIST								
0.6	**SILT** some clay, trace sand, grey, moist		1B	UNDIST								
	grey/brown		2A	UNDIST								
			2B	UNDIST			W. L. 2.4 mBGL Jun 11, 2013					
2.4	**CLAYEY SILT** grey, wet		3A	UNDIST								
			3B	UNDIST								
3.7	**SILTY CLAY** grey, wet		4A	UNDIST								
			4B	UNDIST								
			5A	UNDIST								
	trace sand, trace gravel		5B	UNDIST								
5 8	**END OF BOREHOLE** 1. Sample refusal at 5.8 m. 2. 30mm-diameter monitoring well installed. 3. Water encountered at 2.4 mbg Nov. 6, 2013											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽▼ ▽▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-9A

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lke Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/05/2013
REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 150 mm of reinforced-concrete											
0 2	**FILL** sand, trace gracel, trace silt, brown, moist		1A	UNDIST								
			1B	UNDIST								
	wet		2A	UNDIST								
	grey		2B	UNDIST			W. L. 2.1 mBGL May 11, 2013					
2.4	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. 30mm-diameter monitoring well installed. 3. Water encountered at 2.1 mbg Nov. 5, 2013											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽▼ ▽▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 1.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-10

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	SOIL PROFILE: DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 230 mm of reinforced concrete											
0 2	**FILL** sand and silt, brown, moist		1A	UNDIST								
0.6	**SILT** trace sand, trace gravel, trace clay, brown, oxidation, moist		1B	UNDIST								
	grey/brown		2A	UNDIST								
	grey, wet		2B	UNDIST								
2.4	**SILTY CLAY** trace sand, grey, wet		3A	UNDIST								
			3B	UNDIST								
			4A	UNDIST			W. L. 3.6 mBGL Jun 11, 2013					
			4B	UNDIST								
			5A	UNDIST								
5 5	**SHALE** shale, grey		5B	UNDIST								
5 8	**END OF BOREHOLE** 1. Sample refusal at 5.8 m. 2. 30mm-diameter monitoring well installed. 3.Water encountered at 3.6 mbg Nov. 6, 2013											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 2.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-11

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lke Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/05/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	SOIL PROFILE: DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 230 mm of reinforced concrete											
0 2	**FILL** sand, trace silt, trace gravel, brown		1A	UNDIST								
0.6	**SILT TILL** some sand, trace clay		1B	UNDIST								
1 2	**SILT** some clay, grey, moist		2A	UNDIST								
1 8	**CLAYEY SILT** trace sand, grey, wet		2B	UNDIST								
	brown, some organics		3A	UNDIST								
			3B	UNDIST								
	dry with fine sand layers		4A	UNDIST								
	moist to very moist		4B	UNDIST								
4 9	**SILTY CLAY** grey/brown, wet		5A	UNDIST								
			5B	UNDIST								
6.1	**CLAY TILL** grey, moist		6	UNDIST								
6.4	**END OF BOREHOLE** 1. Possible bedrock refusal at 6.4m. 2. Borehole backfilled with bentonite upon completion											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 1.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-12

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lke Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/06/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ○ QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 200 mm of reinfoced concrete										
0 2	**FILL** silt, some clay, grey, moist		1A	UNDIST							
			1B	UNDIST							
	grey/brown		2A	UNDIST							
			2B	UNDIST							
			3A	UNDIST							
3 0	**SILTY CLAY** grey, wet		3B	UNDIST							
			4A	UNDIST							
			4B	UNDIST							
			5A	UNDIST							
	trace gravel		5B	UNDIST							
			6A	UNDIST							
6 2	**END OF BOREHOLE** 1. Sample refusal at 6.2 m. 2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 1.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-13

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/07/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0 0	**CONCRETE** 230 mm of reinforced concrete										
0 2	**FILL** sand, brown, moist		1A	UNDIST							
			1B	UNDIST							
			2A	UNDIST							
1 8	**SILT** trace clay, brown, wet		2B	UNDIST							
2.1	**SILTY CLAY** grey, wet		3A	UNDIST							
			3B	UNDIST							
			4A	UNDIST							
	saturated		4B	UNDIST							
			5A	UNDIST							
5 5	trace gravel		5B	UNDIST							
			6A	UNDIST							
	END OF BOREHOLE 1. Sample refusal at 6.7 m. 2. 50mm-diameter monitoring well installed.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH1

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/07/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) UNCONF NFD, QUICK TRIAXIAL, FIELD VANE & Sensitivity, LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
0.0 / 25.4	**ASPHALT** 180 mm of asphalt											
25.2	**GRANULAR**		1A	UNDIST								
0.4	**FILL** sand, brown, moist		1B	UNDIST			25					
23.8			2A	UNDIST			24					
1.8	**SILT** some sand, trace gravel, strong PHC odour, brown, moist		2B	UNDIST								
22.6			3A	UNDIST			23					
3.0	**SAND & SILT** strong PHC odour, black, saturated		3B	UNDIST			22					
22.0												
3.7	**END OF BOREHOLE** 1. Sample refusal at 3.7 m. 2. 50mm-diameter monitoring well installed. 3. Water at 3.1 mbg Nov. 7, 2013											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH2

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) UNCONF NFD, QUICK TRIAXIAL, FIELD VANE & Sensitivity, LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
0.0 / 25.5	**ASPHALT** 75 mm of asphalt											
0.1 / 24.9	**FILL** sandy silt, brown, moist		1A	UNDIST			25					
0.8 / 24.1	**FILL** clayey silt, brown, moist		1B	UNDIST								
1.5	**CLAYEY SILT** trace sand, brown, moist		2A	UNDIST			24					
			2B	UNDIST			23					
	strong PHC odour between 3-4.5 m trace gravel											
22.1			3A	UNDIST			22					
3.5 / 21.8	**SANDY SILT** brown											
3.8	**SILTY CLAY** brown/grey, moist		3B	UNDIST								
			4A	UNDIST			21					
			4B	UNDIST			20					
19.6												
6.1	**SHALE** shale, grey		5A	UNDIST			19					
18.9												
6.7	**END OF BOREHOLE** 1. Sample refusal at 6.7 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH3

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w_L / WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7														
25.6 0.1	**ASPHALT** 100 mm of asphalt													
	FILL sand, trace silt, brown, moist		1A	UNDIST			25							
			1B	UNDIST										
24.0 1.7	**CLAYEY SILT** clayey silt, trace sand, brown, moist		2A	UNDIST			24							
			2B	UNDIST			23							
22.6 3.0	**SILTY CLAY** silty clay, brown, moist		3A	UNDIST			22							
			3B	UNDIST										
21.1 4.6	**CLAYEY SILT** clayey silt, brown, moist		4A	UNDIST			21							
			4B	UNDIST			20							
19.6 6.1	**SHALE** shale, grey		5A	UNDIST										
19.0 6.7	**END OF BOREHOLE** 1. Sample refusal at 6.7 m. 2. Borehole backfilled with bentonite upon completion.						19							

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH4

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w_L / WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6														
25.4 0.2	**ASPHALT** 50 mm of asphalt													
	CONCRETE 125 mm of concrete		1A	UNDIST			25							
	FILL silt, trace sand, grey, moist		1B	UNDIST										
24.4 1.2	trace clay													
	SILT trace sand, trace clay, brown, moist		2A	UNDIST			24							
			2B	UNDIST										
			3A	UNDIST			23							
			3B	UNDIST			22							
	some clay, trace sand, wet		4A	UNDIST										
21.4 4.3	**SILTY CLAY** grey, wet		4B	UNDIST			21							
			5A	UNDIST										
	saturated		5B	UNDIST			20							
18.9 6.7			6A	UNDIST										
	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.						19							

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH5

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7												
25.6	**ASPHALT**											
0.1	100 mm of asphalt											
	FILL		1A	UNDIST			25					
	sand and gravel, brown, moist											
			1B	UNDIST								
			2A	UNDIST			24					
	trace sand, some clay											
23.9												
1.8	**CLAY**											
	dark brown, moist		2B	UNDIST								
			3A	UNDIST			23					
			3B	UNDIST								
			4A	UNDIST			22					
	saturated											
21.1			4B	UNDIST								
4.6	**SILTY-CLAY**						21					
	brown, wet		5A	UNDIST								
	saturated		5B	UNDIST			20					
19.0			6A	UNDIST								
6.7	**SHALE**						19					
18.7	shale, grey											
7.0	**END OF BOREHOLE**											
	1. Sample refusal at 7.0 m.											
	2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH6

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
25.5	**ASPHALT**											
0.1	100 mm of asphalt											
25.3												
0.3	**FILL**		1A	UNDIST			25					
	sand and gravel, brown, moist											
	SAND & SILT											
	brown, moist		1B	UNDIST								
24.4												
1.2	**SILT**		2A	UNDIST			24					
	trace sand, grey/brown, moist											
	grey											
23.5			2B	UNDIST								
2.1	**CLAY**											
23.2	dark grey, moist											
2.4	**SILT**		3A	UNDIST			23					
	trace sand, brown, saturated											
	some clay		3B	UNDIST								
22.0							22					
3.7	**CLAYEY SILT**		4A	UNDIST								
	clayey silt, brown, wet											
20.8			4B	UNDIST			21					
4.9	**SILTY CLAY**											
	silty clay, grey, wet		5A	UNDIST								
			5B	UNDIST			20					
			6A	UNDIST								
18.6							19					
7.0	**END OF BOREHOLE**											
	1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH7

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5 / 0.0	**ASPHALT** 75 mm of asphalt						25					
24.9 / 0.6	**FILL** sand and gravel, trace silt, brown		1A	UNDIST								
	FILL silt, some sand, grey/brown, moist trace clay		1B	UNDIST								
			2A	UNDIST			24					
23.1 / 2.4			2B	UNDIST								
	SILT some clay, brown, moist		3A	UNDIST			23					
22.5 / 3.0	**SILTY CLAY** grey, wet		3B	UNDIST								
			4A	UNDIST			22					
	brown, moist		4B	UNDIST			21					
			5A	UNDIST								
			5B	UNDIST			20					
18.8 / 6.7			6A	UNDIST			19					
	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH8

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6 / 0.0	**ASPHALT** 150 mm of asphalt						25					
25.4 / 0.2	**FILL** sand and gravel, brown, moist		1A	UNDIST								
			1B	UNDIST								
			2A	UNDIST			24					
23.3 / 2.3			2B	UNDIST								
	SILTY CLAY brown, moist		3A	UNDIST			23					
22.1 / 3.5	**CLAYEY SILT** some sand, grey, moist		3B	UNDIST								
20.7 / 4.9	**SILTY CLAY** silty clay, grey/brown, moist		4A	UNDIST			22					
			4B	UNDIST			21					
19.5 / 6.1	**SHALE** shale, grey		5A	UNDIST								
18.9 / 6.7	**END OF BOREHOLE** 1. Sample refusal at 6.7 m. 2. Borehole backfilled with bentonite upon completion.						20					
							19					

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH9

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) — UNCONF ○ QUICK TRIAXIAL ● FIELD VANE + LAB VANE ×	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.2	**ASPHALT**						25				
25.0 0.1	100 mm of asphalt										
	FILL sand and gravel, brown, moist		1A	UNDIST							
24.4											
0.8	**FILL** clayey silt, some sand, brown/grey, moist		1B	UNDIST			24				
23.6											
1.5	**SILTY CLAY** trace sand, brown, moist		2A	UNDIST			23				
	black/grey		2B	UNDIST							
22.1											
3.0	**SILT** some clay, trace sand, brown, moist		3A	UNDIST			22				
			3B	UNDIST			21				
20.6											
4.6	**SILTY CLAY** trace sand, brown, wet		4A	UNDIST			20				
19.8											
5.3	**CLAYEY SILT TILL** trace gravel, grey, shale fragments		4B	UNDIST							
19.1											
6.1	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH10

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) — UNCONF ○ QUICK TRIAXIAL ● FIELD VANE + LAB VANE ×	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.6	**ASPHALT**										
24.9 0.1	75 mm of asphalt										
24.3	**FILL** sand and gravel		1A	UNDIST							
0.3	**FILL** sand & silt, grey/brown, moist		1B	UNDIST			24				
23.4											
1.2	**FILL** silt, red and grey, wet		2A	UNDIST			23				
22.8											
1.8	**SILT** trace clay, brown		2B	UNDIST							
	organics		3A	UNDIST			22				
	brown										
21.3			3B	UNDIST							
3.4	**SILTY CLAY** grey, wet		4A	UNDIST			21				
20.4											
4.3	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH11

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.5 / 0.0	**ASPHALT** 75 mm of asphalt											
24.4 / 0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST			24					
23.8 / 0.8	**FILL** silty clay, trace sand, trace gravel, brown, moist		1B	UNDIST								
23.0 / 1.5	**SANDY SILT** trace clay, brown, moist		2A	UNDIST			23					
22.2 / 2.3	**SILTY CLAY** trace gravel, grey, very moist		2B	UNDIST			22					
			3A	UNDIST			21					
20.6 / 4.0	**SHALE** grey		3B	UNDIST			20					
20.0 / 4.6	**END OF BOREHOLE** 1. Sample refusal at 4.6 m. 2. 50mm-diameter monitoring well installed.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH12

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.7 / 0.0	**TOPSOIL** topsoil, dark brown, moist		1A	UNDIST								
24.1 / 0.6	**FILL** silt & sand, trace gravel, trace brick, brown, moist		1B	UNDIST			24					
23.5 / 1.2	**FILL** sand & silt, grey/brown, saturated		2A	UNDIST								
22.6 / 2.1	**CLAYEY SILT** grey/brown, moist		2B	UNDIST			23					
22.3 / 2.4	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH13

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.7 / 0.0	**ASPHALT** 75 mm of asphalt										
24.4 / 0.3	**FILL** sand and gravel, brown, moist		1A	UNDIST			24				
	SILT some clay, trace sand, gravel, brown, moist		1B	UNDIST							
			2A	UNDIST			23				
			2B	UNDIST							
21.7 / 3.0			3A	UNDIST			22				
	CLAYEY SILT grey, moist		3B	UNDIST							
			4A	UNDIST			21				
	trace shale fragments		4B	UNDIST							
19.8 / 4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.						20				

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH14

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6 / 0.0	**ASPHALT** 75 mm of asphalt										
25.5 / 0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST			25				
			1B	UNDIST							
24.1 / 1.5	**SILTY CLAY** grey, wet		2A	UNDIST			24				
			2B	UNDIST			23				
	dark grey										
22.4 / 3.2	**SILT** trace clay, gravel, grey/brown, moist		3A	UNDIST			22				
			3B	UNDIST							
21.0 / 4.6	**SILTY CLAY** grey, moist		4A	UNDIST			21				
19.7 / 5.9			4B	UNDIST							
19.5 / 6.1	**CLAY** grey, moist						20				
	SHALE grey		5A	UNDIST							
18.9 / 6.7	**END OF BOREHOLE** 1. Sample refusal at 6.7 m. 2. 50mm-diameter monitoring well installed.						19				

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH15

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6	**ASPHALT** 100 mm of asphalt											
25.4 0.2	**FILL** sand and gravel, brown, moist		1A	U	ND		25					
	FILL sand & silt, grey/brown, moist		1B	U	ND							
24.3 1.2	**FILL** silty clay, grey, wet		2A	U	ND		24					
23.7 1.8	**CLAYEY SILT** trace organics, brown, moist		2B	U	ND							
	grey/brown		3A	U	ND		23					
22.5 3.0	**SILTY CLAY** grey, moist		3B	U	ND		22					
			4A	U	ND							
	wet		4B	U	ND		21					
20.7 4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.						20					

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH16

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.7 0.0	**TOPSOIL** Topsoil											
24.4 0.3	**FILL** sand, brown, moist		1A	U	ND		24					
	SILT trace sand, some clay, brown, moist		1B	U	ND							
23.2 1.5	**SILTY CLAY** trace sand, organics, grey, wet		2A	U	ND		23					
			2B	U	ND							
22.3 2.4	**CLAYEY SILT** clayey silt, brown, moist		3A	U	ND		22					
			3B	U	ND							
	trace sand, trace shale, some gravel		4A	U	ND		21					
20.5 4.3	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH17

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.6 / 0.0	**ASPHALT** 100 mm of asphalt											
24.3 / 0.3	**FILL** sand and gravel		1A	U	N/D							
	FILL silt, some clay, grey, moist		1B	U	N/D		24					
	grey/brown		2A	U	N/D		23					
22.5 / 2.1	**CLAY** clay, brick and glass fragments		2B	U	N/D							
22.2 / 2.4	wet											
	END OF BOREHOLE 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH18

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.8 / 0.0	**TOPSOIL** topsoil, dark brown, moist											
24.5 / 0.3	**FILL** silt, brown, moist		1A	U	N/D							
24.2 / 0.6	**SILT** some clay, trace sand, brown, moist		1B	U	N/D		24					
			2A	U	N/D		23					
	oxidation		2B	U	N/D							
	grey, wet		3A	U	N/D		22					
			3B	U	N/D							
			4A	U	N/D		21					
20.0 / 4.9			4B	U	N/D		20					
	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH19

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	SOIL PROFILE DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.3												
0.0	**TOPSOIL** topsoil, dark brown											
25.0												
0.3	**FILL** silt, trace clay, brown, damp		1A	UNDIST			25					
			1B	UNDIST								
23.8							24					
1.5	**SILT** trace clay, brown, moist		2A	UNDIST								
			2B	UNDIST			23					
22.4												
2.9	**SILTY-CLAY** grey, very moist		3A	UNDIST			22					
			3B	UNDIST								
			4A	UNDIST			21					
	wet		4B	UNDIST								
			5A	UNDIST			20					
			5B	UNDIST			19					
17.8												
17.5	**SHALE**						18					
7.6	**END OF BOREHOLE** 1. Sample refusal at 7.6 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH20

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	SOIL PROFILE DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.4												
0.0	**TOPSOIL** topsoil											
25.1												
0.3	**FILL** silt, trace clay, trace sand, oxidized, brown		1A	UNDIST			25					
			1B	UNDIST								
23.9							24					
1.5	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH21

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/12/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV (m) / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5												
25.3 / 0.2	**TOPSOIL** topsoil, dark brown, moist											
	SILT some clay, trace sand, brown, moist		1A	U	DIST		25					
			1B	U	DIST							
24.0							24					
1.5	**CLAYEY SILT** brown, wet		2A	U	DIST							
			2B	U	DIST		23					
			3A	U	DIST							
	saturated						22					
21.2			3B	U	DIST							
4.3 / 20.9	**SILTY-CLAY** grey, saturated						21					
4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH22

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/08/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV (m) / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
25.3 / 0.3	**ASPHALT** 150 mm of asphalt											
25.0 / 0.6	**FILL** sand and gravel, brown, moist		1A	U	DIST							
	FILL sand, brown, moist		1B	U	DIST		25					
	SILT trace sand, some clay, brown, moist											
24.1			2A	U	DIST		24					
1.5	**CLAYEY SILT** grey, moist		2B	U	DIST							
			3A	U	DIST		23					
	grey/brown, wet		3B	U	DIST							
			4A	U	DIST		22					
	moist		4B	U	DIST							
20.7							21					
4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH23

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/12/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
25.4 0.2	**TOPSOIL** topsoil											
0.2	**SILT** some clay, trace sand, trace gravel, brown, moist		1A	UNDIST			25					
			1B	UNDIST								
	wet						24					
23.4			2A	UNDIST								
2.3	**SILTY CLAY** grey, moist		2B	UNDIST			23					
			3A	UNDIST								
21.1			3B	UNDIST			22					
4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH24

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/12/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7												
25.5 0.2	**TOPSOIL** topsoil											
0.2	**SILT** some clay, trace sand, trace gravel, brown		1A	UNDIST			25					
	grey		1B	UNDIST								
24.3							24					
1.4	**CLAY** dark grey, wet		2A	UNDIST								
23.8												
1.8	**SILT** brown, wet		2B	UNDIST			23					
	saturated											
			3A	UNDIST			22					
21.4			3B	UNDIST								
4.3	**SILTY CLAY** grey, wet											
21.1												
4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 5.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH25

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/11/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
25.4	**TOPSOIL** topsoil, dark brown											
0.2	**FILL** silt, trace clay, trace sand, brown, damp		1A	UNDIST			25					
			1B	UNDIST								
24.1							24					
1.5	**SILT** trace clay, trace sand, brown, damp		2A	UNDIST								
	grey		2B	UNDIST			23					
22.5	brown											
3.0	**CLAYEY SILT** grey, moist		3A	UNDIST			22					
			3B	UNDIST								
			4A	UNDIST			21					
			4B	UNDIST								
19.5							20					
6.1	**SILTY-CLAY** grey, wet		5A	UNDIST								
			5B	UNDIST			19					
18.2												
7.4	**SHALE**						18					
18.0	shale											
7.6	**END OF BOREHOLE** 1. Sample refusal at 7.6 m. 2. 50mm-diameter monitoring well installed.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH26

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8												
0.0	**TOPSOIL** brown, moist, loose		1A	UNDIST								
25.3							25					
0.5	**FILL** silt, some clay, trace sand and gravel, greyish brown, moist		1B	UNDIST								
	oxidation		2A	UNDIST			24					
	organics											
23.3			2B	UNDIST								
2.4	**SILTY CLAY** grey, wet		3A	UNDIST			23					
			3B	UNDIST								
21.8							22					
4.0	**CLAYEY SILT** brown, moist, hard		4A	UNDIST								
			4B	UNDIST			21					
20.9												
4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH27

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ○ QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7											
~~25.8~~	**FILL**										
0.1	sand and gravel, brown, moist										
	FILL		1A	UNDIST			25				
	silt, brown, moist, loose										
	occassional brick										
	grey, very moist		1B	UNDIST							
24.1											
1.5	**END OF BOREHOLE**										
	1. Borehole backfilled with bentonite upon completion										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH28

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ○ QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7											
~~25.8~~	**ASHPHALT**										
~~25.5~~	90 mm										
0.2	**FILL**		1A	UNDIST			25				
	sand and gravel										
	SILT										
	trace sand, oxidation, brown, moist		1B	UNDIST							
24.2											
1.5	**END OF BOREHOLE**										
	1. Sample refusal at 1.5 m 2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH29

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
25 8							
0 0 25 5	**TOPSOIL** 300 mm						
0 3	**SILT** some clay, trace sand and gravel, brown, moist, compact		1A	U	ND		25
			1B	U	ND		
	organic layer		2A	U	ND		24
			2B	U	ND		
	oxidation zone		3A	U	ND		23
			3B	U	ND		
			4A	U	ND		22
			4B	U	ND		
20 9							21
4 9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.						

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100
SHEAR STRENGTH (kPa): ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE; 50 100 150 200 250
PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%): 10 20 30
POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT. (Mg/m³)
REMARKS AND GRAIN SIZE DISTRIBUTION (%): GR SA SI CL

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH30

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/12/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
25 9							
0 0 25.6	**TOPSOIL** dark brown, moist						
0 2	**SAND** trace silt, brown, very moist, loose		1A	U	ND		
24 9							
0 9	**SILT** some clay, greyish brown, moist, very stiff		1B	U	ND		25
	organic layers		2A	U	ND		
	organics at 2 m (thickness 0.7 m)		2B	U	ND		24
			3A	U	ND		23
			3B	U	ND		
			4A	U	ND		22
			4B	U	ND		
19 8							21
6.1	**CLAY** shale fragments		5A	U	ND		20
19 3							
6.6 19 0	**SHALE**						19
6 9	**END OF BOREHOLE** 1. Sample refusal at 6.8 m 2. 50 mm-diameter monitoring well installed						

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100
SHEAR STRENGTH (kPa): ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE; 50 100 150 200 250
PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%): 10 20 30
POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT. (Mg/m³)
REMARKS AND GRAIN SIZE DISTRIBUTION (%): GR SA SI CL

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH31

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8												
25.9 / 0.0	**TOPSOIL** dark brown, moist											
0.1	**SILT** some clay, trace sand, trace gravel, brown, moist		1A				25					
	very moist		1B									
	organic layer at 1.4 m (thickness 200 mm)		2A				24					
			2B									
			3A				23					
			3B									
21.9			4A				22					
4.0	**CLAYEY SILT** clayey silt, grey, very moist wet		4B									
20.9							21					
4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH32

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/12/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8												
25.9 / 0.0	**TOPSOIL** 150 mm, dark brown, wet, loose											
0.2	**FILL** silt, some clay, trace sand and gravel, greyish brown, wet, loose			UNDIST								
24.3							25					
1.5	**SILT** some clay, brown, moist, hard			UNDIST								
	occasional grey fissures			UNDIST			24					
				UNDIST								
21.9							23					
4.0	**SILTY CLAY** grey, wet, soft			UNDIST								
				UNDIST			22					
20.3	shale											
5.5	**END OF BOREHOLE** 1. 50 mm-diameter monitoring well installed 2. Water encountered at 0.9 mbg Nov. 12, 2013.						21					

W. L. 24.9 m
Nov 12, 2013

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH33

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/12/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8 / 0.0	**ASPHALT** 90 mm											
25.7 / 0.1	**FILL** silt, some clay, trace sand and gravel, brown, moist		1A	UNDIST								
25.2 / 0.6	**SILTY CLAY** zones of oxida ion, brown, moist		1B	UNDIST			25					
			2A	UNDIST			24					
22.8 / 3.0			2B	UNDIST			23					
	SAND trace silt, brownish grey, saturated clayey silt, grey		3A	UNDIST			22					
21.3 / 4.6			3B	UNDIST								
	SILTY CLAY grey, wet, soft		4A	UNDIST			21					
	shale fragments		4B	UNDIST			20					
19.7 / 6.1	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH34

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.9 / 0.0	**ASPHALT** 125 mm of asphalt											
25.8 / 0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST								
25.1 / 0.8	**FILL** silty clay, brown, moist		1B	UNDIST			25					
24.3 / 1.5	**CLAYEY SILT** clayey silt, trace sand, brown, damp		2A	UNDIST			24					
			2B	UNDIST			23					
	damp/moist		3A	UNDIST			22					
21.3 / 4.6			3B	UNDIST								
	END OF BOREHOLE 1. Sample refusal at 4.6 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH35

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7 / 0.0	**ASHPHALT**											
25.6 / 0.1	**FILL** sand and gravel		1A	UNDIST								
25.0 / 0.6	**FILL** silt, some clay, trace sand and gravel, brown, moist, compact		1B	UNDIST			25					
24.4 / 1.2	**SILT** some clay, grey, moist, hard		2A	UNDIST			24					
			2B	UNDIST								
	clayey silt, occasional silt layers		3A	UNDIST			23					
			3B	UNDIST								
			4A	UNDIST			22					
20.8 / 4.9			4B	UNDIST			21					
4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH36

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.9 / 0.0	**TOPSOIL** 90 mm											
25.8 / 0.1	**FILL** silt, trace clay and sand, brown, moist		1A	UNDIST			25					
	grey		1B	UNDIST								
24.3 / 1.5	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH37

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8 / 0.0	**ASPHALT** 100 mm of asphalt										
25.7 / 0.1	**FILL** sand and gravel, brown, damp		1A	UNDIST							
25.0 / 0.8	**FILL** clayey silt, trace sand, trace gravel, brown, moist		1B	UNDIST			25				
24.3 / 1.5	**SILTY CLAY** silty clay, trace sand, grey, very moist		2A	UNDIST			24				
23.7 / 2.1	**CLAYEY SILT** clayey silt, trace sand, brown, moist		2B	UNDIST			23				
	brown/grey		3A	UNDIST							
			3B	UNDIST			22				
21.2 / 4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH38

PROJECT: Mr.Christie
CLIENT: [redacted]
[redacted] 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8 / 0.0	**ASHPHALT** 90 mm										
25.7 / 0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST							
25.1 / 0.6	**FILL** silty clay, trace organics, grey, moist, soft		1B	UNDIST			25				
24.2 / 1.5	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH39

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7 / 0.0	**ASPHALT**											
25.6 / 0.1	125 mm of asphalt **FILL** sand and gravel, brown, damp		1A	UNDIST			25					
24.8 / 0.9	**FILL** clayey silt, some sand, trace gravel, brown/red, moist		1B	UNDIST								
24.2 / 1.5	**SILT** some sand, trace clay, brown, damp/moist		2A	UNDIST			24					
22.6 / 3.0	**CLAYEY SILT** clayey silt, trace sand, grey, moist		2B	UNDIST			23					
			3A	UNDIST			22					
			3B	UNDIST								
			4A	UNDIST			21					
19.9 / 5.8			4B	UNDIST			20					
	SILTY CLAY silty clay, grey, very moist trace gravel, trace shale fragments		5A	UNDIST								
18.7 / 7.0			5B	UNDIST			19					
	SHALE											
18.1 / 7.6	**END OF BOREHOLE** 1. Sample refusal at 7.1 m. 2. 50mm-diameter monitoring well installed at 7.6 m.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH40

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7 / 0.0	**ASPHALT**											
25.6 / 0.1	125 mm of asphalt **FILL** sand and gravel, brown, damp		1A	UNDIST			25					
24.9 / 0.8	**CLAYEY SILT** brick fragments, brown/red, moist		1B	UNDIST								
	trace sand, brown		2A	UNDIST			24					
			2B	UNDIST			23					
			3A	UNDIST			22					
21.1 / 4.6	grey		3B	UNDIST								
	END OF BOREHOLE 1. Sample refusal at 4.6 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH41

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8								20 40 60 80 100 / 50 100 150 200 250	10 20 30			
25.8 / 0.0	**ASPHALT**											
0.1	75 mm of asphalt											
	FILL sand and gravel, brown, damp		1A	UNDIST								
	brick fragments, asphalt fragments, grey		1B	UNDIST			25					
24.2												
1.5	**FILL** clayey silt, some sand, trace organics, black/brown, moist		2A	UNDIST			24					
			2B	UNDIST								
22.7							23					
3.0	**CLAYEY SILT** brown, moist/very moist		3A	UNDIST								
			3B	UNDIST			22					
21.2												
4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH42

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8								20 40 60 80 100 / 50 100 150 200 250	10 20 30			
25.8 / 0.0	**ASPHALT**											
0.1	100 mm of asphalt											
	FILL sand, trace gravel, brown, moist		1A	UNDIST								
25.2												
0.6	**FILL** silt, trace clay and sand, brown, moist		1B	UNDIST			25					
			2A	UNDIST								
	grey						24					
			2B	UNDIST								
23.3							23					
2.4	**CLAYEY SILT** occasional sand layer, grey, moist		3A	UNDIST								
			3B	UNDIST			22					
			4A	UNDIST								
			4B	UNDIST			21					
20.9												
4.9	**SHALE**		5A	UNDIST								
20.3												
5.5	**END OF BOREHOLE** 1. Sample refusal at 5.5 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH43

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5												
~~25.0~~	**ASPHALT**											
0.1	125 mm of asphalt											
	FILL											
	sand and gravel, brown, moist		1A	UNDIST			25					
24.6												
0.9	**CLAYEY SILT**		1B	UNDIST								
	trace sand, brown, moist						24					
			2A	UNDIST								
			2B	UNDIST			23					
			3A	UNDIST			22					
			3B	UNDIST								
21.0							21					
~~21.0~~	~~SHALE~~											
4.6	**END OF BOREHOLE**											
	1. Sample refusal at 4.6 m.											
	2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH44

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7												
~~28.0~~	**ASHPHALT**											
0.1	90 mm											
	FILL											
	sand and gravel, brown, moist, loose		1A	UNDIST			25					
24.9												
0.8	**FILL**		1B	UNDIST								
	silt, some clay, trace sand and gravel, brown, very moist											
24.1												
1.5	**END OF BOREHOLE**											
	1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH45

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5 / 0.0	**ASPHALT** 125 mm of asphalt											
25.4 / 0.1	**FILL** sand and gravel, brown, damp		1A	UNDIST			25					
24.8 / 0.8	**FILL** clayey silt, trace sand, trace organics, dark brown; trace wood fragments		1B	UNDIST								
			2A	UNDIST			24					
23.1 / 2.4	**CLAYEY SILT** clayey silt, trace sand, brown, moist		2B	UNDIST			23					
			3A	UNDIST			22					
	shale fragments, grey		3B	UNDIST								
21.0 / 4.5	**SHALE** shale, grey		4A	UNDIST			21					
20.8 / 4.7	**END OF BOREHOLE** 1. Sample refusal at 4.7 m. 2. 50mm-diameter monitoring well installed at 5.3 m.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH46

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6 / 0.0	**ASPHALT** 90 mm of asphalt											
25.5 / 0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST			25					
24.9 / 0.8	**FILL** silt mixed with slag, brown, moist		1B	UNDIST								
24.1 / 1.5	**END OF BOREHOLE** 1. Sample refusal at 1.5 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH47

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
25.5 / 0.1	**ASPHALT** 100 mm of asphalt											
24.8	**FILL** sand and gravel, brown, damp		1A	UNDIST								
24.2 / 0.8	**FILL** clayey silt, some sand, brown, moist		1B	UNDIST								
1.4	**CLAYEY SILT** trace sand, brown, damp/moist		2A	UNDIST								
22.5			2B	UNDIST								
3.0	**CLAYEY SILT TILL** shale fragments, trace gravel, brown, moist		3A	UNDIST								
	grey		3B	UNDIST								
21.0												
4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH48

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/13/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6												
25.6 / 0.0	**FILL** sand and gravel, brown with black, moist		1A	UNDIST								
24.8							25					
0.8	**FILL** silt, some clay, greyish brown, moist		1B	UNDIST								
24.1												
1.5	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH49

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6	**ASPHALT** 100 mm of asphalt										
25.5 0.1	**FILL** sand and gravel, brown, damp		1A	U	N/D						
24.8 0.8	**FILL** clayey silt, some sand, some gravel, brown, moist		1B	U	N/D		25				
24.0 1.5	**CLAYEY SILT** trace gravel, brown/grey, moist		2A	U	N/D						
			2B	U	N/D		24				
	grey		3A	U	N/D						
21.8 3.8	**SILTY CLAY** silty clay, trace gravel, grey, very moist		3B	U	N/D		23				
21.0 4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.						22				
							21				

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH50

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7 0.0	**FILL** gravel with some sand and silt, brown, moist		1A	U	N/D						
25.1 0.6	**FILL** silt with some clay, greyish brown, moist		1B	U	N/D		25				
24.5 1.2	**FILL** silty clay, trace sand, grey, moist		2A	U	N/D						
	wet		2B	U	N/D		24				
23.3 2.4	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH51

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.0 / 0											
25.9 / 0.1	**FILL** sand with gravel, trace silt, brown, moist		1A	UNDIST							
	FILL silt with some clay, trace sand, brown and grey, wet		1B	UNDIST			25				
24.5 / 1.5			2A	UNDIST							
	FILL silty clay, grey, wet		2B	UNDIST			24				
23.6 / 2.4	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH52

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.3 / 0											
26.0 / 0.2	**TOPSOIL** topsoil										
	FILL silt, some clay, some sand, some gravel, brown, moist		1A	UNDIST			26				
25.5 / 0.8	**FILL** clayey silt, trace sand, trace gravel, brown, moist		1B	UNDIST			25				
24.6 / 1.7	**CLAYEY SILT** brown/grey, moist		2A	UNDIST							
			2B	UNDIST			24				
	grey, moist		3A	UNDIST							
			3B	UNDIST			23				
			4A	UNDIST							
			4B	UNDIST			22				
			5A	UNDIST							
19.3 / 7.0	**END OF BOREHOLE** 1. Sample refusal at 7.0 m. 2. 50mm-diameter monitoring well installed at 7.6 m.						21				
							20				
							19				

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH53

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7 / 0.0	**ASPHALT** 75 mm of asphalt										
25.6 / 0.1	**FILL** sand, trace silt, brown, saturated		1A	UNDIST							
			1B	UNDIST			25				
24.2 / 1.5			2A	UNDIST							
	FILL clayey silt, grey, wet		2B	UNDIST			24				
23.3 / 2.4	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH54

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.4 / 0.0	**TOPSOIL** 230 mm										
26.2 / 0.2	**FILL** silt with some clay, trace sand, brown, moist,		1A	UNDIST			26				
			1B	UNDIST							
	wet		2A	UNDIST			25				
24.4 / 2.0	**SILT CLAY** grey, wet		2B	UNDIST							
24.0 / 2.4	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH55

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7 / 0.0	**ASPHALT** 120 mm											
25.6 / 0.1	**FILL** sand, cinders brown, moist		1A	UNDIST			25					
			1B	UNDIST								
			2A	UNDIST			24					
23.2 / 2.4			2B	UNDIST								
	END OF BOREHOLE 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH56

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.5 / 0.0	**GRAVEL** 130 mm											
26.4 / 0.1	**FILL** silt, trace sand and clay, brown, very moist		1A	UNDIST			26					
25.9 / 0.6	**SILT** some clay, trace sand, brown, moist, hard, iron staining		1B	UNDIST								
			2A	UNDIST			25					
24.1 / 2.4	silty clay, grey, wet		2B	UNDIST								
	END OF BOREHOLE 1. Sample refusal at 4.9 m. 2. Borehole backfilled with bentonite upon completion.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH57

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.7											
0 0 26.4	**TOPSOIL** topsoil										
0 3 25.1	**FILL** clayey silt, trace sand, trace gravel, brown, moist		1A	UNDIST			26				
			1B	UNDIST							
1 5 22.1	**CLAYEY SILT** clayey silt, brown/grey, moist		2A	UNDIST			25				
			2B	UNDIST			24				
	grey		3A	UNDIST							
			3B	UNDIST			23				
4.6 20.6	**SILT** silt, some clay, grey, moist		4A	UNDIST			22				
			4B	UNDIST			21				
6.1 19 0	**SILTY CLAY** silty clay, trace shale fragments, grey, very moist		5A	UNDIST			20				
			5B	UNDIST							
7.6	**END OF BOREHOLE** 1. Sample refusal at 7.6 m. 2. 50mm-diameter monitoring well installed at 8.2 m.						19				

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH58

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6											
0 0 25 3	**TOPSOIL** trace sand, trace gravel, dark brown, moist		1A	UNDIST							
0 3	**SILT** trace clay, trace sand, trace gravel, brown, moist						25				
	some clay, grey, wet		1B	UNDIST							
			2A	UNDIST			24				
23 8											
1 8 23 2	**SILTY CLAY**		2B	UNDIST							
2.4	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH59

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5	**ASPHALT** 75 mm of asphalt		1A	UNDIST			25					
25.2 0.3	**SILT & GRAVEL** trace sand, brown, moist		1B	UNDIST								
25.0 0.5	**ORGANICS** black		2A	UNDIST			24					
	SILT some clay, trace sand, brown, wet		2B	UNDIST								
22.5 3.0	**SILT CLAY** grey, wet		3A	UNDIST			23					
			3B	UNDIST								
20.7 4.9	**END OF BOREHOLE** 1. Sample refusal at 4.9 m. 2. Borehole backfilled with bentonite upon completion.		4A	UNDIST			22					
			4B	UNDIST			21					

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH60

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/15/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.2 0.0	**TOPSOIL** topsoil, dark brown, moist		1A	UNDIST			26					
25.9 0.3	**FILL** silt, some sand, trace gravel, trace clay, trace slag, brown, moist		1B	UNDIST								
			2A	UNDIST			25					
24.1 2.1	**SILT** organic silt											
23.9 2.3	**SILT** silt, some clay, trace sand, brown, moist		2B	UNDIST			24					
23.2 3.0	**CLAYEY SILT** clayey silt, brown, moist		3A	UNDIST			23					
			3B	UNDIST								
21.6 4.6	**SILT** silt, some sand, trace gravel, brown, saturated		4A	UNDIST			22					
			4B	UNDIST			21					
20.1 6.1	**SILTY CLAY** silty clay, grey, saturated		5A	UNDIST			20					
			5B	UNDIST			19					
18.3 7.9			6A	UNDIST			18					
	END OF BOREHOLE 1. Sample refusal at 7.9 m. 2. 50mm-diameter monitoring well installed at 8.4 m.											

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH61

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8											
25.7	**ASPHALT** 75 mm of asphalt										
0.1	**FILL** sand & gravel, brown, moist		1A	UNDIST							
25.2							25				
0.6	**SILT** some clay, trace sand, brown/grey, moist		1B	UNDIST							
	some clay, grey		2A	UNDIST			24				
			2B	UNDIST							
	wet		3A	UNDIST			23				
	saturated		3B	UNDIST							
			4A	UNDIST			22				
			4B	UNDIST							
20.9							21				
4.9	**END OF BOREHOLE** 1. Sample refusal at 4.9 m. 2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH62

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/15/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF NED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8											
25.7	**ASPHALT** 75 mm of asphalt										
0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST							
25.4							25				
0.5	**SILT** some clay, trace sand, trace gravel, brown, moist		1B	UNDIST							
24.0							24				
1.8	**CLAYEY SILT** grey, moist		2A	UNDIST							
			2B	UNDIST			23				
			3A	UNDIST							
			3B	UNDIST			22				
	wet		4A	UNDIST							
			4B	UNDIST			21				
19.6			5A	UNDIST							
6.2	**END OF BOREHOLE** 1. Sample refusal at 6.2 m. 2. 50 mm-diameter monitoring well installed at 6.7 m.						20				

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH63

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV (m) / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) / WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5 / 0.0	**ASPHALT** 125 mm of asphalt										
25.2 / 0.3	**FILL** sand & gravel		1A	UNDIST			25				
	SAND sand, trace silt, brown/grey, wet		1B	UNDIST							
24.3 / 1.2	**SILTY CLAY** grey, moist		2A	UNDIST			24				
			2B	UNDIST							
23.0 / 2.4	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.										

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH64

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

ELEV (m) / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa) / WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.9 / 0.0	**TOPSOIL** dark brown										
25.7 / 0.2	**FILL** silt, some clay, trace sand, brown, moist		1A	UNDIST			25				
24.8 / 1.1	**SILT** some clay		1B	UNDIST							
			2A	UNDIST			24				
	grey, wet		2B	UNDIST							
23.5 / 2.4	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.										

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH65

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/14/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6											
25.5	**ASPHALT**										
0.1	125 mm of asphalt										
	FILL										
	sand & gravel, brown, moist		1A	UNDIST			25				
24.9											
0.8	**FILL**										
	clayey silt, trace sand, trace gravel, brown/red, moist		1B	UNDIST							
24.1							24				
1.5	**CLAYEY SILT**										
	clayey silt, trace sand, grey, very moist		2A	UNDIST							
			2B	UNDIST			23				
			3A	UNDIST							
			3B	UNDIST			22				
	shale fragments, wet										
			4A	UNDIST			21				
			4B	UNDIST							
19.5	dry						20				
6.1											
	END OF BOREHOLE						19				
	1. Sample refusal at 6.1 m.										
	2. 50mm-diameter monitoring well installed at 6.7 m.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH66

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/15/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 50 100 150 200 250	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6											
25.5	**ASPHALT**										
0.1	75 mm of asphalt										
25.2	**FILL**										
0.4	sand and gravel, trace silt, brown, moist		1A	UNDIST			25				
	SILT										
	some clay, brown, moist		1B	UNDIST							
24.1							24				
1.5	**SILTY CLAY**										
	grey, wet		2A	UNDIST							
			2B	UNDIST			23				
			3A	UNDIST							
			3B	UNDIST			22				
			4A	UNDIST			21				
			4B	UNDIST							
19.4			5A	UNDIST			20				
6.2	**END OF BOREHOLE**										
	1. Sample refusal at 6.2 m.										
	2. Borehole backfilled with bentonite upon completion.										

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▼ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH67

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/15/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.5 / 0.0	**ASPHALT**											
25.4 / 0.1	75 mm of asphalt											
	FILL sand and gravel, brown, moist		1A	U	N/D		25					
24.9 / 0.6	**SILTY CLAY** organics, black, moist		1B	U	N/D							
			2A	U	N/D		24					
			2B	U	N/D		23					
22.5 / 3.0	**CLAYEY SILT** brown		3A	U	N/D		22					
	grey, wet		3B	U	N/D							
20.9 / 4.6	**END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.						21					

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH68

1 OF 1

PROJECT: Mr.Christie
CLIENT: [redacted]
PROJECT LOCATION: 2150 Lake Shore Blvd, Toronto, ON
DATUM: Local
BH LOCATION:

DRILLING DATA
Method: Geo Probe
Diameter:
Date: Nov/15/2013

REF. NO.: 1889-220
ENCL NO.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (50 100 150 200 250)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.6 / 0.0	**ASPHALT**											
25.5 / 0.1	75 mm of asphalt											
	SILT some clay, trace sand, trace gravel, grey/orange, moist		1A	U	N/D		25					
			1B	U	N/D							
23.8 / 1.8	**CLAYEY SILT** grey, moist		2A	U	N/D		24					
			2B	U	N/D		23					
			3A	U	N/D		22					
			3B	U	N/D							
	saturated		4A	U	N/D		21					
20.2 / 5.5	**SILTY CLAY** grey, wet		4B	U	N/D							
19.5 / 6.2	**END OF BOREHOLE** 1. Sample refusal at 6.2 m. 2. Borehole backfilled with bentonite upon completion.		5A	U	N/D		20					

GROUNDWATER ELEVATIONS
Shallow/ Single Installation ▽ ▼ Deep/Dual Installation ▽ ▼

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

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.GPJ SPL.GDT 12/5/13

GEO-CANADA

LOG OF BOREHOLE 1

CLIENT: Kraft Canada Inc.
PROJECT: Transformer Upgrades
LOCATION: Toronto
DATUM ELEVATION: Assumed Datum - See Drawing No. 1 for Location
BOREHOLE LOCATION: Refer to Drawing No. 1

DRILLING DATA
Method: Continuous flight solid-stem augers
Diameter: 110mm
Date: October 15, 2004

REF. NO.: G-04.0903
ENCL NO.: 1

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) SHEAR STRENGTH (kPa) O UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE	PLASTIC LIMIT W_P / NATURAL MOISTURE CONTENT W / LIQUID LIMIT W_L WATER CONTENT (%) (10 20 30)	UNIT WEIGHT γ (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
101.5	Ground Surface										
0.0	TOPSOIL 25mm Silt, trace sand, trace gravel and clay, brown, stiff (Possible FILL)		1	SS	10						
100.9											
0.6	CLAYEY SILT mottled brown-grey, stiff to very stiff		2	SS	14						7 68 25
	occ. organic/ and topsoil/ pockets		3	SS	21						
	grey		4	SS	18						
			5	SS	17	▽					
96.9											
4.6	SILT some clay, occ. fine sand/silt partings grey, hard		6	SS	32						8 73 19
95.4											
6.1	CLAY some silt, very moist, interlayered with silt, some clay, trace gravel/shale fragments, grey, stiff		7	SS	12						
94.5											
7.0	BEDROCK SHALE (Inferred) grey		8	SS	50/ 75mm						Split spoon wet.
92.4			9	GRAB	-						
9.1	END OF BOREHOLE Borehole dry upon completion. Water Level Readings: Date W.L. Depth (m) Oct. 22/04 3.25										

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

GEO-CANADA SOIL LOG BOREHOLE LOGS G040903.GPJ GEO-CANADA TEMPLATE.GDT 2/11/04

GEO-CANADA

LOG OF BOREHOLE 2

CLIENT: Kraft Canada Inc.
PROJECT: Transformer Upgrades
LOCATION: Toronto
DATUM ELEVATION: Assumed Datum - See Drawing No. 1 for Location
BOREHOLE LOCATION: Refer to Drawing No. 1

DRILLING DATA
Method: Continuous flight solid-stem augers
Diameter: 110mm
Date: October 15, 2004

REF. NO.: G-04.0903
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) SHEAR STRENGTH (kPa) O UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE	PLASTIC LIMIT W_P / NATURAL MOISTURE CONTENT W / LIQUID LIMIT W_L WATER CONTENT (%) (10 20 30)	UNIT WEIGHT γ (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
101.7	Ground Surface										
0.0	TOPSOIL 50mm Silt, some clay, organic stained, rootlets, brown (Possible FILL)		1	SS	16						
101.1											
0.6	CLAYEY SILT mottled brown grey, occ. fissures very stiff to hard		2	SS	18						
			3	SS	25						7 65 28
			4	SS	32						
98.7											
3.0	SILT some clay, occ. very thin silt partings grey, very stiff		5	SS	22						
	clayey very moist		6	SS	17	▽					
95.6											
6.1	CLAY some silt, interlayered with silt, some clay, stiff, very moist		7	SS	9						
94.4											
7.3	BEDROCK SHALE (Inferred) grey		8	SS	50/ 75mm						
92.6			9	GRAB	-						
9.1	END OF BOREHOLE Borehole dry upon completion. Water Level Readings: Date W.L. Depth (m) Oct. 22/04 5.45										

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

GEO-CANADA SOIL LOG BOREHOLE LOGS G040903.GPJ GEO-CANADA TEMPLATE.GDT 2/11/04

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH1-13
DATE COMPLETED: March 2, 2013
DRILLING METHOD: SPLIT-SPOON
FIELD PERSONNEL: K. Vander Meulen

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	CONCRETE FLOOR	0.3	CONCRETE SEAL					
0.5	SM-SILTY SAND (FILL), trace gravel, compact, fine grained, poorly graded, brown, moist	0.5		1		0.76		0.5
1.0	CL-SILTY CLAY, stiff, medium plasticity, brown, moist	1.1						
1.5	CL-SILTY CLAY (TILL), trace gravel, stiff, medium plasticity, brown, moist		BENTONITE SEAL	2		0.76		0.8
2.0								
2.5	- low plasticity, grey			3		0.76		0.4
	END OF BOREHOLE @ 2.59m BGS	2.6						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 3/3/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH2-13
DATE COMPLETED: March 2, 2013
DRILLING METHOD: SPLIT-SPOON
FIELD PERSONNEL: K. Vander Meulen

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	CONCRETE FLOOR	0.3	CONCRETE SEAL					
0.5	SM-SILTY SAND (FILL), trace gravel, compact, fine grained, poorly graded, brown, moist	0.5		1		0.61		5.1
1.0	CL-SILTY CLAY, stiff, medium plasticity, brown, very moist		BENTONITE SEAL					
1.5				2		0.61		2.4
2.0	END OF BOREHOLE @ 1.83m BGS	1.8						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 3/3/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH3-13
DATE COMPLETED: March 2, 2013
DRILLING METHOD: SPLIT-SPOON
FIELD PERSONNEL: K. Vander Meulen

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	CONCRETE FLOOR	0.2	CONCRETE SEAL					
0.5	CL-SILTY CLAY, firm, medium plasticity, grey, moist			1		0.76		0.8
1.0	- very moist to wet		BENTONITE SEAL	(2)		0.61		0.8
1.5	END OF BOREHOLE @ 1.52m BGS	1.5						
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 3/3/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH4-13
DATE COMPLETED: March 2, 2013
DRILLING METHOD: SPLIT-SPOON
FIELD PERSONNEL: K. Vander Meulen

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	CONCRETE FLOOR	0.2	CONCRETE SEAL					
0.5	SW-GW SAND & GRAVEL (FILL), fine to coarse grained, well graded, brown, moist			1		0.76		0.4
1.0	- split-spoon refusal	0.9	BENTONITE SEAL					
1.5	END OF BOREHOLE @ 0.91m BGS							
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 3/3/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH5-13
DATE COMPLETED: March 2, 2013
DRILLING METHOD: SPLIT-SPOON
FIELD PERSONNEL: K. Vander Meulen

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE
0	CONCRETE FLOOR	0.2	CONCRETE SEAL				
0.5	SW-GW SAND & GRAVEL (FILL)	0.3					
1.0	END OF BOREHOLE @ 0.30m BGS						
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 3/3/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH6-13
DATE COMPLETED: March 2, 2013
DRILLING METHOD: SPLIT-SPOON
FIELD PERSONNEL: K. Vander Meulen

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	CONCRETE FLOOR	0.2	CONCRETE SEAL					
0.5	SP-SAND (FILL), fine grained, poorly graded, brown, moist			1		0.76		0.1
1.0		0.9						
1.5	CL-SILTY CLAY, firm, low plasticity, grey, moist		BENTONITE SEAL	(2)		0.76		0.2
2.0	- stiff, brown, moist			3		0.61		0.1
2.5	END OF BOREHOLE @ 2.44m BGS	2.4						
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

(2) LABORATORY ANALYSIS

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 3/3/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH101-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	INTERVAL	REC (m)	'N' VALUE	PID (ppm)
0	ASPHALT	0.2						
0.5	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, brown, moist			1	P/S	0.61		0.1
1.0		0.9		2	P/S	0.61		0.9
1.0	CL-SILTY CLAY, low plasticity, grey, moist							
1.5				3	P/S	0.61		3.3
2.0				4	P/S	0.61		9.3
2.5	- medium plasticity			5	P/S	0.61		1.3
3.0			BENTONITE SEAL	6	P/S	0.61		159
3.5	- brown, moist to wet							
4.0				7	P/S	0.61		0.6
4.5				8	P/S	0.61		0.1
5.0				9	P/S	0.61		0.0
5.5								
6.0	END OF BOREHOLE @ 6.10m BGS	6.1		10	P/S	0.61		0.0
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH102-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	INTERVAL	REC (m)	'N' VALUE	PID (ppm)
0	ASPHALT	0.2						
0.5	SW-GW SAND & GRAVEL (FILL), well graded, grey, moist	0.6		1	P/S	0.61		1.5
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist							
1.0				2	P/S	0.61		1.6
1.5				3	P/S	0.61		5.2
2.0				4	P/S	0.61		0.3
2.5				5	P/S	0.61		10.3
3.0	- moist to wet, slight black staining, slight odour		BENTONITE SEAL					
3.0	- 152 mm section of coarse gravel , grey, slight odour	3.0		6	P/S	0.61		283
3.5	CL-SILTY CLAY, medium plasticity, grey, moist							
4.0	SM-SILTY SAND, fine grained, poorly graded, brown, wet	4.0		7	P/S	0.61		1.4
4.5	CL-SILTY CLAY, medium plasticity, grey, moist	4.3		8	P/S	0.61		21.9
5.0	- less silt content, high plasticity, grey, moist to wet			9	P/S	0.61		1.2
5.5								
6.0	END OF BOREHOLE @ 6.10m BGS	6.1		10	P/S	0.61		1.4
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH103-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	PID (ppm)
	ASPHALT	0.2		1	P/S	0.61		0.7
0.5	SAND & GRAVEL (FILL), coarse to medium grained, well graded, light brown, moist	0.6		2	P/S	0.61		0.7
1.0	SP-SAND (FILL), fine grained, poorly graded, brown, moist - black staining, no odour			3	P/S	0.61		4.4
1.5	- dark brown, slightly oxidized	1.8		4	P/S	0.61		9.7
2.0	CL-SILTY CLAY, low plasticity, brown, moist			5	P/S	0.61		171
2.5	- medium plasticity, grey, slight odour			6	P/S	0.61		299
3.0	- 152 mm section of moist to wet, slight odour		BENTONITE SEAL	7	P/S	0.61		114
3.5				8	P/S	0.61		3.1
4.0				9	P/S	0.61		0.1
4.5	- trace fine sand, brown, moist			10	P/S	0.61		4.4
5.0								
5.5								
6.0	END OF BOREHOLE @ 6.10m BGS	6.1						
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH104-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE
	ASPHALT	0.1		1	P/S	0.61	
0.5	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, grey, moist	0.3		2	P/S	0.61	
1.0	CL-SILTY CLAY, low plasticity, brown, moist			3	P/S	0.61	
1.5				4	P/S	0.61	
2.0				5	P/S	0.61	
2.5	- moist to wet, slight odour			6	P/S	0.61	
3.0			BENTONITE SEAL	7	P/S	0.61	
3.5				8	P/S	0.61	
4.0	- slightly oxidized			9	P/S	0.61	
4.5	SM-SILTY SAND, fine grained, poorly graded, brown, moist to wet, slightly oxidized	4.4 4.6		10	P/S	0.61	
5.0	CL-SILTY CLAY, low plasticity, brown, moist - medium plasticity, grey, moist to wet						
5.5							
6.0	END OF BOREHOLE @ 6.10m BGS	6.1					
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH105-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE
0	ASPHALT	0.2		1	P/S	0.61	
	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, grey, moist	0.3					
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist	0.6		2	P/S	0.61	
	SM-SILTY SAND (FILL), medium grained, poorly graded, moist, oxidized	0.8					
1.0							
	CL-SILTY CLAY, low plasticity, brown, moist			3	P/S	0.61	
1.5	- slight black staining, no odour						
				4	P/S	0.61	
2.0							
	- brown / grey, slightly oxidized, slight odour						
2.5				5	P/S	0.61	
			BENTONITE SEAL				
3.0				6	P/S	0.61	
	- moist to wet						
3.5							
				7	P/S	0.61	
4.0	- slightly oxidized						
	- slightly oxidized			8	P/S	0.61	
4.5							
5.0	- slightly oxidized			9	P/S	0.61	
	- medium plasticity, grey, moist to wet						
5.5							
				10	P/S	0.61	
6.0	END OF BOREHOLE @ 6.10m BGS	6.1					
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH106-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT	0.1		1	P/S	0.61		1.8
	SW-GW SAND & GRAVEL (FILL), medium to fine grained, well graded, brown, moist	0.3						
0.5	SP-SAND (FILL), fine grained, poorly graded, brown, moist			2	P/S	0.61		0.9
1.0		1.1						
	CL-SILTY CLAY, low plasticity, grey, moist, slightly oxidized			3	P/S	0.61		6.5
1.5	- slight odour, grey							
				4	P/S	0.61		105
2.0								
	- strong odour, wet							
2.5				5	P/S	0.61		82.3
	- strong odour, moist		BENTONITE SEAL					
3.0				6	P/S	0.61		203
	- slight odour, brown							
3.5								
	- grey			7	P/S	0.61		0.8
4.0	- brown							
				8	P/S	0.61		1.4
4.5								
5.0	- 152 mm section of fine silty sand, brown, wet			9	P/S	0.61		0.6
	- grey, moist							
5.5								
				10	P/S	0.61		0.2
6.0	END OF BOREHOLE @ 6.10m BGS	6.1						
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH107-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE
0	ASPHALT	0.1		1	P/S	0.61	
0.5	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, grey, moist	0.6		2	P/S	0.61	
1.0	SP-SAND (FILL), fine grained, poorly graded, brown, moist	1.2		3	P/S	0.61	
1.5	CL-SILTY CLAY, low plasticity, brown, moist - strong odour, brown / grey			4	P/S	0.61	
2.0							
2.5	- slight odour, moist to wet			5	P/S	0.61	
3.0			BENTONITE SEAL	6	P/S	0.61	
3.5							
4.0	- wet			7	P/S	0.61	
4.5	- medium plasticity, grey			8	P/S	0.61	
5.0	- moist to wet			9	P/S	0.61	
5.5							
6.0	END OF BOREHOLE @ 6.10m BGS	6.1		10	P/S	0.61	
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH108-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE
0	CONCRETE	0.1		1	P/S	0.61	
0.5	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, brown, moist						
1.0	SP-SAND (FILL), fine grained, poorly graded, brown, moist	1.1	BENTONITE SEAL	2	P/S	0.61	
1.5	CONCRETE (FILL)	1.5		3	P/S	0.61	
2.0	- Refusal END OF BOREHOLE @ 1.89m BGS	1.8					
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH109-13
DATE COMPLETED: February 7, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE
0	CONCRETE	0.1		1	P/S	0.61	
0.5	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.3		2	P/S	0.61	
1.0	SM-SILTY SAND (FILL), little clay, fine grained, poorly graded, brown, moist - slightly oxidized			3	P/S	0.61	
1.5	CL-SILTY CLAY, low plasticity, brown, moist	1.2		4	P/S	0.61	
2.0	- strong odour			5	P/S	0.61	
2.5							
3.0			BENTONITE SEAL	6	P/S	0.61	
3.5	- medium plasticity, grey			7	P/S	0.61	
4.0							
4.5	- slightly oxidized, no odour			8	P/S	0.61	
5.0	- moist to wet, grey			9	P/S	0.61	
5.5							
6.0	END OF BOREHOLE @ 6.10m BGS	6.1		10	P/S	0.61	
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH110-13
DATE COMPLETED: February 22, 2013
DRILLING METHOD: HAND DRILL
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT	0.1		1		0.37		2.1
0.5	GW-GRAVEL (FILL)	0.3	BENTONITE SEAL					
1.0	CL-SILTY CLAY (FILL), firm, low plasticity, grey, very moist	0.5		2		0.49		0.8
1.5	SP-SAND (FILL), trace silt, compact, fine grained, poorly graded, brown, moist - Refusal	1.4						
2.0	END OF BOREHOLE @ 1.37m BGS							
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH111-13
DATE COMPLETED: February 22, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT	0.1		1	P/S	0.61		0.0
0.5	SW-GW SAND & GRAVEL (FILL)	0.5		2	P/S	0.61		0.0
1.0	CL-SILTY CLAY (FILL), stiff, low plasticity, grey, moist	0.8		3	P/S	0.61		0.0
1.5	SM-SILTY SAND (FILL), compact, fine grained, poorly graded, brown, moist	0.9		4	P/S	0.61		0.0
2.0	CL-SILTY CLAY, stiff, low plasticity, grey, moist			5	P/S	0.61		0.0
2.5	- medium plasticity, very moist		BENTONITE SEAL	6	P/S	0.61		0.0
3.0				7	P/S	0.61		0.0
3.5				8	P/S	0.61		0.0
4.0								
4.5	CL-SILTY CLAY (TILL), trace sand, trace gravel, medium plasticity, grey, moist	4.7 / 4.9						
5.0	- Refusal (Shale fragments)							
5.5	END OF BOREHOLE @ 4.88m BGS							
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (3)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH112-13
DATE COMPLETED: February 22, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT	0.1		1	P/S	0.61		0.0
0.5	SW-GW SAND & GRAVEL (FILL)	0.6		2	P/S	0.61		0.0
1.0	CL-SILTY CLAY, firm, low plasticity, grey, moist			3	P/S	0.61		0.0
1.5	- medium plasticity, moist to very moist			4	P/S	0.61		0.0
2.0				5	P/S	0.61		0.0
2.5			BENTONITE SEAL	6	P/S	0.61		0.0
3.0				7	P/S	0.61		0.0
3.5				8	P/S	0.61		0.0
4.0								
4.5	CL-SILTY CLAY (TILL), trace sand, trace gravel, medium plasticity, grey, moist to very moist	4.3						
5.0	- Refusal (Shale fragments)	4.9						
5.5	END OF BOREHOLE @ 4.88m BGS							
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (3)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH113-13
DATE COMPLETED: February 22, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	SW-GW SAND & GRAVEL (FILL)			1	P/S	0.61		0.0
0.5								
1.0	CL-SILTY CLAY, firm, low plasticity, grey, moist, slightly oxidized	0.9		2	P/S	0.61		0.0
1.5				3	P/S	0.61		0.0
2.0				4	P/S	0.61		0.0
2.5				5	P/S	0.61		0.0
3.0			BENTONITE SEAL	6	P/S	0.61		0.0
3.5	- medium plasticity							
4.0				7	P/S	0.61		0.0
4.5				8	P/S	0.61		0.0
5.0	- high plasticity, very moist			9	P/S	0.61		0.0
5.5								
6.0	- Refusal (Shale fragments)	6.1		10	P/S	0.61		0.0
6.5	END OF BOREHOLE @ 6.10m BGS							
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: Geotechnical Investigation and Phase Two ESA
PROJECT NUMBER: 081211
CLIENT: Mondelez Canada Inc.
LOCATION: 2150 Lake Shore Blvd. West, Toronto

HOLE DESIGNATION: BH114-13
DATE COMPLETED: February 22, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: L. Griffith

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	SW-GW SAND & GRAVEL (FILL)			1	P/S	0.61		0.0
0.5	CL-SILTY CLAY, firm, low plasticity, grey, moist	0.6						
1.0	- slight black discolouration			2	P/S	0.61		0.0
1.5				3	P/S	0.61		0.0
2.0				4	P/S	0.61		0.0
2.5				5	P/S	0.61		0.0
3.0			BENTONITE SEAL	6	P/S	0.61		0.0
3.5								
4.0				7	P/S	0.61		0.0
4.5	- high plasticity			8	P/S	0.61		0.0
5.0				9	P/S	0.61		0.0
5.5								
6.0	CL-SILTY CLAY (TILL), firm, low plasticity, grey, moist	5.8		10	P/S	0.61		0.0
6.5	- Refusal (Shale fragments)	6.1						
7.0	END OF BOREHOLE @ 6.10m BGS							
7.5								
8.0								
8.5								
9.0								
9.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 081211.GPJ CRA_CORP.GDT 2/25/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH201-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT	0.15						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, grey, moist	0.30		1				0.7
0.5	CL-SILTY CLAY, low plasticity, brown, moist - moist to wet, slight oxidation at 0.61m BGS			2				0.7
1.0								
1.5				3				0.7
2.0			BENTONITE	4				0.5
2.5				5				0.6
3.0								
	SM-SILTY SAND, fine grained, poorly graded, grey, moist - wet at 3.51m BGS	3.35		6				0.5
3.5								
4.0				7				0.4
	- Refusal, concrete at 4.27m BGS	4.27						
4.5	END OF BOREHOLE @ 4.27m BGS							
5.0								
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH202-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	ASPHALT						
	- Refusal at 0.15m BGS	0.15					
	END OF BOREHOLE @ 0.15m BGS						
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH203-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	ASPHALT						
	- Refusal at 0.15m BGS	0.15					
	END OF BOREHOLE @ 0.15m BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH204-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT							
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.15		1				0.8
	SP-SAND (FILL), fine grained, poorly graded, brown, moist	0.61		2				0.9
	SM-SILTY SAND, fine grained, poorly graded, brown, moist	0.91		3				0.7
	ML-SILT, trace clay, low plasticity, brown, moist	1.22		4				0.9
	- little sand, wet, slight oxidation at 1.83m BGS		BENTONITE	5				2.1
				6				2.4
	SP-SAND, fine grained, poorly graded, brown, moist	3.66		7				0.7
	ML-SILT, trace clay, low plasticity, brown, moist, slight oxidation	3.96		8				1.0
	CL-SILTY CLAY, low plasticity, grey, moist to wet	4.11		9				0.7
	- trace sand at 4.27m BGS			10				0.6
	- low plasticity, moist at 4.57m BGS							
	- medium plasticity, moist to wet at 4.88m BGS							
	END OF BOREHOLE @ 6.10m BGS	6.10						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH205-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT	0.15						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist			1				0.8
0.5								
1.0	ML-SILT (TILL), trace clay, compact, grey, moist	0.91		2				0.7
	- wood fragments, slight odour at 1.22m BGS							
1.5	- black staining at 1.52m BGS			3				1.4
2.0				4				2.9
2.5								
	ML-SILT, trace clay, compact, brown, moist	2.74		5				1.5
3.0			BENTONITE					
				(6)				0.9
3.5	- trace sand, loose, moist to wet at 3.66m BGS							
4.0				7				0.5
4.5				8				0.3
	CL-SILTY CLAY, medium plasticity, grey, moist	4.57						
5.0				9				0.5
5.5								
6.0				10				0.4
	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH206-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT	0.23						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.30		1				0.8
0.5	SP-SAND (FILL), fine grained, poorly grained, brown, moist	0.61						
	ML-SILT, loose, grey, moist							
1.0	SM-SILTY SAND (TILL), fine grained, poorly graded, trace gravel, brown, some black staining, slight odour	0.91		2				0.5
1.5				3				1.3
	ML-SILT (TILL), loose, brown, moist, slight black staining	1.83						
2.0				4				1.4
2.5	ML-SILT, compact, with clay, brown, moist	2.44		5				1.2
3.0			BENTONITE					
	- trace sand at 3.35m BGS			(6)				0.7
3.5	- brown streaks at 3.66m BGS							
4.0				7				0.8
4.5				8				0.8
	CL-SILTY CLAY, medium plasticity, brown, moist to wet	4.88						
5.0				9				0.8
	- grey at 5.33m BGS							
5.5								
6.0				10				0.5
	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH207-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT	0.15						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.30		1				1.1
0.5	SP-SAND (FILL), medium grained, well graded, brown, moist	0.46						
	SM-SILTY SAND, fine grained, poorly graded, grey, moist	0.61		2				6.8
1.0	ML-SILT, trace sand, loose, grey, moist							
	- with sand, black staining at 1.22m BGS							
1.5				3				50.7
	SM-SILTY SAND, fine grained, poorly graded, moist, black staining, slight odour	1.68 / 1.83						
2.0	ML-SILT, with clay, compact, grey, moist			4				33.6
2.5	- slight odour at 2.44m BGS			5				23.6
3.0	- some black staining, strong odour at 3.05m BGS		BENTONITE	6				1686.0
3.5	- slight odour at 3.66m BGS							
4.0				7				23.6
	- moist to wet at 4.27m BGS							
4.5				8				29.1
	- slight odour at 4.88m BGS							
5.0				9				21.7
5.5	- grey and brown at 5.49m BGS							
				10				3.6
6.0	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH208-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	ASPHALT	0.15						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.30		1				20.8
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist	0.46						
	ML-SILT, trace sand, loose, grey, moist			2				1.5
1.0								
	SM-SILTY SAND, fine grained, poorly graded, grey, some black staining, slight odour	1.22						
1.5				3				7.1
	ML-SILT, trace sand, loose, grey, moist, slight odour	1.83						
2.0				4				4.5
2.5				5				4.8
3.0	CL-SILTY CLAY, medium plasticity, grey, moist to wet	3.05	BENTONITE					
	- slight black staining at 3.35m BGS			6				1.4
3.5								
4.0	- brown and grey at 3.96m BGS			7				6.0
4.5				8				1.1
5.0				9				2.9
5.5	- trace sand, slight black staining at 5.18m BGS							
				10				0.9
6.0	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH209-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.09						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.15		1				1.2
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist, slight oxidation	0.61						
	SM-SILTY SAND, fine grained, poorly graded, brown, moist			2				0.7
1.0								
1.5	ML-SILT, little sand, loose, grey, moist	1.52		3				1.9
2.0	- trace sand at 1.98m BGS							
	- trace sand, wood chip fragments, slight odour at 2.13m BGS			4				0.7
2.5	- slight odour at 2.44m BGS							
	- trace sand, medium plasticity, brown, moist at 2.74m BGS			5				1.5
3.0			BENTONITE					
				6				0.8
3.5	- with sand, wet at 3.66m BGS							
4.0				7				1.3
	- trace sand at 4.27m BGS							
4.5				8				0.9
	- grey, wet at 4.88m BGS							
5.0				9				1.0
	CL-SILTY CLAY, medium plasticity, grey, moist	5.18						
5.5				10				0.3
6.0	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH210-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.23						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.30		1				0.5
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist							
	SM-SILTY SAND, fine grained, poorly graded, grey, moist	0.91		2				0.8
1.0	- black staining, slight odour at 1.22m BGS							
1.5				3				0.9
2.0	ML-SILT, trace clay, fine grained, poorly graded, grey, moist	2.13		4				1.2
2.5								
				5				1.0
3.0	- brown at 3.05m BGS		BENTONITE					
	- black staining, vegetative rootlets, slight odour at 3.35m BGS			6				1.4
3.5								
4.0	- with clay, slight odour at 3.96m BGS			7				3.0
4.5				8				5.2
5.0				9				1.5
5.5				10				0.9
6.0	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH211-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.15						
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.30		1				0.5
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist							
1.0				2				0.5
	SM-SILTY SAND, fine grained, poorly graded, brown, moist	1.22						
1.5	ML-SILT, trace clay, fine grained, poorly graded, grey, moist	1.52		3				0.5
2.0				4				0.4
2.5				5				0.2
3.0	- trace vegetative matter, vegetative staining at 3.05m BGS		BENTONITE	(6)				0.4
3.5								
4.0				7				0.2
4.5				8				0.4
5.0	- with clay at 4.88m BGS			9				0.4
5.5								
6.0				10				0.6
	END OF BOREHOLE @ 6.10m BGS	6.10						
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (6)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: MONDELEZ
PROJECT NUMBER: 081211
CLIENT:
LOCATION: 2150 LAKE SHORE BLVD. W., TORONTO, ONTARIO

HOLE DESIGNATION: BH212-13
DATE COMPLETED: 27 May 2013
DRILLING METHOD: 51mm O.D./DIRECT PUSH
FIELD PERSONNEL: L. GRIFFITH

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT							
	SP-SAND (FILL), medium grained, poorly graded, brown, moist	0.15		1				1.3
0.5								
1.0	ML-SILT, trace sand	0.91		2				1.8
	- black staining at 1.07m BGS							
1.5	- black staining, slight odour, wood fragments at 1.52m BGS			3				1.2
2.0				4				3.4
2.5	- trace clay, slight odour at 2.44m BGS		BENTONITE					
	- trace clay, grey, moist to wet at 2.74m BGS			5				8.4
3.0								
3.5				(6)				1.9
	- trace clay, brown, moist at 3.66m BGS							
4.0				7				0.8
4.5				8				0.9
5.0								
	END OF BOREHOLE @ 4.88m BGS	4.88						
5.5								
6.0								
6.5								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (6)

OVERBURDEN LOG 81211.GPJ CRA_CORP.GDT 11/6/13

Appendix C

Hydrological Review Summary Form

August 2018

HYDROLOGICAL REVIEW SUMMARY

The form is to be completed by the Professional that prepared the Hydrological Review.
Use of the form by the City of Toronto is not to be construed as verification of engineering/hydrological content.

Refer to the Terms of Reference, Hydrological Review:
Link to Terms of Reference Hydrological Review

For City Staff Use Only:	
Name of ECS Case Manager (Please print)	
Date Review Summary provided to to TW, EM&P	

IF ANY OF THE REQUIREMENTS LISTED BELOW HAVE NOT BEEN INLCUDED IN THE HYDROLOGICAL REVIEW, THE REVIEW WILL BE CONSIDERED INCOMPLETE.
THE GREY SHADED BOXES WILL REQUIRE A CONSISTANCY CHECK BY THE ECS CASE MANAGER.

Summary of Key Information:

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Site Address	2150-2194 Lake Shore Boulevard West and 23 Park Lawn Rd	Page 3 Section 1.1	
Postal Code	M8V 1A3	Page 5 Section 2	
Property Owner (on request for comments memo)	FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc	Page 3 Section 1.1	
Proposed description of the project (if applicable) (point towers, number of podiums)	Fifteen towers with basement, mid-rise and low-rise buildings, new Park Lawn GO Station, a public park	Page 3 Section 1.1	
Land Use (ex. commercial, residential, mixed, institutional, industrial)	Mixed (residential, offices, services/retail, institutional)	Page 3 Section 1.1	
Number of below grade levels for the proposed structure	3 to 5	Page 3 and 4 Section 1.1	
HYDROLOGICAL REVIEW INFORMATION			
Date Hydrological Review was prepared:	15 May 2020	Cover Page	
Who Performed the Hydrological Review (Consulting Firm)	Arup Canada Inc	Cover Page	
Name of Author of Hydrological Review	James Collins	Cover Page	

August 2018

HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Check the directories on the website for Professional Geoscientists and/or Professional Engineers of Ontario been checked to ensure that the Hydrological Report has been prepared by a qualified person who is a licensed Professional Geoscientist as set out in the Professional Geoscientist Act of Ontario or a Professional Engineer? PEO: Professional Engineers of Ontario APGO: Association of Professional Geoscientists of Ontario		N/A	
Has the Hydrological Review been prepared in accordance with all the following: • Ontario Water Resources Act • Ontario Regulation 387/04 • Toronto Municipal Code Chapter 681-Sewers	Yes	Page 4 Section 1.2	
		Page # & Section # of every occurrence in the Review	**Review Includes this Information City Staff (Check)**

TORONTO

August 2018

HYDROLOGICAL REVIEW SUMMARY

<table>
<tr><th colspan="2">SITE INFORMATION</th><th>Page # & Section # of Review</th><th>Review Includes this Information City Staff (Check)</th></tr>
<tr><td>Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) with safety factor included</td><td>What safety factor was used?
Factor of Safety of 1.5 was used
Values for each basement have been tabulated and are presented in the report. Report text includes values in L/d.
Table 7 - Anticipated Groundwater Discharge
<table><tr><th>Basement Phase</th><th>Minimum Anticipated Groundwater Discharge (m³/d) (unfactored)</th><th>Maximum Anticipated Groundwater Discharge (m³/d) (unfactored)</th><th>Maximum Anticipated Groundwater Discharge (m³/d) (factored)</th></tr><tr><td>Phase 1</td><td>5</td><td>47</td><td>70</td></tr><tr><td>Phase 2</td><td>4</td><td>41</td><td>62</td></tr><tr><td>Phase 3</td><td>5</td><td>49</td><td>73</td></tr><tr><td>Phase 4</td><td>4</td><td>38</td><td>57</td></tr><tr><td>Phase 5</td><td>3</td><td>34</td><td>51</td></tr><tr><td>Phase 6</td><td>3</td><td>34</td><td>51</td></tr><tr><td>Phase 1-5</td><td>21</td><td>209</td><td>313</td></tr><tr><td colspan="4">Note: Factored groundwater discharge includes a Factor of Safety of 1.5</td></tr></table></td><td>Page 20
Section 5.2.3</td><td></td></tr>
<tr><td>Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) without safety factor included</td><td>Values for each basement have been tabulated and are presented in the report. Report text includes values in L/d.
Table 7 - Anticipated Groundwater Discharge
<table><tr><th>Basement Phase</th><th>Minimum Anticipated Groundwater Discharge (m³/d) (unfactored)</th><th>Maximum Anticipated Groundwater Discharge (m³/d) (unfactored)</th><th>Maximum Anticipated Groundwater Discharge (m³/d) (factored)</th></tr><tr><td>Phase 1</td><td>5</td><td>47</td><td>70</td></tr><tr><td>Phase 2</td><td>4</td><td>41</td><td>62</td></tr><tr><td>Phase 3</td><td>5</td><td>49</td><td>73</td></tr><tr><td>Phase 4</td><td>4</td><td>38</td><td>57</td></tr><tr><td>Phase 5</td><td>3</td><td>34</td><td>51</td></tr><tr><td>Phase 6</td><td>3</td><td>34</td><td>51</td></tr><tr><td>Phase 1-5</td><td>21</td><td>209</td><td>313</td></tr><tr><td colspan="4">Note: Factored groundwater discharge includes a Factor of Safety of 1.5</td></tr></table></td><td>Page 20
Section 5.2.3</td><td></td></tr>
<tr><td>Total Volume (L/day) Long Term drainage of groundwater (from foundation drainage, weeping tiles, sub slab drainage) with safety factor included

If the development is part of a multiple tower complex, include total volume for each separate tower</td><td>What safety factor was used?
Factor of Safety of 1.5 was used
Values for each basement have been tabulated and are presented in the report. Report text includes values in L/d.
Table 8 – Anticipated Groundwater Discharge with Secant Pile Perimeter Wall
<table><tr><th>Basement Phase</th><th>Maximum Anticipated Groundwater Discharge (m³/d) with Secant Pile Perimeter Wall (factored)</th></tr><tr><td>Phase 1</td><td>18</td></tr><tr><td>Phase 2</td><td>15</td></tr><tr><td>Phase 3</td><td>18</td></tr><tr><td>Phase 4</td><td>14</td></tr><tr><td>Phase 5</td><td>13</td></tr><tr><td>Phase 6</td><td>13</td></tr><tr><td>Phase 1-5</td><td>78</td></tr><tr><td colspan="2">Note:
Factored groundwater discharge includes a Factor of Safety of 1.5
Above groundwater discharge assumes 25% of factored analysis result due to benefit of secant pile wall.</td></tr></table></td><td>Page 21
Section 5.4</td><td></td></tr>
<tr><td>List the nearest surface water (river, creek, lake)</td><td>Mimico Creek, approximately 200 m to the southwest. Lake Ontario is located approximately 250 m to 300 m to the southeast .</td><td>Page 5
Section 2.2</td><td></td></tr>
</table>

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HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Lowest basement elevation	+89 masl	Page 18 Section 5.2.2	
Foundation elevation	Anticipated to be within the shale bedrock which was encountered between 70.7 masl and 82.6 masl	Page 16 Section 5.1	
Ground elevation	The site is generally flat, with existing elevation across the site typically ranging from approximately +84 masl and +86 masl.	Page 5 Section 2.1	
STUDY AREA MAP		**Page # & Section # of every occurrence in the Review**	**Review Includes this Information City Staff (Check)**
Study area map(s) have been included in the report.	ⓧ **Yes** Site Location Plan - Page 3, Section 1.1 Borehole Location Plan - Appendix A	Page 3 Section 1.1 and Appendix A	N/A
Study area map(s) been prepared according to the Hydrological Review Terms of Reference.	ⓧ **Yes**		N/A
WATER LEVEL AND WELLS		**Page # & Section # of every occurrence**	**Review Includes this Information (City Staff Initial)**

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
		in the Review	
The groundwater level has been monitored using all wells located on site (within property boundary).	Yes	Page 12 Section 4.2	
The static water level measurements have been monitored at all monitoring wells for a minimum of 3 months with samples taken every 2 weeks for a minimum of 6 samples. The intent is for the qualified professional to use professional judgement to estimate the seasonally high groundwater level.	No. Existing monitoring data is provided at various seasons but not consistently for 3 months. Based on the available data a conservative estimate of groundwater level has been made, and groundwater assumed to be 1 m below ground surface.	Page 16 Section 5.2	
All water levels in the wells have been measured with respect to masl.	Yes	Page 12 Section 4.2	
A table of geology/soil stratigraphy for the property has been included.	Yes	Page 10 Section 3.3 and Page 11 Section 4.1	
GEOLOGY AND PHYSICAL HYDROLOGY		**Page # & Section # of every occurrence in the Review**	**Review Includes this Information (City Staff Initial)**
The review has made reference to the soil materials including thickness, composition and texture, and bedrock environments.	Yes	Page 10 Section 3.3	
Key aquifers and the site's proximity to nearby surface water has been identified.	ⓧ **Yes**	Page 5 Section 2.2 and Page 11 Section 4.1	N/A

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
PUMP TEST/SLUG TEST/DRAWDOWN ANALYSIS		**Page # & Section # of every occurrence in the Review**	**Review Includes this Information City Staff (Check)**
A summary of the pumping test data and analysis is included in the review.	Pumping tests have not yet been carried out. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	Page 23 Section 7	
The pump test been carried out for at least 24 hours if possible. If not, has a slug test been conducted?	Slug tests have not been conducted. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	Page 23 Section 7	
Have the monitoring well(s) have been monitored using digital devices? If yes how frequently?	Not monitored using digital devices	N/A	
If a slug or pump test has been conducted has the static groundwater level been monitored at all monitoring well(s) multiple times to measure recovery? -prior to the slug or pumping test(s)? -post slug or pumping test(s)?	◯ **Yes** Pumping nor slug tests tests have not yet been carried out. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	N/A	N/A
The above noted slug or pump tests have been included in the report.	◯ **Yes** Pumping nor slug tests tests have not yet been carried out. In situ permeability testing is proposed for future design stages, which is discussed in Section 7 Summary and Further Work	N/A	
WATER QUALITY		**Page # & Section # of every occurrence in the Review**	**Review Includes this Information City Staff (Check)**

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
The report includes baseline water quality samples from a laboratory. The water quality must be analyzed for all parameters listed in Tables 1 and 2 of Chapter 681 Sewers of the Toronto Municipal Code (found in Appendix A) and the samples must have to be taken unfiltered within 9 months of the date of submission.	The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	
The water quality data templates in Appendix A have been completed for each sample taken for both sanitary/combined and storm sewer limits.	For sanitary discharge- See the sanitary/combined sewer parameter limit template For storm discharge- See the storm sewer parameter limit template	N/A	
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the sanitary/combined Bylaw limits **If there are any sample parameter Exceedances the groundwater can't be discharged as is.**	The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the storm Bylaw limits. **If there are any sample parameter exceedances the groundwater can't be discharged as is.**	The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	
The water quality samples have been analyzed by a Canadian laboratory accredited and licensed by Standards Council of Canada and/or Canadian Association for Laboratory Accreditation.	◯ **Yes** The report discusses known contamination at the site and the requirements of Tables 1 and Table 2 of The City of Toronto Sewers By-Law. Required tests are to be carried out during ground investigation for future design stages.	Page 15 Section 4.5	N/A

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
List of Canadian accredited laboratories: Standards Council of Canada	N/A	N/A	
A chain of custody record for the samples is included with the report.	N/A	N/A	
Has the chain of custody reference any filtered sample? If yes, the report has to be amended and re-submitted to include only non-filtered samples.	N/A	N/A	
List any of the sample parameters that exceed the Bylaw limits with the reporting detection limit (RDL) included.	N/A	N/A	
A true copy of the Certificate of Analysis report, is included with the report.	N/A	N/A	
EVALUATION OF IMPACT		**Page # & Section # of every occurrence in the Review**	**Review Includes this Information City Staff (Check)**
Does the report recommend a back-up system or relief safety valve(s)?	◯ **Yes** ⓧ **No**		
Does the associated Geotechnical report recommend a back-up system or relief safety valve(s)?	◯ **Yes** ⓧ **No**		
The taking and discharging of groundwater on site has been analyzed to ensure that no negative	◯ **Yes**		N/A

HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
impacts will occur to: the City sewage works in terms of quality and quantity (including existing infrastructure), the natural environment, and settlement issues.	Review has been carried out in terms of groundwater quantity. Further review of groundwater quality and detailed settlement analysis will be carried out during ground investigation and future design stages.	Page 22 Section 5.6	
Has it been determined that there will be a negative impact to the natural environment, City sewage works, or surrounding properties has the study identified the following: the extent of the negative impact, the detail of the precondition state of all the infrastructure, City sewage works, and natural environment within the effected zone and the proposed remediation and monitoring plan?	◯ **Yes** **If yes, identify impact:** ⓧ **No**		N/A

Summary of Additional Information and Key Items (if applicable):

Appendix A:

SANITARY/COMBINED **Sample Location:**

Inorganics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L			ug/L
BOD	300			300,000
Fluoride	10			10,000
TKN	100			100,000
pH	6.0 - 11.5			6.0 - 11.5
Phenolics 4AAP	1			1,000
TSS	350			350,000
Total Cyanide	2			2,000
Metals				
Chromium Hexavalent	2			2,000
Mercury	0.01			10
Total Aluminum	50			50,000
Total Antimony	5			5,000
Total Arsenic	1			1,000
Total Cadmium	0.7			700
Total Chromium	4			4,000
Total Cobalt	5			5,000
Total Copper	2			2,000
Total Lead	1			1,000
Total Manganese	5			5,000
Total Molybdenum	5			5,000
Total Nickel	2			2,000
Total Phosphorus	10			10,000
Total Selenium	1			1,000
Total Silver	5			5,000
Total Tin	5			5,000
Total Titanium	5			5,000
Total Zinc	2			2,000
Petroleum Hydrocarbons				
Animal/Vegetable Oil & Grease	150			150,000
Mineral/Synthetic Oil & Grease	15			15,000

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Volatile Organics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L			ug/L
Benzene	0.01			10
Chloroform	0.04			40
1,2-Dichlorobenzene	0.05			50
1,4-Dichlorobenzene	0.08			80
Cis-1,2-Dichloroethylene	4			4,000
Trans-1,3-Dichloropropylene	0.14			140
Ethyl Benzene	0.16			160
Methylene Chloride	2			2,000
1,1,2,2-Tetrachloroethane	1.4			1,400
Tetrachloroethylene	1			1,000
Toluene	0.016			16
Trichloroethylene	0.4			400
Total Xylenes	1.4			1,400
Semi-Volatile **Organics**				
Di-n-butyl Phthalate	0.08			80
Bis (2-ethylhexyl) Phthalate	0.012			12
3,3'-Dichlorobenzidine	0.002			2
Pentachlorophenol	0.005			5
Total PAHs	0.005			5
Misc **Parameters**				
Nonylphenols	0.02			20
Nonylphenol Ethoxylates	0.2			200

Sample Collected:
Temperature:

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STORM **Sample Location:**

Inorganics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L			ug/L
pH	6.0 - 9.5			
BOD	15			15,000
Phenolics 4AAP	0.008			8
TSS	15			15,000
Total Cyanide	0.02			20
Metals				
Total Arsenic	0.02			20
Total Cadmium	0.008			8
Total Chromium	0.08			80
Chromium Hexavalent	0.04			40
Total Copper	0.04			40
Total Lead	0.12			120
Total Manganese	0.05			50
Total Mercury	0.0004			0.4
Total Nickel	0.08			80
Total Phosphorus	0.4			400
Total Selenium	0.02			20
Total Silver	0.12			120
Total Zinc	0.04			40
Microbiology				
E.coli	200			200,000
Volatile Organics				
Parameter	mg/L			ug/L
Benzene	0.002			2
Chloroform	0.002			2
1,2-Dichlorobenzene	0.0056			6
1,4-Dichlorobenzene	0.0068			7
Cis-1,2-Dichloroethylene	0.0056			6
Trans-1,3-Dichloropropylene	0.0056			6
Ethyl Benzene	0.002			2
Methylene Chloride	0.0052			5
1,1,2,2-Tetrachloroethane	0.017			17
Tetrachloroethylene	0.0044			4
Toluene	0.002			2
Trichloroethylene	0.0076			8
Total Xylenes	0.0044			4

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Semi-Volatile Organics		Sample Result	Sample Result with upper RDL included	
Di-n-butyl Phthalate	0.015			5
Bis (2-ethylhexyl) Phthalate	0.0088			8.8
3,3'-Dichlorobenzidine	0.0008			0.8
Pentachlorophenol	0.002			2
Total PAHs	0.002			2
PCBs	0.0004			0.4
Misc Parameters				
Nonylphenols	0.001			1
Nonylphenol Ethoxylates	0.01			10

Sample Collected:
Temperature:

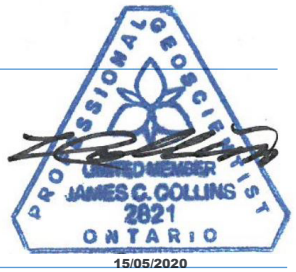
Consulting Firm that prepared Hydrological Report: Arup

Qualified Professional who completed the report summary: James Collins

Print Name

Qualified Professional who completed the report summary: See stamp

Signature



Date & Stamp