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

2150 Lake Shore

Preliminary Geotechnical Study

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Job number 264635-00

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Executive Summary

This geotechnical study has been prepared in accordance with the requirements for a Geotechnical Study 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 masl (meters above sea level, approximately 20 mbgs – meters below ground surface).

This report summarizes the findings from available geotechnical investigation and provides assessment on the soil, bedrock and groundwater characteristics of the subject property to determine its feasibility and stability to accommodate the proposed development, which includes preliminary design and construction recommendations for site preparation, foundations, floor slabs, retaining walls, temporary shoring system, underground services, pavement structure, earthquake consideration and dewatering. In addition, this report provides discussion on potential risks, mitigation measures and monitoring programs for the proposed development.

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 details <https://www.toronto.ca/wp-content/uploads/2018/08/97bb-Hydrological-Review-August-2018.pdf>.

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1 Introduction

1.1 Project Description

In October 2019, FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc. ("the Owners" or "FCR") 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.

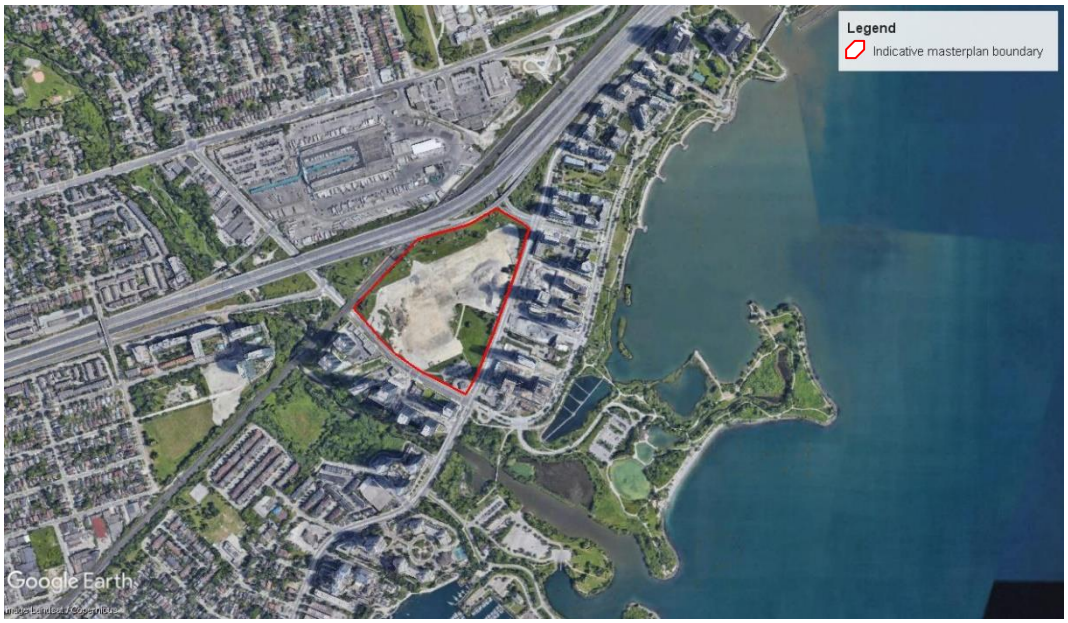

Figure 1: Site Location and Boundary

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.

1.2 Proposed Development

The proposed site contains several mix-use buildings (residential, employment and retail), two schools, a 1 ha park, several open spaces, a new train station on the Lake Shore GO line, a TTC streetcar loop, and a series of public and private roadways, as shown in Figure 2.

Figure 2: Proposed Development

1.3 Scope and Limitation

Arup was retained by FCR (Park Lawn) LP and CPPIB Park Lawn Canada Inc. to prepare a Geotechnical Study for the Zoning Bylaw Amendment application.

This report summarizes the findings from available geotechnical investigation and provides assessment on the soil, bedrock and groundwater characteristics of the subject property to determine its feasibility and stability to accommodate the proposed development, which includes preliminary design and construction recommendations for site preparation, foundations, floor slabs, retaining walls, temporary shoring system, underground services, pavement structure, earthquake consideration and dewatering. In addition, this report provides discussion on potential risks, mitigation measures and monitoring programs for the proposed development.

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 documenting the information encountered at the borehole locations, at the time of their determination during preparation of this report. Any discrepancies between this report and the borehole logs, information on the borehole logs shall prevail. Ground and groundwater information may vary between and beyond boreholes.

2 Site Condition

The site is located at 2150 Lake Shore Boulevard West, in the Etobicoke-Lakeshore area of the Toronto City District of Etobicoke-York. The site is approximately 11.2 hectares and 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 Existing Geotechnical Features

Existing geotechnical features include a fill slope with a 2:1 to 2.5:1 gradient, measuring approximately 10 m in height and 250 m in length forming the southern slope of the embankment upon which the Gardener Expressway east bound exist ramp is located, forming the north-northwestern boundary of the site; a retaining wall measuring up to approximately 5 m in height and 100 m in length, alongside an onsite access road, and in part, in close proximity to Canadian National Railway line passing along the northwestern boundary of the site. A small slope measuring up to approximately 2 m in height and 65 m in length along the northern boundary of the site. These features allow differing ground elevation within the site and surrounding area and will need to be further assessed as part of the site development.

3 Land Use History

3.1 Historical Maps and Aerial Photographs

A review of available historical maps and aerial photographs for the area has been conducted to determine the site land use history, which is summarized in Table 1, below.

Table 1: Summary of historical Maps and Aerial Photographs

Year	Sheet/Photograph No.	Details
1903	Plan of the city of Toronto.	The site is bounded by Lake Shore Road to the south, Salisbury Road (currently Park Lane Road) to the southwest, and CN Railway to the north. No development is shown within site.
1908	City of Toronto Contour Map	The site is bounded by Lake Shore Road to the south, Salisbury Road (currently Park Lane Road) to the southwest, and CN Railway to the north. No development is shown within site.
1921	Toronto Transportation Commission – Contour Map of Toronto District	The site is shown to be bounded by Lake Shore Road to the south, Canadian Pacific Railway to the north. No development is shown within site. Site elevation is shown to be approximately +84 masl.
1932	Province of Ontario Department of Mines. Map No. 41g. The Pleistocene of the Toronto Region	The site is shown to be bounded by Lake Shore Road to the south, Canadian Pacific Railway to the north, and Park Lane Road to the southwest. The site is labelled as “Brick Yards”.
1937	City of Toronto Planning Board	The site is bounded by Lake Shore Road, Park Lane Road, CN Rail, and Queen Elizabeth Way (now the Gardener Expressway). No development is shown within site.
1947	Aerial Photograph 21C	The site is bounded by Lake Shore Road, Park Lane Road, CN Rail, and Queen Elizabeth Way (now the Gardener Expressway). The site appears to have been largely cleared of vegetation but remains undeveloped with the exception of several small structures towards the west of the sire. To the south of the site, Humber Bay Park East and West are not yet reclaimed and remain as open water.
1950	Aerial Photograph 21C	The northern portion of the Mr. Christie’s Bakery building is present on the site. The water tower in the northern portion of the site has also been constructed.

Year	Sheet/Photograph No.	Details
1956	Aerial Photographs 183 and 184	The southern portion of the building that is currently occupied by Mr. Christie's Bakery is present on the site, completing the building in its current state. The building that is currently the BMO bank is present in the southern corner of the site.
1959	Aerial Photograph 11	No significant change within the site. Reclamation to the south of the site, forming the land for what is now Marine Parade Drive and adjacent developments.
1960 to 1971	Aerial Photographs	No significant change within the site. Continued reclamation to the south.
1973	Aerial Photograph 35	No significant change within the site. Ongoing reclamation to the south of the site, to what is now partially Humber Bay Park East and West
1975	Aerial Photograph 29	Construction of the Gardener Expressway eastbound off ramp bounding the north of the site has been completed.
1976 to 1992	Aerial Photographs	No significant change within the site.
2002 to 2017	Google Earth	No significant change within the site.
2018	Google Earth	The former Mr. Christie's Bakery has been removed from the site. The BMO building in the southern corner of the site remains.

3.2 Published Historical Information

The following information is credited to the Etobicoke Historical Society, who have compiled historical information on Humber Bay and other neighbourhoods throughout Etobicoke.

Lake Shore Boulevard West (called Lake Shore Road until 1959), forms the southeast border of the site and was first surveyed in 1791 along the path of an ancient aboriginal trail, making it one of the oldest roads in Ontario. Much of the local area, including 2150 Lake Shore Boulevard has historically been used as farmland. In 1853 the railway, currently the Canadian National Railway was constructed which now forms part of the northern boundary of the site. In 1940 Queen Elizabeth Way (now the gardener Expressway) was constructed. 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. In 1948, Christie Brown & Co. built a large bakery on the site, which closed in 2014.

4 Review of Existing Information

4.1 Published Geological Information

The map of Quaternary Geology of Toronto and the Surrounding Area (1980) indicates that the site is underlain by Older Lake Deposits of silt and clay, as shown in Figure 3. Beneath the Older Lake Deposits there is potential for presence of the Older Glacial 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.

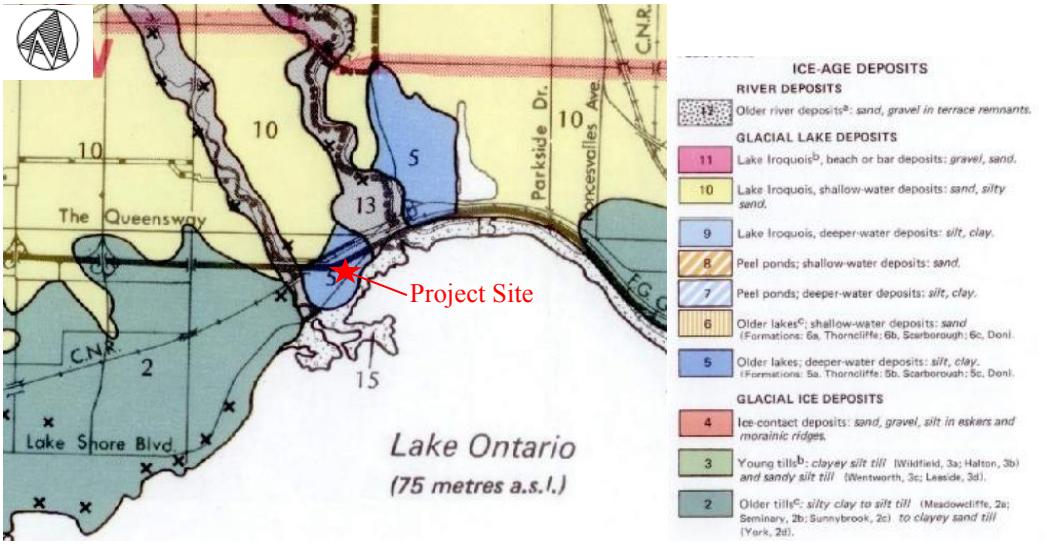

Figure 3: Regional Geology of Project Site (Quaternary Geology of Toronto and the Surrounding Area (1980)

4.2 Geotechnical Reports and Information

4.2.1 Historical Geotechnical Reports and Boreholes

A search of ground investigation information within the site and surrounding area has been carried out via 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); and
- Toronto Development Projects Planning Applications.

Table 2, below, summarizes reports and eighteen (18) boreholes that have been considered in preliminary determination of the site-specific ground conditions.

Table 2: Summary of Available Geotechnical Reports

Source	Document Type	Relevant Boreholes	Borehole Locations
Ontario Ministry of Transport Foundation Library	Foundation Investigation Report – 30M11-094 (1970)	BH9 and BH10	Boreholes located at northern boundary of site, adjacent to Gardiner Expressway east bound off ramp
	Foundation Investigation Report – 30M11-097 (1970)	BH107 and BH109	Boreholes located at northeastern boundary of site.
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	Within the 2150 Lake Shore Boulevard site, in close proximity to the northwestern boundary.
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	South of Lake Shore Boulevard West.

4.2.2 Site Specific Geotechnical Reports

Two site specific geotechnical reports are summarized in Table 3. Thirty-eight borehole logs and one test pit log were provided in the site specific geotechnical reports. Eighteen (18) out of the thirty-eight (38) boreholes and one (1) test pit were carried out for environmental sampling or well installation with no geotechnical in situ tests or laboratory tests having been carried out for these boreholes.

Table 3: Summary of Project Specific Geotechnical Reports

Date	Source	Document Type	Relevant Boreholes and Test Pits
February 2013	Conestoga-Rovers & Associates	Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario	MW1-13, MW2-13, MW3-13, MW4-13, MW5-13, MW6-13, MW7-13, MW8-13, MW9-13, *TP1-03, *BH2-04, *BH3-04, *BH4-04, *BH5-04, *BH6-04, *BH7-

Date	Source	Document Type	Relevant Boreholes and Test Pits
			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
January 2015	Golder Associates	Preliminary Geotechnical Investigation, 2150 Lake Shore Boulevard West Toronto, Ontario	15-1, 15-2, 15-3, 15-4, 15-5, *MW14-4, *MW14-6
* Boreholes or test pits were carried for environmental sampling or well installation with no geotechnical laboratory or in situ tests.			

5 Ground and Groundwater Conditions

5.1 General

Based on the project specific geotechnical reports, the subject property is underlain by the overburden materials comprising a layer of earth fill overlaying the native silty clay to silt deposits, and the native silty clay to silt deposits are underlain by shale bedrock of Georgian Bay Formation.

The above subsurface condition is consistent with the general subsurface conditions interpreted from the historical geotechnical reports from adjacent sites.

5.2 Ground Conditions

The following soil stratigraphy is interpreted based on the site specific geotechnical boreholes.

5.2.1 Topsoil, Concrete and Asphalt

Based on the site specific geotechnical reports, topsoil was encountered in seven (7) boreholes drilled in the landscaped area; concrete was encountered in five (5) boreholes drilled within the demolished building, and asphalt was encountered in twenty (20) boreholes and one (1) test pit carried out in the demolished parking lot. Details of these surface cover are summarized in Table 4.

Table 4: Topsoil, Concrete and Asphalt Thickness and Location Summary

Description	Min. Thickness (mm)	Max. Thickness (mm)	Borehole Encountered
Topsoil	30	150	MW1-13, MW3-13, MW5-13, MW6-13, MW7-13, BH1 and BH2
Concrete	100	200	BH11-04, BH201-05, BH202-05, BH203-05, BH204-05 and BH205-05
Asphalt	60	210	BH15-1, BH15-2, BH15-3, BH15-4, BH15-5, MW2-13, MW4-13, MW8-13, MW9-13, BH2-04, BH3-04, BH4-04, BH5-04, BH8-04, BH9-04, BH10-04, MW1-04, MW2-04, MW3-04, MW5-04, MW6-04 and TP1-03

5.2.2 Earth Fill

Granular fill, ranging from 50 mm to 1.27 m in thickness, was encountered beneath the pavement structure or concrete slab in twenty (20) boreholes summarized in Table 5. The granular fill generally comprises brown or grey sand and gravel with

trace to some silt. Based on the SPT-N values and moisture content summarized in Table 6, the granular fill is moist to wet and is in very loose to compact condition.

Earth fill, ranging from 0.3 m to 3.96 m in thickness, was recorded in twenty (20) boreholes summarized in Table 5. The earth fill comprises sand, silt and silty clay materials. Based on the SPT-N values and moisture content summarized in Table 6, the earth fill material is moist to wet and in very loose to dense or very soft to very stiff condition. The high moisture content values indicated the presence of organic matters.

Table 5: Earth Fill Thickness and Location Summary

Description	Min. Thickness (mm)	Max. Thickness (mm)	Borehole Encountered
Granular Fill	50	1270	BH15-1, BH15-2, BH15-3, BH15-4, BH15-5, MW4-13, MW8-13, BH2-04, BH3-04, BH4-04, BH5-04, BH6-04, BH7-04, BH9-04, BH10-04, MW5-04, MW6-04, BH201-05, BH202-05 and BH203-05.
Earth Fill	300	3960	BH15-1, BH15-4, MW1-13, MW3-13, MW6-13, MW7-13, MW9-13, BH1, BH2, TP1-03, BH6-04, BH7-04, BH8-04,

			BH10-04, BH11-04, MW1-04, MW2-04, MW3-04, MW-5-04 and MW6-04

Table 6: SPT-N and Moisture Content Summary for Earth Fill

Description	Min. Moisture Content	Max. Moisture Content	Min. SPT-N Value	Max. SPT-N Value
Granular Fill	4	16	4	27
Earth Fill	7	42	0	34

5.2.3 Silty Clay and Clayey Silt

Below the topsoil, concrete, asphalt pavement and earth fill, natural deposits of clayey silt to silty clay were encountered in majority of the boreholes and extended to the bedrock at depths ranging from 4.1 m to 7.6 m below ground surface in eleven (11) boreholes.

Based on the SPT-N value and moisture content summarized in Table 7, clayey silt deposit is generally moist to very moist and is in very loose to dense condition, while the silty clay deposit is moist to wet and is in very soft to hard. The low SPT-N values for silty clay deposit is generally associated with high moisture content, and the high SPT-N is generally encountered at the interface between the silty clay deposit and weather shale.

Table 7: SPT-N and Moisture Content Summary for Silty Clay and Clayey Silt

Description	Min. Moisture Content (%)	Max. Moisture Content (%)	Min. SPT-N Value	Max. SPT-N Value
Clayey Silt deposit	12	23	3	32
Silty Clay deposit	8	33	0	50

Gradation analyses, summarized in Table 8, were carried out on three samples of clayey silt and four samples of silty clay deposit. Based on the gradation analysis results, the clayey silt deposit has silt content between 77% and 82% and clay content between 13% and 17%. The silty clay deposit has silt content between 46% and 70% and clay content between 29% and 46%.

Table 8: Gradation Analysis Result Summary for Silty Clay and Clayey Silt

BH No.	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Description
BH15-4	2.29-2.9	0	10	77	13	Clayey Silt

BH No.	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Description
BH15-5	1.52-2.13	0	6	77	17	Clayey Silt
MW2-13	0.9-1.4	0	4	82	14	Clayey Silt
MW1-13	5.3-5.9	0	5	49	46	Silty Clay
MW4-13	2.3-2.6	0	2	69	29	Silty Clay
MW5-13	5.3-5.9	1	7	46	46	Silty Clay
MW9-13	4.6-5.2	0	0	70	30	Silty Clay

Atterberg limit tests were carried out on three samples of clayey silt and four samples of silty clay, and the results are summarized in Table 9. According to the result, the plasticity index of the clayey silt deposit ranges from 3% to 8% indicating the low clay content.

The silty clay samples had plastic limit of 15% to 18%, liquid limit of 28% to 34 % and plasticity indices of 12% to 17% and were classified as low to medium plasticity clay. The moist content of the tested samples lied between the liquid and plastic limit and were described to be in moist to wet condition.

Table 9: Atterberg Limit Test Result Summary for Silty Clay and Clayey Silt

BH No.	Depth (m)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Moisture Content (%)	Description
BH15-4	2.3-2.9	15	18	3	23	Clayey Silt
BH15-5	1.6-2.1	14	6	8	9	Clayey Silt
MW2-13	0.9-1.4	24	16	8	20	Clayey Silt
MW3-13	3.8-4.4	22	17	5	22	Clayey Silt
MW1-13	5.3-5.9	33	17	16	27	Silty Clay
MW4-13	2.3-2.6	30	18	12	23	Silty Clay
MW5-13	5.3-5.9	34	17	17	28	Silty Clay
MW9-13	4.6-5.2	28	15	13	23	Silty Clay

5.2.4 Silty Clay Till

Silty clay till deposit was encountered below pavement structure in three boreholes (BH15-1, BH15-2 and BH15-3) extending to shale bedrock at depths from 5 m to 6.5 m below ground surface.

Based on the SPT-N values and moisture content summarized in Table 10, silty clay till deposit is generally moist and has a soft to hard consistency. The soft deposit was associated with high water content, and the hard deposit was encountered at the interface between silty clay till and shale bedrock.

Table 10: SPT-N Values and Moisture Content Summary for Silty Clay Till

Description	Min. Moisture Content (%)	Max. Moisture Content (%)	Min. SPT-N Value	Max. SPT-N Value
Silty Clay Till	16	20	4	50

Gradation analysis has been conducted on one representative sample, and the result is summarized in Table 11.

Table 11: Gradation Analysis Summary for Silty Clay Till

BH No.	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Description
BH15-1	6.1-6.52	14	8	54	24	Silty Clay Till

Based on the Atterberg limit test result summarized in Table 12, the silty clay till was classified as low plasticity clay. The moist content of the tested sample lied close to its plastic limit and was described to be in moist condition.

Table 12: Atterberg Limit Test Result Summary for Silty Clay Till

BH No.	Depth (m)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Moisture Content (%)	Description
BH15-1	6.1-6.52	27	16	11	17	Silty Clay Till

5.2.5 Shale Bedrock

Shale bedrock was encountered in fifteen (15) boreholes. The weathered shale levels were determined by auger refusal or split spoon sampling, and rock coring with HQ size double tube wireline equipment was carried out in eight (8) boreholes to evaluate the rock quality with depth and to collect rock samples for laboratory testing. The weathered shale level and rock coring details are summarized in Table

13. Based on the borehole findings, weathered shale was encountered at depths ranging from 4.1 mbgs to 7.3 mbgs (from +80.1 masl to +75.1 masl).

Visual inspection on the rock cores indicates that the bedrock belongs to the Georgian Bay Formation consisting of highly weathered to fresh, grey to dark grey, fine to very fine-grained fissile shale, with occasional fresh, grey, fine grained calcareous siltstone and limestone layers. In addition, planes of weaknesses, including planes of fissility and bedding, contact surfaces between shale and siltstone or limestone bands and some oblique and subvertical joints, along the core were observed and tended to break. The joints along the bedding surfaces were occasionally infilled with clay, and the joints along the planes of fissility were generally smooth and clean. Detailed borehole logs and rock core pictures are provided in the project specific reports (CRA, February 2013 and Golder Associates, January 2015).

Table 13: Summary of Weathered Shale Level and Rock Coring

BH No.	Top of Weathered Shale		Start of Rock Coring		End of Rock Coring	
	Depth (mbgs)	Elevation (masl)	Depth (mbgs)	Elevation (masl)	Depth (mbgs)	Elevation (masl)
BH15-1	6.5	77.9*	NA	NA	NA	NA
BH15-2	6.3	78.5*	NA	NA	NA	NA
BH15-3	4.9	79.3*	NA	NA	NA	NA
BH15-4	4.7	79.3*	NA	NA	NA	NA
BH15-5	5.5	78.9*	NA	NA	NA	NA
MW2-13	6.4	75.1	7.3	74.6	10.5	74.4
MW3-13	6.9	78.0	7.4	77.4	10.6	74.2
MW4-13	4.1	80.1	5.2	79.0	8.2	76.0
MW5-13	6.4	78.6	7.2	77.8	15.4	69.7
MW6-13	6.6	79.6	7.3	78.9	10.4	75.8
MW7-13	6.9	79.6	7.3	79.4	10.5	76.2
MW8-13	5.3	78.6	5.6	78.4	13.9	70.1
MW8-13	6.9	77.6	7.4	77.0	10.6	73.9
BH1	7.0	NA	NA	NA	NA	NA
BH2	7.3	NA	NA	NA	NA	NA

* Borehole elevation was not provided in original borehole logs and was inferred from topographic plan and/or adjacent boreholes.

According to the borehole logs, the recorded Rock Quality Designation (RQD) index in the upper portion of the bedrock (first rock core) varied between 0 and 75 percent, indicating the rock quality in the upper portion is in very poor to fair condition. The RQD values of the remaining rock cores varied between 30 and 100 percent, showing the lower portion of the bedrock is in poor to excellent condition. The Total Core Recovery (TCR) values varied between 70 and 100 percent.

Unconfined Compressive Strength (UCS) tests have been carried out on four (4) representative rock core samples, and the test results are summarized in Table 14.

Table 14: Summary of Unconfined Compressive Strength Test Result

BH No.	Rock Core Depth (mbgs)	Unconfined Compressive Strength (MPa)
MW1-13	7.54 to 7.65	30.2
MW4-13	7.16 to 7.28	28.9
MW5-13	11.9 to 12.0	108.9
MW9-13	9.27 to 9.40	35.2

5.3 Groundwater Conditions

Thirteen (13) groundwater observation wells were installed on site, and the well installation details, including well depth and screen levels, are summarized in Table 15.

As shown in Table 15, the measured groundwater level in the observation wells installed within the overburden soils ranged between 0.68 mbgs and 5.45mbgs (between +81.7 masl and +85.8 masl). However, the measured groundwater level in the monitoring wells installed in shale bedrock ranged between 7.94 mbgs and 11.53 mbgs (between +71.6 masl and +76.1 masl). Based on the available monitoring data, the groundwater table in shale bedrock was not hydraulically connected to the groundwater table in the overburden soils.

The project site is located near the Lake Ontario, which has an average water level at +74.4 masl. The groundwater gradient in the overburden soils is likely toward the Lake Ontario, and the groundwater table in the bedrock is likely influenced by the Lake Ontario.

The available monitoring data only covered a short period of time, which did not reflect the seasonal groundwater fluctuation.

Table 15: Summary of Measured Groundwater Readings

Well ID	Strata Screened	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Measured Groundwater Reading		Date
				Elevation (masl)	Depth (mbgs)	
MW14-4	Silty Sand	1.8	3.7	81.8*	2.63	16 Dec 2014
MW14-6	Fill/Silt	0.6	2.9	82.7*	1.28	16 Dec 2014
MW1-13	Silt/Silty Clay	2.7	6.4	84.3	0.68	4 Mar 2013
MW2-13	Shale Bedrock	12.5	15.4	71.6	9.93	4 Mar 2013
MW3-13	Silt/Silty Clay	3.7	7.3	81.9	2.90	4 Mar 2013
MW4-13	Silty Clay/weathered Shale Bedrock	1.8	5.2	82.8	1.44	4 Mar 2013
MW5-13	Shale Bedrock	11.6	15.4	73.5	11.53	4 Mar 2013
MW6-13	Silt/Silty Clay	3.0	6.7	85.8	0.45	4 Mar 2013
MW7-13	Silty Clay	3.4	7.0	84.2	2.52	4 Mar 2013
MW8-13	Shale Bedrock	8.5	10.7	76.1	7.94	4 Mar 2013
MW9-13	Silt/Silty Clay	2.7	6.4	81.7	2.74	4 Mar 2013
BH1	Silt	6.1	9.1	NA	3.25	22 Oct 2004
BH2	Silt/Silty Clay	4.9	7.5	NA	5.45	22 Oct 2004
* Borehole elevation was not provided in original borehole logs and was inferred from topographic plan.						

5.4 Potential Contamination

Environmental Assessments for the site (Golder, 2019) highlights 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 has included 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).

6 Geotechnical Design Parameters

6.1 General

Geotechnical design parameters are interpreted based on the in situ and laboratory test results summarized in Table 16.

Table 16: Summary of In Situ and Laboratory Tests (min/average/max)

Soil Type	SPT-N Values	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
Granular Fill	4/14/27	4/8/16	NA	NA	NA
Earth Fill	0/12/34	7/16/42	NA	NA	NA
Clayey Silt	3/14/32	12/18/23	14/19/24	6/14/18	3/6/8
Silty Clay	0/11/50	8/20/33	28/31/33	15/17/18	12/14/16
Silty Clay Till	4/21/50	16/18/20	27	16	11

6.2 Strength Parameters

Due to the limited laboratory test result, the geotechnical design parameters are primarily interpreted based on empirical correlation presented in this section.

6.2.1 Unit Weight (γ)

Soil unit weight are determined based on laboratory testing (i.e. specific gravity) and empirical correlation with natural moisture content (w). The following correlation is adopted:

$$\gamma_{wet} = \frac{\gamma_w G_s (1 + w)}{1 + \left(\frac{w}{S}\right) G_s}$$

Where specific gravity, G_s equals 2.7 for cohesive soils and G_s equals 2.65 for cohesionless soils; Saturation (S) equals 0.9 and unit weigh of water (γ_w) equals 9.81 kN/m^3.

6.2.2 Friction Angle (ϕ) and Effective Cohesion (c')

For earth fill, friction angle is determined based on empirical correlation with corrected SPT N' values proposed by Peck, Hanson & Thornburn (1974), where ϕ'= 0.27*SPT N' + 27.5.

For silty clay and clayey silt deposit, friction angle is determined based on empirical correlation with Plasticity Index proposed by Bjerrum and Simons (1960), where $\phi' = 0.0015PI^2 - 0.29PI + 36$.

For silty clay till, friction angle is determined based on empirical correlation with SPT N values proposed by Cao et al., 2015, where ϕ'=32.5+0.09N.

6.2.3 Undrained Shear Strength (S_u)

For normally consolidated to lightly overconsolidated silty clay deposit, the correlation of S_u with Plasticity Index (PI) proposed by Skempton and Henkel (1953) is adopted:

$$\frac{s_u}{\sigma'_{vc}} = 0.37PI + 0.11$$

Where the ratio of S_u/σ'_{vc} is in kPa.

For over-consolidated silty clay till, the correlation of S_u with PI proposed by Stroud and Butler (1975) is adopted:

$$s_u = N \times [5 \times 10^{-5}(PI)^3 + 0.008(PI)^2 - 0.41(PI) + 10.6]$$

6.2.4 Proposed Geotechnical Design Parameters

The proposed geotechnical design parameters are summarized in Table 17.

Table 17: Summary of Geotechnical Design Parameters

Soil Type	Bulk Unit Weight	Effective Friction Angle	Effective Cohesion	Undrained Shear Strength	Unfactored Friction Coefficient*
	γ (kN/m³)	φ' (°)	c' (kPa)	S_u (kPa)	μ
Granular Fill	20	32	0	0	0.39
Earth Fill	18	28	0	0	0.34
Clayey Silt	19	28	0	0	0.34
Silty Clay	19	25	0	50	0.30
Silty Clay Till	22	34	0	100	0.42
* Unfactored friction coefficient is determined by the friction angle, μ = tan(2/3ϕ)					

6.3 Hydraulic Conductivities

The anticipated permeability for the geological units are determined based on descriptions within boreholes legs, available particle size distribution data, and experience of similar ground conditions in the area. Anticipated permeabilities are summarized in Table 18.

Table 18: Anticipated Permeability for Geological Units

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	>50m*	$1x10^{-10}$ to $1x10^{-8}$
Note: *Thickness of the shale has not been proven, however it is expected that shale formations (with limestone) will have a thickness greater than 50 m.		

7 Discussion and Recommendations

7.1 General

The purpose of this report is to summarize the ground and groundwater conditions based on the available geotechnical investigation and to provide assessment on the soil, bedrock and groundwater characteristics of the subject property to determine its feasibility and stability to accommodate the proposed development.

The following sections provide the preliminary design and construction recommendations for site preparation, foundations, floor slabs, retaining walls, temporary shoring system, underground services, pavement structure, earthquake consideration and dewatering for the proposed development. In addition, this report provides discussion on potential risks, mitigation measures and monitoring programs for the proposed development.

At the time of this report preparation, details of the proposed development are under development; as a result, the preliminary recommendations provided herein should be reviewed and revised during future design stages of the project when additional information is available.

7.2 Site Preparation

The existing topsoil, asphalt, surficial soils and earth fill with organic materials are considered not suitable as subgrade material to support the proposed pavement structure, foundations, slab-on-grade, engineered fill or any settlement sensitive structures and should be removed prior to construction of these structures.

The existing earth fill and granular fill with no organic or deleterious matters may be reused as engineered fill for regrading. Additional laboratory testing on the existing granular fill, i.e. gradation analysis, is required to verify its quality prior to be reused as subbase materials for the proposed structures.

Existing underground services and infrastructure on site may need to be decommissioned, removed and properly backfilled with suitable backfill materials.

All subgrade materials shall be proof-rolled under supervision by the geotechnical engineer. Any wet, soft or loose subgrade materials shall be replaced with suitable backfill materials and properly compacted.

In general, fill materials will be in accordance with OPSS 1010, and the fill compaction requirement will be in accordance with OPSS 501 and SSP501SS2.

7.3 Foundations

All geotechnical structures such as foundations and retaining walls shall be designed according to the limit state design approach, which is set forth in the

Ontario Building Code, Canadian Highway Bridge Design Code, and other such documents. In this approach, the factored resistance must equal or exceed the factored load demand to satisfy the Ultimate Limit State (ULS). Furthermore, the unfactored load demand must not exceed a nominal unfactored resistance commensurate with an allowable degree of movement or settlement such that the Serviceability Limit State (SLS) is satisfied. Hence for foundations such as spread footings and drilled shafts, both ULS and SLS resistances are provided.

7.3.1 Mat Foundation/Spread Footings

Based on the Master Plan, the proposed development includes low, mid and high-rise buildings, fifteen towers ranging in height from 22 to 71 storeys with up to 5-level basement car park. Mat foundation or spread footings may be employed to support columns on square or rectangular pad foundations or continuous walls on strip foundations. Depending on the detailed location of basements, these foundations may bear either on the underlying shale bedrock, upper overburden soils, or shallow engineered fill. The existing earth fill is not considered as suitable subgrade material for foundation construction. SLS and factored ULS bearing pressures are provided in Table 19 as a function of bearing material, footing geometry and founding depth.

It is recommended that a consistent bearing material be employed for all foundations to minimize differential settlements. Foundations with different bearing materials shall be separated by a construction joint in the slab and superstructure, to allow for each portion of the structure to move independently of the other.

Table 19: Summary of SLS and ULS Bearing Capacities for Geological Units

Description	SLS Bearing Capacity (kPa)	ULS Bearing Capacity (kPa)	Note
Clayey Silt/Silty Clay	75	100	The bearing capacities are based on strip footing dimensions of 0.45m W by 10m L or spread footings with a maximum area of 1m^2.
Silty Clay Till	250	350	
Weathered Shale	1,200	1,800	Minimum embedment of 0.6m into shale.

7.3.2 Deep Foundation

Where large concentrated loads are to be applied, bored pile foundations drilled into the underlying shale bedrock would be appropriate for this site. The minimum rock socket length shall be the larger of 1,200 mm or two pile diameters into the shale. It is estimated that 1 m diameter bored piles would have SLS capacities of 3 MN and factored ULS axial capacities of 4.5 MN, based primarily on the allowable compressive strength of concrete and the underlying shale bedrock. Final capacities

are a function of concrete compressive strength, rock socket length (depth into rock), and results of pile load testing.

Due to the shallow groundwater table in the overburden soils, construction methods for such piling shall employ either a temporary steel casing to top of rock or construction under bentonite or polymer slurry (drilling fluid) to provide temporary stabilization of pile walls through the overburden prior to tremie concreting.

An alternative to bored piling would be driven piling, either H-piles or concrete-infilled driven pipe piles, driven to refusal in the glacial till or shale bedrock, with capacity limited by the allowable driving stress during pile installation. For example, a 325 mm O.D. driven steel pipe pile, later infilled with concrete, is estimated to have an SLS capacity on the order of 1 MN and factored ULS capacity on the order of 1.5 MN. Final capacities are a function of pile wall (steel) thickness, pile hammer weight and drop height, measured driving stress, refusal criteria, and pile load test results.

7.3.3 Frost Protection and Shale Bedrock Protection

All pad or strip foundations shall either have a 1.2 m soil cover, or employ insulation, to protect against frost heave. All foundation subgrade must be protected against frost during winter construction. Frost protection, i.e. extruded polystyrene insulation, shall be provided around ventilation shafts, ramp slabs and ramp walls leading into underground structures, where ambient temperatures remain below zero for extended periods.

Shale bedrock may weather rapidly between wetting and drying cycles; therefore, where necessary, exposed shale bedrock surfaces may be protected with lean concrete mat.

7.4 Slab-on-grade

The existing topsoil, surficial soils and earth fill with organic materials are not considered as suitable subgrade materials for slab-on-grade construction and should be removed. The existing clean earth fill in its current state is also not suitable for slab-on-grade construction but can be excavated and properly recompacted as engineered fill for slab-on-grade construction.

Subgrade must be proof rolled prior to placement of engineered fill. Any wet, soft and loose materials shall be replaced with suitable backfill material and properly recompacted. Earth borrow or Granular B in accordance with OPSS 1010 can be used to raise the site grade and shall be compacted in accordance with OPSS 501.

Where groundwater level is within 2 m below the slab subgrade level, drainage system shall be provided beneath the slab and shall be connected to positive outlet. Floor slabs constructed below groundwater level shall be designed for hydraulic uplifting force with water proofing measures.

7.5 Earth Retaining Structures

7.5.1 Shoring System

High-rise buildings, fifteen towers ranging in height from 22 to 71 storeys, with up to 5-level basement car park is proposed for the development, which will require a basement excavation down to the Georgian Bay Shale level at approximately +67 masl. Shoring system consisting of secant pile wall can be considered for the proposed excavation. Secant pile wall can reduce the amount of dewatering and the associated impact on adjacent structures. Soldier pile and lagging wall can be considered as alternative shoring system; however, high water ingress to the excavation is anticipated due to the shallow groundwater and appropriate dewatering system shall be designed to control water seepage into the excavation.

Soil-structure interaction modelling is recommended to be carried out for each stage of the excavation to determine the loading on the structural elements and anticipated deformation of the shoring system as well as stability at each excavation stage. The appropriate surcharge loading from the construction activities, surrounding structures or traffic as well as the hydro-static pressure shall be incorporated into the analysis.

Secant piles or soldier piles shall be socketed into the sound bedrock in accordance with the result of the soil-structure interaction modelling to provide adequate stability for the shoring system. Temporary casing shall be provided for piling to prevent overburden soils caving into the drilled hole.

The proposed excavation will intercept both upper (between elevation +81.7masl and +85.8 masl) and lower (between elevation +71.6 masl and +76.1 masl) groundwater levels. Further hydrogeological study and groundwater monitoring covering seasonal fluctuation is recommended to determine the appropriate design groundwater level and distribution for the shoring design.

Soil and rock anchors can be considered to provide lateral support to the shoring system. Anchor design and load tests (pre-production and production tests) shall be carried out in accordance with Canadian Foundation Engineering Manual (CFEM) and PTI DC35.1-14.

7.5.2 Retaining Walls

Retaining walls up to 7.5 m in height are anticipated for the current design of the proposed relief road (Great Northern Gateway, GNG), which runs along the northern site boundary, broadly parallel to the Gardiner East Lake Shore West Ramp. Due to the proximity to the existing road ramp, the conventional cantilever rigid retaining wall (Inverse-T wall) requiring large excavation for construction is not recommended; alternatively, secant pile wall can be considered for the proposed relief road construction.

Significant wall deflection is anticipated during excavation with cantilever secant pile wall located in proximity to the existing roadway ramp, which may result in potential surface settlement on the existing roadway ramp behind the retaining wall. Soil or rock anchors can be installed to restrain the wall deflection and limit the influence on the existing roadway; however, property easement may be required to allow anchor installation. Anchor design and load tests (pre-production and production tests) shall be carried out in accordance with Canadian Foundation Engineering Manual (CFEM) and PTI DC35.1-14

Soil-structure interaction modelling is also recommended to be carried out for each stage of the excavation to determine the loading on the structural elements and anticipated deformation of the secant pile wall as well as stability at each excavation stage. The appropriate loading from the surrounding structures and/or traffic as well as the hydro-static pressure shall be incorporated into the analysis.

7.5.3 Lateral Earth Pressure

Shoring system, basement walls and similar earth retaining structures shall be designed to support lateral earth pressure and hydrostatic pressure, which can be calculated by the following:

$$P = K[\gamma(h\text{-}h_w) + \gamma' h_w + q] + \gamma_w h_w$$

Where:

P	=	horizontal pressure at depth, h (m)
K	=	lateral earth pressure coefficient (Table 20)
γ	=	bulk unit weight of soil, (kN/m^3)
γ'	=	submerged unit weight of soil, (kN/m^3)
γ_w	=	unit weight of water, (kN/m^3)
h_w	=	depth below groundwater level (m)
q	=	surcharge load (kPa)

The proposed lateral earth pressure coefficients for the geological units are summarized Table 20.

Table 20: Summary of Lateral Earth Pressure Coefficient

Soil Type	Bulk Unit Weight	Effective Friction Angle	Lateral Earth Pressure Coefficient		
	γ (kN/m^3)	φ' (°)	k_a	k_0	k_p
Granular Fill	20	32	0.31	0.47	3.25
Earth Fill	18	28	0.36	0.53	2.77
Clayey Silt	19	28	0.36	0.53	2.77
Silty Clay	19	25	0.41	0.58	2.46
Silty Clay Till	22	34	0.28	0.44	3.54

7.6 Excavation

The design of temporary shoring of trench excavations for utilities, structural footings and slabs shall be the responsibility of the contractor and shall conform to all applicable codes and guidelines.

Specifically, OHSA regulations require that all excavations 1.2m and deeper must be sloped and/or braced in accordance with OHSA requirements. OSHA divides soils into four different types as defined in Table 21.

Table 21: Soil Definition based OHSA

Soil Type	Definition
1	a) Hard, very dense and only able to be penetrated with difficulty by a small sharp object; b) Has a low natural moisture content and a high degree of internal strength; c) Has no signs of water seepage; and, d) Can be excavated only by mechanical equipment.
2	a) Very stiff, dense and can be penetrated with moderate difficulty by a small sharp object; b) Has a low to medium natural moisture content and a medium degree of internal strength; and, c) Has a damp appearance after it is excavated.
3	a) Stiff to firm and compact to loose in consistency, or is previously excavated soil; b) Exhibits signs of surface cracking; c) Exhibits signs of water seepage; d) If it is dry, may run easily into a well defined conical pile; and, e) Has a low degree of internal strength.
4	a) Soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength; b) Runs easily or flows, unless it is completely supported before excavating; c) Has almost no internal strength; and, d) Exerts substantial fluid pressure on its supporting system, per Ontario Regulation 213/91 s226(5).

In relation to the OHSA soil classification, onsite soils which are dry are generally classified as Type 3, whereas damp/moist to wet soils shall be classified as Type 4.

The trenching requirements based on OHSA regulations are summarized in Table 22.

Table 22: Excavation Side-Slope Gradient based on OHSA

Soil Type	Base of Slope	Maximum Slope Inclination
1 & 2	Vertical within 1.2m from bottom of excavation	1 Horizontal to 1 Vertical
3	From bottom of excavation	1 Horizontal to 1 Vertical
4	From bottom of excavation	3 Horizontal to 1 Vertical

Where site geometry does not allow for the required backslopes of 1:1 or 1:3 (Type 3 and 4 soils, respectively), a braced excavation shall be designed according to lateral earth pressure, discussed in Section 7.5.1, OHSA Regulations and OPSS 539 performance level 2. Where existing adjacent structures are located within the active wedge of the excavation, OPSS 539 performance level 1A is to be adopted.

Based on the available groundwater monitoring data, shallow groundwater table is expected, and temporary dewatering is anticipated for the proposed excavation.

Local construction experience in the Georgian Bay Formation indicates that methane gas could be encountered during excavation in the bedrock; therefore, potential mitigation measures, i.e. monitoring and ventilation system, may be required during excavation. However, no methane gas was detected during project specific geotechnical investigation.

7.7 Underground Services

Temporary excavation for underground utilities installation shall be carried out in accordance with Section 7.5.

Based on the revealed subsurface condition, the subgrade for the proposed underground utilities will likely consist of clayey silt, silty clay or silty clay till, which are generally considered as suitable subgrade material for the proposed utility construction. Where organic/deleterious materials and soft or loose deposits were encountered at the subgrade level, they shall be replaced with suitable backfill materials and properly recompacted prior to placement of bedding.

For City of Toronto utilities, fills will be in accordance with TS 1010 and TS 401 where all embedment and bedding material are to be Granular A or Granular A RCM. Cover material are to be Granular A or B. Backfill material will be Granular A, Granular A RCM, unshrinkable fill or native material. Details for utility trench backfill are shown in Figure 4.

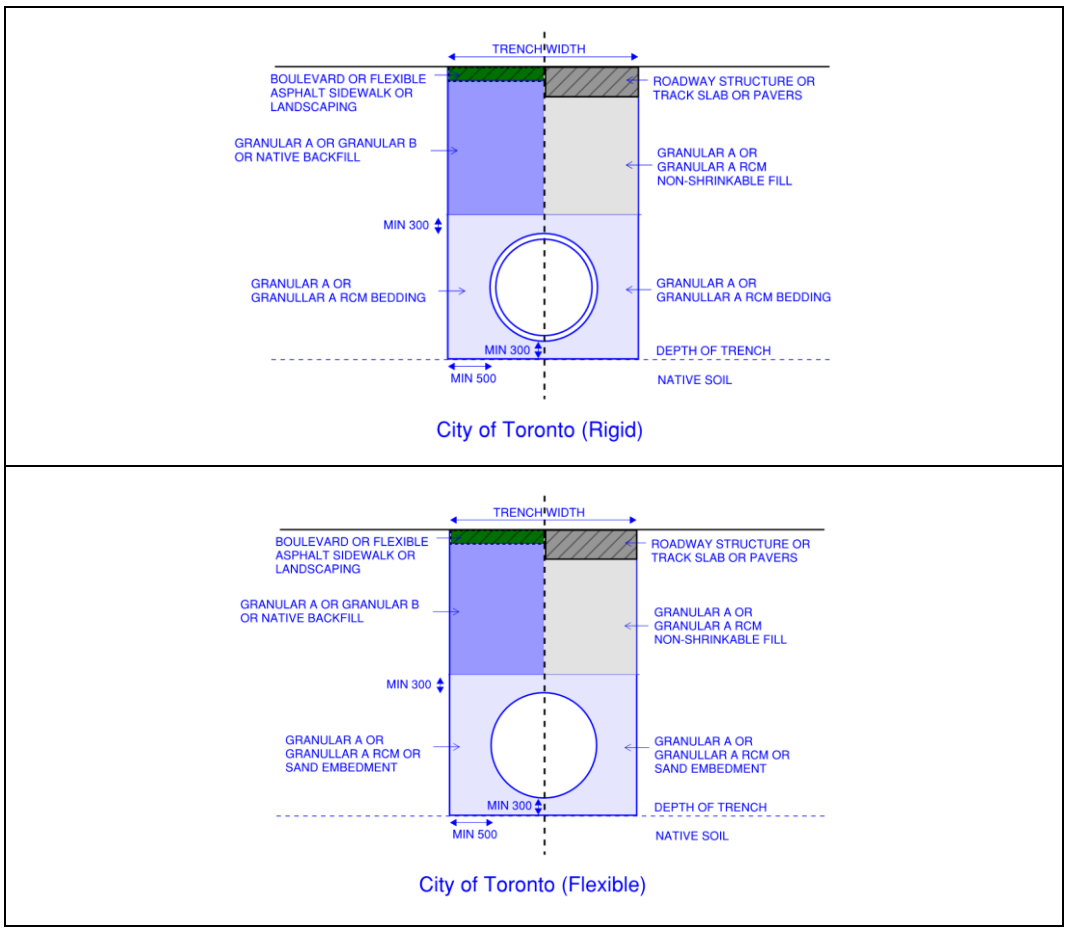

Figure 4: Backfill for Utility Trenches

7.8 Pavement Structure

The existing topsoil, surficial soils and earth fill with organic materials are not considered as suitable subgrade materials for pavement construction and should be removed.

The existing earth fill free of organic and deleterious materials is considered as suitable subgrade for the pavement construction. Subgrade material must be proof-rolled prior to pavement construction. Any wet, soft and loose materials shall be replaced with suitable backfill material and properly recompacted.

Earth borrow or Granular B in accordance with OPSS 1010 can be used to raise the site grade and shall be compacted in accordance with OPSS 501 and SSP501SS2.

The recommended pavement design for the proposed roadways and parking areas is summarized in Table 23.

Table 23: Summary of Pavement Design

Pavement Layer	Compaction Requirements	Light Duty Pavement Structure	Heavy Duty Pavement Structure
Surface Course Asphaltic Concrete HL3 (OPSS 1150)	91% to 96.5% Maximum Relative Density (OPSS 310)	40 mm	40 mm
Base Course Asphaltic Concrete HL8 (OPSS 1150)	92% to 97.5% Maximum Relative Density (OPSS 310)	40 mm	60 mm
Base Course: Granular A or 19mm Crusher Run	100% Standard Proctor Maximum Dry Density	150 mm	150 mm
Sub-base Course: Granular B or 50mm Crusher Run	98% Standard Proctor Maximum Dry Density	250 mm	350 mm

7.9 Dewatering

Based on the available monitoring data, the groundwater table in the overburden soils ranged between 0.68 mbgs and 5.45mbgs (between +81.7 masl and 85.8 masl), and the measured groundwater level in shale bedrock ranged between 7.94 mbgs and 11.53 mbgs (between +71.6 masl and +76.1 masl). The proposed 5-level basement will extend approximately to +67 masl, below both upper (perched) and lower groundwater tables.

A more comprehensive hydrogeological study, i.e. in-situ testing and modelling, shall be carried out to verify the hydrogeological behaviours and characteristic of the geological units, to select the appropriate shoring system, i.e. secant pile wall or soldier pile and lagging wall, dewatering system and to determine the anticipated volume of water for permits approval.

Ministry of Environment (MOE) Permit to Take Water (PTTW) will be required where dewatering volume exceeds 50,000 L/days. In addition, Private Water Discharge permit is also required by City of Toronto to discharge water to the municipal storm sewer system. The volume of dewatering is governed by the groundwater level, hydrogeological characteristics of the geological units, and the shoring system.

Where necessary, the dewatering system shall be designed to allow stable sides and bottom for the proposed excavation during the construction period taking the groundwater fluctuation into account. Adequate filters shall be provided to prevent fine grain soils migration due to pumping. Contingency pumping system shall be available in case of emergency. Gradual groundwater recovering period shall be allowed to prevent fine grain soils migration.

7.10 Seismic Site Class

The seismic site class is a function of the average shear wave velocity (V_s), SPT N-Value, or soil undrained shear strength (S_u) within the top 30m of the soil profile, as shown in Table 24. For mat/slab foundations bearing directly on the shale bedrock, Site Class C (very dense soil / soft rock) may be adopted. For foundations bearing on the overburden soils, Site class D (stiff soil) may be more appropriate. It should be noted that the above seismic site class is only preliminary, and a quantitative assessment for proper determination of seismic site class is required by the seismic provision of NBCC. Multi-channel analysis of surface waves (MASW) is recommended to obtain the shear wave velocity of the soil and rock profile for the quantitative assessment to determine the proper seismic site class.

Table 24: Seismic Site Class

Site Class	Type of Soil Profile	Average Properties in Top 30m		
		Soil Shear Wave Average Velocity V_s (m/s)	Standard Penetration Resistance N_{60}	Soil Undrained Shar Strength S_u (kPa)
A	Hard Rock	$V_s > 1500$	-	-
B	Rock	$760 < V_s < 1500$	-	-
C	Very Dense Soil and Soft Rock	$360 < V_s < 750$	$N_{60} > 50$	$S_u > 100$
D	Stiff Soil	$180 < V_s < 360$	$15 \leq N_{60} \leq 50$	$50 < S_u < 100$
E	Soft Soil	$V_s < 180$	$N_{60} < 15$	$S_u < 50$
F	Others	Site Specific Evaluation Required		

According to the Supplementary Standard SB-1 of the 2006 OBC, for the Toronto Area the mapped Spectral Response Acceleration (Sa) value of 0.26g (PGA) for short duration (period) of 0.2 second and 0.055g for one second duration. These parameters should be reviewed by the structural engineer.

7.11 Monitoring

Excavations adjacent to existing infrastructure, primarily the railway and Gardener Expressway corridors, shall be monitored for movement. The combined use of fixed survey points and inclinometers (either embedded in the retaining structures themselves or nearby in either the retained soil or passive zone) is recommended.

The allowable movements shall be established by the owners (Metrolinx and City of Toronto, respectively). Sample values of allowable, review, and alarm movement

limits from Metrolinx are provided in Table 25. Allowable movements reported by MTO for the RER track widening project beneath MTO's 401/409 highway are on the order of 20 to 25mm. Application of these values to the project at hand shall be confirmed with the respective owners prior to commencement of excavation and monitoring.

Table 25: Summary of Allowable, Review and Alarm Levels (Metrolinx)

Class of Track	Allowable Limits (mm)		Review Limits (mm)		Alarm Limits (mm)	
	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1/yard	0-10	0-12	10-15	12-20	>15	>20
2	0-4	0-4	4-9	4-12	>9	>12
3						
4						
5						

Temporary excavations shall be constructed following OPSS 539 – Construction Specification for Temporary Protection Systems and shall be designed to at least performance level 2 as described in Table 26, with a maximum settlement of 25mm and angular distortion of 1:200. Again, these criteria should be verified with third party owners.

Table 26: Performance Levels for Temporary Shoring System (OPSS 539)

Performance Level	Maximum Angular Distortion	Maximum Horizontal Displacement (mm)
1a	1:1000	5
1b	1:1000	10
2	1:200	25
3	1:100	50

8 Further Work

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 should be considered preliminary for initial recommendations. 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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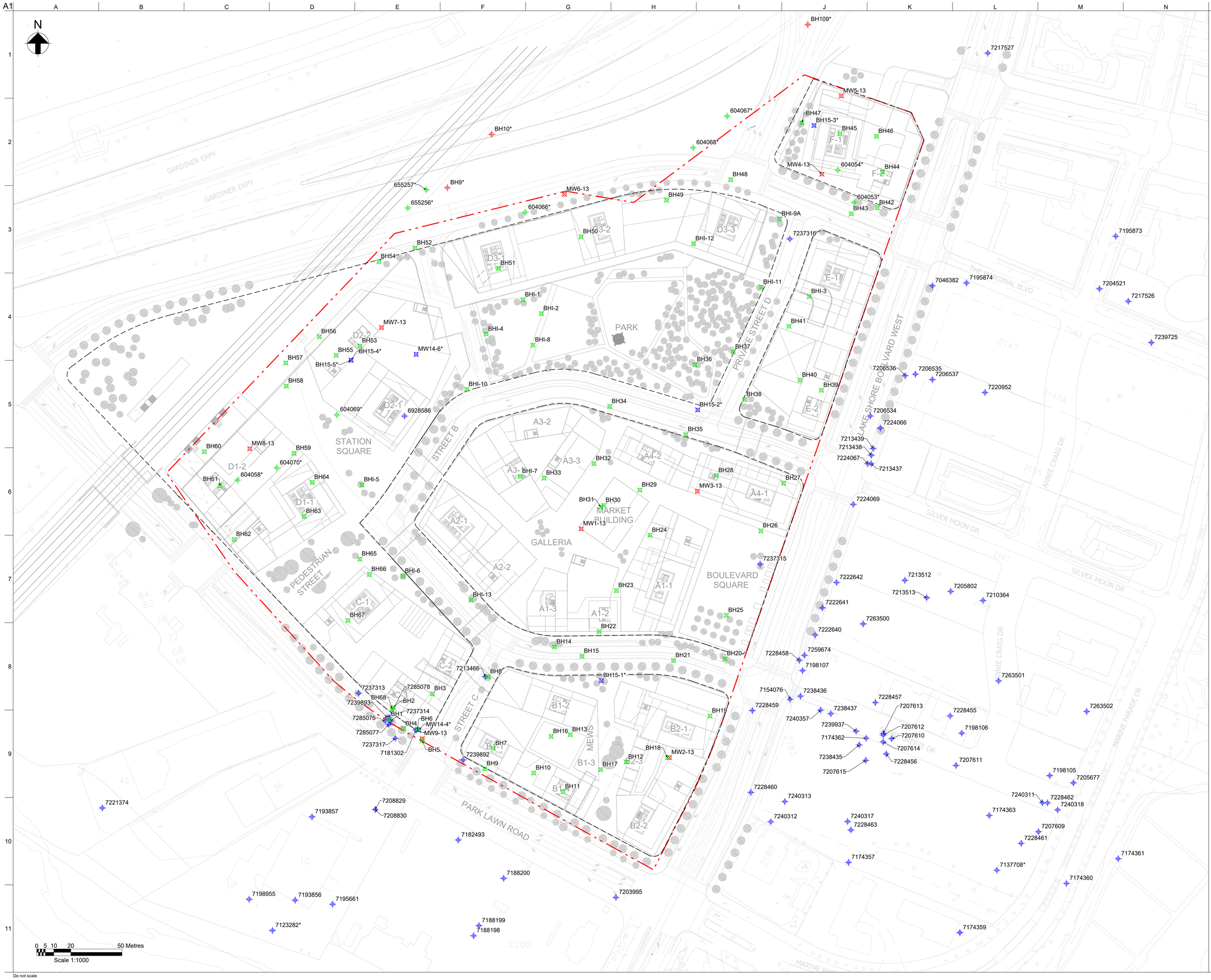
Appendix A

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)	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, 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						
		(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													
					6	SS	10						
5													
		(Cl) SILTY CLAY, some sand, some gravel; grey (TILL); cohesive, w~PL, firm		5.49									
6					7A	SS	4					MH	
		Highly weathered, grey SHALE Bedrock		6.50	7B								
7		END OF BOREHOLE		6.60									
		NOTE:											
8		1. Borehole open and dry at completion of drilling.											
9													
10													

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: BC/SR

CHECKED: JET

GTA-BHS 001 S:\CLIENTS\FIRST_CAPITAL\2150_LAKESHORE_BLVD\02_DATA\GINT\1417422.GPJ GAL-MIS.GDT 1/23/15 JFC

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)	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, trace silt; grey; non-cohesive, moist, loose		0.15	1A	SS	4						
		(CL) sandy SILTY CLAY, trace to some gravel; brown (TILL), with sand seams brown; cohesive, w<PL, stiff to very stiff		0.46	1B								
1					2	SS	21						
2					3	SS	25						
3					4	SS	16						
					5	SS	17						
4													
					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:											
9		1. Borehole open and dry at completion of drilling.											
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: 15-3

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, 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; 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						
					5	SS	25						
4		- Becoming grey at a depth of 4.0 m			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													

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DEPTH SCALE 1 : 50

Golder Associates

LOGGED: BC

CHECKED: JET

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, 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, 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													

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DEPTH SCALE 1 : 50

Golder Associates

LOGGED: BC/SR

CHECKED: JET

RECORD OF BOREHOLE: 15-5

PROJECT: 1417422
LOCATION: As Per Figure 2
BORING DATE: January 5, 2015
SHEET 1 OF 1
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. ⊕	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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RECORD OF BOREHOLE: MW14-4

PROJECT: 1417422
LOCATION: N ; E
BORING DATE: December 10, 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] (20 40 60 80) ND = Not Detected / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] (20 40 60 80) ND = Not Detected	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 O.D. Steel Casing	Hydrovacuumed		0.00							Concrete; SAND; Bentonite; Sand; Screen
1											
2		(SM) Silty SAND; brown-grey; cohesive, moist, compact		2.44	1	DO		ND			
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		(CI) SILTY CLAY, trace sand; grey-brown; wet		3.81	2	DO	-						
5				4.57									
6													
7													
8													
9													
10													

DEPTH SCALE
1 : 50

LOGGED: EW
CHECKED:

Golder Associates

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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
		FILL - (SM) SAND, with silt; grey; wet		0.20	1	DO	-	ND					Bentonite
1					2	-	-	ND					Sand
					3	DO	-						
2					4	DO	-	ND					Screen
		(SC) SILT, some clay, trace sand; grey; non-cohesive, wet		2.44	5	DO	-	ND					
3					6	DO	-	ND					
		END OF BOREHOLE		3.66									1. Groundwater Level was measured at 1.28 m below ground surface on December 16, 2014.
4													
5													
6													
7													
8													
9													
10													

DEPTH SCALE
1 : 50

LOGGED: EW
CHECKED:

Golder Associates

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RECORD OF BOREHOLE: MW14-7

PROJECT: 1417422
LOCATION: N ; E
BORING DATE: December 11, 2014
SHEET 1 OF 1
DATUM:

BORING METHOD: Wheel Mounted Geo Probe 420 m; 305 mm D.O. Steel Casing

Description	Elev. Depth (m)	Sample Number	Type	Headspace Organic Vapour
GROUND SURFACE				
CONCRETE	0.00			
FILL - (SW) SAND, some silt; brown with grey; moist	0.30	1	DO	ND
(MH) SILT, some clay, trace sand; grey; cohesive, moist	0.61	2	DO	
		3	DO	ND
		4	DO	ND
		5	DO	ND
		6	DO	ND
END OF BOREHOLE	3.66			

HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [%LEL] ND = Not Detected; HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] ND = Not Detected; HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT Wp W Wl; ADDITIONAL LAB. TESTING

Piezometer or Standpipe Installation: Concrete, Bentonite, Sand, Screen

DRAFT

DEPTH SCALE 1 : 50
LOGGED: EW
CHECKED:

Golder Associates

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REFERENCE No.: 081211
ENCLOSURE No.: 1

BOREHOLE REPORT

Page: 1 of 2

BOREHOLE No.: MW1-13
ELEVATION: 84.95 m

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 (m)	Elevation (m)	Description of Soil and Bedrock	Type and Number	Recovery (%)	Moisture Content	Blows per 6 in. / 15 cm or RQD	N / Index/SCR
	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; Gr : 0%, Sa : 5%, Si : 50%, Cl : 45%	SS-8	100	27	2-2-2-2	4
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 (%); ● "N" Value (blows / 12 in.-30 cm)

Well: 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 No.: MW1-13
ELEVATION: 84.95 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 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 (%)
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.: 2

BOREHOLE No.: MW2-13
ELEVATION: 81.46 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 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 (%)
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

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

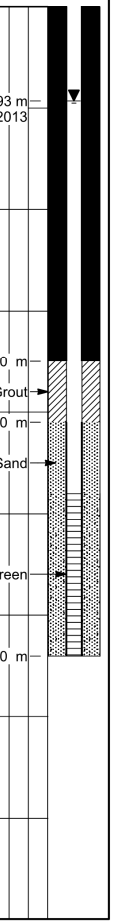
CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 29, 2013 DATE (FINISH): January 29, 2013

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

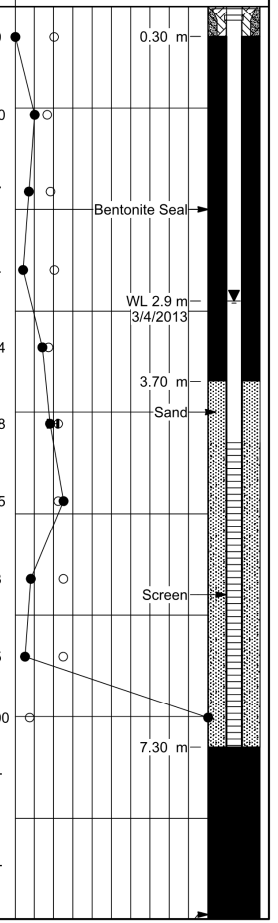
CLIENT: Mondelez Canada Inc.
PROJECT: Preliminary Geotechnical Investigation
LOCATION: 2150 Lake Shore Blvd. West, Toronto
DESCRIBED BY: K. Vander Meulen CHECKED BY: S. Shahangian
DATE (START): January 31, 2013 DATE (FINISH): January 31, 2013

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 (%) W_p W_l
● "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 (%) 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 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 ☐ 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
		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 ☐ 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
		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		RUN-3	100	--	70	--
				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-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	--
	15.39	69.65		END OF BOREHOLE						

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

WL 11.53 m 3/4/2013
11.60 m
Sand
Screen
13.70 m
Bentonite Seal
15.40 m

● 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	Depth (m)	Elev. (m)
3/4/2013	11.53	73.51

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	86.12		TOPSOIL : 75 mm						
	0.61	85.59		SM-SILTY SAND (FILL), trace clay, loose, brown, moist, oxidized		SS-1	82	42	4-2-6-6	8
	1.22	84.98		ML-SILT, trace sand, compact, brown, moist, oxidized		SS-2	62	--	5-6-7-8	13
				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	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	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	79.65		SHALE (GEORGIAN BAY FORMATION), highly to completely weathered (inferred), with clay inclusion, grey						
	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

0.30 m
WL 0.45 m
3/4/2013
Bentonite Seal
3.00 m
Sand
Screen
6.70 m
Bentonite Seal

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	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
		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							10.52 m
				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

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	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
		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	0.30 m
	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	Bentonite Seal
						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							WL 7.94 m 3/4/2013
						RUN-3	95	--	60	--	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								

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

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

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				
4.0			4	3.35 - 4.27	11.5
4.5	- silt, with clay, with sand, mottled brown/olive, moist to wet at 4.42m BGS				
5.0			5	4.27 - 5.18	28
	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	0.76	1	0.00 - 1.22	7
1.0	ML/CL - SILTY CLAY, stiff, dark gray, moist, black staining, petroleum hydrocarbon odour				
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					
3.0	- trace sand, moderate to slight odour at 2.74m BGS		3	2.44 - 3.35	334
3.5	- stiff, moist, no odour at 3.20m BGS				
4.0	- soft to firm, very moist to wet at 3.81m BGS		4	3.35 - 4.27	4
4.5	- stiff, moist at 4.11m BGS				
5.0	END OF TEST PIT @ 4.27m BGS	4.27			
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	3.35 - 4.27	2.5
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 (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			
5.0	END OF TEST PIT @ 4.57m BGS	4.72			
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: 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)
0	ASPHALT	0.09			
	SAND and GRAVEL (FILL), compact to dense, coarse grained, well graded, light brown, dry				
	- with silt at 0.30m BGS	0.46			
0.5	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					
4.5	- mottled gray/brown at 4.27m BGS				
			5	4.27 - 5.33	0
5.0					
5.5	END OF TEST PIT @ 5.33m BGS	5.33			
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)
0	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					
4.5	- soft, dilatent, saturated at 4.27m BGS - gray at 4.42m BGS				
			(5)	4.27 - 5.18	9
5.0					
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: 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		3	2.44 - 3.35	150
	- moderate odour at 3.05m BGS				
	- 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 (NUMBER)

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		CONCRETE SEAL					
	SILT and CLAY (FILL), soft, gray, wet to saturated, no odour	0.46	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	7		0	>50	–
	SHALE (BEDROCK), gray	5.33						
	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 (NUMBER)

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	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT		CONCRETE SEAL	1		75	16	0
0.5	SAND (FILL), dense, brown, moist	0.46						
	- silt, with sand, laminated, mottled gray/green at 0.61m BGS	0.76	BENTONITE CHIPS					
1.0	SILT, trace sand, trace gravel, firm, laminated, mottled gray/green, moist			2		60	18	0
1.5								
2.0			203mm ϕ BOREHOLE	3		8	3	0
	- wet at 2.29m BGS							
2.5				4		65	4	0
3.0			WELL SCREEN SAND PACK					
	- moist at 3.35m BGS			5		65	23	0
3.5								
4.0				6			12	0
4.5	- with gravel at 4.57m BGS							
5.0	END OF BOREHOLE @ 4.97m BGS	4.97	BENTONITE CHIPS	7			>62	0
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 1.22m BGS
Material: BENTONITE CHIPS
Sand Pack:
1.22 to 4.57m BGS
Material: #1 SILICIA 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: 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	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ASPHALT		CONCRETE SEAL	1		56	41	0
0.5	SAND and GRAVEL (FILL), dense, gray/brown, slight petroleum hydrocarbon odour	0.30						
		0.91	BENTONITE CHIPS					
1.0	SAND and SILT (TILL), firm, gray			2		0	13	--
	- saturated at 1.22m BGS							
1.5								
2.0			203mm ϕ BOREHOLE	3		50	2	0
2.5				4		38	4	0
3.0			WELL SCREEN SAND PACK					
				5		100	4	0
3.5	- trace gravel, trace sand, trace clay at 3.66m BGS							
4.0				6		88	9	0
		4.27						
4.5	ML - SILT (TILL), trace sand, trace gravel, stiff, medium plasticity, laminated, gray/olive, moist to wet							
5.0	- with sand, with gravel at 4.88m BGS		BENTONITE CHIPS	7		71	17	0
	END OF BOREHOLE @ 5.18m BGS	5.18						
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 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: 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
	ASPHALT	
	GRAVEL (FILL), with sand, trace silt, loose, fine to coarse grained, well graded, brownish grey, moist	0.20
0.5	SAND (FILL), trace silt, compact, fine to medium grained, poorly graded, brown with oxidation, moist to wet, no odours	0.38
	- grey with dark grey mottling, wet, no odours at 0.76m BGS	0.97
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	
	- trace sand, coarse grained, grey, oxidation mottling, moist to wet, sheen, strong petroleum hydrocarbon odour, black grease from 1.52 to 1.83m BGS	
2.0		
2.5	- with clay, green mottling at 2.44m BGS	
3.0	- black vegetative debris at 3.05m BGS	
	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	
4.5	ML - SILT (TILL), with clay, trace gravel, trace sand, hard, well graded, fine to coarse grained, cohesive, plastic, grey, moist	4.57
	END OF BOREHOLE @ 4.57m BGS	4.88
5.0		
5.5		
6.0		
6.5		

MONITORING WELL: CONCRETE SEAL; BENTONITE CHIPS; RISER PIPE; 203 mm ø BOREHOLE; SAND PACK; WELL SCREEN; MACROCORE SAMPLE HOLE

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

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1	P/S	75		0.6
NR-03				3.2
2	P/S	75		0.6
NR-04				
3	P/S	75		1.4
4	P/S	75		1.0

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: 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
	ASPHALT	
	GRAVEL (FILL), trace to with sand, trace silt, loose, well graded, small to coarse grained, grey, moist	0.15 0.20
0.5	SAND (FILL), with gravel, trace silt, fine to coarse grained, brown, moist	
	- no gravel, loose, fine grained, wet, oxidized at 0.61m BGS	
1.0	- grey, black mottling at 1.07m BGS	
	- trace to with silt, dilatant at 1.37m BGS	
1.5		
2.0		
	- dark grey, slight staining, slight odours at 2.13m BGS	2.29
2.5	ML - SILT, trace to with clay, trace sand, stiff, fine grained, slightly cohesive, brittle, grey with green mottling, moist, oxidized	
	- clayey, plastic, cohesive, sticky, moist to wet at 2.74m BGS	
3.0		
	- medium to coarse sand veneer, brown, wet at 3.25m BGS	
3.5	- trace fine sand veneers, grey at 3.51m BGS	
4.0	- grey, no mottling, moist at 3.96m BGS	
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
5.0	- trace clay, sticky, plastic, very cohesive, moist to wet at 4.88m BGS	5.18
5.5	SHALE - bedrock, grey, brittle, moist	
	END OF BOREHOLE @ 5.64m BGS	5.64
6.0		
6.5		
7.0		

MONITORING WELL: CONCRETE SEAL; BENTONITE CHIPS; RISER PIPE; 203 mm ø BOREHOLE; SAND PACK; WELL SCREEN; MACROCORE SAMPLE HOLE

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

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1	P/S	50		0.8
2	P/S	75		0.2
NR-02				
3	P/S	75		0.2
4	P/S	75		1.3
5	P/S	75		1.1

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	0.46	SS-1		15		
1.0	- silty, dark grey, wet/saturated, dilatant, faint petroleum hydrocarbon odour at 0.76m BGS		SS-2		100		0
1.5	END OF BOREHOLE @ 1.52m BGS	1.52					
2.0	Note: Borehole was backfilled with bentonite chips and a concrete surface.						
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		SS-2				
1.0			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

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 / 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, 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.											

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-3

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 / 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** 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											

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-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	UNDIST								
			1B	UNDIST								
			2A	UNDIST								
1 8	**SILTY CLAY** grey, saturated		2B	UNDIST								
			3A	UNDIST								
			3B	UNDIST								
	wet		4A	UNDIST								
			4B	UNDIST								
	trace weathered shale		5A	UNDIST								
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-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	UNDIST								
0.6	**SILTY CLAY** trace sand, brown, moist		1B	UNDIST								
			2A	UNDIST								
			2B	UNDIST								
	grey, wet saturated		3A	UNDIST								
	wet		3B	UNDIST								
			4A	UNDIST								
	trace gravel		4B	UNDIST								
			5A	UNDIST								
			5B	UNDIST								
6.1	**END OF BOREHOLE** 1. Sample refusal at 6.6 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-6

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	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**											
0 2	150 mm of reinforced concrete **FILL** sand, trace silt, gravel, brown, moist		1A	U	ND/ST							
			1B	U	ND/ST							
1.4	**SILT** trace clay, grey, moist		2A	U	ND/ST							
1 8	**CLAYEY SILT** grey, moist		2B	U	ND/ST							
			3A	U	ND/ST							
			3B	U	ND/ST							
3.7	**SILTY CLAY** grey, moist		4A	U	ND/ST							
			4B	U	ND/ST							
	wet		5A	U	ND/ST							
			5B	U	ND/ST							
			6A	U	ND/ST							
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 3.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BHI-7

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**											
0 2	150 mm of reinforced concrete **FILL** sand and clayey silt, brown/grey		1A	U	ND/ST							
			1B	U	ND/ST							
1.1	**SILT** some clay, brown, moist		2A	U	ND/ST							
			2B	U	ND/ST							
2.4	**SILTY CLAY** grey, wet		3A	U	ND/ST							
			3B	U	ND/ST							
			4A	U	ND/ST							
			4B	U	ND/ST							
	saturated		5A	U	ND/ST							
			5B	U	ND/ST							
			6A	U	ND/ST							
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

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-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	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 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
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								
2.4	**CLAYEY SILT** grey, wet		3A	UNDIST			W. L. 2.4 mBGL Jun 11, 2013					
			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	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 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
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	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
0 0	**CONCRETE** 230 mm of reinforced concrete										
0 2	**FILL** sand and silt, brown, moist		1A	UN	DIST						
0.6	**SILT** trace sand, trace gravel, trace clay, brown, oxidation, moist		1B	UN	DIST						
	grey/brown		2A	UN	DIST						
	grey, wet		2B	UN	DIST						
2.4	**SILTY CLAY** trace sand, grey, wet		3A	UN	DIST		W. L. 3.6 mBGL Jun 11, 2013				
			3B	UN	DIST						
			4A	UN	DIST						
			4B	UN	DIST						
			5A	UN	DIST						
5 5	**SHALE** shale, grey		5B	UN	DIST						
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	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
0 0	**CONCRETE** 230 mm of reinforced concrete										
0 2	**FILL** sand, trace silt, trace gravel, brown		1A	UN	DIST						
0.6	**SILT TILL** some sand, trace clay		1B	UN	DIST						
1 2	**SILT** some clay, grey, moist		2A	UN	DIST						
1 8	**CLAYEY SILT** trace sand, grey, wet		2B	UN	DIST						
	brown, some organics		3A	UN	DIST						
			3B	UN	DIST						
	dry with fine sand layers		4A	UN	DIST						
	moist to very moist		4B	UN	DIST						
4 9	**SILTY CLAY** grey/brown, wet		5A	UN	DIST						
			5B	UN	DIST						
6.1	**CLAY TILL** grey, moist		6	UN	DIST						
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

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 / 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** 200 mm of reinfoced concrete											
0 2	**FILL** silt, some clay, grey, moist		1A	UNDIST								
	grey/brown		1B	UNDIST								
			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

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 / 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, 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

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
25.6							
0.0 / 25.4	**ASPHALT** 180 mm of asphalt						
0.2 / 25.2	**GRANULAR**		1AUNDIST				
0.4	**FILL** sand, brown, moist		1BUNDIST				25
			2AUNDIST				
23.8							24
1.8	**SILT** some sand, trace gravel, strong PHC odour, brown, moist		2BUNDIST				
22.6			3AUNDIST				23
3.0	**SAND & SILT** strong PHC odour, black, saturated		3BUNDIST				
22.0							22
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						

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

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 BH2

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
25.6							
0.0 / 25.5	**ASPHALT** 75 mm of asphalt						
0.1 / 24.9	**FILL** sandy silt, brown, moist		1AUNDIST				25
0.8 / 24.1	**FILL** clayey silt, brown, moist		1BUNDIST				
1.5	**CLAYEY SILT** trace sand, brown, moist		2AUNDIST				24
			2BUNDIST				23
	strong PHC odour between 3-4.5 m trace gravel						
22.1			3AUNDIST				
3.5 / 21.8	**SANDY SILT** brown						22
3.8	**SILTY CLAY** brown/grey, moist		3BUNDIST				
			4AUNDIST				21
			4BUNDIST				20
19.6							
6.1	**SHALE** shale, grey		5AUNDIST				
18.9							19
6.7	**END OF BOREHOLE** 1. Sample refusal at 6.7 m. 2. Borehole backfilled with bentonite upon completion.						

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

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 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.:

(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												
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					

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.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 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.:

(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												
25.5 / 0.1	**ASPHALT** 50 mm of asphalt											
25.2 / 0.4	**CONCRETE** 125 mm of concrete		1A	UNDIST								
	FILL silt, trace sand, grey, moist		1B	UNDIST			25					
24.4 / 1.2	trace clay											
	SILT trace sand, trace clay, brown, moist		2A	UNDIST			24					
			2B	UNDIST								
			3A	UNDIST			23					
			3B	UNDIST								
	some clay, trace sand, wet		4A	UNDIST			22					
21.4 / 4.3	**SILTY CLAY** grey, wet		4B	UNDIST								
			5A	UNDIST			21					
	saturated		5B	UNDIST								
			6A	UNDIST			20					
18.9 / 6.7	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.						19					

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 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	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
25.7 / 0.0	**ASPHALT** 100 mm of asphalt		1A	UNDIST			25
25.6 / 0.1	**FILL** sand and gravel, brown, moist		1B	UNDIST			
			2A	UNDIST			24
23.9 / 1.8	trace sand, some clay **CLAY** dark brown, moist		2B	UNDIST			
			3A	UNDIST			23
			3B	UNDIST			
	saturated		4A	UNDIST			22
21.1 / 4.6			4B	UNDIST			
	SILTY-CLAY brown, wet		5A	UNDIST			21
	saturated		5B	UNDIST			20
19.0 / 6.7			6A	UNDIST			
18.7 / 7.0	**SHALE** shale, grey						19
	END OF BOREHOLE 1. Sample refusal at 7.0 m. 2. Borehole backfilled with bentonite upon completion.						

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

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 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	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
25.6 / 0.0	**ASPHALT** 100 mm of asphalt		1A	UNDIST			25
25.3 / 0.3	**FILL** sand and gravel, brown, moist **SAND & SILT** brown, moist		1B	UNDIST			
24.4 / 1.2	**SILT** trace sand, grey/brown, moist		2A	UNDIST			24
	grey		2B	UNDIST			
23.5 / 2.1	**CLAY** dark grey, moist						23
23.2 / 2.4	**SILT** trace sand, brown, saturated		3A	UNDIST			
	some clay		3B	UNDIST			22
22.0 / 3.7	**CLAYEY SILT** clayey silt, brown, wet		4A	UNDIST			
20.8 / 4.9			4B	UNDIST			21
	SILTY CLAY silty clay, grey, wet		5A	UNDIST			
			5B	UNDIST			20
18.6 / 7.0			6A	UNDIST			
	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.						19

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

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 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.:

(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 / 0.0	**ASPHALT** 75 mm of asphalt		1A	UNDIST			25					
24.9 / 0.6	**FILL** sand and gravel, trace silt, brown		1B	UNDIST								
	FILL silt, some sand, grey/brown, moist trace clay		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								
	brown, moist		4A	UNDIST			22					
			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.:

(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
25.6 / 0.0	**ASPHALT** 150 mm of asphalt		1A	UNDIST			25					
25.4 / 0.2	**FILL** sand and gravel, brown, moist		1B	UNDIST								
			2A	UNDIST			24					
23.3 / 2.3	**SILTY CLAY** brown, moist		2B	UNDIST								
22.1 / 3.5	**CLAYEY SILT** some sand, grey, moist		3A	UNDIST			23					
			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			20					
18.9 / 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, ×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			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT / WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							GR SA SI CL
25.2 / 0.0	**ASPHALT** 100 mm of asphalt						25					
0.1 / 24.4	**FILL** sand and gravel, brown, moist		1A	UNDIST								
0.8 / 23.6	**FILL** clayey silt, some sand, brown/grey, moist		1B	UNDIST			24					
1.5	**SILTY CLAY** trace sand, brown, moist		2A	UNDIST								
22.1	black/grey		2B	UNDIST			23					
3.0 / 20.6	**SILT** some clay, trace sand, brown, moist		3A	UNDIST			22					
			3B	UNDIST			21					
4.6 / 19.8	**SILTY CLAY** trace sand, brown, wet		4A	UNDIST								
5.3 / 19.1	**CLAYEY SILT TILL** trace gravel, grey, shale fragments		4B	UNDIST			20					
6.1	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 4.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 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			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH (kPa)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT / WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							GR SA SI CL
24.6 / 0.0	**ASPHALT** 75 mm of asphalt											
24.3 / 0.3	**FILL** sand and gravel		1A	UNDIST			24					
	FILL sand & silt, grey/brown, moist		1B	UNDIST								
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 / 3.4	**SILTY CLAY** grey, wet		3B	UNDIST								
			4A	UNDIST			21					
20.4 / 4.3	**END OF BOREHOLE** 1. 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 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								
20.0 / 4.6	**END OF BOREHOLE** 1. Sample refusal at 4.6 m. 2. 50mm-diameter monitoring well installed.						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 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.:

ELEV / DEPTH (m)	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
24.7											
24.8	**ASPHALT**										
0.0	75 mm of asphalt										
24.4	**FILL**		1A	UNDIST							
0.3	sand and gravel, brown, moist										
	SILT		1B	UNDIST			24				
	some clay, trace sand, gravel, brown, moist										
			2A	UNDIST							
							23				
			2B	UNDIST							
21.7							22				
3.0	**CLAYEY SILT**		3A	UNDIST							
	grey, moist										
			3B	UNDIST			21				
			4A	UNDIST							
	trace shale fragments										
19.8			4B	UNDIST			20				
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 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.:

ELEV / DEPTH (m)	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
25.6											
25.9	**ASPHALT**										
0.1	75 mm of asphalt										
	FILL		1A	UNDIST			25				
	sand and gravel, brown, moist										
			1B	UNDIST							
24.1							24				
1.5	**SILTY CLAY**		2A	UNDIST							
	grey, wet										
							23				
			2B	UNDIST							
	dark grey										
22.4							22				
3.2	**SILT**		3A	UNDIST							
	trace clay, gravel, grey/brown, moist										
			3B	UNDIST			21				
21.0											
4.6	**SILTY CLAY**		4A	UNDIST							
	grey, moist										
			4B	UNDIST			20				
19.7											
19.9	**CLAY**										
6.1	grey, moist										
	SHALE		5A	UNDIST			19				
	grey										
18.9											
6.7	**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 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	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	**ASPHALT**											
25.4 0.2	100 mm of asphalt **FILL** sand and gravel, brown, moist		1A	U	ND		25					
24.3 1.2	**FILL** sand & silt, grey/brown, moist		1B	U	ND							
23.7 1.8	**FILL** silty clay, grey, wet		2A	U	ND		24					
22.5 3.0	**CLAYEY SILT** trace organics, brown, moist grey/brown		2B	U	ND		23					
20.7 4.9	**SILTY CLAY** grey, moist wet		3A	U	ND		22					
			3B	U	ND							
			4A	U	ND		21					
	END OF BOREHOLE 1. Borehole backfilled with bentonite upon completion.		4B	U	ND		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 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	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	**TOPSOIL**											
24.6 0.1	Topsoil **FILL** sand, brown, moist		1A	U	ND		24					
24.4 0.3	**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					
22.3 2.4	**CLAYEY SILT** clayey silt, brown, moist		2B	U	ND							
	trace sand, trace shale, some gravel		3A	U	ND		22					
20.5 4.3	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.		3B	U	ND							
			4A	U	ND		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 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.:

(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 (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
24.6												
24.6 / 0.0	**ASPHALT** 100 mm of asphalt											
24.3 / 0.3	**FILL** sand and gravel		1A	UNDIST								
	FILL silt, some clay, grey, moist		1B	UNDIST			24					
	grey/brown		2A	UNDIST			23					
22.5 / 2.1	**CLAY** clay, brick and glass fragments		2B	UNDIST								
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.:

(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 (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	UNDIST								
24.2 / 0.6	**SILT** some clay, trace sand, brown, moist		1B	UNDIST			24					
			2A	UNDIST			23					
	oxidation		2B	UNDIST								
	grey, wet		3A	UNDIST			22					
			3B	UNDIST								
			4A	UNDIST			21					
20.0			4B	UNDIST			20					
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 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	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 (50 100 150 200 250) + FIELD VANE & Sensitivity × LAB VANE	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 / 25.0	**TOPSOIL** topsoil, dark brown											
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								
22.4			2B	UNDIST			23					
2.9	**SILTY-CLAY** grey, very moist		3A	UNDIST			22					
			3B	UNDIST								
			4A	UNDIST			21					
	wet		4B	UNDIST			20					
			5A	UNDIST			19					
17.8			5B	UNDIST								
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: $+^3$, $\times^3$: 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 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	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 (50 100 150 200 250) + FIELD VANE & Sensitivity × LAB VANE	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 / 25.1	**TOPSOIL** topsoil											
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: $+^3$, $\times^3$: 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 BH21

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 ● 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 / 0.0	**TOPSOIL** topsoil, dark brown, moist											
25.3 / 0.2	**SILT** some clay, trace sand, brown, moist		1A	UNDIST			25					
			1B	UNDIST								
24.0 / 1.5	**CLAYEY SILT** brown, wet		2A	UNDIST			24					
			2B	UNDIST			23					
	saturated		3A	UNDIST			22					
21.2 / 4.3			3B	UNDIST								
20.9 / 4.6	**SILTY-CLAY** grey, saturated						21					
	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

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	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** 150 mm of asphalt											
25.3 / 0.3	**FILL** sand and gravel, brown, moist		1A	UNDIST								
25.0 / 0.6	**FILL** sand, brown, moist		1B	UNDIST			25					
	SILT trace sand, some clay, brown, moist											
24.1 / 1.5	**CLAYEY SILT** grey, moist		2A	UNDIST			24					
			2B	UNDIST								
			3A	UNDIST			23					
	grey/brown, wet		3B	UNDIST								
			4A	UNDIST			22					
20.7 / 4.9	moist		4B	UNDIST			21					
	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.:

(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	**TOPSOIL** topsoil										
25.4 / 0.2	**SILT** some clay, trace sand, trace gravel, brown, moist		1A	UNDIST			25				
	wet		1B	UNDIST							
23.4 / 2.2			2A	UNDIST			24				
2.3	**SILTY CLAY** grey, moist		2B	UNDIST			23				
			3A	UNDIST			22				
21.1 / 4.6			3B	UNDIST							
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.:

(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	**TOPSOIL** topsoil										
25.5 / 0.2	**SILT** some clay, trace sand, trace gravel, brown		1A	UNDIST			25				
	grey		1B	UNDIST							
24.3 / 1.4	**CLAY** dark grey, wet		2A	UNDIST			24				
23.8 / 1.8	**SILT** brown, wet		2B	UNDIST			23				
	saturated		3A	UNDIST			22				
21.4 / 4.3			3B	UNDIST							
21.1 / 4.6	**SILTY CLAY** grey, wet										
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
25.6 / 0.0	**TOPSOIL** topsoil, dark brown						25
25.4 / 0.2	**FILL** silt, trace clay, trace sand, brown, damp		1A	UNDIST			
			1B	UNDIST			
24.1 / 1.5	**SILT** trace clay, trace sand, brown, damp		2A	UNDIST			24
	grey		2B	UNDIST			
22.5 / 3.0	brown **CLAYEY SILT** grey, moist		3A	UNDIST			23
			3B	UNDIST			22
			4A	UNDIST			21
			4B	UNDIST			20
19.5 / 6.1	**SILTY-CLAY** grey, wet		5A	UNDIST			19
18.2 / 7.4			5B	UNDIST			
18.0 / 7.6	**SHALE** shale						18
	END OF BOREHOLE 1. Sample refusal at 7.6 m. 2. 50mm-diameter monitoring well installed.						

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)
SHEAR STRENGTH (kPa) (50 100 150 200 250)
○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE

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

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
25.8 / 0.0	**TOPSOIL** brown, moist, loose		1A	UNDIST			25
25.3 / 0.5	**FILL** silt, some clay, trace sand and gravel, greyish brown, moist		1B	UNDIST			
	oxidation		2A	UNDIST			24
	organics		2B	UNDIST			
23.3 / 2.4	**SILTY CLAY** grey, wet		3A	UNDIST			23
			3B	UNDIST			22
21.8 / 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.						

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)
SHEAR STRENGTH (kPa) (50 100 150 200 250)
○ UNCONF ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE

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

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 50 100 150 200 250 + FIELD VANE & Sensitivity × LAB VANE	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	**FILL** sand and gravel, brown, moist											
0.1	**FILL** silt, brown, moist, loose		1A	UNDIST			25					
	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 50 100 150 200 250 + FIELD VANE & Sensitivity × LAB VANE	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	**ASHPHALT** 90 mm											
25.5	**FILL** sand and gravel		1A	UNDIST			25					
0.2	**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	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 8												
0 0	**TOPSOIL**											
25 5	300 mm											
0 3	**SILT**		1A	UNDIST			25					
	some clay, trace sand and gravel, brown, moist, compact		1B	UNDIST								
			2A	UNDIST			24					
	organic layer		2B	UNDIST								
	oxidation zone		3A	UNDIST			23					
			3B	UNDIST								
			4A	UNDIST			22					
			4B	UNDIST								
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
$+^3$, $\times^3$: 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	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**											
25.6	dark brown, moist											
0 2	**SAND**		1A	UNDIST			25					
	trace silt, brown, very moist, loose											
24 9												
0 9	**SILT**		1B	UNDIST								
	some clay, greyish brown, moist, very stiff											
	organic layers		2A	UNDIST			24					
	organics at 2 m (thickness 0.7 m)		2B	UNDIST								
			3A	UNDIST			23					
			3B	UNDIST								
			4A	UNDIST			22					
			4B	UNDIST								
19 8							21					
6.1	**CLAY**											
	shale fragments		5A	UNDIST			20					
19 3												
6.6	**SHALE**											
19 0							19					
6 9	**END OF BOREHOLE**											
	1. Sample refusal at 6.8 m 2. 50 mm-diameter monitoring well installed											

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	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: 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	**TOPSOIL** dark brown, moist		1A				25					
0.1	**SILT** some clay, trace sand, trace gravel, brown, moist		1B									
	very moist		2A				24					
	organic layer at 1.4 m (thickness 200 mm)		2B									
			3A				23					
			3B									
21.9 / 4.0	**CLAYEY SILT** clayey silt, grey, very moist wet		4A				22					
20.9			4B				21					
4.9	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.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 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	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: 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	**TOPSOIL** 150 mm, dark brown, wet, loose											
0.2	**FILL** silt, some clay, trace sand and gravel, greyish brown, wet, loose			UNDIST								
						W. L. 24.9 m Nov 12, 2013	25					
24.3 / 1.5	**SILT** some clay, brown, moist, hard			UNDIST			24					
	occasional grey fissures			UNDIST								
				UNDIST			23					
21.9 / 4.0	**SILTY CLAY** grey, wet, soft			UNDIST			22					
				UNDIST								
20.3	shale						21					
5.5	**END OF BOREHOLE** 1. 50 mm-diameter monitoring well installed 2. Water encountered at 0.9 mbg Nov. 12, 2013.											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.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 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.:

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 (kg/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** 90 mm											
0.1 / 25.2	**FILL** silt, some clay, trace sand and gravel, brown, moist		1A	UNDIST								
0.6	**SILTY CLAY** zones of oxida ion, brown, moist		1B	UNDIST			25					
			2A	UNDIST			24					
22.8			2B	UNDIST			23					
3.0	**SAND** trace silt, brownish grey, saturated		3A	UNDIST			22					
	clayey silt, grey		3B	UNDIST								
21.3												
4.6	**SILTY CLAY** grey, wet, soft		4A	UNDIST			21					
			4B	UNDIST								
	shale fragments						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.:

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 (kg/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** 125 mm of asphalt											
0.1 / 25.1	**FILL** sand and gravel, brown, moist		1A	UNDIST								
0.8 / 24.3	**FILL** silty clay, brown, moist		1B	UNDIST			25					
1.5	**CLAYEY SILT** clayey silt, trace sand, brown, damp		2A	UNDIST			24					
			2B	UNDIST								
	damp/moist		3A	UNDIST			23					
21.3			3B	UNDIST			22					
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 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								
			3A	UNDIST			23					
	clayey silt, occasional silt layers		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

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 "N" BLOWS 0.3 m	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											
25.7 / 0.1	**ASPHALT** 100 mm of asphalt										
	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

1 OF 1

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.:

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS 0.3 m	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
25.7											
25.6 / 0.1	**ASHPHALT** 90 mm										
	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

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 (m) / DEPTH	DESCRIPTION	SAMPLE NUMBER	TYPE	ELEVATION
25.7 / 0.0	**ASPHALT** 125 mm of asphalt			
0.1	**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
		2B	UNDIST	23
22.6 / 3.0	**CLAYEY SILT** clayey silt, trace sand, grey, moist	3A	UNDIST	22
		3B	UNDIST	21
		4A	UNDIST	
		4B	UNDIST	20
19.9 / 5.8	**SILTY CLAY** silty clay, grey, very moist trace gravel, trace shale fragments	5A	UNDIST	19
		5B	UNDIST	
18.7 / 7.0	**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.			

Column headings: SOIL PROFILE; STRATA PLOT; SAMPLES ("N" BLOWS/0.3 m); GROUND WATER CONDITIONS; DYNAMIC CONE PENETRATION RESISTANCE PLOT (20, 40, 60, 80, 100); SHEAR STRENGTH (kPa) ○ UNCONFINED + FIELD VANE & Sensitivity ● QUICK TRIAXIAL × 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/m^3); REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL

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

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 (m) / DEPTH	DESCRIPTION	SAMPLE NUMBER	TYPE	ELEVATION
25.7 / 0.0	**ASPHALT** 125 mm of asphalt			
0.1	**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
	grey	3B	UNDIST	
21.1 / 4.6	**END OF BOREHOLE** 1. Sample refusal at 4.6 m. 2. Borehole backfilled with bentonite upon completion.			

Column headings: SOIL PROFILE; STRATA PLOT; SAMPLES ("N" BLOWS/0.3 m); GROUND WATER CONDITIONS; DYNAMIC CONE PENETRATION RESISTANCE PLOT (20, 40, 60, 80, 100); SHEAR STRENGTH (kPa) ○ UNCONFINED + FIELD VANE & Sensitivity ● QUICK TRIAXIAL × 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/m^3); REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL

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

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. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.8 / 0.0	**ASPHALT** 75 mm of asphalt										
25.7 / 0.1	**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							
			2B	UNDIST			24				
22.7 / 3.0	**CLAYEY SILT** brown, moist/very moist		3A	UNDIST			23				
			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 BH42

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. (Mg/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, trace gravel, brown, moist		1A	UNDIST							
25.2 / 0.6	**FILL** silt, trace clay and sand, brown, moist		1B	UNDIST			25				
			2A	UNDIST							
	grey		2B	UNDIST			24				
23.3 / 2.4	**CLAYEY SILT** occasional sand layer, grey, moist		3A	UNDIST							
			3B	UNDIST			23				
			4A	UNDIST			22				
			4B	UNDIST							
20.9 / 4.9	**SHALE**		5A	UNDIST			21				
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: $+^3$, $\times^3$: 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 BH43

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
25.5 / 0.0	**ASPHALT** 125 mm of asphalt										
25.4 / 0.1	**FILL** sand and gravel, brown, moist		1A	UNDIST			25				
24.6 / 0.9	**CLAYEY SILT** trace sand, brown, moist		1B	UNDIST			24				
			2A	UNDIST							
			2B	UNDIST			23				
			3A	UNDIST			22				
			3B	UNDIST							
21.0 / 4.6	**SHALE** **END OF BOREHOLE** 1. Sample refusal at 4.6 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 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH44

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
25.7 / 0.0	**ASHPHALT** 90 mm										
25.6 / 0.1	**FILL** sand and gravel, brown, moist, loose		1A	UNDIST			25				
24.9 / 0.8	**FILL** silt, some clay, trace sand and gravel, brown, 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 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.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" BLOWS 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										
25.4 / 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.										

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

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.:

ELEV / DEPTH (m)	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" BLOWS 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
25.6 / 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.										

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

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

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: "N" BLOWS 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
25.6												
25.6 / 0.1	**ASPHALT** 100 mm of asphalt											
25.6 / 0.1 – 24.8	**FILL** sand and gravel, brown, damp		1A	UNDIST			25					
0.8 – 24.2	**FILL** clayey silt, some sand, brown, moist		1B	UNDIST								
1.4 – 22.5	**CLAYEY SILT** trace sand, brown, damp/moist		2A	UNDIST			24					
			2B	UNDIST			23					
3.0 – 21.0	**CLAYEY SILT TILL** shale fragments, trace gravel, brown, moist		3A	UNDIST			22					
	grey		3B	UNDIST								
4.6	**END OF BOREHOLE** 1. 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 7.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH48

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: "N" BLOWS 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
25.6												
25.6 / 0.0 – 24.8	**FILL** sand and gravel, brown with black, moist		1A	UNDIST			25					
0.8 – 24.1	**FILL** silt, some clay, greyish brown, moist		1B	UNDIST								
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

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	NUMBER	TYPE	"N" BLOWS/0.3 m	GROUND WATER CONDITIONS	ELEVATION
25.6 0.0 / 0.1	**ASPHALT** 100 mm of asphalt **FILL** sand and gravel, brown, damp	1A	UNDIST			25
24.8 0.8	**FILL** clayey silt, some sand, some gravel, brown, moist	1B	UNDIST			
24.0 1.5	**CLAYEY SILT** trace gravel, brown/grey, moist	2A	UNDIST			24
		2B	UNDIST			23
	grey	3A	UNDIST			22
21.8 3.8	**SILTY CLAY** silty clay, trace gravel, grey, very moist	3B	UNDIST			
21.0 4.6	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.					21

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100
SHEAR STRENGTH (kPa): ○ UNCONFINED + FIELD VANE & Sensitivity; ● QUICK TRIAXIAL × 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/m^3) | REMARKS AND GRAIN SIZE DISTRIBUTION (%): GR SA SI CL

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 BH50

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	NUMBER	TYPE	"N" BLOWS/0.3 m	GROUND WATER CONDITIONS	ELEVATION
25.7 0.0	**FILL** gravel with some sand and silt, brown, moist	1A	UNDIST			
25.1 0.6	**FILL** silt with some clay, greyish brown, moist	1B	UNDIST			25
24.5 1.2	**FILL** silty clay, trace sand, grey, moist	2A	UNDIST			24
	wet	2B	UNDIST			
23.3 2.4	**END OF BOREHOLE** 1. Borehole backfilled with bentonite upon completion.					

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100
SHEAR STRENGTH (kPa): ○ UNCONFINED + FIELD VANE & Sensitivity; ● QUICK TRIAXIAL × 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/m^3) | REMARKS AND GRAIN SIZE DISTRIBUTION (%): GR SA SI CL

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 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.:

SOIL PROFILE			SAMPLES			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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"							
26.0 / 0												
25.9 / 0.1	**FILL** sand with gravel, trace silt, brown, moist		1A	UNDIST			25					
	FILL silt with some clay, trace sand, brown and grey, wet		1B	UNDIST								
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.											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 6.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 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.:

SOIL PROFILE			SAMPLES			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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"							
26.3 / 0												
26.0 / 0.3	**TOPSOIL** topsoil											
25.8 / 0.2	**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			23					
			3B	UNDIST								
			4A	UNDIST			22					
			4B	UNDIST			21					
			5A	UNDIST			20					
19.3 / 7.0	**END OF BOREHOLE** 1. Sample refusal at 7.0 m. 2. 50mm-diameter monitoring well installed at 7.6 m.						19					

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 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, × 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, × 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.:

(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. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
25.7	**ASPHALT**										
25.6 0.1	120 mm **FILL** sand, cinders brown, moist		1A	UNDIST			25				
			1B	UNDIST							
			2A	UNDIST			24				
23.2			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 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.:

(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. (Mg/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
26.5	**GRAVEL**										
26.4 0.1	130 mm **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				
	silty clay, grey, wet		2B	UNDIST							
24.1 2.4	**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.:

(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
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				
	grey		2B	UNDIST			24				
			3A	UNDIST			23				
			3B	UNDIST							
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.:

(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											
0.0 / 25.3	**TOPSOIL** trace sand, trace gravel, dark brown, moist		1A	UNDIST			25				
0.3	**SILT** trace clay, trace sand, trace gravel, brown, moist		1B	UNDIST							
	some clay, grey, wet		2A	UNDIST			24				
1.8 / 23.8	**SILTY CLAY**		2B	UNDIST							
2.4 / 23.2	**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

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 **SILT** some clay, trace sand, brown, wet		2A	UNDIST			24					
			2B	UNDIST								
22.5			3A	UNDIST			23					
3.0	**SILT CLAY** grey, wet		3B	UNDIST								
			4A	UNDIST			22					
20.7			4B	UNDIST			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 BH60

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							26					
0.0	**TOPSOIL** topsoil, dark brown, moist		1A	UNDIST								
25.9 0.3	**FILL** silt, some sand, trace gravel, trace clay, trace slag, brown, moist		1B	UNDIST			25					
			2A	UNDIST								
24.1							24					
23.9 2.3	**SILT** organic silt		2B	UNDIST								
	SILT silt, some clay, trace sand, brown, moist											
23.2			3A	UNDIST			23					
3.0	**CLAYEY SILT** clayey silt, brown, moist		3B	UNDIST								
21.6							22					
4.6	**SILT** silt, some sand, trace gravel, brown, saturated		4A	UNDIST								
			4B	UNDIST			21					
20.1												
6.1	**SILTY CLAY** silty clay, grey, saturated		5A	UNDIST			20					
			5B	UNDIST								
18.3			6A	UNDIST			19					
7.9												
	END OF BOREHOLE 1. Sample refusal at 7.9 m. 2. 50mm-diameter monitoring well installed at 8.4 m.						18					

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 NFD ● 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														
25.8 0.1	**ASPHALT** 75 mm of asphalt													
	FILL sand & gravel, brown, moist		1A	UNDIST										
25.2 0.6	**SILT** some clay, trace sand, brown/grey, moist		1B	UNDIST			25							
	some clay, grey		2A	UNDIST										
			2B	UNDIST			24							
	wet													
	saturated		3A	UNDIST			23							
			3B	UNDIST										
			4A	UNDIST			22							
20.9			4B	UNDIST			21							
4.9	**END OF BOREHOLE** 1. Sample refusal at 4.9 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 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 NFD ● 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														
25.8 0.1	**ASPHALT** 75 mm of asphalt													
25.4 0.5	**FILL** sand and gravel, brown, moist		1A	UNDIST										
	SILT some clay, trace sand, trace gravel, brown, moist		1B	UNDIST			25							
24.0 1.8	**CLAYEY SILT** grey, moist		2A	UNDIST			24							
			2B	UNDIST										
			3A	UNDIST			23							
			3B	UNDIST										
	wet		4A	UNDIST			22							
			4B	UNDIST										
19.6			5A	UNDIST			21							
6.2	**END OF BOREHOLE** 1. Sample refusal at 6.2 m. 2. 50 mm-diameter monitoring well installed at 6.7 m.						20							

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.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 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 / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	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 (kN/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.											

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
WATER CONTENT (%): 10 20 30

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 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 / DEPTH (m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS "N" 0.3 m	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 (kN/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					
23.5 / 2.4	grey, wet **END OF BOREHOLE** 1. Sample refusal at 2.4 m. 2. Borehole backfilled with bentonite upon completion.		2B	UNDIST								

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
WATER CONTENT (%): 10 20 30

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 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								
24.9							25					
0.8	**FILL**											
	clayey silt, trace sand, trace gravel, brown/red, moist		1B	UNDIST								
24.1												
1.5	**CLAYEY SILT**						24					
	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.											

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 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								
	SILT						25					
	some clay, brown, moist		1B	UNDIST								
24.1												
1.5	**SILTY CLAY**						24					
	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.											

SPL SOIL LOG 1889-220 BOREHOLE LOGS SET 8.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 BH67

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
25.5 / 0.0	**ASPHALT**											
25.4 / 0.1	75 mm of asphalt											
	FILL		1A	UNDIST			25					
24.9 / 0.6	sand and gravel, brown, moist											
	SILTY CLAY		1B	UNDIST			24					
	organics, black, moist											
			2A	UNDIST								
			2B	UNDIST			23					
22.5 / 3.0	**CLAYEY SILT**											
	brown		3A	UNDIST			22					
	grey, wet		3B	UNDIST								
20.9 / 4.6	**END OF BOREHOLE**						21					
	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 8.GPJ SPL.GDT 12/5/13

SPL Consultants Limited
Geotechnical Environmental Materials Hydrogeology

LOG OF BOREHOLE BH68

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 / 0.0	**ASPHALT**											
25.5 / 0.1	75 mm of asphalt											
	SILT		1A	UNDIST			25					
	some clay, trace sand, trace gravel, grey/orange, moist											
			1B	UNDIST			24					
23.8 / 1.8	**CLAYEY SILT**		2A	UNDIST								
	grey, moist		2B	UNDIST			23					
			3A	UNDIST			22					
			3B	UNDIST								
	saturated		4A	UNDIST			21					
20.2 / 5.5	**SILTY CLAY**											
	grey, wet		4B	UNDIST			20					
19.5 / 6.2	**END OF BOREHOLE**		5A	UNDIST								
	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

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
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		
	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		
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		
			9	GRAB	-		
92.4							
9.1	END OF BOREHOLE						

Borehole dry upon completion.

Water Level Readings:
Date W.L. Depth (m)
Oct. 22/04 3.25

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)
SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE
(20 40 60 80 100)

PLASTIC LIMIT W_P | NATURAL MOISTURE CONTENT W | LIQUID LIMIT W_L
WATER CONTENT (%) (10 20 30)

UNIT WEIGHT γ (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)

NUMBER	GR	SA	SI	CL
2	7	68	25	
6	8	73	19	
8	Split spoon wet.			

GRAPH NOTES: $+^3, \times^3$: Numbers refer to Sensitivity ○ 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
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		
			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		
			9	GRAB	-		
92.6							
9.1	END OF BOREHOLE						

Borehole dry upon completion.

Water Level Readings:
Date W.L. Depth (m)
Oct. 22/04 5.45

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)
SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE
(20 40 60 80 100)

PLASTIC LIMIT W_P | NATURAL MOISTURE CONTENT W | LIQUID LIMIT W_L
WATER CONTENT (%) (10 20 30)

UNIT WEIGHT γ (kN/m³)

REMARKS AND GRAIN SIZE DISTRIBUTION (%)

NUMBER	GR	SA	SI	CL
3	7	65	28	

1.7

GRAPH NOTES: $+^3, \times^3$: Numbers refer to Sensitivity ○ 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)
0.5	CONCRETE FLOOR	0.3	CONCRETE SEAL					
	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)
0.5	CONCRETE FLOOR	0.3	CONCRETE SEAL					
	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					
	END OF BOREHOLE @ 0.30m BGS						

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						
	CL-SILTY CLAY, firm, low plasticity, grey, moist		BENTONITE SEAL	2		0.76		0.2
1.5	- stiff, brown, moist							
2.0				3		0.61		0.1
2.5	END OF BOREHOLE @ 2.44m BGS	2.4						

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: 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	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE 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 ( )

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	SAMPLE INTERVAL	SAMPLE REC (m)	SAMPLE 'N' VALUE	SAMPLE 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
1.0	SP-SAND (FILL), medium grained, poorly graded, brown, moist			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	3.0	BENTONITE SEAL	6	P/S	0.61		283
3.5	- 152 mm section of coarse gravel , grey, slight odour							
4.0	CL-SILTY CLAY, medium plasticity, grey, moist			7	P/S	0.61		1.4
4.5	SM-SILTY SAND, fine grained, poorly graded, brown, wet	4.0		8	P/S	0.61		21.9
5.0	CL-SILTY CLAY, medium plasticity, grey, moist	4.3		9	P/S	0.61		1.2
5.5	- less silt content, high plasticity, grey, moist to wet							
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 ( )

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					
	SW-GW SAND & GRAVEL (FILL), coarse to medium grained, well graded, grey, moist	0.3		1	P/S	0.61	
0.5	SP-SAND (FILL), medium grained, poorly graded, brown, moist	0.6					
	SM-SILTY SAND (FILL), medium grained, poorly graded, moist, oxidized	0.8		2	P/S	0.61	
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						
	SW-GW SAND & GRAVEL (FILL), medium to fine grained, well graded, brown, moist	0.3		1	P/S	0.61		1.8
0.5	SP-SAND (FILL), fine grained, poorly graded, brown, moist							
		1.1		2	P/S	0.61		0.9
1.0	CL-SILTY CLAY, low plasticity, grey, moist, slightly oxidized							
1.5	- slight odour, grey			3	P/S	0.61		6.5
				4	P/S	0.61		105
2.0								
2.5	- strong odour, wet			5	P/S	0.61		82.3
	- strong odour, moist		BENTONITE SEAL					
3.0				6	P/S	0.61		203
3.5	- slight odour, brown							
				7	P/S	0.61		0.8
4.0	- grey							
	- 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 ( )

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						
1.0	CL-SILTY CLAY (FILL), firm, low plasticity, grey, very moist	0.5	BENTONITE SEAL	2		0.49		0.8
1.5	SP-SAND (FILL), trace silt, compact, fine grained, poorly graded, brown, moist							
2.0	- Refusal	1.4						
2.5	END OF BOREHOLE @ 1.37m BGS							
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 ( )

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
	SW-GW SAND & GRAVEL (FILL)	0.5						
0.5	CL-SILTY CLAY (FILL), stiff, low plasticity, grey, moist	0.8						
	SM-SILTY SAND (FILL), compact, fine grained, poorly graded, brown, moist	0.9		2	P/S	0.61		0.0
1.0	CL-SILTY CLAY, stiff, low plasticity, grey, moist							
1.5	- medium plasticity, very moist			3	P/S	0.61		0.0
2.0				4	P/S	0.61		0.0
2.5			BENTONITE SEAL	5	P/S	0.61		0.0
3.0				6	P/S	0.61		0.0
3.5								
4.0				7	P/S	0.61		0.0
4.5		4.7 / 4.9		8	P/S	0.61		0.0
	CL-SILTY CLAY (TILL), trace sand, trace gravel, medium plasticity, grey, moist							
5.0	- Refusal (Shale fragments)							
	END OF BOREHOLE @ 4.88m BGS							
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 (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
	SW-GW SAND & GRAVEL (FILL)	0.6						
0.5	CL-SILTY CLAY, firm, low plasticity, grey, moist							
1.0				2	P/S	0.61		0.0
	- medium plasticity, moist to very moist							
1.5				3	P/S	0.61		0.0
2.0				4	P/S	0.61		0.0
2.5			BENTONITE SEAL	5	P/S	0.61		0.0
3.0				6	P/S	0.61		0.0
3.5								
4.0				7	P/S	0.61		0.0
4.5		4.3		8	P/S	0.61		0.0
	CL-SILTY CLAY (TILL), trace sand, trace gravel, medium plasticity, grey, moist to very moist							
5.0	- Refusal (Shale fragments)	4.9						
	END OF BOREHOLE @ 4.88m BGS							
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 (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 ( )

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		0.6						
1.0	CL-SILTY CLAY, firm, low plasticity, grey, moist - 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 - Refusal (Shale fragments)	5.8 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 ( )

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						

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: 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						
	SM-SILTY SAND, fine grained, poorly graded, brown, moist	0.91		2				0.9
	ML-SILT, trace clay, low plasticity, brown, moist	1.22						
	- little sand, wet, slight oxidation at 1.83m BGS			3				0.7
			BENTONITE	4				0.9
				5				2.1
				6				2.4
	SP-SAND, fine grained, poorly graded, brown, moist	3.66						
	ML-SILT, trace clay, low plasticity, brown, moist, slight oxidation	3.96		7				0.7
	CL-SILTY CLAY, low plasticity, grey, moist to wet	4.11						
	- trace sand at 4.27m BGS			8				1.0
	- low plasticity, moist at 4.57m BGS							
	- medium plasticity, moist to wet at 4.88m BGS			9				0.7
				10				0.6
	END OF BOREHOLE @ 6.10m BGS	6.10						

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: 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								
0.91	ML-SILT (TILL), trace clay, compact, grey, moist	0.91		2				0.7
1.0								
	- 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								
	CL-SILTY CLAY, medium plasticity, grey, moist	4.57		8				0.3
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			2				0.5
0.91	SM-SILTY SAND (TILL), fine grained, poorly graded, trace gravel, brown, some black staining, slight odour	0.91						
1.0								
1.5				3				1.3
1.83	ML-SILT (TILL), loose, brown, moist, slight black staining	1.83						
2.0				4				1.4
2.44	ML-SILT, compact, with clay, brown, moist	2.44						
2.5				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
4.88	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	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				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			7				23.6
4.0	- moist to wet at 4.27m BGS							
4.5	- slight odour at 4.88m BGS			8				29.1
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	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				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		3				7.1
1.5								
2.0	ML-SILT, trace sand, loose, grey, moist, slight odour	1.83		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	- trace sand, slight black staining at 5.18m BGS			9				2.9
5.5								
6.0	END OF BOREHOLE @ 6.10m BGS	6.10		10				0.9
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		1				1.2
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.15						
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		1				0.5
	SW/GW-SAND AND GRAVEL (FILL), coarse to medium grained, well graded, brown, moist	0.30						
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