

APPENDIX I

FINAL REPORT

Phase I Environmental Site Assessment, Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario

Presented to:

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Report No. 1160517

December 12, 2016

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EXECUTIVE SUMMARY

Morrison Hershfield Limited (MH) was retained by the City of Toronto to conduct a Phase I Environmental Site Assessment (Phase I ESA) for the new East-West connection between Rean Drive and Kenaston Gardens in the Bayview Village in Toronto, Ontario. The Phase I ESA is part of a Class Environmental Assessment (EA) Study carried out for the project to develop, identify and evaluate alternative solutions for the new east-west street connection between Kenaston Gardens and Rean Drive. The study area of the EA and of the Phase I ESA extends from Highway 401 to the south, Sheppard Avenue East to the north, Bayview Avenue to the west and to approximately 100 m east of Rean Drive. The focus area of the EA Study and this Phase I ESA which at this stage of the project is considered to be the preferred alternative (hereafter referred as "Site") includes the following lands:

- The existing road segment between Barberry Place and Rean Drive and the right of way;
- The lands between Kenaston Gardens and Barberry Place where the new road segment and the right of way are proposed to be built. These lands are occupied by residential dwellings and are expected to be acquired by the City of Toronto to complete the new road and the right-of-way.

The Phase I ESA was completed in general accordance with the November 2001 Canadian Standards Association document entitled Phase I Environmental Site Assessment, Z768-01 (R2012) and included a records review for the Site and the study area, a walkover of the Site and study area, evaluation of the available information, and reporting. The purpose of a Phase I ESA is to identify actual and potential site contamination within the study area in order to assist in the preliminary evaluation of the alternatives.

The CSA Phase I ESA was enhanced by including a review of the land use and cultural heritage as part of the EA study carried out for the project.

The Site (focus area) and the adjacent lands have been used for residential purposes since 1940s until present with the exception of the east part of the Site between Barberry Place and Rean Drive which was developed as an access road in the early 2000s. The adjacent lands have been mostly redeveloped with midrise condominium buildings or are currently under development with residential buildings.

In general, the lands within the study area have been used mainly for residential (residential houses and apartment buildings) and community uses (church and YMCA). In addition, a retail fuel outlet with four (4) underground storage tanks (USTs) is located within the study area at 2831 Bayview Avenue, approximately 100 m west of the west most part of the Site at the southeast corner of the intersection of Sheppard Avenue and Bayview Road. The retail fuel outlet has been in operation for over 50 years. In addition, several spills have been reported to occur on this property in 1994, 2007 and 2011. The spills reportedly consisted of spilling/releasing of 3,700 L, 500 L and 14 L of fuel to the ground and/or to the concrete surface.

A former fuel UST was located at a residential property located at 591 Sheppard Avenue East (the adjacent property north of the Site). This property is currently under redevelopment with residential buildings. Previous Phase II ESA studies completed by others for this property in 2012 did not identify soil or groundwater impacts at 591 Sheppard Avenue. In addition, a Record of Site Condition (RSC) was filed for the property in 2015. As



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such, the former UST is not considered to be an issue of potential environmental concern for the Site.

Based on the information obtained and reviewed as part of this Phase I ESA, no potentially contaminating activities (PCAs) were identified on the Site or on adjacent lands in immediate vicinity of the Site. However, the following PCA was identified within the study area that may have impacted the Site:

- Presence of a retail fuel outlet at 2831 Bayview Avenue with 4 USTs, approximately 100 m west and up-gradient of the Site. The retail fuel outlet has been in operation for over 50 years and there is potential for subsurface contamination associated with the 4 USTs and the reported spills. Given the distance between the Site (the focus area) and this PCA and that the Site is separated from this potential source of contamination by midrise buildings with deeper foundations, it is considered that the retail fuel outlet represents a medium risk for potential subsurface impact on the Site (focus area).

Based on the above findings, a scoped Phase II Environmental Site Assessment (Phase II ESA) is recommended to be completed in conjunction with the proposed geotechnical and hydrogeological studies to assess the presence/absence of soil and/or groundwater impacts in the west part of the Site at Kenaston Gardens due to potential contaminant migration from the retail fuel outlet. The Scoped Phase II ESA will assist in the planning and scoping of the construction phase of the project with regards to management of potentially contaminated materials (soil and/or groundwater) during the construction.



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1. INTRODUCTION

1.1 General

Morrison Hershfield Limited (MH) was retained by the City of Toronto to conduct a Phase I Environmental Site Assessment (Phase I ESA) for the new East-West connection between Rean Drive and Kenaston Gardens in the Bayview Village in Toronto, Ontario. The Phase I ESA is part of a Class Environmental Assessment (EA) Study carried out for the project to develop, identify and evaluate alternative solutions for the new east-west street connection between Kenaston Gardens and Rean Drive.

The study area of the EA and of the Phase I ESA extends from Highway 401 to the south, Sheppard Avenue East to the north, Bayview Avenue to the west and to approximately 100 m east of Rean Drive. The focus area of the EA Study and this Phase I ESA which at this stage of the project is considered to be the preferred alternative (hereafter referred as “Site”) includes the following lands:

- The existing road segment between Barberry Place and Rean Drive and the right of way;
- The lands between Kenaston Gardens and Barberry Place where the new road segment and the right of way are proposed to be built. These lands are occupied by residential dwellings and are expected to be acquired by the City of Toronto to complete the new road and the right-of-way.

The general location of the study and the focus area (the Site) is shown on the Key Plan, Figure 1 and a plan of the study and the focus area is shown on the Site Plan, Figure 2.

1.2 Scope of Work

The scope of work for the Phase I ESA carried out for the study area is based on the Canadian Standards Association (CSA) standard Z768-01 (R2012), Phase I Environmental Site Assessment. The major components of the Phase I ESA scope work included the following:

- A site history and records review;
- Ecolog ERIS report for selected databases review;
- A site visit;
- Interview(s) with person(s) familiar with the Site; and,
- Data evaluation, and reporting.

This Phase I ESA specifically excludes intrusive investigation and sampling of soil and/or groundwater and analysis of these media to determine concentrations of contaminants of concern.

In addition to the standard CSA Phase I ESA scope of work, the following items were included in this report which are required as part of the EA study:

- Land Use;
- Cultural Heritage.

This Phase I ESA has been carried out as part of a larger EA study for the project to identify actual and potential site contamination within the study area in order to assist in the preliminary evaluation of the alternatives and was completed in accordance with the CSA Standard Z768-01. The CSA Phase I ESA report is not sufficient to support a filing of a Record of Site Condition (RSC) pursuant to *Ontario Regulation 153/04 – Records of Site Condition – Part XV.1 of the Act*, made under the *Environmental Protection Act* for the Site, should a filing of an RSC be required.

2. SITE DESCRIPTION

2.1 Site Location

- There is no municipal address associated with the Site. The Site is located within the study area defined by Sheppard Avenue East to the north, HWY 401 to the south, Bayview Avenue to the west and approximately 100 m east Rean Drive in Bayview Village in Toronto as shown on Figures 1 and 2. The study area is located in a residential land use setting with some community and commercial land uses. The Site where the new road is considered to be built and is comprised of:
- The existing road segment between Barberry Place and Rean Drive and the right of way; and,
- The lands between Kenaston Gardens and Barberry Place where the new road segment and the right of way are proposed to be built. These lands are occupied by residential dwellings that are expected to be acquired by the City of Toronto to complete the new road and the right-of-way.

2.2 Present Use of Site

The Site is partially occupied by residential dwellings in the west part and by an asphalt road in the east part.

2.3 Topography, Hydrology and Geology

MH reviewed Ontario Geological Survey (OGS) maps and the City of Toronto interactive map available on-line to obtain information regarding the general geological and topographic conditions in the area. The following OGS maps were reviewed on line:

- Ontario Geological Survey, 2011. Bedrock geology of Ontario, Ontario Geological Survey, Miscellaneous Release---Data 126-Revision 1, Scale 1:250 000 - Bedrock Geology
- Ontario Geological Survey 2010. Surficial geology of Southern Ontario, Ontario Geological Survey, Miscellaneous Release--Data 128-REV Surficial Geology – Southern Ontario
- Armstrong, D.K. and Dodge, J.E.P. 2007. Paleozoic geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 219- Paleozoic Bedrock Geology – Southern Ontario
- Gao, C., Shiota, J., Kelly, R. I., Brunton, F.R., van Haaften, S. 2006. Bedrock topography and overburden thickness mapping, southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 207.

Geological information on the Site and the study area based on the above, is as follows:

Table 2-1: Topographical, Geological and Hydrological Information

TOPOGRAPHICAL, GEOLOGICAL, AND HYDROGEOLOGICAL INFORMATION		SOURCE OF INFORMATION
Topography	The overall slope of the study area is downwards in southeast direction. The study area is at elevation between 180 meters above sea level (mASL) and 169 mASL with a gentle slope towards east and southeast. The study area is in general at grade with the surrounding lands.	City of Toronto topography map
Physiography and Surficial Geology	The surficial geology at the study area is mapped as till- stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain. The subsurface conditions on the adjacent lands on the north of the Site are described as asphalt over granular base underlain by heterogeneous fill encountered at depths ranging between 0.8 and 2.3 metres below ground surface (mbgs) overlying native sandy silt till. The fill was described as comprised of sandy silt, clayey silt and silty clay with trace of organics.	OGS on-line geological maps Previous Phase II ESA report completed by SPL (refer to section 3.7.2 of this report)
Bedrock geology	Shale, limestone, dolostone, siltstone Georgian Bay Formation; Blue Mountain Formation; Billings Formation; Collingwood Member; Eastview Member	OGS on-line geological maps
Depth to Bedrock (expected)	The depth to bedrock is unknown, however, based on the information obtained from the boreholes and monitoring wells drilled in close proximity to the study area, the depth to the bedrock is greater than 15 m. Bedrock was not encountered in any of the 4 boreholes drilled to a depth between 1.2 and 12.5 mbgs on adjacent land north of the Site (591 and 593 Sheppard Avenue).	OGS on-line geological maps Previous Phase II ESA report completed by SPL (refer to section 3.7.2 of this report)
Local Groundwater flow direction (inferred)	The shallow groundwater flow is interpreted to be in east direction towards Don River East located approximately 1.65 km southeast of the study area.	Previous Phase II ESA report completed by SPL (refer to section 3.7.2 of this report)
Regional Groundwater	The regional groundwater flow is expected to be in south direction towards Lake	City of Toronto topography map

TOPOGRAPHICAL, GEOLOGICAL, AND HYDROGEOLOGICAL INFORMATION		SOURCE OF INFORMATION
Flow Direction (inferred)	Ontario located approximately 15 km south of the Site.	
Depth to groundwater	Between 4.82 and 5.15 mbgs	Previous Phase II ESA report completed by SPL (refer to section 3.7.2 of this report)
Nearest Open Water Body	Don River East Branch located approximately 1.65 km east of the study area	City of Toronto topography map
Water Wells	Based on the MOECC Water Well database and the 2012 SPL Phase II ESA report completed on adjacent lands north of the Site there are eight (8) monitoring wells in total installed within the study area in 2012 and 2013. The wells were drilled to an approximate depth of 15 m. No water supply wells are known to be present within the study area.	MOECC Water Well database Previous Phase II ESA report completed by SPL (refer to section 3.7.2 of this report)

3. RECORDS REVIEW

3.1 Aerial Photographs and Satellite Imagery

Historical satellite imagery was obtained from Google Earth, Bing Maps, and from the City of Toronto web mapping service. The aerial photographs were reviewed to determine on-site and land uses within the study area, and to identify areas of potential environmental concern. Table 3-1 below provides a summary of the review of aerial photographs and satellite imagery. Google Street View was used to determine present-day land use in more detail, where required. Annotated versions of the photographs viewed are included in Appendix B.

Table 3-1: Aerial Photograph Review

Year	Quality	Site (Focus Area)	Properties North of the Site Within the Study Area	Properties South Of The Site Within the Study Area	Properties East of the Site Within the Study Area	Properties West of the Site Within the Study Area
1947	Fair	Most part of the Site is Farm Land, and the central part of the Site is partially occupied by residential houses	Residential houses along Sheppard Ave East	Farm Land	Farm Land	Farm Land
1956	Good	Kenaston Gardens starts development, and Barberry PL is under construction. Rean Drive is built and appears as it is at the present. Site is mostly vacant land with some residential development in the west and east parts	Residential houses are developed at 591 Sheppard Ave and 593 Sheppard Ave and Barberry place is under construction	Residential houses followed by Hwy 401 which is under construction	Residential houses and vacant lands	Residential houses and vacant lands
1960	Good	Similar to 1956, however, Barberry PL is further developed	More residential houses are built along Barberry PL	More residential houses are built adjacent to the Site	More residential houses are built adjacent to the Site	2831 Bayview Street is developed with a commercial type building (possible gas station). The remaining lands are occupied by residential dwellings.
1966	Fair	No Change	18-26 Rean Drive are under construction	No Change	No Change	The residential houses at 567 Sheppard Ave E are demolished. 2831 Bayview appears to be a gas station.

Year	Quality	Site (Focus Area)	Properties North of the Site Within the Study Area	Properties South Of The Site Within the Study Area	Properties East of the Site Within the Study Area	Properties West of the Site Within the Study Area
1977	Poor	No Change	More residential houses are developed	Kenaston Gardens is extended further south and more residential houses are built	No Change	2831 Bayview street is still occupied by the gas station. The remaining lands are vacant or occupied by residential dwellings.
1987	Fair	No Change	No Change	No Change	No Change	The gas station at 2831 Bayview is still present. 567 Sheppard Ave E is developed with the current YMCA building.
2002	Good	The asphalt road currently connecting Barberry PL and Rean Drive is under construction	No Change	Houses on the south of the Site are demolished and high rise buildings are under construction	No Change	The gas station at 2831 Bayview Street is still present but appears to be redeveloped. The remaining lands are similar to 1987 and are occupied by residential dwellings and YMCA building.
2009	Good	The asphalt road connecting Barberry PL and Rean Drive is developed to current condition	Houses at 18-26 Rean Drive are replaced by one high rise condominium	More high rise condominium are built	Residential houses are replaced by high rise condominium	Similar to 2002 with the addition that the lands occupied by the residential dwellings are redeveloped with high-rise condominiums.
2015	Good	No Change	Building at 18 Rean Drive is built	Houses at 17-25 Kenaston Gardens are replaced by high rise condominium	No Change	No Change

The historical aerial photos suggest that the Site and the adjacent lands within the study area have been used for residential purposes since 1940s. A gas station has been present at 2831 Bayview Avenue (southeast corner of the intersection of Bayview Avenue and Sheppard Avenue East) since 1960s and it is still present. The Site has been vacant land in its majority

with some residential houses located on the west, east and central part of the Site in 1940s, 1950s, 1960s, 1970s and 1980s. The asphalt access between Barberry Place and Rean Drive which is part of the Site was constructed around year 2000s.

2831 Bayview Ave has been a gas service station for over 50 years, therefore the land use at 2831 Bayview Ave is identified as Potentially Contaminating Activity (PCA).

3.2 Ecolog ERIS Database Report

MH retained EcoLog Environmental Risk Information Services Ltd. (EcoLog ERIS) to complete a search of selected databases that provide environmentally pertinent records for the study area. The Ecolog ERIS report searches federal, provincial and private sector databases and provides historical environmental information for any property in Canada. The Ecolog ERIS report is used to assist in the identification of possible environmental concerns or risks for commercial, industrial and residential sites. As part of this Phase I ESA, MH requested Ecolog ERIS to search the following twelve (12) databases: Automobile Wrecking and Supplies (AUWR), Commercial Fuel Oil Tanks (CFOT), Coal Gasification Plants (COAL), Fuel Storage Tank (FST), Ontario Regulation 347 Waste Generators Summary (GEN), Inventory of PCB Storage Sites (OPCB), Private and Retail Fuel Storage Tanks (PRT), Ontario Regulation 347 Waste Receivers Summary (REC), Scott's Manufacturing Directory (SCT), Ontario Spills (SPL), Anderson's Storage Tanks (TANK), Transport Canada Fuel Storage Tanks (TCFT). The review of the EcoLog ERIS report indicated the following:

Summary of the Site (Focus Area) Information

The above noted databases were searched and no records were found for the Site.

Summary of the Study Area Information

- The EcoLog ERIS report listed the following registered waste generators within the study area:
 - Daniels Corporation (real estate developer in Toronto) at 18 Dean Drive was identified as a hazardous waste generator of light fuels in 2013.
 - TSCC 1496 (real estate property managers) at 3 Rean Drive was identified as a waste generator of aliphatic solvents in 2010.
 - YMCA at 567 Sheppard Avenue East (approximately 65 m west of the Site) was identified as a waste generator of paint/pigment/coating residues and PCBs in 2005.
 - Shell Canada Products at 2831 Bayview Avenue was identified as a waste generator of light fuels and waste oils since 2012 up to date.
- 2831 Bayview Ave (approximately 100 m west of the Site) was listed as a gas station since 1991 or earlier. Several historical and current underground storage tanks were also identified at this property. There are also three reported spills events with 3,700, 500L and 14 L of gasoline occurred on this property in 1994, 2007 and 2011, respectively. It was indicated that soil contamination and surface water pollution associated with the spills were confirmed.

Based on the review of Ecolog ERIS report, no PCAs were identified on the Site, however, a retail fuel outlet (currently Shell) located at 2831 Bayview Avenue (approximately 100 m west of the Site and up-gradient of the Site) has been identified within the study area. In addition, several reported gasoline spills occurred on this property. As such, the retail fuel outlet is considered to be a PCA that can impact the subsurface at the Site. Given the distance between the Site and the gas station and that the Site is separated from this potential source of contamination by midrise buildings with deeper foundations, it is considered that the retail fuel outlet represents a medium risk for potential subsurface impact on the Site (focus area).

The hazardous waste generators (Daniels Corporation, TSCC 1496 and YMCA) identified in the Ecolog ERIS report are not considered to be potential environmental concern given the nature of the activities associated with these generators (real estate developers, real estate managers and a community recreational center).

The complete EcoLog ERIS report, including a brief description of each of the databases searched for this Phase I ESA is included in Appendix C.

3.3 Fire Insurance Plans

MH conducted a search of available Fire Insurance Plans (FIPs) at the City of Toronto website to review fire insurance plans or drawings for the Site and the study area. No on-line FIPs were available for the Site or the study area.

FIPs for year 1959 Volume 10 were previously ordered from the Catalogue of Canadian Fire Insurance Plans (1875-1975) for the properties located at 591 and 593 Sheppard Avenue East (adjacent properties to the north of the Site) and the surrounding areas within 250 m of these properties as part of the Phase I ESA completed by SPL in 2012 for these two properties (discussed in section 3.7.1 of this report). The FIPs ordered and reviewed during the 2012 SPL Phase I ESA report in general covered the current Phase I ESA study area. The FIPs did not identify any issues of potential environmental concern within the study area other than the presence of a gasoline service station with four (4) underground storage tanks (USTs) located at 2831 Bayview Avenue (southeast corner with Sheppard Avenue East) which is still being used as Shell retail fuel outlet.

Based on the above mentioned considerations and that there are other sources of background information for the study area, it is considered not necessary to order FIPs as part of this Phase I ESA. It was deemed that other information from the records review (including the FIPs from the 2012 SPL Phase I ESA) would satisfy the objectives of the records search and that it would not contribute additional environmental information.

3.4 Chain of Title Search

A chain of title search was not provided for review for this Phase I ESA. The part of the Site occupied by residential dwellings is currently owned by private parties and the part of the Site occupied by road has municipal ownership.

3.5 City Directories

MH retained the services of EcoLog ERIS to provide the City directories for the Site and selected addresses within the study area for the years of 2000, 1995, 1990, 1985, 1980, 1975, 1971, 1965, and 1960. The following was noted based on the City directories review:

- 2831 Bayview Ave has been listed as a gas station since 1965.
- 567 Sheppard Ave East has been listed as YMCA since 1995.
- 573 Sheppard Ave East was listed as a dental office in 1995.

- 2 Rean Drive, 8 Rean Drive, 12 Rean Drive, 15 Rean Drive, 20 Rean Drive, 18 Kenaston Gardens, 25 Kenaston Gardens, 38 Kenaston Gardens have always been listed as residential properties.

The city directory search also confirmed the residential and community land uses on the Site and within the study area. It also confirmed that 2831 Bayview Avenue has been a gas station over 50 years.

3.6 Local and Municipal Government Inquires

3.6.1 Ontario Ministry of Environment and Climate Change

The Ontario Ministry of Environment and Climate Change (“MOECC”) was contacted (refer to copy of correspondence in Appendix A) to provide an Index Report with respect to active orders and approvals for the selected addresses within the study area as detailed below:

- Active orders under the Environmental Protection Act (“EPA”), the Ontario Water Resources Act (“OWRA”), and the Pesticides Act (“PA”); and,
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

A response from the MOECC was received by MH on July 22, 2016. The MOECC response provided information regarding the publically available MOECC resources and databases. The review of these resources is provided in the sections below:

3.6.1.1 MOECC Waste Disposal Site Inventory, June 1991

A search of the 1991 MOE (Waste Disposal Site Inventory) indicates that the Site or the study area are not registered as a former or current waste disposal site and that there are no records of closed or active waste disposal sites within 1 km of the study area.

3.6.1.2 MOE Database on Brownfields Environmental Site Registry - Records of Site Condition (RSC), October 2004

A search of the Brownfields environmental site registry was carried out for the Site and the study area to determine whether a Record of Site condition Under Part XV.1 of the Environment Protection Act has been filed for the Site or the study area. The search indicated that an RSC has been filed for the following properties located within the study area.

- RSC was filed on July 12, 2012 for the residential properties located at 16 to 26 Rean Drive. The RSC was filed on the basis of Phase I ESA.
- RSC was filed on November 27, 2015 for properties located at 591 to 593 Sheppard Avenue East based on the Phase I and II ESA.

3.6.2 Technical Standards and Safety Authority

The Technical Standards and Safety Authority (“TSSA”) was contacted via e-mail (refer to copy of correspondence in Appendix A) to determine if any USTs were registered on selected

addresses within the study area. Note: Since it is known that 2831 Bayview is occupied by a gas station, this address was excluded from the search.

Mr. Prem Lal at TSSA responded via email on July 15, 2016 and indicated that the TSSA does not have records in their database of any fuel storage tanks at the Site and on the searched addresses on the adjacent lands.

3.6.3 City of Toronto

MH contacted the project manager at City of Toronto via email (see the correspondence in Appendix A) to request records and information that the City of Toronto may have on file for the study area related to any environmental concerns, including active orders, notices, charges, spills, violations or records of non-compliance or dumping infractions.

At the time of the preparation of this report a response from the City of Toronto regarding the above requested information has not been received. However, as part of this Phase I ESA the City of Toronto provided previous Phase I and Phase II ESA reports for two properties located on adjacent lands north of the Site (591 and 593 Sheppard Avenue East). The review of these reports is provided in Section 3.7 below.

3.7 Client-Provided Reports and Background Information

As part of this project the City of Toronto provided the following the following Phase I and II ESA reports completed for 591 and 593 Sheppard Avenue East in Toronto which are located on adjacent lands north of the Site within the study area:

- Report entitled “*Phase I Environmental Site Assessment, 591 and 593 Sheppard Avenue East, Toronto, Ontario*” prepared for 1834373 Ontario Inc. by SPL Consultants Ltd. dated August 31, 2012 (2012 SPL Phase I ESA report).
- Report entitled “*Phase II Environmental Site Assessment, 591 and 593 Sheppard Avenue East, Toronto, Ontario*” prepared for 1834373 Ontario Inc. by SPL Consultants Ltd. dated September 4, 2012 (2012 SPL Phase II ESA report).

3.7.1 2012 SPL Phase I ESA report

The review of the 2012 SPL Phase I ESA indicated the following:

- The Phase I ESA was completed for two properties located at 591 and 593 Sheppard Avenue East, where is adjacent to the focus area (Site) and within the study area. The Phase I ESA was completed for redevelopment purposes.
- The property located at 591 Sheppard Avenue was occupied by a residential dwelling built in the 1950s. The property was historically occupied by residential dwellings.
- The property located at 593 Sheppard Avenue has been occupied by Evangelical Presbyterian Church semi-attached to a residential dwelling since 1970s until the present. Prior to 1970s, the property has been historically used for residential purposes.

- The surrounding lands were used mainly for residential purposes with some commercial uses. There were a retail fuel outlet and an auto body shop approximately 270 m of 591 Sheppard Avenue East.
- Both properties are currently heated with natural gas. Vent and fill pipes extending through the west exterior wall of the property located at 591 Sheppard Avenue East were noted during the 2012 Phase I ESA Site visit. It was indicated that the pipes are likely associated with underground storage tank (UST) which is currently not in use. (Note: The UST was located approximately 50 m north of the Site).
- It was indicated that fill material was expected to have been used during the development of the properties and also to backfill suspect former basement structures.
- The 2012 SPL Phase I ESA identified the following potentially contaminating activities that may have impacted the soil and/or groundwater quality at the site and which are relevant to the current Phase I ESA study area:
 - Possible presence of fill material on 591 and 593 Sheppard Avenue East.
 - Presence of fuel UST at 591 Sheppard Avenue East.
 - De-icing use along the roadways in the study area.
 - Historical and current presence of a retail fuel outlet with 4 USTs at the southeast corner of Bayview Avenue and Sheppard Avenue East at 2831 Bayview Avenue. The retail fuel outlet is located at the west part of the current Phase I ESA study area and approximately 100 m west of the focus area (the Site).
- The 2012 SPL Phase I ESA recommended that a Phase II ESA to be completed to assess the soil and groundwater quality at the site.

3.7.2 2012 SPL Phase II ESA report

Following the completion of the 2012 SPL Phase I ESA and recommendation for a Phase II ESA, SPL conducted a Phase II ESA at 591 and 593 Sheppard Avenue East to address the identified PCAs as described above. The Phase II ESA was completed for due diligence purposes prior to the redevelopment of the properties. The review of the 2012 SPL Phase II ESA indicated the following:

- Four (4) boreholes were completed on the two properties (591 and 593 Sheppard Avenue). Three of boreholes were advanced to a depth of 9.4-12.5 mbgs and were installed with monitoring wells. The fourth borehole completed in close proximity to the fuel UST at 591 Sheppard Avenue was hand augured and was extended to a depth of 1.2 mbgs.
- One or two soil samples were selected from each of the boreholes and submitted for laboratory analysis of petroleum hydrocarbons (PHCs) F1 to F4, volatile organic compounds (VOCs), metals and inorganics. Groundwater samples were collected from the 3 monitoring wells and submitted for analysis of PHCs F1 to F4, VOCs and metals.
- The depth to the groundwater in the 3 monitoring wells measured on August 20, 2012 was 3.86, 4.82 and 5.15 mbgs. The groundwater flow direction was interpreted to be in east, southeast direction towards East Don River.
- The results of soil and groundwater analysis indicated that the concentrations of the contaminants of concern in soil and groundwater were below MOECC Table 3 Standards for residential property use. No sheen or odour was noted in groundwater.

- It was indicated that impacted PHC soils may be encountered during excavation in immediate vicinity and bedding soil of the UST at 591 Sheppard Avenue.

MH Note: During the 2012 SPL Phase II ESA, the groundwater and soil quality at depths where potential PHC impacts would occur due to the presence of the fuel UST were not investigated. Only a shallow hand augured borehole was completed in the UST area to a depth of 1.2 mbgs due to possible tank obstruction which is considered to be inadequate to address potential subsurface impacts associated with the UST. However, a monitoring well was installed downgradient, approximately 40 m southeast of the UST location and in close proximity, north of the Site. No groundwater impacts were identified in any of the 3 wells installed at 591 Sheppard Avenue including the well which is in close proximity to the Site and downgradient of the UST suggesting that no PHC contamination migrated downgradient from the UST area. In addition, these properties are currently under redevelopment involving excavations which would remove potentially contaminated soil (if any is encountered). Furthermore, an RSC was filed for these properties in November 27, 2015 (see section 3.6.1.2 of this report) which is a certification that the environmental condition at the properties met the applicable standards at the time of the filing of the RSC. Based on the aforementioned, the presence of the former UST is not considered to be an issue of potential environmental concern for the Site.

3.8 Land Use

Currently, the road segment between Barberry Place and Rean Drive has already been constructed with adjacent properties mostly redeveloped to mid-rise condominiums including The Claridges (#12 Rean Drive), NY Towers "NY2" (#18 Rean Drive) and Amica at Bayview (#15 Barberry Place). Current development in this east segment is the Liberty Development (591, 593 and 595 Sheppard Avenue).

The proposed road segment between Kenaston Gardens and Barberry Place has not been constructed. The development to the south of the proposed alignment has already been built including The Chelsea (19 Barberry Place) and NY Place (#17 Kenaston Gardens). Current development in the west segment is the Chestnut Hill Developments (5-15 Kenaston Gardens, 573-577 Sheppard Avenue).

3.9 Cultural Heritage

The Thomas Clark House at #9 Barberry Place is designated under the Ontario Heritage Act. This heritage house will remain and would not be impacted by the proposed improvements

4. SITE VISIT

4.1 Methodology and Limiting Conditions

A site visit was conducted on Thursday, July 21th, 2016, by Cindy Zhao of Morrison Hershfield. The site visit included a visual inspection of the Site and study area from publicly accessible areas for signs of potential contamination or potentially contaminating activities. There are a number of high rise apartment buildings and residential dwellings located within the study area and on the Site. These properties were not part of the Phase I ESA and as such, they were assessed based on the exterior observations made from publically accessible area. Photographs were taken to document the conditions, which are included in Appendix D.

The locations and the limits of the Site and the study area are shown on Figure1 and 2 following this report.

Findings from the Site visit are summarized below.

4.2 Interior Observations

The residential house located at 23 Barberry Place located on the west part of the Site was not part of the Phase I ESA and as such, were not assessed. Thus, no interior observations were made during the Site visit.

4.3 Exterior Observations

4.3.1 Observation of the Site (Focus Area)

The Site extends from Kenaston Gardens to the east to Rean Drive. The west part of the Site between Kenaston Gardens and Barberry Place is occupied by two residential dwellings, 15 Kenaston Gardens and 23 Barberry Place. At time of the site visit, the residential houses at 5-15 Kenaston Gardens were demolished and the area was under construction. The part of the Site between Barberry Place and Rean Drive is partially occupied by a residential dwelling (13 Barberry Place) and the remaining part is asphalt access road between two high rise condominiums.

During the Site visit it was noted that the residential houses located on the Site and along Kenaston Gardens, Rean Drive and Barberry Place (which were observable) were natural gas heated (i.e. had gas meters). No vent or fill piles extending through the exterior walls or through the ground indicating potential presences of aboveground storage tanks (ASTs) or USTs were noted.

4.3.2 Observation of the Study Area

The study area is mainly occupied by high rise condominiums, apartment buildings, residential dwellings with some community buildings (church and YMCA). In addition, a Shell retail fuel outlet is located at the southeast corner of Sheppard Avenue and Bayview Avenue (2831 Bayview Ave), approximately 100 m west of the Site and within the study area. An ESSO retail

outlet is located just across the Shell retail outlet at the southwest corner of Sheppard Avenue east and Bayview Avenue, outside the study area.

During the 2012 SPL Phase I ESA, fill and vent pipes associated with a UST were noted at 591 Sheppard Ave East. At time of the Site visit, 591 and 593 Sheppard Ave East were under construction, therefore the previously identified UST at 591 Sheppard Ave East is assumed have been removed during the house demolition. Where observable from publically accessible area it was noted that the buildings within the study area were heated by natural gas.

4.3.3 Topographic, Geologic and Hydrogeologic Conditions

The Site is in grade with the surrounding lands with a gently slope in east direction. The overall slope of the study area is in the southeast direction. During the Site visit there were no trenches, pits or lagoons within the study area to allow observations of the subsurface conditions.

4.3.4 General Description of Structures

There were no structures on the Site at the time of the inspection except a residential house located at 13 Barberry Place.

4.3.5 Chemical or Fuel Storage

No chemical or fuel storage was observed on or in the vicinity of the Site at the time of the inspection.

4.3.6 Storage, Handling and Disposal of Hazardous Materials

No hazardous waste was observed or reported to be generated or stored on the Site at the time of the Site visit.

4.3.7 Aboveground Storage Tanks (ASTs)

No evidence of ASTs was noted on the Site. In addition, observations were made from publically accessible areas for potential evidence of fill or vent pipes extending through exterior walls that could be associated with ASTs within the study area. No evidence of potential presence of ASTs were noted within the study area. It was observed that the majority of the buildings within the study area were heated via natural gas.

4.3.8 Underground Storage Tanks (USTs)

Based on information obtained during the Phase I ESA, no petroleum or chemical USTs are suspected to be present on the Site. In addition, observations were made from publically accessible areas for potential evidence (filler/vent pipes extending through walls or slabs/ground surface) of USTs within the study area. It was noted that fuel USTs associated with a retail fuel outlet located at 2831 Bayview Ave were present approximately 100 m west of the Site.

4.3.9 Wells and Water Supply

No water supply wells or monitoring wells were noted on the Site or within the study area.

4.3.10 Sewage Disposal and Wastewater

No indication of sewage disposal was observed in the vicinity of the Site or within the study area during the site visit.

4.3.11 Pits and Lagoons

No pits or lagoons were observed on the Site or within the study area at the time of the inspection.

4.3.12 Stained Materials and Stressed Vegetation

Minor staining was observed on the asphalt road on the Site during the site inspection. No other apparent staining was observed.

4.3.13 Fill

No piles of fill material were observed on the Site during the site inspection. Fill material used for construction purposes (i.e. roadway sub-base, building foundations) was observed at the construction site at 5-15 Kenaston Gardens.

4.3.14 Watercourses, Ditches, and Standing Water

No watercourses, ditches or standing water were present on or in the vicinity of the Site and within the study area at the time of the inspection.

4.3.15 Roads, Parking Facilities, and Rights of Way

The Site is occupied by a residential house and an asphalt road.

5. INTERVIEWS

5.1 Property Owner

The part of the Site occupied by the road and the right of way is owned by City of Toronto and the part of the Site occupied by the residential dwelling is owned by a private party. A request for information was sent to the City of Toronto to obtain relevant environmental information for the Site (see section 3.6.3 of the report).

5.2 Site Manager

MH contacted the project manager at City of Toronto via email (see the correspondence in Appendix A) to request records and information that the City of Toronto may have on file for the study area related to any environmental concerns, including active orders, notices, charges, spills, violations or records of non-compliance or dumping infractions.

At the time of the preparation of this report a response from the City of Toronto regarding the above requested information has not been received. However, as part of this Phase I ESA the City of Toronto provided previous Phase I and Phase II ESA reports for two properties located on adjacent lands north of the Site (591 and 593 Sheppard Avenue East). The review of these reports is provided in Section 3.7.

5.3 Occupants

There are no occupants on the Site other than the occupants associated with the residential house on 13 Barberry Place.

5.4 Local Government Officials

No government officials were interviewed as part of this assessment.

5.5 Other

Given the nature of the Site (occupied by a road and a residential dwelling) no other individuals were interviewed as part of this assessment.

6. FINDINGS AND EVALUATION OF FINDINGS

The Site (focus area) and the adjacent lands have been used for residential purposes since 1940s until present with the exception of the east part of the Site between Barberry Place and Rean Drive which was developed as an access road in the early 2000s. The adjacent lands have been mostly redeveloped with midrise condominium buildings or are currently under development with residential buildings.

In general, the lands within the study area have been used mainly for residential (residential houses and apartment buildings) and community purposes (church and YMCA). In addition, a retail fuel outlet with four (4) USTs is located within the study area at 2831 Bayview Avenue (at the southeast corner of the intersection of Sheppard Avenue East and Bayview Avenue), approximately 100 m west and up-gradient of the Site. The retail fuel outlet has been in operation for over 50 years. In addition, several spills have been reported to occur on this property in 1994, 2007 and 2011. The spills reportedly consisted of spilling/releasing of 3,700 L, 500 L and 14 L of fuel to the ground and/or to the concrete surface.

A former fuel UST was also located at a residential property located at 591 Sheppard Avenue (the adjacent property north of the Site). This property is currently under redevelopment with residential buildings. Previous Phase II ESA studies completed by others for this property in 2012 did not identify soil or groundwater impacts at 591 Sheppard Avenue. In addition, an RSC was filed for this property in 2015. As such, the former UST is not considered to be an issue of potential environmental concern for the Site.

Based on the information obtained and reviewed as part of this Phase I ESA, no PCAs were identified on the Site, however, the following potentially PCA was identified within the study area:

- Presence of a retail fuel outlet at 2831 Bayview Avenue with 4 USTs. The retail fuel outlet has been in operation for over 50 years and there is potential for subsurface contamination associated with the 4 USTs and the reported spills. Given the distance between the Site (the focus area) and this PCA (approximately 100 m) and that the Site is separated from this potential source of contamination by midrise buildings with deeper foundations, it is considered that the retail fuel outlet represents a medium risk for potential subsurface impact on the Site (focus area).

7. CONCLUSIONS AND RECOMMENDATIONS

Based on the information obtained and reviewed as part of this Phase I ESA, no PCAs were identified on the Site or on adjacent lands in immediate vicinity of the Site. However, the following PCA was identified within the study area that may have impacted the Site:

- Presence of a retail fuel outlet at 2831 Bayview Avenue with 4 USTs (approximately 100 m west and up-gradient of the Site). The retail fuel outlet has been in operation for over 50 years and there is potential for subsurface contamination associated with the 4 USTs and the reported spills. Given the distance between the Site (the focus area) and this PCA and that the Site is separated from this potential source of contamination by midrise buildings with deeper foundations, it is considered that the retail fuel outlet represents a medium risk for potential subsurface impact on the Site (focus area).

Based on the above findings, a scoped Phase II Environmental Site Assessment (Phase II ESA) is recommended to be completed in conjunction with the proposed geotechnical and hydrogeological studies to assess the presence/absence of soil and/or groundwater impacts in the west part of the Site at Kenaston Gardens due to potential contaminant migration from the retail fuel outlet. The Scoped Phase II ESA will assist in the planning and scoping of the construction phase of the project with regards to management of potentially contaminated materials (soil and/or groundwater) during the construction.

8. CLOSURE

We trust the above meets with your current requirements. Should you have any comments, questions, or require additional information, please do not hesitate to contact this office.

Respectfully Submitted

Morrison Hershfield Limited



Cindy Zhao, M.A. Sc.
Hydrogeologist-in-Training



Anthony West, Ph.D., P.Eng.
Senior Geo-Environmental Engineer
on Behalf of
Maria Staneva, M.Eng., P.Eng.
Senior Geo-Environmental Engineer

9. LIMITATIONS AND USE

This report has been prepared for the exclusive use by City of Toronto, by Morrison Hershfield Limited (Morrison Hershfield). Morrison Hershfield hereby disclaims any liability or responsibility to any person or party, other than City of Toronto, for any loss, damage, expense, fines, or penalties which may arise from the use of any information or recommendations contained in this report by a third party.

In preparing this report Morrison Hershfield has relied in good faith on information provided by individuals and companies noted in this report. Morrison Hershfield assumes that the information provided is factual and accurate, and accepts no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of the persons interviewed or contacted.

The report, which specifically includes all tables, figures and appendices is based on data and information collected during investigations conducted by Morrison Hershfield and is based solely on the conditions of the site at the time of the investigation, supplemented by historical information and data obtained by Morrison Hershfield as described in this report. No intrusive sampling or analysis was conducted as part of the Phase I ESA. Furthermore, no assurance is made regarding changes in conditions and/or the regulatory regime (standards, guidelines, etc.), subsequent to the time of investigation.

Morrison Hershfield has exercised professional judgment in collecting and analyzing the information and formulating recommendations based on the results of the study. The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to this study. No other warranty or representation, either expressed or implied, as to the accuracy of the information or recommendations included or intended in this report.

10. QUALIFICATIONS OF THE ASSESSORS

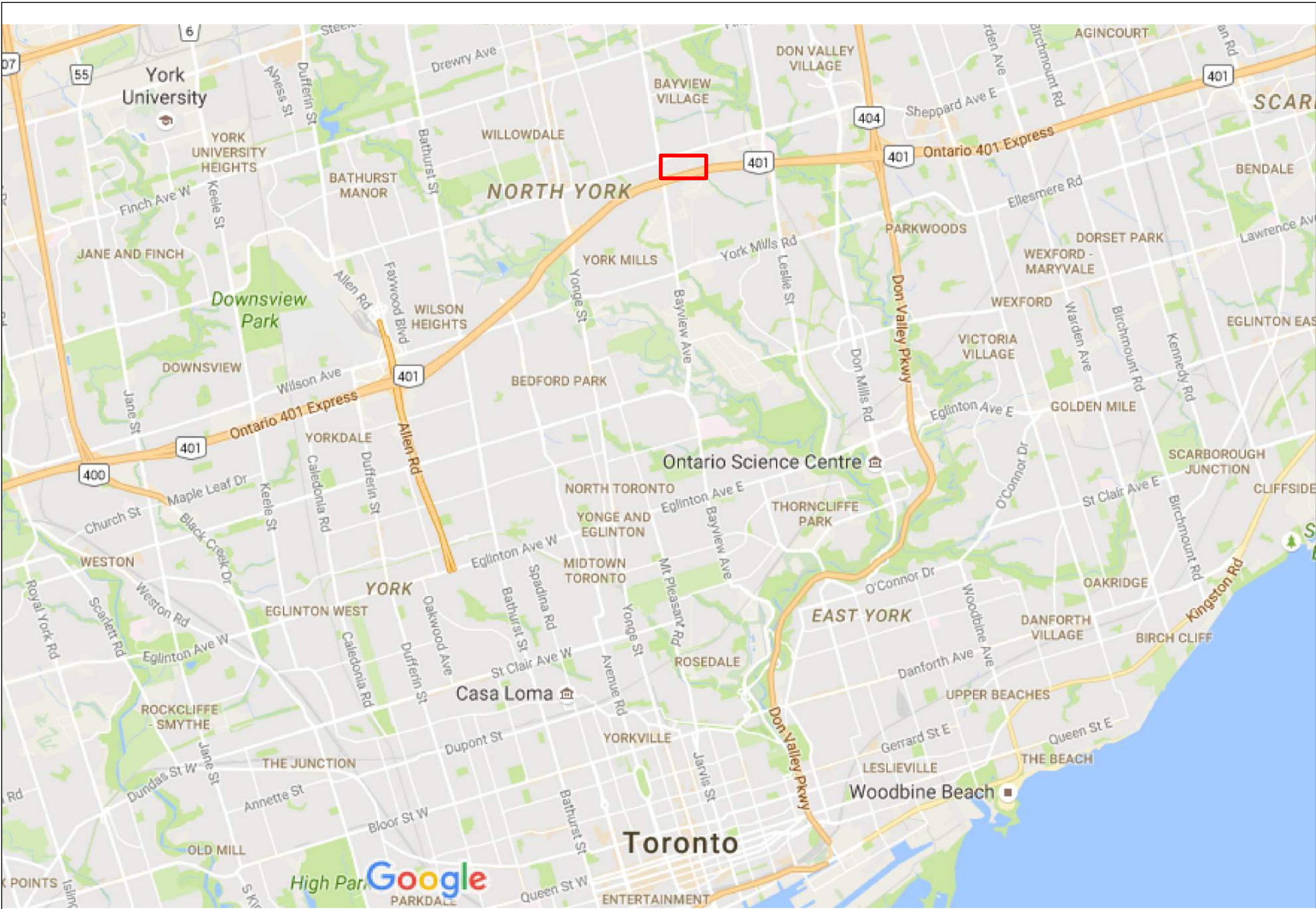
Maria Staneva, M.Eng., P.Eng., Senior Geo-Environmental Engineer

Maria is a senior geo-environmental engineer with 10 years of experience in conducting various Phase I, Phase II and Phase III Environmental Site Assessments in accordance with the federal and provincial requirements (O. Reg. 153/04) and CSA Standards, including conducting contaminated site investigations, interviews, site visits, obtaining and reviewing historical and regulatory records, report writing, project management and proposal preparation. She is involved in developing and managing work programs for Phase II and III ESA including design and implementation of a sampling and analysis plan, identifying the presence/absence and delineation of contamination, results interpretation and report writing, developing remedial action plans and remedial options evaluation, developing Phase I and Phase II ESA conceptual site models in accordance with O.Reg.153/04, and filing RSCs with the MOECC.

Cindy Zhao, M.A.Sc., Hydrogeologist-in-training.

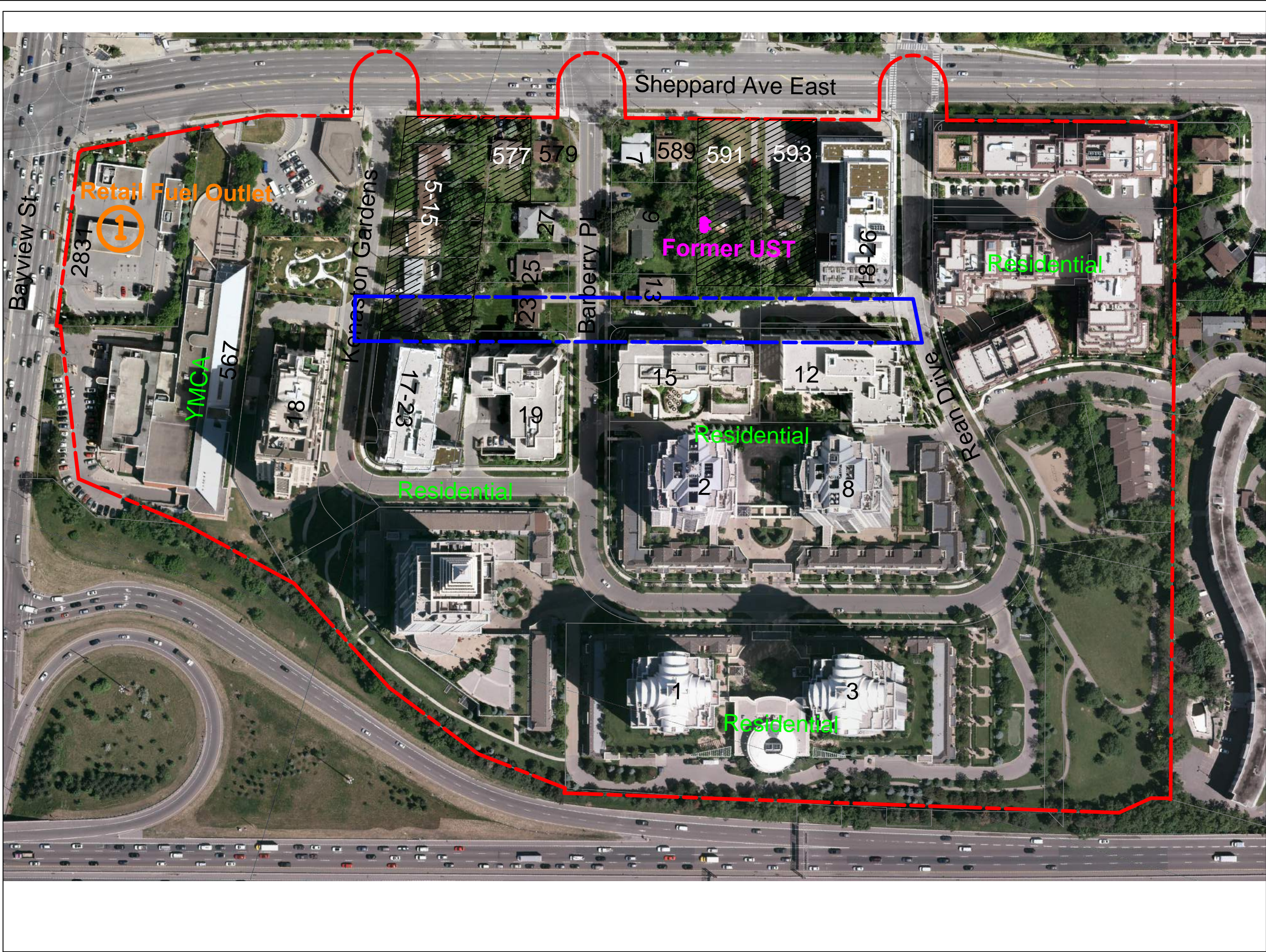
Cindy is a hydrogeologist in training with more than two years of experience in various Phase I and Phase II Environmental Site Assessments in accordance with the federal and provincial requirements (O. Reg. 153/04) and CSA Standards, including obtaining and reviewing historical and regulatory records, conducting interviews and site visits, and report writing. She is also actively involved in contaminated soil and groundwater inspections and remediation and free product remediation as part of roadway construction projects. Ms. Zhao was responsible for site visit and elements of the records review and reporting for this Phase I ESA.

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LEGEND	
	Study Area
	
PROJECT: EXTENSION OF REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO	
PREPARED FOR: 	
DESIGNED BY:	CINDY ZHAO
DRAWN BY:	CINDY ZHAO
CHECKED BY:	MARIA STANEVA
DATE:	JULY 27, 2016
SCALE:	N.T.S
PROJECT NO:	1160517
TITLE: LOCATION PLAN PHASE I ENVIRONMENTAL SITE ASSESSMENT REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO	
FIGURE NO:	1

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LEGEND

Study Area

Property Parcel

Focus Area (Site)

Properties in Construction

Low Risk for Subsurface Impacts on the Site

Medium Risk for Subsurface Impacts on the Site

High Risk for Subsurface Impacts on the Site

Potentially Contaminating Activities (PCAs)

Retail outlet with 4 USTs that has been in operation for over 50 years

MORRISON HERSHFIELD

PROJECT:

EXTENSION OF REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO

PREPARED FOR:

TORONTO

DESIGNED BY:

CINDY ZHAO

DRAWN BY:

CINDY ZHAO

CHECKED BY:

MARIA STANEVA

DATE:

JULY 27, 2016

SCALE:

5m 0m 10m 30m

PROJECT NO:

1160517

TITLE:

SITE PLAN
PHASE I ENVIRONMENTAL SITE ASSESSMENT
REAN DRIVE TO KENASTON GARDENS,
TORONTO, ONTARIO

FIGURE NO:

2

APPENDIX A: Regulatory Requests and Responses

Sue Bilek

From: Prem Lal <plal@tssa.org> on behalf of Public Information Services
<publicinformationservices@tssa.org>
Sent: Friday, July 15, 2016 4:59 PM
To: Maria Staneva
Subject: RE: Request for Information, Toronto East-West Extension Rean Drive/Kenaston Gardens

Hi Maria:

Thank you for your inquiry.

We have no record in our database of any fuel storage tanks at the subject address (addresses).

For a further search in our archives please submit your request in writing to Public Information Services via e-mail (publicinformationservices@tssa.org) or through mail along with a fee of \$56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard) or with a Cheque made payable to TSSA.

Thank you

Prem



Prem Lal | Public Information Coordinator

Facilities and Business Services

3300 Bloor Street West

Centre Tower, 16th Floor

Toronto, Ontario M8X 2X4

Tel: +1-416-734-3570 | Fax: +1-416-734-3568 | E-Mail: plal@tssa.org

www.tssa.org



From: Maria Staneva [mailto:MStaneva@morrisonhershfield.com]

Sent: Thursday, July 14, 2016 1:18 PM

To: Public Information Services

Subject: Request for Information, Toronto East-West Extension Rean Drive/Kenaston Gardens

Hi Sarah,

Could you please review your records to determine if any bulk fuel underground storage tanks were registered on or near the addresses in Toronto listed below. Also can you please check for any records of spills or accidents.

567, 573 Shappard Avenue East
20, 12, 2, 8, 15, 12 Rean Drive
13 Barberry Place
18 Kenaston Gardens

Thank you!

Maria

Maria Staneva, M.Eng., P.Eng.
Senior Geo-Environmental Engineer
mstaneva@morrisonhershfield.com



2440 Don Reid Drive | Ottawa, ON K1H 1E1 Canada
Dir: 613 739 2910 x1022226 | Cell: 613-262-0032 | Fax: 613 739 4926
morrisonhershfield.com

This electronic message and any attached documents are intended only for the named recipients. This communication from the Technical Standards and Safety Authority may contain information that is privileged, confidential or otherwise protected from disclosure and it must not be disclosed, copied, forwarded or distributed without authorization. If you have received this message in error, please notify the sender immediately and delete the original message.

Sue Bilek

From: Maria Staneva
Sent: Friday, July 15, 2016 10:17 AM
To: Andrew Chislett
Cc: Cindy Zhao; Anthony West
Subject: Phase I ESA City of Toronto Request for Information Rean-Kenaston new road

Good Morning Andrew,

Cindy and I are working on the Phase I ESA part of the Kenaston Gardens – Rean Drive extension project. In this regard could please assist to provide any environmental information that the City of Toronto may have on file for the study area including but not limited to the information below. Just FYI, Steve Forester at the City of Toronto has already provided a Phase I ESA for 591 to 593 Sheppard Avenue.

- active orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA);
- approvals;
- reports relating to environmental concerns;
- records of non-compliance or regulatory concerns;
- dumping infractions, spills or discharges to the environment;
- violations of sewer use or environmental by-laws;
- historic information related to landfill or dump sites on or in proximity to the study area; and,
- other environmental information.

Thank you!

Maria

Maria Staneva, M.Eng., P.Eng.
Senior Geo-Environmental Engineer
mstaneva@morrisonhershfield.com



2440 Don Reid Drive | Ottawa, ON K1H 1E1 Canada
Dir: 613 739 2910 x1022226 | Cell: 613-262-0032 | Fax: 613 739 4926
morrisonhershfield.com

From: John Grebenc
Sent: Thursday, July 14, 2016 9:36 AM
To: Maria Staneva <MStaneva@morrisonhershfield.com>; Martin-Pierre Blouin <MBlouin@morrisonhershfield.com>; Andrew Chislett <achislet@toronto.ca>
Cc: Chris Helmer <CHelmer@morrisonhershfield.com>; Anthony West <AWest@morrisonhershfield.com>
Subject: RE: Rean-Kenaston new road

Maria, Andrew Chislett is the City PM.

Andrew, per below do you have additional information for the Phase 1 ESA?

John J. Grebenc, P. Eng.
Vice President, Transportation
jgrebenc@morrisonhershfield.com



Suite 300, 125 Commerce Valley Drive West | Markham, ON L3T 7W4
Dir: 416 499 3110 x1011810 | Fax: 416 499 9658
morrisonhershfield.com

From: Maria Staneva
Sent: Wednesday, July 13, 2016 2:08 PM
To: Martin-Pierre Blouin <MBlouin@morrisonhershfield.com>
Cc: John Grebenc <JGrebenc@morrisonhershfield.com>; Chris Helmer <CHelmer@morrisonhershfield.com>; Anthony West <AWest@morrisonhershfield.com>
Subject: RE: Rean-Kenaston new road

Thank you Martin!

Is Steve Forrester the City of Toronto PM for this project? As part of the Phase I ESA we will need to contact the City's PM to obtain environmental related information that the City may have on file for the study area in addition to the Ph. I ESA that he already sent.

Thanks!

Maria

Maria Staneva, M.Eng., P.Eng.
Senior Geo-Environmental Engineer
mstaneva@morrisonhershfield.com



2440 Don Reid Drive | Ottawa, ON K1H 1E1 Canada
Dir: 613 739 2910 x1022226 | Cell: 613-262-0032 | Fax: 613 739 4926
morrisonhershfield.com

From: Martin-Pierre Blouin
Sent: Wednesday, July 13, 2016 9:20 AM
To: Maria Staneva <MStaneva@morrisonhershfield.com>
Cc: John Grebenc <JGrebenc@morrisonhershfield.com>; Chris Helmer <CHelmer@morrisonhershfield.com>; Anthony West <AWest@morrisonhershfield.com>
Subject: FW: Rean-Kenaston new road

Maria.

Here is some geotechnical and Phase 1 ESA information from the adjacent developments we just received from the City for the Kenaston Gardens – Rean Drive extension.

Regards,

Martin-Pierre Blouin, P.Eng.

Transportation Designer
mblouin@morrisonhershfield.com



Suite 300, 125 Commerce Valley Drive West | Markham, ON L3T 7W4
Dir: 416 499 3110 x1011480 | Fax: 416 499 9658
morrisonhershfield.com

From: Steve Forrester [<mailto:SFORREST@toronto.ca>]
Sent: Wednesday, July 13, 2016 8:50 AM
To: John Grebenc <JGrebenc@morrisonhershfield.com>; Andrew Chislett <achislet@toronto.ca>; Geoffrey Lau <glau@toronto.ca>
Cc: Martin-Pierre Blouin <MBlouin@morrisonhershfield.com>
Subject: RE: Rean-Kenaston new road

John

Geotechnical information is required when land is conveyed to the City.

Attached is geotechnical information pertaining to the small parcel of land on the south side of the Liberty project at 591 and 593 Sheppard Avenue E.

The requirement to convey 15 Kenaston Gardens to the City for a future road is a condition of Site Plan approval and to date, we have not received that information.

Trust this helps.

Steve Forrester
Senior Planner

City of Toronto
City Planning Division, North York District
North York Civic Centre, Ground Floor
5100 Yonge Street
Toronto, Ontario M2N 5V7
(416) 395-7126
sforrest@toronto.ca

From: John Grebenc [<mailto:JGrebenc@morrisonhershfield.com>]
Sent: July-08-16 12:45 PM
To: Andrew Chislett; Steve Forrester; Geoffrey Lau
Cc: Martin-Pierre Blouin
Subject: Rean-Kenaston new road

Andrew, wondering if you have any geotechnical information for the Rean-Kenaston, maybe through the developments, etc?

We would use this when we consider the geotechnical work.

We have the proposal for 2 boreholes and 7 asphalt cores, though they can only be completed on the easterly half where the road exists already.

John J. Grebenc, P. Eng.
Vice President, Transportation, Central Ontario
jgrebenc@morrisonhershfield.com



Suite 300, 125 Commerce Valley Drive West | Markham, ON L3T 7W4
Dir: 416 499 3110 x1011810 | Fax: 416 499 9658
morrisonhershfield.com

TRANSMITTAL FORM



MORRISON HERSHFIELD

TO: Ontario Ministry of the Environment and Climate Change	DATE: August 8, 2016
	VIA: FAX 416-314-6713
	FROM: Maria Staneva, M.Eng., P.Eng. (mstaneva@morrisonhershfield.com)
	YOUR REFERENCE:
PROJECT: Class Environmental Assessment (EA) Study for the new East-West extension between Rean Drive and Kenaston Gardens in the Bayview Village, Toronto, Ontario	PROJECT No.:116051700

Information Request: Phase I Environmental Site Assessment, Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario

We are in process of preparing of Phase I ESA for the new East-West extension project between Rean Drive and Kenaston Gardens in the Bayview Village in Toronto, Ontario. In this regard, we would like to request the Ministry to provide an Index review with respect to the following:

- Active orders under the Environmental Protection Act ("EPA"), the Ontario Water Resources Act ("OWRA"), and the Pesticides Act ("PA"); and,
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

Your search should include the following addresses in Toronto, ON:

- 567, 573 Sheppard Avenue East
- 2831 Bayview Avenue
- 20, 12, 2, 8, 15, 12 Rean Drive
- 15 Barberry Place
- 18, 38, 25 Kenaston Gardens

Your attention to this matter is appreciated. Should you have any questions please contact me.

Yours truly,

Morrison Hershfield Limited

Maria Staneva

\\tor01fp.mh.local\data1\shared\Proj\1160517\Phase I ESA\Reg. Requests\3. MOECC Request.docx

Sue Bilek

From: Nicol, Shannon (MOECC) <Shannon.Nicol@ontario.ca>
Sent: Friday, July 22, 2016 12:30 PM
To: Maria Staneva
Subject: Ministry of the Environment and Climate Change request for search of records
Attachments: Legal document.doc; Morrison Hershfield.pdf; 240-freedom-of-information-request-form-en.pdf; 241-foi-credit-card-form-en.pdf

Hello,

Thank you for your inquiries to the Ministry of the Environment and Climate Change. Please see the attached document regarding your letter to the ministry.

If you should require further information, please see the link below on Freedom of Information requests:

<https://www.ontario.ca/page/how-make-freedom-information-request>

Requests can be submitted in 3 ways: by mail, in-person, or by fax (416-314-4285).

To submit a request by mail or in person:

FOI Office
12th Floor
40 St Clair Ave W
Toronto ON M4V1M2

General FOI phone number: 416-314-4075

I have attached the request form, as well as the credit card form. If you're paying by cheque, cash or money order, the credit card form is not required.

Thank you,

Shannon Nicol

District Administrative Assistant
Toronto District Office
Ministry of the Environment and Climate Change
5775 Yonge St., 9th Floor
Toronto, Ontario
M2M 4J1

Tel: 416-326-5716
Fax: 416-325-6346
Shannon.nicol@ontario.ca

**Ministry
of the Environment
and Climate Change**
Central Region Office
5775 Yonge Street
8th Floor
North York ON M2M 4J1
Tel.: 416 326-6700
Fax: 416-325-5345

**Ministère
de l'Environnement et de l'Action
en matière de changement climatique**
Région du centre
5775, rue Yonge
8^{ème} étage
North York (Ontario) M2M 4J1
Tél: (416) 326-6700
Téléc: (416) 326-6345



Thank you for your inquiry requesting a search of records from the Ministry of the Environment & Climate Change (MOECC). The MOECC encourages you to use the available on-line resources to access publically-available information which may assist with your inquiry.

The MOECC's Access Environment is an on-line, map-based search tool designed to allow the public, quick and easy access to MOECC approvals and registration information from December 1999 onward. Access Environment currently displays Environmental Compliance Approvals (ECA), Renewable Energy Approvals (REA) and registrations on the Environmental Activity and Sector Registry (EASR). ECAs include all Certificates of Approval (CofAs) previously issued under the Environmental Protection Act (EPA) and approvals previously issued under s.53 of the Ontario Water Resources Act (OWRA). You can access this information from the MOECC website or at the following link:

www.accessenvironment.ene.gov.on.ca/AEWeb/ae/GoSearch.action?search=basic&lang=en

Copies of ECAs prior to 1999 can be obtained through a request to the ministry's Information Unit at the Environmental Approvals, Access and Service Integration Branch – the form is available at:

<http://www.ontario.ca/environment-and-energy/request-copy-environmental-compliance-approval>

Additional site information related to the location of landfill sites in the province can be found at the following link:

<http://www.ontario.ca/environment-and-energy/small-landfill-sites>

<http://www.ontario.ca/environment-and-energy/map-large-landfill-sites>

For information on Records of Site Condition filed on the Environmental Site Registry since October 1, 2004, please use the following link:

http://www.ene.gov.on.ca/environment/en/subject/brownfields/STDPROD_075742.html

The MOECC's Hazardous Waste Information Network (HWIN) can also be accessed to search for information on generators, carriers, and receivers of subject waste in the province at the following link:

www.hwin.ca

The MOECC's Environmental Compliance Reports provide information about contaminant discharges to water and emissions to air that exceed limits found in legislation, [environmental approvals](#), orders and/or policies/guidelines and can be accessed at the following link:

<http://www.ontario.ca/environment-and-energy/environmental-compliance-reports>

Information on environmental penalties, which are monetary penalties that can be imposed by the MOECC for some industrial spills, can be assessed at the following link:

<http://www.ontario.ca/government/search-results?query=Environmental+penalties&op=Search>

Additional ministry information can be accessed through the Government of Ontario's Open Data Catalogue:

<http://www.ontario.ca/government/open-data-ontario>

For information related to any MOECC Orders issued to the property in question, please request this information from the property owner. If you would like further information regarding a specific Order issued, please contact Central Region at (416) 326-6700.

The MOECC also encourages you to consider best practices and standards of care used within the legal community and through your associations as a guide to obtaining information related to specific property for any legal purpose.

We trust this information will help meet your requirements quickly and effectively.

The local District Office can also be contacted for information on how to access any additional information regarding a specific property. Information on the location of District Offices is available at:

<http://www.ontario.ca/environment-and-energy/ministry-environment-regional-and-district-offices>



Thank you for your inquiry.

APPENDIX B: Aerial Photographs

L:\proj\2124077\Drawings\Location Plans\Template.pdf



Legend

-  Study Area
-  Focus Area



Project Name:

**Phase I Environmental Site
Assessment (ESA)
Rean Drive to Kenaston
Gardens, Toronto, Ontario**

Photo Title:

1947 Aerial Photo

Reference:

City of Toronto Online Archives



Scale:

N.T.S

Project No:

1160517

Photo No:

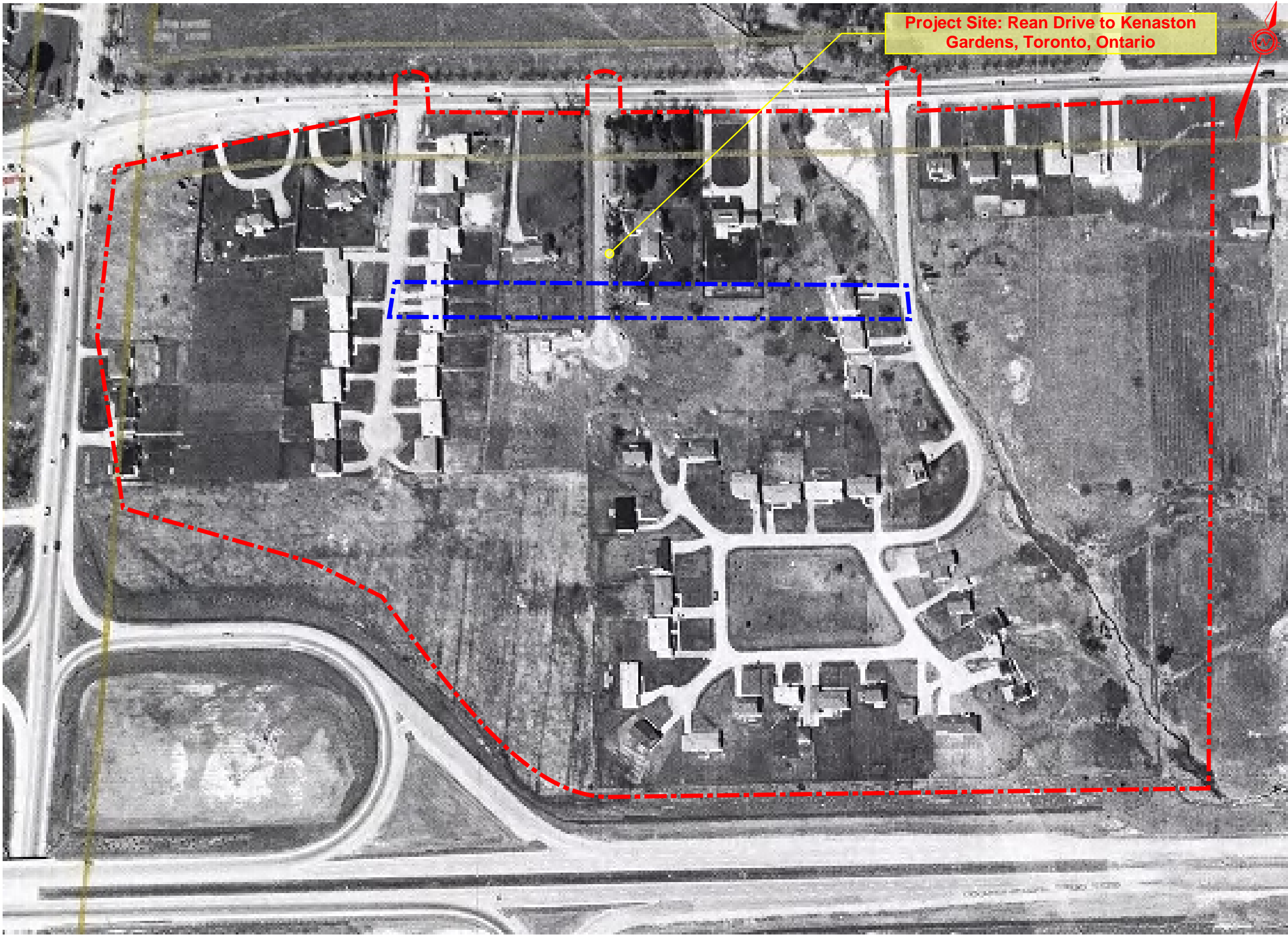
1



Department:

Environmental

Date:

July 2016



- Legend
-  Study Area
 -  Focus Area



Project Name:

**Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario**

Photo Title:

1956 Aerial Photo

Reference:

City of Toronto Online Archives





Scale:

N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016



- Legend
-  Study Area
 -  Focus Area



Project Name:

**Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario**

Photo Title:

1960 Aerial Photo

Reference:

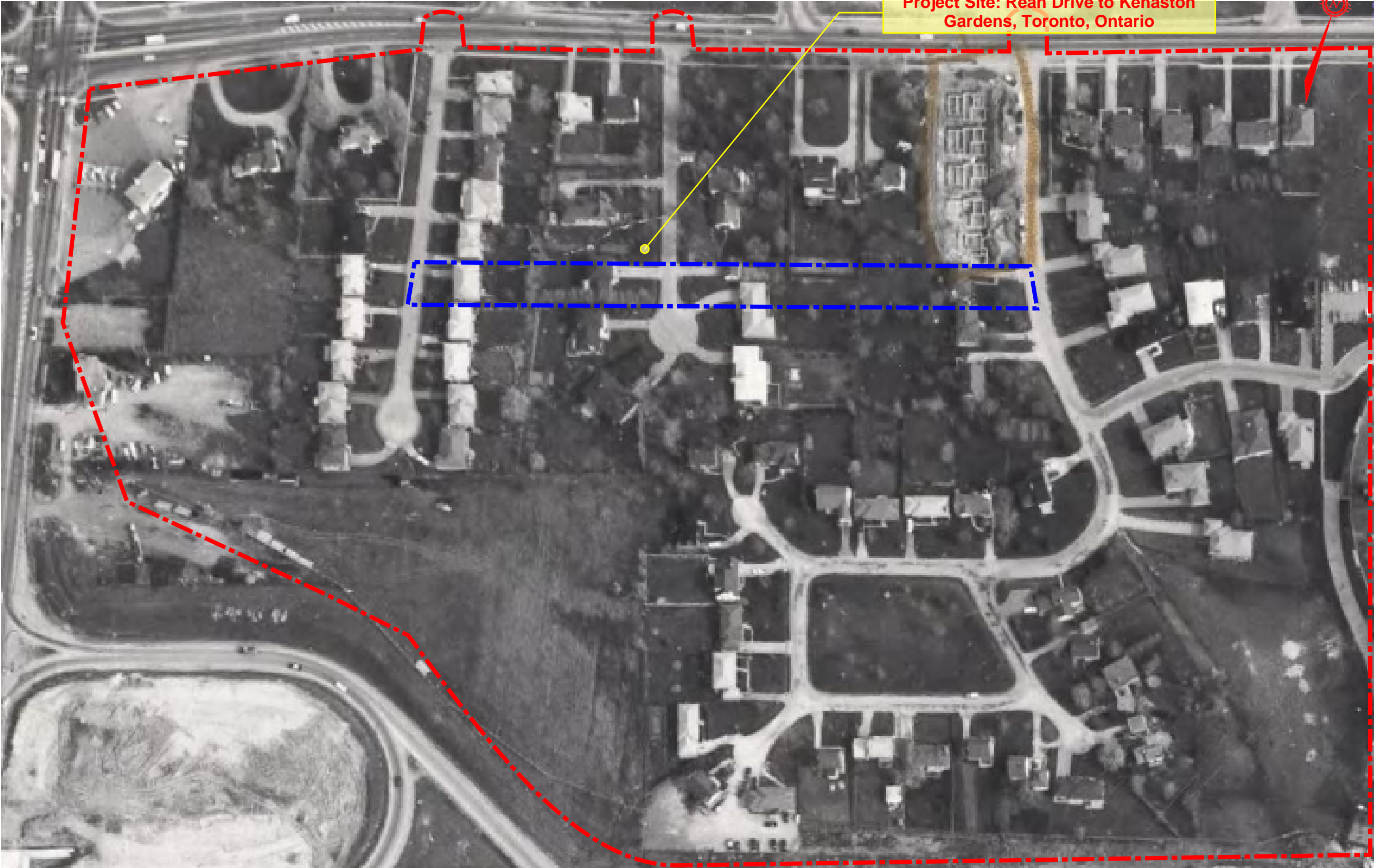
City of Toronto Online Archives



Scale:

N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016



Legend

Study Area

Focus Area



Project Name:

**Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario**

Photo Title:

1966 Aerial Photo

Reference:

City of Toronto Online Archives





Scale:

N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016



- Legend
-  Study Area
 -  Focus Area



Project Name:

Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario

Photo Title:

1977 Aerial Photo

Reference:

City of Toronto Online Archives





Scale:

N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016



- Legend**
-  Study Area
 -  Focus Area



Project Name:
**Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario**

Photo Title:
1987 Aerial Photo

Reference:
City of Toronto Online Archives



Scale:
N.T.S

Project No: 1160517	Photo No: 1
Department: Environmental	Date: July 2016



- Legend
- Study Area
 - Focus Area



Project Name:

Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario

Photo Title:

2002 Aerial Photo

Reference:

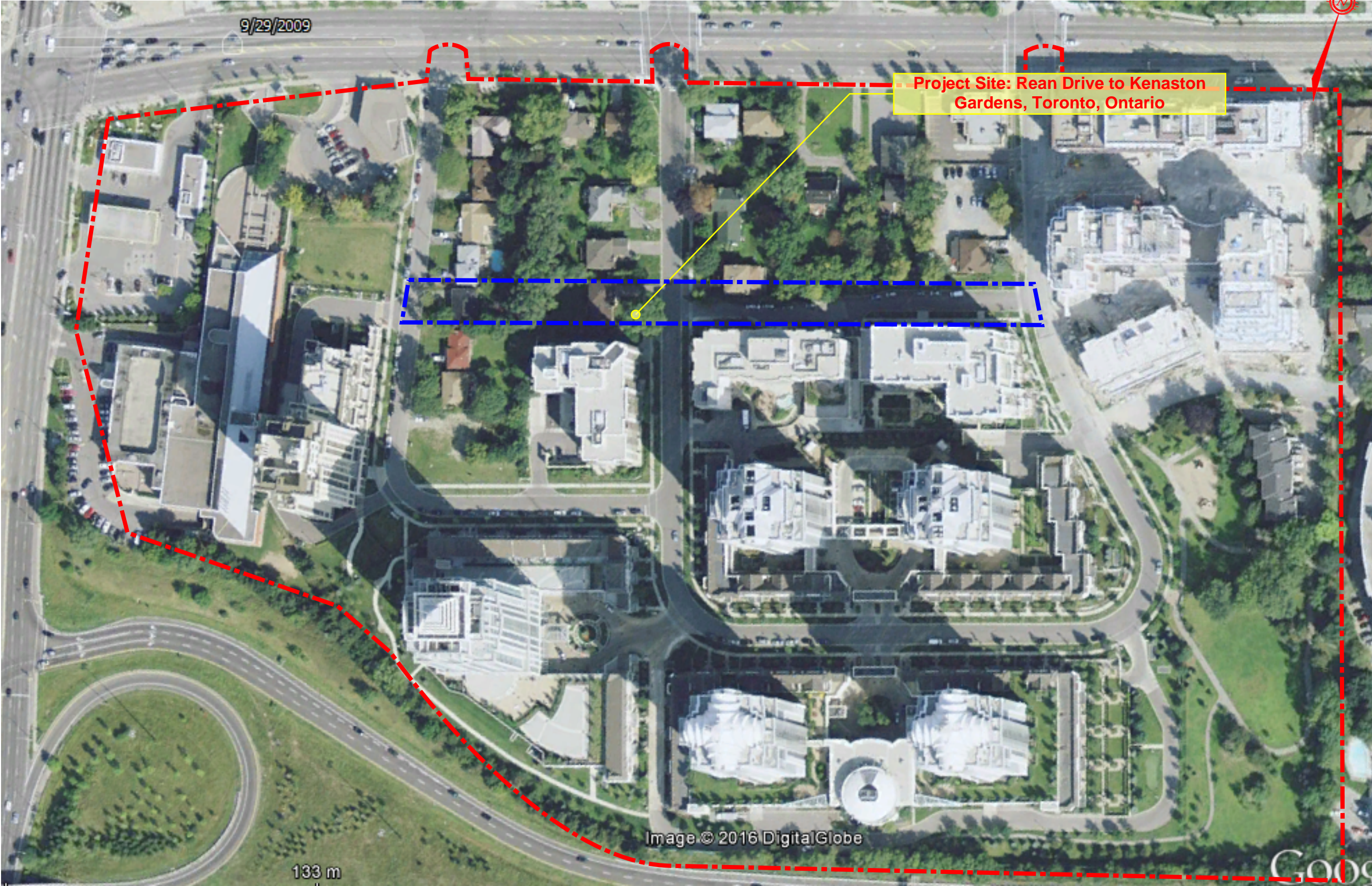
Google Earth




Scale:


N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016



Legend

 Study Area

 Focus Area



Project Name:

Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario

Photo Title:

2009 Aerial Photo

Reference:

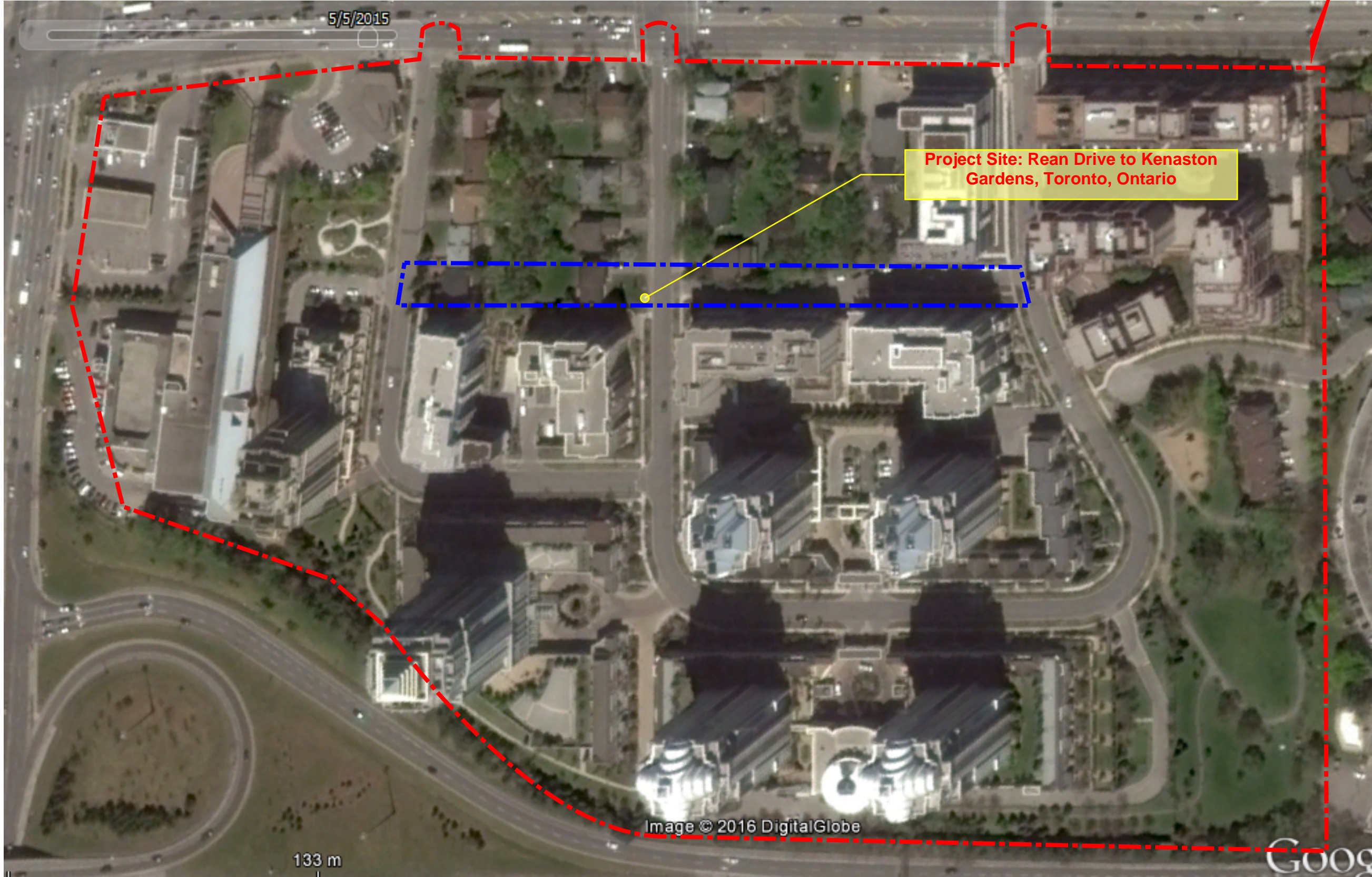
Google Earth




Scale:


N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016



Legend

 Study Area

 Focus Area



Project Name:

Phase I Environmental Site Assessment (ESA)
Rean Drive to Kenaston Gardens, Toronto, Ontario

Photo Title:

2015 Aerial Photo

Reference:

Google Earth



Scale:

N.T.S

Project No:	Photo No:
1160517	1
Department:	Date:
Environmental	July 2016

APPENDIX C: EcoLog ERIS Report and City Directories



City Directory Information Source

Polk's Toronto North York ON Criss Cross

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 2000	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-YMCA of Greater Toronto
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Residential (1 tenant)

15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Residential (1 tenant)
18 Kenaston Gardens	-Homa Finance and Exchange Inc -Residential (1 tenant)
25 Kenaston Gardens	-Residential (1 tenant)
38 Kenaston Gardens	-Residential (2 tenants)
2831 Bayview Avenue	-Mazin Shell -Shell Canada Products Ltd

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1995	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-YMCA Metropolitan Toronto
573 Sheppard Avenue East	-Dental Office

2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Address Not Listed
15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Residential (1 tenant)
18 Kenaston Gardens	-Homa Finance and Exchange Inc -Residential (1 tenant)
25 Kenaston Gardens	-Residential (2 tenants)
38 Kenaston Gardens	-Residential (2 tenants)
2831 Bayview Avenue	-Gerry Balabik Shell Ctr -Shell Canada Products Ltd

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1990	
Site Listing:	-No Site Identified
Adjacent Properties:	

567 Sheppard Avenue East	-Address Not Listed
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Residential (1 tenant)
15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Residential (1 tenant)
18 Kenaston Gardens	-Residential (1 tenant)
25 Kenaston Gardens	-Residential (1 tenant)
38 Kenaston Gardens	-Residential (1 tenant)
2831 Bayview Avenue	-Address Not Listed

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1985-1986	

Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-Address Not Listed
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Residential (1 tenant)
15 Rean Drive	-No Return
20 Rean Drive	-Residential (1 tenant)
18 Kenaston Gardens	-Residential (1 tenant)
25 Kenaston Gardens	-Residential (1 tenant)
38 Kenaston Gardens	-Residential (1 tenant)
2831 Bayview Avenue	-Balabik Gerry Shell Ctr Gas

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1980	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-Address Not Listed
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Residential (1 tenant)
15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Residential (1 tenant)
18 Kenaston Gardens	-Residential (1 tenant)
25 Kenaston Gardens	-Residential (1 tenant)

38 Kenaston Gardens	-Residential (1 tenant)
2831 Bayview Avenue	-Balabik Gerry Shell Ctr Gas

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1975	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-Address Not Listed
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Residential (1 tenant)
15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Residential (1 tenant)

18 Kenaston Gardens	-Residential (1 tenant)
25 Kenaston Gardens	-Residential (1 tenant)
38 Kenaston Gardens	-Residential (1 tenant)
2831 Bayview Avenue	-Balabik Gerry Shell Ctr Gas

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1971	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-YMCA Office
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed
8 Rean Drive	-Address Not Listed
12 Rean Drive	-Address Not Listed

15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Residential (1 tenant)
18 Kenaston Gardens	-Residential (1 tenant)
25 Kenaston Gardens	-Address Not Listed
38 Kenaston Gardens	-Address Not Listed
2831 Bayview Avenue	-Shell Can Ltd serv Sta

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1965	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-Residential (1 tenant)
573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Address Not Listed

8 Rean Drive	-Address Not Listed
12 Rean Drive	-Residential (1 tenant)
15 Rean Drive	-Residential (1 tenant)
20 Rean Drive	-Address Not Listed
18 Kenaston Gardens	-Residential (1 tenant)
25 Kenaston Gardens	-Address Not Listed
38 Kenaston Gardens	-Address Not Listed
2831 Bayview Avenue	-Shell Oil Co of Can Ltd serv Sta

PROJECT NUMBER: 20160714124	
Site Address:	Bayview Avenue & Sheppard Avenue East, Toronto, Ontario
Year: 1960	
Site Listing:	-No Site Identified
Adjacent Properties:	
567 Sheppard Avenue East	-Address Not Listed

573 Sheppard Avenue East	-Address Not Listed
2 Rean Drive	-Street Not Listed
8 Rean Drive	-Street Not Listed
12 Rean Drive	-Street Not Listed
15 Rean Drive	-Street Not Listed
20 Rean Drive	-Street Not Listed
18 Kenaston Gardens	-Street Not Listed
25 Kenaston Gardens	-Street Not Listed
38 Kenaston Gardens	-Street Not Listed
2831 Bayview Avenue	-Address Not Listed

-All listings for businesses were listed as they are in the city directory.

-Listings that are residential are listed as “residential” with the number of tenants. The name of the residential tenant is not listed in the above city directory

DATABASE REPORT

Project Property: 1160509
Sheppard Avenue East
Toronto ON

Project No:

Report Type: Quote - Custom-Build Your Own Report

Order No: 20160714116

Requested by: Morrison Hershfield

Date Completed: July 19, 2016

Ecolog ERIS Ltd.
Environmental Risk Information
Service Ltd. (ERIS)
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com
www.erisinfo.com

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Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as a database review of environmental records.

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Executive Summary

Property Information:

Project Property: 1160509
Sheppard Avenue East Toronto ON

Project No:

Order Information:

Order No: 20160714116
Date Requested: July 14, 2016
Requested by: Morrison Hershfield
Report Type: Quote - Custom-Build Your Own Report

Additional Products:

Executive Summary: Report Summary

Database	Name	Searched	Project Property
AAGR	<i>Abandoned Aggregate Inventory</i>	N	-
AGR	<i>Aggregate Inventory</i>	N	-
AMIS	<i>Abandoned Mine Information System</i>	N	-
ANDR	<i>Anderson's Waste Disposal Sites</i>	N	-
AUWR	<i>Automobile Wrecking & Supplies</i>	Y	0
BORE	<i>Borehole</i>	N	-
CA	<i>Certificates of Approval</i>	N	-
CFOT	<i>Commercial Fuel Oil Tanks</i>	Y	0
CHEM	<i>Chemical Register</i>	N	-
COAL	<i>Inventory of Coal Gasification Plants and Coal Tar Sites</i>	Y	0
CONV	<i>Compliance and Convictions</i>	N	-
CPU	<i>Certificates of Property Use</i>	N	-
DRL	<i>Drill Hole Database</i>	N	-
EASR	<i>Environmental Activity and Sector Registry</i>	N	-
EBR	<i>Environmental Registry</i>	N	-
ECA	<i>Environmental Compliance Approval</i>	N	-
EEM	<i>Environmental Effects Monitoring</i>	N	-
EHS	<i>ERIS Historical Searches</i>	N	-
EIIS	<i>Environmental Issues Inventory System</i>	N	-
EMHE	<i>Emergency Management Historical Event</i>	N	-
EXP	<i>List of TSSA Expired Facilities</i>	N	-
FCON	<i>Federal Convictions</i>	N	-
FCS	<i>Contaminated Sites on Federal Land</i>	N	-
FOFT	<i>Fisheries & Oceans Fuel Tanks</i>	N	-
FST	<i>Fuel Storage Tank</i>	Y	4
FSTH	<i>Fuel Storage Tank - Historic</i>	N	-
GEN	<i>Ontario Regulation 347 Waste Generators Summary</i>	Y	7
GHG	<i>Greenhouse Gas Emissions from Large Facilities</i>	N	-
HINC	<i>TSSA Historic Incidents</i>	N	-
IAFT	<i>Indian & Northern Affairs Fuel Tanks</i>	N	-
INC	<i>TSSA Incidents</i>	N	-
LIMO	<i>Landfill Inventory Management Ontario</i>	N	-
MINE	<i>Canadian Mine Locations</i>	N	-
MNR	<i>Mineral Occurrences</i>	N	-
NATE	<i>National Analysis of Trends in Emergencies System (NATES)</i>	N	-
NCPL	<i>Non-Compliance Reports</i>	N	-

Database	Name	Searched	Project Property
NDFT	<i>National Defense & Canadian Forces Fuel Tanks</i>	N	-
NDSP	<i>National Defense & Canadian Forces Spills</i>	N	-
NDWD	<i>National Defence & Canadian Forces Waste Disposal Sites</i>	N	-
NEBW	<i>National Energy Board Wells</i>	N	-
NEES	<i>National Environmental Emergencies System (NEES)</i>	N	-
NPCB	<i>National PCB Inventory</i>	N	-
NPRI	<i>National Pollutant Release Inventory</i>	N	-
OGW	<i>Oil and Gas Wells</i>	N	-
OOGW	<i>Ontario Oil and Gas Wells</i>	N	-
OPCB	<i>Inventory of PCB Storage Sites</i>	Y	0
ORD	<i>Orders</i>	N	-
PAP	<i>Canadian Pulp and Paper</i>	N	-
PCFT	<i>Parks Canada Fuel Storage Tanks</i>	N	-
PES	<i>Pesticide Register</i>	N	-
PINC	<i>TSSA Pipeline Incidents</i>	N	-
PRT	<i>Private and Retail Fuel Storage Tanks</i>	Y	4
PTTW	<i>Permit to Take Water</i>	N	-
REC	<i>Ontario Regulation 347 Waste Receivers Summary</i>	Y	0
RSC	<i>Record of Site Condition</i>	N	-
RST	<i>Retail Fuel Storage Tanks</i>	Y	1
SCT	<i>Scott's Manufacturing Directory</i>	Y	0
SPL	<i>Ontario Spills</i>	Y	5
SRDS	<i>Wastewater Discharger Registration Database</i>	N	-
TANK	<i>Anderson's Storage Tanks</i>	Y	0
TCFT	<i>Transport Canada Fuel Storage Tanks</i>	Y	0
VAR	<i>TSSA Variances for Abandonment of Underground Storage Tanks</i>	N	-
WDS	<i>Waste Disposal Sites - MOE CA Inventory</i>	N	-
WDSH	<i>Waste Disposal Sites - MOE 1991 Historical Approval Inventory</i>	N	-
WWIS	<i>Water Well Information System</i>	N	-
		Total:	21

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Page Number
<u>1</u>	SPL		1 West Dean Drive, Etobicoke Toronto ON	<u>12</u>
<u>2</u>	GEN	The Daniels Corpoation	18 Rean Drive Toronto ON	<u>12</u>
<u>2</u>	SPL	Enbridge Gas Distribution Inc.	18 Rean Dr Toronto ON	<u>12</u>
<u>3</u>	GEN	TSCC 1496	3 Rean Drive Toronto ON M2K 3C2	<u>13</u>
<u>4</u>	GEN	North York YMCA	567 Sheppard Ave. E. North York ON	<u>13</u>
<u>4</u>	GEN	YMCA - North York	567 Sheppard Avenue East Toronto ON M2K 1B2	<u>13</u>
<u>5</u>	FST	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	<u>13</u>
<u>5</u>	FST	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	<u>14</u>
<u>5</u>	FST	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	<u>14</u>
<u>5</u>	FST	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	<u>14</u>
<u>5</u>	GEN	Shell Canada Products	2831 Bayview Avenue Toronto ON	<u>15</u>
<u>5</u>	GEN	Shell Canada Products	2831 Bayview Avenue Toronto ON	<u>15</u>
<u>5</u>	GEN	Shell Canada Products	2831 Bayview Avenue Toronto ON	<u>15</u>
<u>5</u>	PRT	GERRY BALABIKS SHELL CENTRE	2831 BAYVIEW AV NORTH YORK ON M2K 1E5	<u>15</u>
<u>5</u>	PRT		2831 BAYVIEW AV. WILLOWDALE ON	<u>15</u>
<u>5</u>	PRT	GERRY BALABIKS SHELL CENTRE	2831 BAYVIEW AV NORTH YORK ON M2K 1E5	<u>16</u>

Map Key	DB	Company/Site Name	Address	Page Number
<u>5</u>	PRT	SHELL CANADA LTD	2831 BAYVIEW AV NORTH YORK ON M2K1E5	<u>16</u>
<u>5</u>	RST	MAZIN SHELL	2831 BAYVIEW AVE NORTH YORK ON M2K1E5	<u>16</u>
<u>5</u>	SPL	SHELL CANADA PRODUCTS LTD.	2831 BAYVIEW AVE (BAYVIEW & SHEPPARD) SERVICE STATION TORONTO CITY ON M2K 1E5	<u>16</u>
<u>5</u>	SPL		2831 Bayview Ave. @ sheppard Toronto ON	<u>17</u>
<u>5</u>	SPL	Shell Canada Limited	2831 Bayview Ave Toronto ON M2K 1E5	<u>17</u>

Executive Summary: Summary By Data Source

FST - Fuel Storage Tank

A search of the FST database, dated 2010-Nov 2015 has found that there are 4 FST site(s) within approximately 0.00 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	0.0	<u>5</u>
SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	0.0	<u>5</u>
SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	0.0	<u>5</u>
SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN	2831 BAYVIEW AVE TORONTO ON M2K 1E5	0.0	<u>5</u>

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-May 2015 has found that there are 7 GEN site(s) within approximately 0.00 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
The Daniels Corpoation	18 Rean Drive Toronto ON	0.0	<u>2</u>
TSCC 1496	3 Rean Drive Toronto ON M2K 3C2	0.0	<u>3</u>
YMCA - North York	567 Sheppard Avenue East Toronto ON M2K 1B2	0.0	<u>4</u>
North York YMCA	567 Sheppard Ave. E. North York ON	0.0	<u>4</u>
Shell Canada Products	2831 Bayview Avenue Toronto ON	0.0	<u>5</u>
Shell Canada Products	2831 Bayview Avenue Toronto ON	0.0	<u>5</u>
Shell Canada Products	2831 Bayview Avenue Toronto ON	0.0	<u>5</u>

PRT - Private and Retail Fuel Storage Tanks

A search of the PRT database, dated 1989-1996* has found that there are 4 PRT site(s) within approximately

0.00 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
GERRY BALABIKS SHELL CENTRE	2831 BAYVIEW AV NORTH YORK ON M2K 1E5	0.0	<u>5</u>
SHELL CANADA LTD	2831 BAYVIEW AV NORTH YORK ON M2K1E5	0.0	<u>5</u>
	2831 BAYVIEW AV. WILLOWDALE ON	0.0	<u>5</u>
GERRY BALABIKS SHELL CENTRE	2831 BAYVIEW AV NORTH YORK ON M2K 1E5	0.0	<u>5</u>

RST - Retail Fuel Storage Tanks

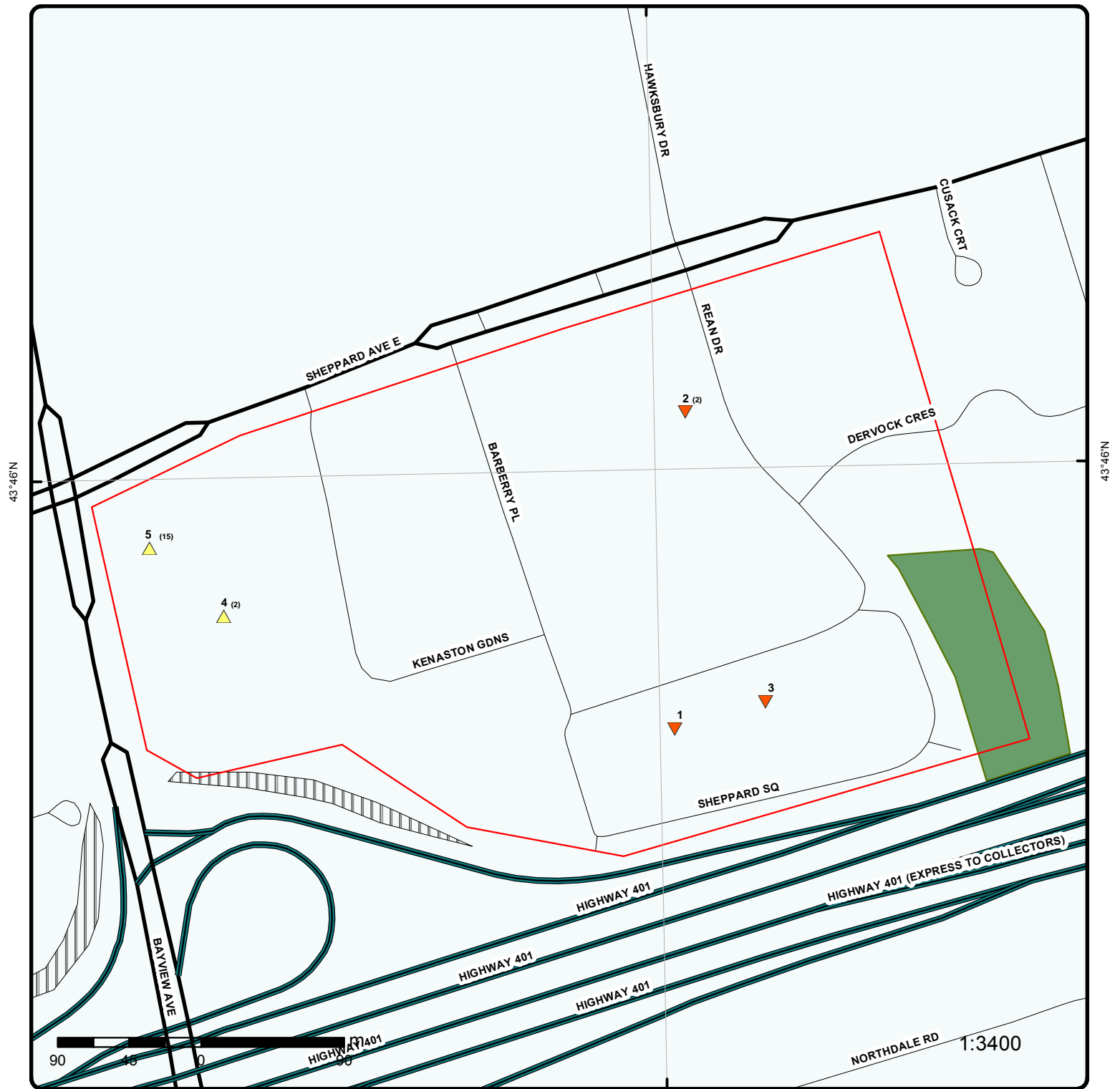
A search of the RST database, dated 1999-Jul 2014 has found that there are 1 RST site(s) within approximately 0.00 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
MAZIN SHELL	2831 BAYVIEW AVE NORTH YORK ON M2K1E5	0.0	<u>5</u>

SPL - Ontario Spills

A search of the SPL database, dated 1988-Jun 2015 has found that there are 5 SPL site(s) within approximately 0.00 kilometers of the project property.

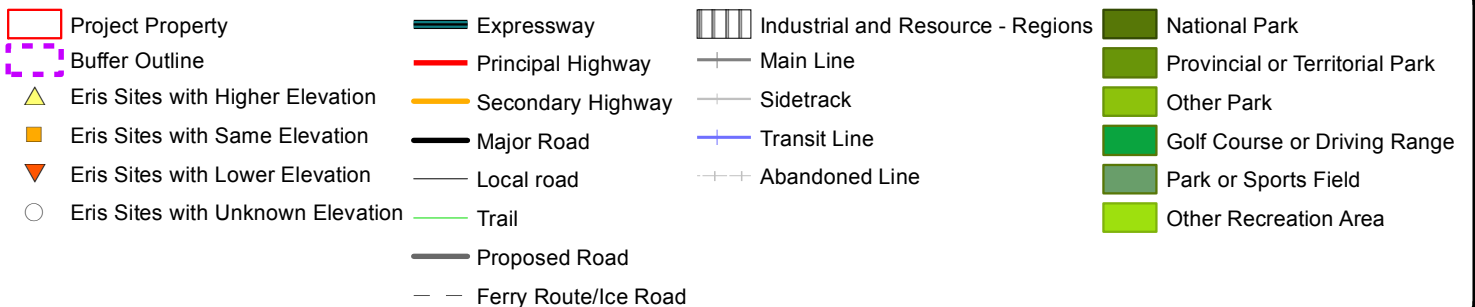
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	1 West Dean Drive, Etobicoke Toronto ON	0.0	<u>1</u>
Enbridge Gas Distribution Inc.	18 Rean Dr Toronto ON	0.0	<u>2</u>
SHELL CANADA PRODUCTS LTD.	2831 BAYVIEW AVE (BAYVIEW & SHEPPARD) SERVICE STATION TORONTO CITY ON M2K 1E5	0.0	<u>5</u>
Shell Canada Limited	2831 Bayview Ave Toronto ON M2K 1E5	0.0	<u>5</u>
	2831 Bayview Ave. @ sheppard Toronto ON	0.0	<u>5</u>



Map

Order No: 20160714116

Address: Sheppard Avenue East, Toronto, ON





Aerial

Order No: 20160714116

Address: Sheppard Avenue East, Toronto, ON

Source: ESRI World Imagery, Updated October 2014

© Ecolog ERIS Ltd

Detail Report

Map Key	Number of Records	Elevation (m)	Site	DB
1	1 of 1	173.0	1 West Dean Drive, Etobicoke Toronto ON	SPL
Ref NO: 3437-75ET6V Contaminant Code: 24 Contaminant Name: XYLENE Contaminant Quantity: 400 ppm Incident Cause: Tank (Underground) Leak Incident Dt: Incident Reason: Incident Summary: Shell Cnd: Historic contamination MOE Reported Dt: 7/24/2007 Environmental Impact: Confirmed Nature of Impact: Soil Contamination Receiving Medium: Land SAC Action Class: Sector Source Type: Other Site Municipality: Toronto				
2	1 of 2	170.0	The Daniels Corpoation 18 Rean Drive Toronto ON	GEN
Generator #: ON7980928 Approval Yrs: 2013 SIC Code: 213118 SIC Description: SERVICES TO OIL AND GAS EXTRACTION --- Details --- Waste Code: 221 Waste Description: LIGHT FUELS				
2	2 of 2	170.0	Enbridge Gas Distribution Inc. 18 Rean Dr Toronto ON	SPL
Ref NO: 1130-9EHQH9 Contaminant Code: 35 Contaminant Name: NATURAL GAS (METHANE) Contaminant Quantity: 0 other - see incident description Incident Cause: Leak/Break Incident Dt: 2013/12/18 Incident Reason: Unknown / N/A Incident Summary: TSSA: Private Gas Line Damage for Condo Bldg MOE Reported Dt: 2013/12/18 Environmental Impact: Confirmed Nature of Impact: Air Pollution Receiving Medium:				

Map Key	Number of Records	Elevation (m)	Site	DB
SAC Action Class: Sector Source Type: Site Municipality:		TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill Pipeline/Components Toronto		
<u>3</u>	1 of 1	171.4	TSCC 1496 3 Rean Drive Toronto ON M2K 3C2	GEN
Generator #:		ON4732186		
Approval Yrs:		2009		
SIC Code:		531310		
SIC Description:		Real Estate Property Managers		
--- Details ---				
Waste Code:		212		
Waste Description:		ALIPHATIC SOLVENTS		
<u>4</u>	1 of 2	178.9	North York YMCA 567 Sheppard Ave. E. North York ON	GEN
Generator #:		ON7757612		
Approval Yrs:		2012		
SIC Code:		713940		
SIC Description:		Fitness and Recreational Sports Centres		
<u>4</u>	2 of 2	178.9	YMCA - North York 567 Sheppard Avenue East Toronto ON M2K 1B2	GEN
Generator #:		ON6865174		
Approval Yrs:		05		
SIC Code:		813310		
SIC Description:		Social Advocacy Organizations		
--- Details ---				
Waste Code:		145		
Waste Description:		PAINT/PIGMENT/COATING RESIDUES		
+				
Waste Code:		243		
Waste Description:		PCB'S		
<u>5</u>	1 of 15	180.0	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN 2831 BAYVIEW AVE TORONTO ON M2K 1E5	FST
Instance Number:		56404753		
Cont Name:				
Instance Type:		FS Liquid Fuel Tank		
Fuel Type:		Gasoline		
Status:		Active		
Capacity:		40000		
Tank Material:		Fiberglass (FRP)		
Corrosion Protection:		Fiberglass		

Map Key	Number of Records	Elevation (m)	Site	DB
<i>Tank Type:</i> Double Wall UST <i>Install Year:</i> 2001 <i>Parent Facility Type:</i> FS Gasoline Station - Self Serve <i>Facility Type:</i> FS Liquid Fuel Tank				
<u>5</u>	2 of 15	180.0	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN 2831 BAYVIEW AVE TORONTO ON M2K 1E5	FST
<i>Instance Number:</i> 56404751 <i>Cont Name:</i> <i>Instance Type:</i> FS Liquid Fuel Tank <i>Fuel Type:</i> Diesel <i>Status:</i> Active <i>Capacity:</i> 25000 <i>Tank Material:</i> Fiberglass (FRP) <i>Corrosion Protection:</i> Fiberglass <i>Tank Type:</i> Double Wall UST <i>Install Year:</i> 2001 <i>Parent Facility Type:</i> FS Gasoline Station - Self Serve <i>Facility Type:</i> FS Liquid Fuel Tank				
<u>5</u>	3 of 15	180.0	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN 2831 BAYVIEW AVE TORONTO ON M2K 1E5	FST
<i>Instance Number:</i> 56404752 <i>Cont Name:</i> <i>Instance Type:</i> FS Liquid Fuel Tank <i>Fuel Type:</i> Gasoline <i>Status:</i> Active <i>Capacity:</i> 40000 <i>Tank Material:</i> Fiberglass (FRP) <i>Corrosion Protection:</i> Fiberglass <i>Tank Type:</i> Double Wall UST <i>Install Year:</i> 2001 <i>Parent Facility Type:</i> FS Gasoline Station - Self Serve <i>Facility Type:</i> FS Liquid Fuel Tank				
<u>5</u>	4 of 15	180.0	SIVAYOGAN PONNUTHURAI O/A SHELL CANADA GAS STN 2831 BAYVIEW AVE TORONTO ON M2K 1E5	FST
<i>Instance Number:</i> 56404754 <i>Cont Name:</i> <i>Instance Type:</i> FS Liquid Fuel Tank <i>Fuel Type:</i> Gasoline <i>Status:</i> Active <i>Capacity:</i> 40000 <i>Tank Material:</i> Fiberglass (FRP) <i>Corrosion Protection:</i> Fiberglass <i>Tank Type:</i> Double Wall UST <i>Install Year:</i> 2001 <i>Parent Facility Type:</i> FS Gasoline Station - Self Serve				

Map Key	Number of Records	Elevation (m)	Site	DB
Facility Type:		FS Liquid Fuel Tank		
5	5 of 15	180.0	Shell Canada Products 2831 Bayview Avenue Toronto ON	GEN
Generator #:		ON4699942		
Approval Yrs:		2013		
SIC Code:		447110		
SIC Description:				
--- Details ---				
Waste Code:		221		
Waste Description:		LIGHT FUELS		
5	6 of 15	180.0	Shell Canada Products 2831 Bayview Avenue Toronto ON	GEN
Generator #:		ON4699942		
Approval Yrs:		As of May 2015		
SIC Code:				
SIC Description:				
--- Details ---				
Waste Code:		221		
Waste Description:		Light fuels		
+				
Waste Code:		251		
Waste Description:		Waste oils/sludges (petroleum based)		
5	7 of 15	180.0	Shell Canada Products 2831 Bayview Avenue Toronto ON	GEN
Generator #:		ON4699942		
Approval Yrs:		2012		
SIC Code:		447110		
SIC Description:		Gasoline Stations with Convenience Stores		
5	8 of 15	180.0	GERRY BALABIKS SHELL CENTRE 2831 BAYVIEW AV NORTH YORK ON M2K 1E5	PRT
Location ID:		10171		
Type:		retail		
Expiry Date:		1991-04-30		
Capacity (L):		2000		
Licence #:		0032233001		
5	9 of 15	180.0	2831 BAYVIEW AV. WILLOWDALE ON	PRT

Map Key	Number of Records	Elevation (m)	Site	DB
Location ID: Type: Expiry Date: Capacity (L): Licence #:		17041 retail		
5	10 of 15	180.0	GERRY BALABIKS SHELL CENTRE 2831 BAYVIEW AV NORTH YORK ON M2K 1E5	PRT
Location ID: Type: Expiry Date: Capacity (L): Licence #:		10171 retail 1995-08-31 2000 0076370808		
5	11 of 15	180.0	SHELL CANADA LTD 2831 BAYVIEW AV NORTH YORK ON M2K1E5	PRT
Location ID: Type: Expiry Date: Capacity (L): Licence #:		10171 retail 1995-09-30 0 0027164001		
5	12 of 15	180.0	MAZIN SHELL 2831 BAYVIEW AVE NORTH YORK ON M2K1E5	RST
Facility: Description:		Service Stations-Gasoline, Oil & Natural Gas		
5	13 of 15	180.0	SHELL CANADA PRODUCTS LTD. 2831 BAYVIEW AVE (BAYVIEW & SHEPPARD) SERVICE STATION TORONTO CITY ON M2K 1E5	SPL
Ref NO: Contaminant Code: Contaminant Name: Contaminant Quantity: Incident Cause: Incident Dt: Incident Reason: Incident Summary: MOE Reported Dt: Environmental Impact: Nature of Impact: Receiving Medium: SAC Action Class:		98915 PIPE/HOSE LEAK 4/18/1994 CORROSION SHELL - 3700 L. GASOLINE MISSING FROM TANK. LEAK IN SUCTION LINE FOUND 4/21/1994 CONFIRMED Soil contamination LAND		

Map Key	Number of Records	Elevation (m)	Site	DB
<hr/>				
Sector Source Type:		1106		
Site Municipality:				
<hr/>				
<u>5</u>	14 of 15	180.0	2831 Bayview Ave. @ sheppard Toronto ON	SPL
Ref NO:		5420-77PNZZ		
Contaminant Code:		12		
Contaminant Name:		GASOLINE		
Contaminant Quantity:		500 L		
Incident Cause:		Pipe Or Hose Leak		
Incident Dt:				
Incident Reason:		Unknown - Reason not determined		
Incident Summary:		B&B Gas Station: approx. 150Lto ground and CB		
MOE Reported Dt:		10/5/2007		
Environmental Impact:		Confirmed		
Nature of Impact:		Other Impact(s); Surface Water Pollution		
Receiving Medium:		Water		
SAC Action Class:				
Sector Source Type:		Tank Truck		
Site Municipality:		Toronto		
<hr/>				
<u>5</u>	15 of 15	180.0	Shell Canada Limited 2831 Bayview Ave Toronto ON M2K 1E5	SPL
Ref NO:		7353-8JPJM6		
Contaminant Code:		12		
Contaminant Name:		GASOLINE		
Contaminant Quantity:		14 L		
Incident Cause:		Container Leak (Fuel Tank Barrels)		
Incident Dt:		7/10/2011		
Incident Reason:		Other - Reason not otherwise defined		
Incident Summary:		Shell Canada stn - 14 L gasoline to concrete		
MOE Reported Dt:		7/12/2011		
Environmental Impact:		Confirmed		
Nature of Impact:		Other Impact(s)		
Receiving Medium:				
SAC Action Class:		Land Spills		
Sector Source Type:		Service Station		
Site Municipality:		Toronto		
<hr/>				

Unplottable Summary

Total: **36** Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
GEN	TORONTO, MUNICIPALITY OF METROPOLITAN	BAYVIEW AVENUE BRIDGE OVER DON RIVER NORTH OF LAWRENCE AVENUE	NORTH YORK ON	
GEN	SHELL		DON MILLS ON	M3B 3K4
OPCB	ONTARIO HYDRO	SHEPPARD AVE. T. S. C/O 700 UNIVERSITY AVE.	TORONTO ON	M5G 1X6
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON	
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON	
SPL	SHELL CANADA PRODUCTS LTD.	TANK TRUCK (CARGO)	TORONTO CITY ON	
SPL	SHELL CANADA PRODUCTS LTD.	TANK TRUCK (CARGO)	TORONTO CITY ON	
SPL	Toronto Transit Commission	SHEPPARD AVE EAST FROM PHARMACY AVE PAST VICTORIA PARK AVE.<UNOFFICIAL>	Toronto ON	
SPL	ONTARIO HYDRO SERVICES COMPANY	SHEPPARD TRANSFORMER STATION,SHEPPARD AVE EAST BETWEEN MEADOVALE & SWITCH GEAR	TORONTO CITY ON	
SPL		Sheppard Ave, near Bathurst	Toronto ON	
SPL	ONTARIO HYDRO	SHEPPARD TRANSFORMER STATION TRANSFORMER	TORONTO CITY ON	
SPL	TORONTO TRANSIT COMMISSION	CATCHBASIN, WESTBOUND ON SHEPPARD WEST OF DEAN PARK MOTOR VEHICLE (OPERATING FLUID)	TORONTO CITY ON	
SPL		Northbound Bayview Avenue, south of Lawrence	Toronto ON	
SPL	Toronto and Region Conservation Authority	Ravine south of Sunnybrook Hospital, access from n/b lane of Bayview Ave. (east side) just south of Sunnybrook	Toronto ON	

SPL		Bayview Avenue, North of Hwy. 401	Toronto ON
SPL	David Schaeffer Engineering<UNOFFICIAL>	BROOK CREEK - BAYVIEW AVE NORTH OF EGLINGTON<UNOFFICIAL>	Toronto ON
SPL		Bayview Ave. (Gerrad St. E to Queen St. E)	Toronto ON
SPL	TORONTO, CITY OF	RAVINE 100' FROM BAYVIEW S OF BLYTHEWOOD NEAR SUNNYBROOK DEPARTMENT OF WORKS	TORONTO CITY ON
SPL	City of Toronto	Baview Ave., Just South of Sheppard	Toronto ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	TANK TRUCK (CARGO)	TORONTO CITY ON
SPL	Shell Canada OP Inc. and Shell Canada Limited		Toronto ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL		SHELL GAS STATION \	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	TANK TRUCK (CARGO)	TORONTO CITY ON
SPL	Shell Canada Limited		Toronto ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL GAS STATION	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON
SPL	SHELL CANADA PRODUCTS LTD.	SERVICE STATION	TORONTO CITY ON

SPL	PRIVATE OWNER	SHELL STATION, FUELING PAD MOTOR VEHICLE (OPERATING FLUID)	TORONTO CITY ON
SPL	SHELL CANADA*	SHELL CANADA CAR WASH SERVICE STATION	TORONTO CITY ON

Unplottable Report

Site: TORONTO, MUNICIPALITY OF METROPOLITAN
BAYVIEW AVENUE BRIDGE OVER DON RIVER NORTH OF LAWRENCE AVENUE NORTH YORK ON

Database:
GEN

Generator #: ON0605932
Approval Yrs: 99,00,01,03,04
SIC Code: 4591
SIC Description: HIGHWAY, ETC. IND.

--- Details ---

Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS

Site: SHELL
DON MILLS ON M3B 3K4

Database:
GEN

Generator #: ON0005131
Approval Yrs: 86,87,88,89,90,92,93,94
SIC Code: 0000
SIC Description: *** NOT DEFINED ***

Site: ONTARIO HYDRO
SHEPPARD AVE. T. S. C/O 700 UNIVERSITY AVE. TORONTO ON M5G 1X6

Database:
OPCB

Year: 1995
Site Number: 30185A042
Name Owner:
Additional Site Information:

--- Details ---

Quantity: 13.00
Address Site:
Description: Number of Capacitors with High Level PCBs (>1000 ppm)
+
Quantity: 2.00
Address Site:
Description: Number of Drums of Soil with Low Level PCBs (< 1000 ppm) kg
+
Quantity: 800.00
Address Site:
Description: Weight of Drums of Soil with Low Level PCBs (< 1000 ppm) kg
+
Quantity: 1.00
Address Site:
Description: Number of Drums of Other Material with Low Level PCBs (< 1000 ppm) kg
+
Quantity: 150.00
Address Site:
Description: Weight of Drums of Other Material with Low Level PCBs (< 1000 ppm) kg

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 121336
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 11/29/1995
Incident Reason: ERROR
Incident Summary: SHELL-4 L GASOLINE TO LOT,CONTAINED,CLEANED-UP, AUTO'S TANK OVERFILLED.
MOE Reported Dt: 11/29/1995
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 121926
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: VALVE/FITTING LEAK OR FAILURE
Incident Dt: 12/19/1995
Incident Reason: EQUIPMENT FAILURE
Incident Summary: SHELL SERV STN-15 L GAS TO PVMT, NO DRAINS.NOZZLEMALFUNCTION.CLEANED.
MOE Reported Dt: 12/19/1995
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL CANADA PRODUCTS LTD.
TANK TRUCK (CARGO) TORONTO CITY ON

Database:
SPL

Ref NO: 8832
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: OTHER CONTAINER LEAK
Incident Dt: 9/3/1988
Incident Reason: ERROR
Incident Summary: SHELL CANADA -20 LITRES GASOLINE ADDITIVE TO ASPHALT.
MOE Reported Dt: 9/3/1988
Environmental Impact:
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL CANADA PRODUCTS LTD.
TANK TRUCK (CARGO) TORONTO CITY ON

Database:
SPL

Ref NO: 110746
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 3/10/1995
Incident Reason: ERROR
Incident Summary: SHELL OIL: 200L GASOLINE TO GROUND. TANK OVERFLOW.CONTAINED AND CLEANED UP
MOE Reported Dt: 3/10/1995
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: Toronto Transit Commission
SHEPPARD AVE EAST FROM PHARMACY AVE PAST VICTORIA PARK AVE.<UNOFFICIAL> Toronto ON

Database:
SPL

Ref NO: 4170-6SW29Q
Contaminant Code: 15
Contaminant Name: MOTOR OIL
Contaminant Quantity: 50 L
Incident Cause:
Incident Dt: 8/21/2006
Incident Reason:
Incident Summary: TTC-50 L Motor oil along Road & cleaned up.
MOE Reported Dt: 8/21/2006
Environmental Impact: Possible
Nature of Impact: Soil Contamination
Receiving Medium: Land
SAC Action Class:
Sector Source Type: Other Motor Vehicle
Site Municipality: Toronto

Site: ONTARIO HYDRO SERVICES COMPANY
SHEPPARD TRANSFORMER STATION,SHEPPARD AVE EAST BETWEEN MEADOVALE & SWITCH GEAR TORONTO CITY ON

Database:
SPL

Ref NO: 169784
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: PROCESS UPSET
Incident Dt: 7/4/1999
Incident Reason: EQUIPMENT FAILURE
Incident Summary: ONTARIO HYDRO-20 KG SULPHUR HEXOFLOURIDE TO ATM,BLOWN BREAKER.
MOE Reported Dt: 7/4/1999
Environmental Impact: POSSIBLE

Nature of Impact: Water course or lake
Receiving Medium: AIR
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: Sheppard Ave, near Bathurst Toronto ON

Database:
SPL

Ref NO: 4346-6FDPR6
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause:
Incident Dt: 8/18/2005
Incident Reason:
Incident Summary: West Don Parklands, pink water from outfall to Don R.
MOE Reported Dt: 8/18/2005
Environmental Impact: Confirmed
Nature of Impact: Surface Water Pollution
Receiving Medium: Water
SAC Action Class: Spills to Watercourses
Sector Source Type:
Site Municipality: Toronto

Site: ONTARIO HYDRO
SHEPPARD TRANSFORMER STATION TRANSFORMER TORONTO CITY ON

Database:
SPL

Ref NO: 129815
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: COOLING SYSTEM LEAK
Incident Dt: 7/29/1996
Incident Reason: EQUIPMENT FAILURE
Incident Summary: ONTARIO HYDRO- 4L MINERALOIL TO GROUND. CLEANED. NO WATER.
MOE Reported Dt: 7/29/1996
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: TORONTO TRANSIT COMMISSION
CATCHBASIN, WESTBOUND ON SHEPPARD WEST OF DEAN PARK MOTOR VEHICLE (OPERATING FLUID) TORONTO CITY ON

Database:
SPL

Ref NO: 221337
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE
Incident Dt: 2/13/2002
Incident Reason: EQUIPMENT FAILURE

Incident Summary: TTC: BUS LEAKED 1L COOLANT TO CATCHBASIN, VACUUM TRUCK EN ROUTE
MOE Reported Dt: 2/13/2002
Environmental Impact: POSSIBLE
Nature of Impact: Water course or lake
Receiving Medium: WATER
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: Northbound Bayview Avenue, south of Lawrence Toronto ON

Database:
SPL

Ref NO: 0561-782MAB
Contaminant Code: 13
Contaminant Name: DIESEL FUEL
Contaminant Quantity: 40 L
Incident Cause:
Incident Dt:
Incident Reason: Spill
Incident Summary: MVA: Day&Ross truck, diesel spill on Bayview Ave
MOE Reported Dt: 10/16/2007
Environmental Impact: Not Anticipated
Nature of Impact: Soil Contamination
Receiving Medium: Land
SAC Action Class:
Sector Source Type: Transport Truck
Site Municipality: Toronto

Site: Toronto and Region Conservation Authority
Ravine south of Sunnybrook Hospital, access from n/b lane of Bayview Ave. (east side) just south of Sunnybrook Toronto ON

Database:
SPL

Ref NO: 8065-99PKJY
Contaminant Code: 44
Contaminant Name: SEWAGE,RAW UNCHLORINATED
Contaminant Quantity: 0 other - see incident description
Incident Cause: Leak/Break
Incident Dt: 2013/07/17
Incident Reason: Equipment Failure
Incident Summary: Toronto Water: sewage to Burke Brook to West Don
MOE Reported Dt: 2013/07/17
Environmental Impact: Confirmed
Nature of Impact: Surface Water Pollution
Receiving Medium:
SAC Action Class: Watercourse Spills
Sector Source Type: Sewer (Private or Municipal)
Site Municipality: Toronto

Site: Bayview Avenue, North of Hwy. 401 Toronto ON

Database:
SPL

Ref NO: 3484-5ZHARJ
Contaminant Code: 12
Contaminant Name: GASOLINE
Contaminant Quantity: 5 L

Incident Cause: Other Discharges
Incident Dt: 5/30/2004
Incident Reason: Spill
Incident Summary: MVA - gasoline to Rd. and CB - Bayview Ave.
MOE Reported Dt: 5/30/2004
Environmental Impact: Possible
Nature of Impact: Soil Contamination; Surface Water Pollution
Receiving Medium: Land & Water
SAC Action Class: Spill to Highway (Accident); Spill to Land
Sector Source Type: Other
Site Municipality: Toronto

Site: **David Schaeffer Engineering<UNOFFICIAL>**
BROOK CREEK - BAYVIEW AVE NORTH OF EGLINGTON<UNOFFICIAL> Toronto ON

Database:
SPL

Ref NO: 1642-63RUM5
Contaminant Code: 99
Contaminant Name: BENTONITE
Contaminant Quantity: other - see incident description
Incident Cause: Discharge Or Bypass To A Watercourse
Incident Dt: 8/11/2004
Incident Reason: Other - Reason not otherwise defined
Incident Summary: David Schaeffer Eng-Bentonite & Mud to Creek
MOE Reported Dt: 8/11/2004
Environmental Impact: Possible
Nature of Impact: Surface Water Pollution
Receiving Medium: Water
SAC Action Class: Spill to Inland Watercourses
Sector Source Type: Other
Site Municipality: Toronto

Site: **Bayview Ave. (Gerrard St. E to Queen St. E) Toronto ON**

Database:
SPL

Ref NO: 7130-86UA8P
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause:
Incident Dt:
Incident Reason:
Incident Summary: Bayview Flood/CSO - Gerrard St. E to Queen St. E.
MOE Reported Dt: 6/27/2010
Environmental Impact:
Nature of Impact:
Receiving Medium:
SAC Action Class: Sewage Bypasses / Overflows
Sector Source Type: Sewer
Site Municipality:

Site: **TORONTO, CITY OF**
RAVINE 100' FROM BAYVIEW S OF BLYTHEWOOD NEAR SUNNYBROOK DEPARTMENT OF
WORKS TORONTO CITY ON

Database:
SPL

Ref NO: 220143

Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: WASTEWATER DISCHARGE TO WATERCOURSE
Incident Dt: 1/21/2002
Incident Reason: UNKNOWN
Incident Summary: TORONTO WORKS: MANHOLE DISCHARGING SEWAGE, APP 1000L SO FAR,
MOE Reported Dt: 1/21/2002
Environmental Impact: POSSIBLE
Nature of Impact: Water course or lake
Receiving Medium: LAND / WATER
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: **City of Toronto**
Baview Ave., Just South of Sheppard Toronto ON

Database:
SPL

Ref NO: 5720-8YZQPP
Contaminant Code: 44
Contaminant Name: SEWAGE,RAW UNCHLORINATED
Contaminant Quantity: 0 other - see incident description
Incident Cause: Overflow/Surcharge
Incident Dt: 12-OCT-12
Incident Reason: Unknown / N/A
Incident Summary: City of Toronto: Sewer Surcharge, Unkn Qty to Don R.
MOE Reported Dt: 12-OCT-12
Environmental Impact: Confirmed
Nature of Impact: Surface Water Pollution
Receiving Medium:
SAC Action Class: Sewage Bypasses / Overflows
Sector Source Type: Sewer (Private or Municipal)
Site Municipality: Toronto

Site: **SHELL CANADA PRODUCTS LTD.**
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 17030
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: VALVE/FITTING LEAK OR FAILURE
Incident Dt: 4/12/1989
Incident Reason: ERROR
Incident Summary: SHELL STATION HAD SPILL OF 30 L GAS WHEN TRUCK LEFT VALVE OPEN
MOE Reported Dt: 4/12/1989
Environmental Impact:
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: **SHELL CANADA PRODUCTS LTD.**
TANK TRUCK (CARGO) TORONTO CITY ON

Database:
SPL

Ref NO: 11766
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 11/17/1988
Incident Reason: NEGLIGENCE (APPARENT)
Incident Summary: SHELL - 100 LTR. GASOLINE TO COLLECTION SYSTEM WHEN TRUCK OVERFILLED.
MOE Reported Dt: 11/17/1988
Environmental Impact:
Nature of Impact:
Receiving Medium: LAND / AIR
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: **Shell Canada OP Inc. and Shell Canada Limited**
Toronto ON

Database:
SPL

Ref NO: 6004-8HGHJK
Contaminant Code: 12
Contaminant Name: GASOLINE
Contaminant Quantity: 3 L
Incident Cause: Unknown
Incident Dt: 6/2/2011
Incident Reason: Error- Operator error
Incident Summary: Shell Canada: spill of gas, 3 L to pvt, cld
MOE Reported Dt: 6/3/2011
Environmental Impact: Confirmed
Nature of Impact: Other Impact(s)
Receiving Medium:
SAC Action Class: Land Spills
Sector Source Type: Service Station
Site Municipality: Toronto

Site: **SHELL CANADA PRODUCTS LTD.**
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 36883
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: PIPE/HOSE LEAK
Incident Dt: 6/27/1990
Incident Reason: EQUIPMENT FAILURE
Incident Summary: SHELL SERVICE STN-17 L GASOLINE TO PAVEMENT.
MOE Reported Dt: 6/27/1990
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: AIR
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 120139
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: UNKNOWN
Incident Dt: 10/27/1995
Incident Reason: UNKNOWN
Incident Summary: SHELL SERV STN-20 L GAS TO PVMT.SPILL BLOCKED FRMDRAIN WITH WOOD.
MOE Reported Dt: 10/27/1995
Environmental Impact: POSSIBLE
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 119820
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: PIPE/HOSE LEAK
Incident Dt: 10/19/1995
Incident Reason: EQUIPMENT FAILURE
Incident Summary: SHELL-1.5 L GASOLINE TO LOT,AUTO'S TANK LEAKED, CONTAINED,CLEANED-UP.
MOE Reported Dt: 10/19/1995
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 119779
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 10/18/1995
Incident Reason: ERROR
Incident Summary: SHELL CANADA-0.25 LITERS GASOLINE TO STATION LOT, AUTO'S TANK OVERFILLED.
MOE Reported Dt: 10/18/1995
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 118810
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 9/22/1995
Incident Reason: ERROR
Incident Summary: SHELL SERV STN-0.1 L GAS TO PVMT. NO ENV IMPACT.
MOE Reported Dt: 9/22/1995
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: SHELL GAS STATION \ TORONTO CITY ON

Database:
SPL

Ref NO: 93876
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause:
Incident Dt: 11/27/1993
Incident Reason:
Incident Summary:
MOE Reported Dt: 11/27/1993
Environmental Impact:
Nature of Impact:
Receiving Medium: LAND / WATER
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: SHELL CANADA PRODUCTS LTD.
TANK TRUCK (CARGO) TORONTO CITY ON

Database:
SPL

Ref NO: 25895
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 9/20/1989
Incident Reason: ERROR
Incident Summary: SHELL OIL - 10L DIESEL FUEL TO GROUND WHILE FILLING TRUCK
MOE Reported Dt: 9/20/1989
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:

Site Municipality: 01106

Site: Shell Canada Limited
Toronto ON

Database:
SPL

Ref NO: 0120-8KMQR
Contaminant Code: 12
Contaminant Name: GASOLINE
Contaminant Quantity: 1 L
Incident Cause: Valve / Fitting Leak Or Failure
Incident Dt: 8/11/2011
Incident Reason: Unknown - Reason not determined
Incident Summary: Shell Gas Stn: 1L gas from car to parking lot, cld
MOE Reported Dt: 8/11/2011
Environmental Impact: Not Anticipated
Nature of Impact: Soil Contamination
Receiving Medium:
SAC Action Class: Land Spills
Sector Source Type: Motor Vehicle
Site Municipality: Toronto

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 122865
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: OTHER CAUSE (N.O.S.)
Incident Dt: 1/21/1996
Incident Reason: ERROR
Incident Summary: SHELL-5 L GASOLINE TO LOTCONTAINED,SORBANTS APPLIED,CLEANED-UP.
MOE Reported Dt: 1/21/1996
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: SHELL GAS STATION
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 131918
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: OTHER CAUSE (N.O.S.)
Incident Dt: 9/15/1996
Incident Reason: EQUIPMENT FAILURE
Incident Summary: SHELL STATION 3L OF GASOLINE TO THE PAVEMENT AUTOMATIC SHUT-OFF FAILED
MOE Reported Dt: 9/15/1996
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND

SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 152104
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: CONTAINER OVERFLOW
Incident Dt: 2/4/1998
Incident Reason: ERROR
Incident Summary: SHELL CANADA: 3 L GASOLINE TO GROUND
MOE Reported Dt: 2/4/1998
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: SHELL CANADA PRODUCTS LTD.
SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 173007
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: OTHER CAUSE (N.O.S.)
Incident Dt: 9/22/1999
Incident Reason: ERROR
Incident Summary: TSSA: CUSTOMER SPILLED 40L GAS TO SHELL PROPERTY. CONTAINED.
MOE Reported Dt: 9/22/1999
Environmental Impact: NOT ANTICIPATED
Nature of Impact:
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 1106

Site: PRIVATE OWNER
SHELL STATION, FUELING PAD MOTOR VEHICLE (OPERATING FLUID) TORONTO CITY ON

Database:
SPL

Ref NO: 217629
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: OTHER CONTAINER LEAK
Incident Dt: 12/5/2001
Incident Reason: MATERIAL FAILURE
Incident Summary: AUTOMOBILE: LEAKING FUEL TANK - 30 L GASOLINE TO PAD-NO SEWERS/OFFSITE.
MOE Reported Dt: 12/5/2001
Environmental Impact: Possible

Nature of Impact: Air Pollution
Receiving Medium: Land
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Site: SHELL CANADA*
SHELL CANADA CAR WASH SERVICE STATION TORONTO CITY ON

Database:
SPL

Ref NO: 226252
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: PIPE/HOSE LEAK
Incident Dt: 5/24/2002
Incident Reason: EQUIPMENT FAILURE
Incident Summary: SHELL: 4L HYDRAULIC OIL TO FLOOR OF CAR WASH. NO SEWERS IMPACTED.
MOE Reported Dt: 5/24/2002
Environmental Impact: POSSIBLE
Nature of Impact: Water course or lake
Receiving Medium: LAND
SAC Action Class:
Sector Source Type:
Site Municipality: 01106

Appendix: Database Descriptions

*Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory:

Provincial [AAGR](#)

The MAAP Program maintains a database of all abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

*Government Publication Date: Sept 2002**

Aggregate Inventory:

Provincial [AGR](#)

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Mar 2015

Abandoned Mine Information System:

Provincial [AMIS](#)

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Oct 2014

Anderson's Waste Disposal Sites:

Private [ANDR](#)

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies:

Private [AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 2001-Jul 2014

Borehole:Provincial [BORE](#)

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2014

Certificates of Approval:Provincial [CA](#)

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

*Government Publication Date: 1985-Oct 30, 2011**

Commercial Fuel Oil Tanks:Provincial [CFOT](#)

Since May 2002, Ontario developed a new act where it became mandatory for fuel oil tanks to be registered with Technical Standards & Safety Authority (TSSA). This data would include all commercial underground fuel oil tanks in Ontario with fields such as location, registration number, tank material, age of tank and tank size.

Government Publication Date: 1948-Dec 2015

Chemical Register:Private [CHEM](#)

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1992, 1999-Jul 2014

Inventory of Coal Gasification Plants and Coal Tar Sites:Provincial [COAL](#)

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

*Government Publication Date: Apr 1987 and Nov 1988**

Compliance and Convictions:Provincial [CONV](#)

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Feb 2014

Certificates of Property Use:Provincial [CPU](#)

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994-Jan 2016

Drill Hole Database:Provincial [DRL](#)

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886-Jun 2014

Environmental Activity and Sector Registry:Provincial [EASR](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Feb 29, 2016

Environmental Registry:Provincial [EBR](#)

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994-Jan 2016

Environmental Compliance Approval:Provincial [ECA](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Feb 29, 2016

Environmental Effects Monitoring:Federal [EEM](#)

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

*Government Publication Date: 1992-2007**

ERIS Historical Searches:Private [EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 2014

Environmental Issues Inventory System:

Federal EIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

*Government Publication Date: 1992-2001**

Emergency Management Historical Event:

Provincial EMHE

The Emergency Management Historical Event data class will store the locations of historical occurrences of emergency events. Events captured will include those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance.

Government Publication Date: May 31, 2014

List of TSSA Expired Facilities:

Provincial EXP

This is a list of all expired facilities that fall under the TSSA (TSSA Act & Safety Regulations), including the six regulations that exist under the Fuels Safety Division. It will include facilities such as private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. These tanks have been removed and automatically fall under the expired facilities inventory held by TSSA.

Government Publication Date: Current to Nov 2015

Federal Convictions:

Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

*Government Publication Date: 1988-Jun 2007**

Contaminated Sites on Federal Land:

Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: June 2000-Oct 2015

Fisheries & Oceans Fuel Tanks:

Federal FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sept 2003

Fuel Storage Tank:

Provincial FST

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

Government Publication Date: 2010-Nov 2015

Fuel Storage Tank - Historic:Provincial **FSTH**

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

*Government Publication Date: Pre-Jan 2010**

Ontario Regulation 347 Waste Generators Summary:Provincial **GEN**

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-May 2015

Greenhouse Gas Emissions from Large Facilities:Federal **GHG**

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: Dec 31, 2013

TSSA Historic Incidents:Provincial **HINC**

This database will cover all incidences recorded by TSSA with their older system, before they moved to their new management system. TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. The TSSA works to protect the public, the environment and property from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from pipelines, diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

*Government Publication Date: 2006-June 2009**

Indian & Northern Affairs Fuel Tanks:Federal **IAFT**

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

*Government Publication Date: 1950-Aug 2003**

TSSA Incidents:Provincial **INC**

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

Government Publication Date: June 2009 - Nov 2015

Landfill Inventory Management Ontario:Provincial [LIMO](#)

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the ministry compiles new and updated information. The inventory will include small and large landfills. Additionally, each year the ministry will request operators of the larger landfills complete a landfill data collection form that will be used to update LIMO and will include the following information from the previous operating year. This will include additional information such as estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills will include information such as site owner, site location and certificate of approval # and status.

*Government Publication Date: 2012***Canadian Mine Locations:**Private [MINE](#)

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

*Government Publication Date: 1998-2009****Mineral Occurrences:**Provincial [MNR](#)

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

*Government Publication Date: 1846-Apr 2013***National Analysis of Trends in Emergencies System (NATES):**Federal [NATE](#)

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

*Government Publication Date: 1974-1994****Non-Compliance Reports:**Provincial [NCPL](#)

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

*Government Publication Date: 1994-2013***National Defense & Canadian Forces Fuel Tanks:**Federal [NDFT](#)

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

*Government Publication Date: Up to May 2001**

National Defense & Canadian Forces Spills:Federal [NDSP](#)

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites:Federal [NDWD](#)

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

*Government Publication Date: 2001-Apr 2007**

National Energy Board Wells:Federal [NEBW](#)

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

*Government Publication Date: 1920-Feb 2003**

National Environmental Emergencies System (NEES):Federal [NEES](#)

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

*Government Publication Date: 1974-2003**

National PCB Inventory:Federal [NPCB](#)

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

*Government Publication Date: 1988-2008**

National Pollutant Release Inventory:Federal [NPRI](#)

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-2013

Oil and Gas Wells:Private [OGW](#)

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-2015

Ontario Oil and Gas Wells:

Provincial OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, and well cap date, license No., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-Aug 2015

Inventory of PCB Storage Sites:

Provincial OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013

Orders:

Provincial ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Jan 2016

Canadian Pulp and Paper:

Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Parks Canada Fuel Storage Tanks:

Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

*Government Publication Date: 1920-Jan 2005**

Pesticide Register:

Provincial PES

The Ontario Ministry of Environment maintains a database of all manufacturers and vendors of registered pesticides.

Government Publication Date: 1988-Jun 2013

TSSA Pipeline Incidents:

Provincial PINC

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. This database will include spills, strike and leaks from recorded by the TSSA.

Government Publication Date: June 2009-2014

Private and Retail Fuel Storage Tanks:

Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

*Government Publication Date: 1989-1996**

Permit to Take Water:

Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994-Jan 2016

Ontario Regulation 347 Waste Receivers Summary:

Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-2013

Record of Site Condition:

Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.

RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Jan 2016

Retail Fuel Storage Tanks:

Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jul 2014

Scott's Manufacturing Directory:

Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

*Government Publication Date: 1992-Mar 2011**

Ontario Spills:

Provincial SPL

This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Jun 2015

Wastewater Discharger Registration Database:

Provincial SRDS

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-2013

Anderson's Storage Tanks:

Private TANK

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

*Government Publication Date: 1915-1953**

Transport Canada Fuel Storage Tanks:

Federal TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970-Mar 2007

TSSA Variances for Abandonment of Underground Storage Tanks:

Provincial VAR

The TSSA, under the Liquid Fuels Handling Code and the Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, you may apply to seek a variance from this code requirement. This is a list of all variances granted for abandoned tanks.

Government Publication Date: Current to Nov 2015

Waste Disposal Sites - MOE CA Inventory:

Provincial WDS

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Feb 29, 2016

Waste Disposal Sites - MOE 1991 Historical Approval Inventory:

Provincial WDSH

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

*Government Publication Date: Up to Oct 1990**

Water Well Information System:

Provincial WWIS

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: 1955-Mar 2014

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

APPENDIX D: Site Photos



Photo 1: View of the west part of the asphalt road between Barberry Place and Rean Drive looking east.



Photo 2: View of the east part of the asphalt road between Barberry Place and Rean Drive looking west.



Photo 3: Staining on the asphalt road between Barberry Place and Rean Drive



Photo 4: View of the residential dwellings on Barberry Place looking north



Photo 5: View of the residential land use on Rean Drive looking north



Photo 6: View of the south side of 593 Sheppard Ave East and 591 Sheppard Ave East looking south currently under construction



Photo 7: View of the residential land use on Kenaston Gardens looking south (5-15 Kenaston Gardens currently under construction)



Photo 8: Residential land use at the south part of the Site or Study Area



Photo 9: 2831 Bayview Avenue, Shell Gas Station



FINAL REPORT

Phase II Environmental Site Assessment

**Toronto East-West Extension, Rean
Drive/Kenaston Gardens, Toronto,
Ontario**

Presented to:

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Engineering & Construction Services
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Report No. 1160517.00

December 12, 2016

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Executive Summary

Morrison Hershfield Limited (MH) was retained by the City of Toronto to conduct a scoped Phase II Environmental Site Assessment (Phase I ESA) for the new East-West connection between Rean Drive and Kenaston Gardens in the Bayview Village in Toronto, Ontario.

The purpose of a Phase II ESA is to determine the presence or absence of soil and/or groundwater contamination on the property and to that end Morrison Hershfield followed the methodology described in the Canadian Standards Association (CSA) standard Z769-00, Phase II Environmental Site Assessment. The scope of work included intrusive subsurface investigations at a total of 10 boreholes, chemical analysis of soil and groundwater, assessment of remedial options, and generation of this report.

Based on the findings of the soil sampling and analysis, the following conclusions are made.

1. PAHs, VOCs and PHCs were not detected in soil. This indicates that the retail fuel outlet at 2831 Bayview Avenue has not acted as a source of contamination.
2. Only the shallow fill layer have SAR and/or EC above the Table 3 RPI standards, and the elevated level of EC and SAR is attributable to road salt application for the purpose of keeping the roadway safe for traffic under conditions of snow or ice; therefore, in accordance with Section 48(3) of O. Reg. 153/04, EC and SAR are deemed not to be exceeding the MOECC Table 3 RPI standards at the Site. Leaving the salt impacted soil onsite or re-using it for the on-site road development does not pose human health risks to the current or future site receptors (construction and trench workers) or ecological risks if no vegetation is planted onsite. Therefore, no remedial action is required for the EC and SAR impacted soil.

The following recommendations are made based on the findings of this assessment:

1. No remedial action is required for the EC and SAR impacted soil. The EC and SAR impacted soil can be re-used for the on-site road development.
2. If the salt impacted soil is to be disposed off-site, the soil may only be placed:
 - a) a minimum of 1.5 m below the finished grade at the disposal location; and
 - b) on non-agricultural property.

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Table C-2: Soil Metals Analyses

Table C-3: Soil PAH Analyses

Table C-4: Soil VOC Analyses

Table C-5: Soil PHC Analyses

APPENDIX D: Laboratory Certificates of Analysis

APPENDIX E: Laboratory Certificates of TCLP Analysis

1. INTRODUCTION

1.1 General

Morrison Hershfield Limited (MH) was retained by the City of Toronto to conduct a scoped Phase II Environmental Site Assessment (Phase I ESA) for the new East-West connection between Rean Drive and Kenaston Gardens in the Bayview Village in Toronto, Ontario. The Phase II ESA is part of a Class Environmental Assessment (EA) Study carried out for the project to develop, identify and evaluate alternative solutions for the new east-west street connection between Kenaston Gardens and Rean Drive.

The study area of the EA and of the Phase II ESA extends from Highway 401 to the south, Sheppard Avenue East to the north, Bayview Avenue to the west and to approximately 100 m east of Rean Drive. The focus area of the EA Study and this Phase II ESA which at this stage of the project is considered to be the preferred alternative (hereafter referred as “Site”) includes the following lands:

- The existing road segment between Barberry Place and Rean Drive and the right of way;
- The lands between Kenaston Gardens and Barberry Place where the new road segment and the right of way are proposed to be built. These lands are occupied by residential dwellings and are expected to be acquired by the City of Toronto to complete the new road and the right-of-way.

The general location of the study and the focus area (the Site) is shown on the Key Plan, Figure 1 and a plan of the study and the focus area is shown on the Site Plan, Figure 2. The Phase II ESA is not intended to support Record of Site Condition under Ontario Regulation 153/04 and Part XV.1 of the Environmental Protection Act.

1.2 Areas of Potential Environmental Concern / Contaminants of Concern

According to the Phase I ESA conducted by MH in August 2016, no Areas of Potential Environmental Concern (APECs) and no Potentially Contaminating Activities (PCAs) were identified on the Site. The following potentially PCA was identified within the study area:

- Presence of a retail fuel outlet at 2831 Bayview Avenue with 4 USTs. The retail fuel outlet has been in operation for over 50 years and there is potential for subsurface contamination associated with the 4 USTs and the reported spills. Given the distance between the Site (the focus area) and this PCA (approximately 100 m) and that the Site is separated from this potential source of contamination by midrise buildings with deeper foundations, it is considered that the retail fuel outlet represents a medium risk for potential subsurface impact on the Site (focus area)

1.3 Scope of Work

The scope was to conduct a Phase II ESA in accordance with CSA Standard Z769-00 (reaffirmed 2008). That is, to characterize and/or delineate the concentrations of substances of concern related to the areas of potential contamination identified in the Phase I ESA. The Scope of Work included the following:

- Subsurface Investigation;
- Collection of soil and groundwater samples;
- Chemical Analysis of Soil and Groundwater; and
- Interpretation of Data and Reporting.

1.4 Contents of Report

This section of the report provides information on the context for the study, the scope of work and the layout of the report. Sections 2 outlines the method used. Sections 3 and 4 presents the findings of the chemical analysis of soil and groundwater and an evaluation of their significance. Section 5 presents remedial options. Conclusions and recommendations for further investigation are presented in Sections 6 and 7, respectively. Section 8 provides closure notes and signatures of the report authors, and Section 9 presents the limitations and use of this report. The qualifications of the assessors are presented in Section 10, while references are provided in Section 11. Figures, tables, and supporting documents are provided in the appendices.

2. METHODS

2.1 Development of Site Conceptual Model and Sampling Plan

The site conceptual model was developed based on review of the available topography, geology, and hydrogeology information, and information from the previous Phase I ESA.

A sampling plan was developed which specified the locations of boreholes and monitoring wells, identification of the target horizons for contamination, and specification of the numbers of soil and groundwater samples to be collected and analysed.

2.2 Borehole Drilling

The geo-environmental field investigation for the Phase II ESA was conducted in conjunction with the geotechnical field investigation, led by Geo-pro. The location and drilling depth of the geo-environmental boreholes was determined based on the requirements of the geotechnical investigation. The geotechnical boreholes were drilled to a maximum depth of 2.0 m, and because the construction will not extend deeper than 1.5 m so there is no need to deepen the geotechnical boreholes for environmental purposes.

Drilling was carried out by a specialist drilling subcontractor, under the supervision of Geo-pro staff in conjunction of geotechnical investigation. The drilling subcontractor is a licensed well contractor, with drilling staff who are licensed well technicians in accordance with O. Reg. 903. The drilling was conducted using truck-mounted continuous flight auger equipment.

2.3 Soil Sampling

Soil samples were recovered at regular intervals of depth using a 50 mm O.D. split-spoon sampler driven into the soil in accordance with the Standard Penetration Test (SPT) procedure described in ASTM D1586 - 11 Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.

All soil samples, whether collected from a borehole, were logged for texture, colour, odour, moisture and evidence of contamination, and were placed in polyethylene bags for processing.

The headspace in each collected soil sample bag was tested using an Eagle II portable gas monitor equipped with hydrocarbon (combustible vapours, calibrated to a hexane standard) and VOC (photo ionization of volatiles, calibrated to isobutylene) detectors. Based on all available field evidence, the most contaminated samples and a representative set of samples from various depths were placed in jars for laboratory analysis of COCs. Samples for VOCs including BTEX were collected using one-time use samplers and were preserved in the field with methanol, following the methodology

prescribed by Ontario Regulation 153/04. Sample jars were stored in a refrigerated cooler prior to delivery to ALS Environmental Laboratories of Richmond Hill, Ontario

Representative soil samples that may require landfill disposal were analysed for metals and PAHs by the Toxicity Characteristic Leaching Procedure and the results compared to Schedule 4 of Ontario Regulation 347 – General Waste Management. This is the test to determine whether the material is considered non-hazardous under this regulation, and can be disposed of as such.

2.4 Monitoring Well Installation and Elevation Surveying

No groundwater was encountered during the geotechnical investigation, therefore no monitoring well was installed.

2.5 Groundwater Sampling

No groundwater was encountered during the geotechnical investigation, therefore no groundwater was sampled.

3. RESULTS

3.1 Site Conceptual Model

3.1.1 Topography and Drainage

The overall slope of the study area is downwards in the southeast direction. The study area is at elevation between 180 meters above sea level (mASL) and 169 mASL with a gentle slope towards east and southeast. The study area is in general at grade with the surrounding lands (City of Toronto topography map).

3.1.2 Surficial Geology

The surficial geology at the study area is mapped as till- stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain (OGS on-line geological maps).

The subsurface conditions on the adjacent lands on the north of the Site are described as asphalt over granular base underlain by heterogeneous fill encountered at depths ranging between 0.8 and 2.3 metres below ground surface (mbgs) overlying native sandy silt till. The fill was described as comprised of sandy silt, clayey silt and silty clay with trace of organics (Previous Phase II ESA report completed by SPL).

3.1.3 Bedrock Geology

The underlying bedrock consists of Shale, limestone, dolostone, siltstone Georgian Bay Formation; Blue Mountain Formation; Billings Formation; Collingwood Member; Eastview Member (OGS on-line geological maps).

3.1.4 Hydrogeology

Based on the MOECC Water Well database and the 2012 SPL Phase II ESA report completed on adjacent lands north of the Site there are eight (8) monitoring wells in total installed within the study area in 2012 and 2013. The wells were drilled to an approximate depth of 15 m. No water supply wells are known to be present within the study area.

The SPL (2012) Phase II ESA indicated the shallow groundwater flow is interpreted to be in east direction towards Don River East located approximately 1.65 km southeast of the study area. The regional groundwater flow is expected to be in south direction towards Lake Ontario located approximately 15 km south of the Site.

3.1.5 APECs and PCAs

These are described in Section 1.2

3.2 Sampling Plan

Ten (10) boreholes were chosen for the assessment of soil. The location and drilling depth of the geo-environmental boreholes was determined based on the requirements of the geotechnical investigation. The borehole locations are shown on the site plan, figure 2.

Target horizons for contamination were the shallow sub-surface including immediately below the ground surface for spills and poor fill on the existing asphalt road, and also potential contaminant migration from the retail fuel outlet at the west part of the Site at Kenaston Gardens.

3.3 Soil and Groundwater Conditions Encountered

Ten (10) boreholes were drilled on September 28, 2016 to 2.0 m. Soils in the boreholes generally consisted of fill and native till. No hydrocarbon odours or black soil staining were detected in any of the boreholes. Borehole logs are presented in Appendix B.

No groundwater was encountered in any of these boreholes and no monitoring wells were installed.

3.4 Applicable Standards

Site Condition Standards for the evaluation of soil and groundwater quality at this site are the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (Ministry of the Environment, 2011). The following considerations were taken into account concerning the choice of the standards to be used for comparison purposes in this assessment:

- The areas covered in this assessment are serviced by municipal drinking water supply and are thus not reliant on local groundwater for potable consumption. Drinking water wells are not known to be present within 100 m of the areas of this assessment. Existing municipal water supplies will therefore not be affected if the local groundwater is compared to non-potable groundwater standards.
- The most common land use of the areas covered in this assessment is residential/parkland/institutional.

Based on these considerations, the groundwater and soil analytical results will be mainly compared to the applicable generic standards are found in Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition. Table 3 standards

applicable to soil are chosen according to the property use and grain size. Soil standards for coarse-grained soils and Residential/Parkland/Institutional (RPI) property were used.

3.5 Soil Analytical Results

Seven (7) soil samples were submitted for various analyses as shown in Table 1. The results are included in Table C-1 (Inorganics), Table C-2 (metals), Table C-3 (PAHs), Table C-4 (VOCs) and Table C-5 (PHCs) in Appendix C, while the exceedances of applicable standards are summarized in Table 1, and on Figure 3. The laboratory Certificate of Analysis is included in Appendix D.

Table 1: Soil Samples Submitted and Exceedances of MOE Table 3 RPI Standards

Sample	Depth (m)	Description	Parameters with concentrations in soil which exceed applicable standards		
			Metals / Inorganics / PAHs	VOC	PHC
BH1 – SS2	0.76-1.22	FILL: sandy silt, trace gravel, brown, moist, loose	SAR	NA	NA
BH2 – SS3	1.52-1.98	SANDY SILT: trace gravel, brown, moist, very dense	NA	None	None
BH4 – SS2	0.76-1.22	SILT TILL: trace gravel, trace clay, brown, moist compact to dense	None	NA	NA
BH5 – SS2	0.76-1.22	FILL: sandy silt, trace gravel, brown to grey, moist, loose	EC	NA	NA`
BH6 – SS3	1.52-1.98	SANDY SILT TILL trace gravel, trace clay, containing cobbles/boulders, brown, moist, compact to dense	NA	None	None
BH8 – SS2	0.76-1.22	FILL: sandy silt, trace gravel, pockets of sand, brown, moist, compact	SAR and EC	NA	NA
BH10 – SS2	0.76-1.22	FILL: sand and gravel, trace silt, grey, moist, very dense to compact	EC	NA	NA

NA = Not Applicable (sample not submitted for this analysis)

All the samples that were tested for inorganics have exceedances of SAR and/or EC of Table 3 RPI standards. The source of elevated EC and SAR in soil samples is likely the use of de-icing salt on the existing asphalt road.

There were no exceedances of Table 3 RPI standards for metals, PAH, and PHC/VOCs. One composite sample was analysed for metals and PAH by the Toxicity Characteristic Leaching Procedure. When compared to Schedule 4 of Ontario Regulation 347, the

results verified that the material is considered non-hazardous soil. The laboratory Certificate of TCLP Analysis is included in Appendix E.

3.6 Groundwater Analytical Results

No groundwater was encountered and no groundwater is sampled.

4. EVALUATION OF RESULTS

Areas of potential environmental concern and/or Potentially Contaminating Activities (PCAs) identified in the Phase I ESA by Morrison Hershfield were investigated as part of this scoped Phase II ESA.

VOC and PHC Contamination Not Present in the Soil

See Tables C-4 and C-5 for VOCs and PHCs in soil, respectively.

Neither PHCs nor VOCs were detected in the two soil samples analysed for these parameters. This demonstrates that the retail fuel outlet at 2831 Bayview Avenue has not acted as a source of contamination.

EC/SAR Exceedances Present in the Upper Fill Layer of Soil

See Tables C-1, C-2 and C-3 for inorganics, metals and PAHs in soil, respectively.

Five (5) samples of shallow fill from 5 boreholes were analysed for inorganics, metals and PAHs. All the fill samples have SAR and/or EC above the Table 3 RPI standards. No PAH or metal exceedances of Table 3 RPI standards were noted.

This contamination source of the soil EC and SAR is likely the use of de-icing salt. Section 48(3) of O. Reg. 153/04 states that:

"If, having regard to any phase one and phase two environmental site assessments for a property, a qualified person determines that an applicable site condition standard is exceeded at the property solely because a substance has been used on a highway for the purpose of keeping the highway safe for traffic under conditions of snow or ice or both, as provided for under section 2 of Regulation 339 of the Revised Regulations of Ontario, 1990 (Classes of Contaminants — Exemptions), the applicable site condition standard is deemed not to be exceeded for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3)."

As stated above, the elevated level of EC and SAR is attributable to road salt application on the existing asphalt road for the purpose of keeping the roadway safe for traffic under conditions of snow or ice; therefore, in accordance with Section 48(3) of O. Reg. 153/04, EC and SAR are deemed not to be exceeding the MOECC Table 3 RPI standards at the Site.

One composite sample was analysed for metals and PAH by the Toxicity Characteristic Leaching Procedure. When compared to Schedule 4 of Ontario Regulation 347, the results verified that the material is considered non-hazardous soil.

5. REMEDIAL OPTIONS

Based on the findings of the scoped Phase II ESA, only EC and SAR in the fill layer have exceedances of Table 3 standards, and the elevated level of EC and SAR is attributable to road salt application on the existing asphalt road for the purpose of keeping the roadway safe for traffic under conditions of snow or ice. In accordance with Section 48(3) of O. Reg. 153/04, EC and SAR are deemed not to be exceeding the MOECC Table 3 RPI standards at the Site.

The Tables of the MOECC Site Condition Standards (SCS), April 15, 2011 are developed through the use of a number of component values. A component value is developed to provide a receptor or group of receptors protection from a contaminant via a specific pathway. The driving component value used to develop the MOECC Table 3 Standard for EC and SAR for residential land use is the direct soil contact of plants and soil invertebrates. Leaving the salt impacted soil onsite or re-using it for the on-site road development does not pose human health risks to the current or future site receptors (construction and trench workers) or ecological risks if no vegetation is planted onsite.

Based on the considerations above, no remedial action is required for the EC and SAR impacted soil onsite.

6. CONCLUSIONS

Based on the findings of the soil sampling and analysis, the following conclusions are made.

1. PAHs, VOCs and PHCs were not detected in soil. This indicates that the retail fuel outlet at 2831 Bayview Avenue has not acted as a source of contamination.
2. Only the shallow fill layer have SAR and/or EC above the Table 3 RPI standards, and the elevated level of EC and SAR is attributable to road salt application for the purpose of keeping the roadway safe for traffic under conditions of snow or ice; therefore, in accordance with Section 48(3) of O. Reg. 153/04, EC and SAR are deemed not to be exceeding the MOECC Table 3 RPI standards at the Site. Leaving the salt impacted soil onsite or re-using it for the on-site road development does not pose human health risks to the current or future site receptors (construction and trench workers) or ecological risks if no vegetation is planted onsite. Therefore, no remedial action is required for the EC and SAR impacted soil.

7. RECOMMENDATIONS

The following recommendations are made based on the findings of this assessment:

1. No remedial action is required for the EC and SAR impacted soil. The EC and SAR impacted soil can be re-used for the on-site road development.
2. If the salt impacted soil is to be disposed off-site, the soil may only be placed:
 - a) a minimum of 1.5 m below the finished grade at the disposal location; and
 - b) on non-agricultural property.

8. CLOSURE

We trust the above meets with your current requirements. Should you have any comments, questions, or require additional information, please do not hesitate to contact this office.

Respectfully submitted,
Morrison Hershfield Limited



Cindy Zhao, M.A. Sc.
Hydrogeologist-in-Training



Anthony West, Ph.D., P.Eng.
Senior Geo-Environmental Engineer

9. LIMITATIONS AND USE

This report has been prepared for the exclusive use by City of Toronto, by Morrison Hershfield Limited (Morrison Hershfield). Morrison Hershfield hereby disclaims any liability or responsibility to any person or party, other than City of Toronto, for any loss, damage, expense, fines, or penalties which may arise from the use of any information or recommendations contained in this report by a third party.

In preparing this report Morrison Hershfield has relied in good faith on information provided by individuals and companies noted in this report. Morrison Hershfield assumes that the information provided is factual and accurate, and accepts no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of the persons interviewed or contacted.

The report, which specifically includes all tables, figures and appendices is based on data and information collected during investigations conducted by Morrison Hershfield and is based solely on the conditions of the site at the time of the investigation, supplemented by historical information and data obtained by Morrison Hershfield as described in this report. No intrusive sampling or analysis was conducted as part of the Phase I ESA. Furthermore, no assurance is made regarding changes in conditions and/or the regulatory regime (standards, guidelines, etc.), subsequent to the time of investigation.

Morrison Hershfield has exercised professional judgment in collecting and analyzing the information and formulating recommendations based on the results of the study. The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to this study. No other warranty or representation, either expressed or implied, as to the accuracy of the information or recommendations included or intended in this report.

10. QUALIFICATIONS OF THE ASSESSORS

Morrison Hershfield is an employee-owned firm providing integrated multidisciplinary engineering and related expertise. We deliver innovative, cost effective and technically sophisticated solutions to clients in the Industrial, Telecommunications, Transportation, Building Engineering, Land Development, and Life Sciences sectors. Our staff of approximately 850 serve North America and beyond from 10 Canadian offices (from St. John's NL in the east to Whitehorse YK in the north, to Victoria in the west) and 6 U.S. offices. Now in its 66th year in business, Morrison Hershfield is firmly entrenched as part of the Canadian engineering landscape.

Anthony West, Ph.D., P.Eng is a senior geo-environmental engineer with Morrison Hershfield Limited, and leader of this practice within the firm. He has approximately 20 years of experience in assessment and remediation of contaminated sites, groundwater flow and contaminant transport modelling, and hydrogeology. He is a registered professional engineer, first licensed in 1995. He has a B.A.Sc., M.Eng., and Ph.D., all in civil engineering, with water resources, contaminant transport, and fractured bedrock hydrogeology specializations, respectively. Dr. West was responsible for project management and technical oversight.

Cindy is a hydrogeologist in training with more than two years of experience in various Phase I and Phase II Environmental Site Assessments in accordance with the federal and provincial requirements (O. Reg. 153/04) and CSA Standards, including obtaining and reviewing historical and regulatory records, conducting interviews and site visits, and report writing. She is also actively involved in contaminated soil and groundwater inspections and remediation and free product remediation as part of roadway construction projects. Ms. Zhao was responsible for the coordination of site investigation and reporting.

11. REFERENCES

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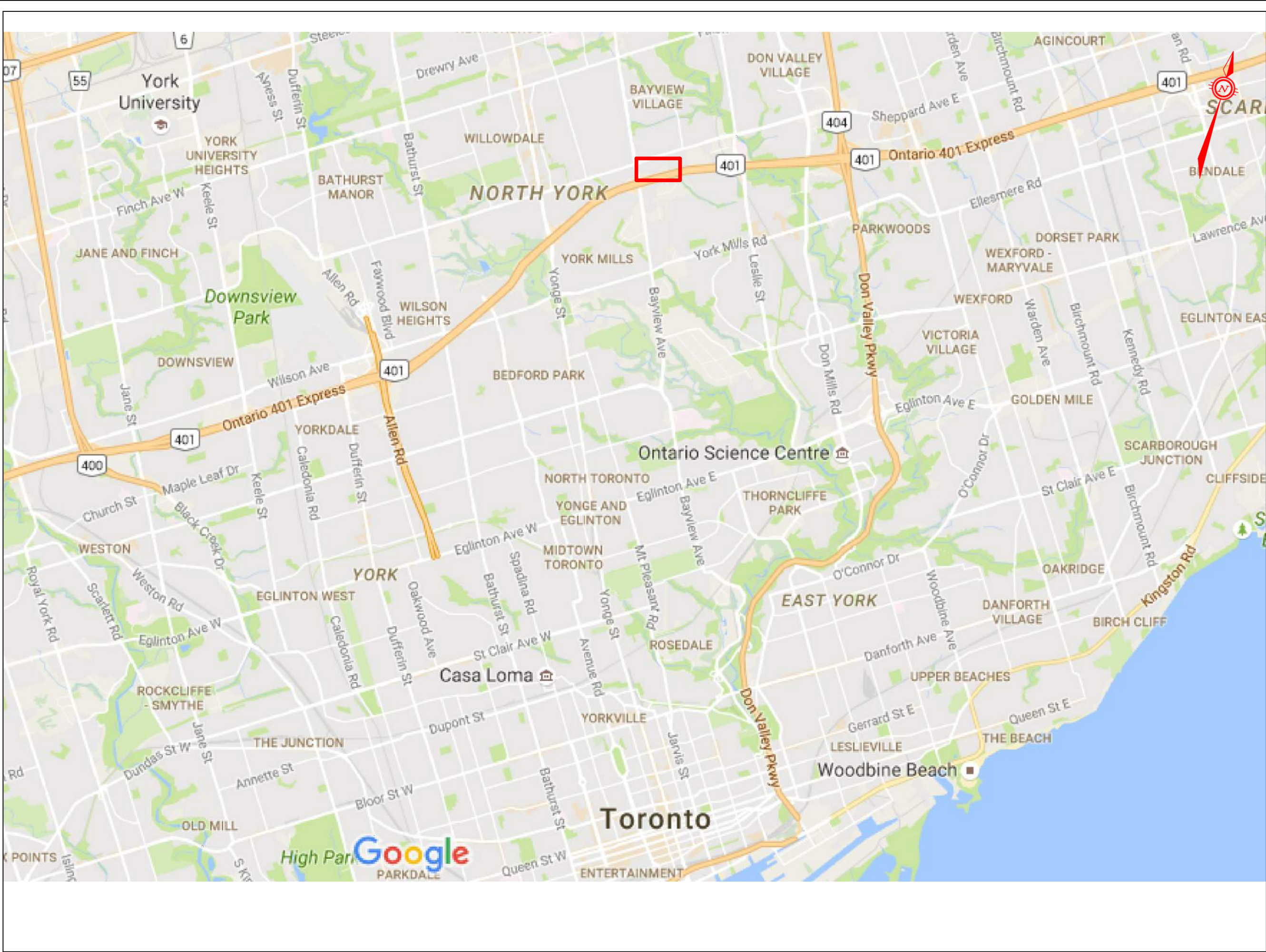
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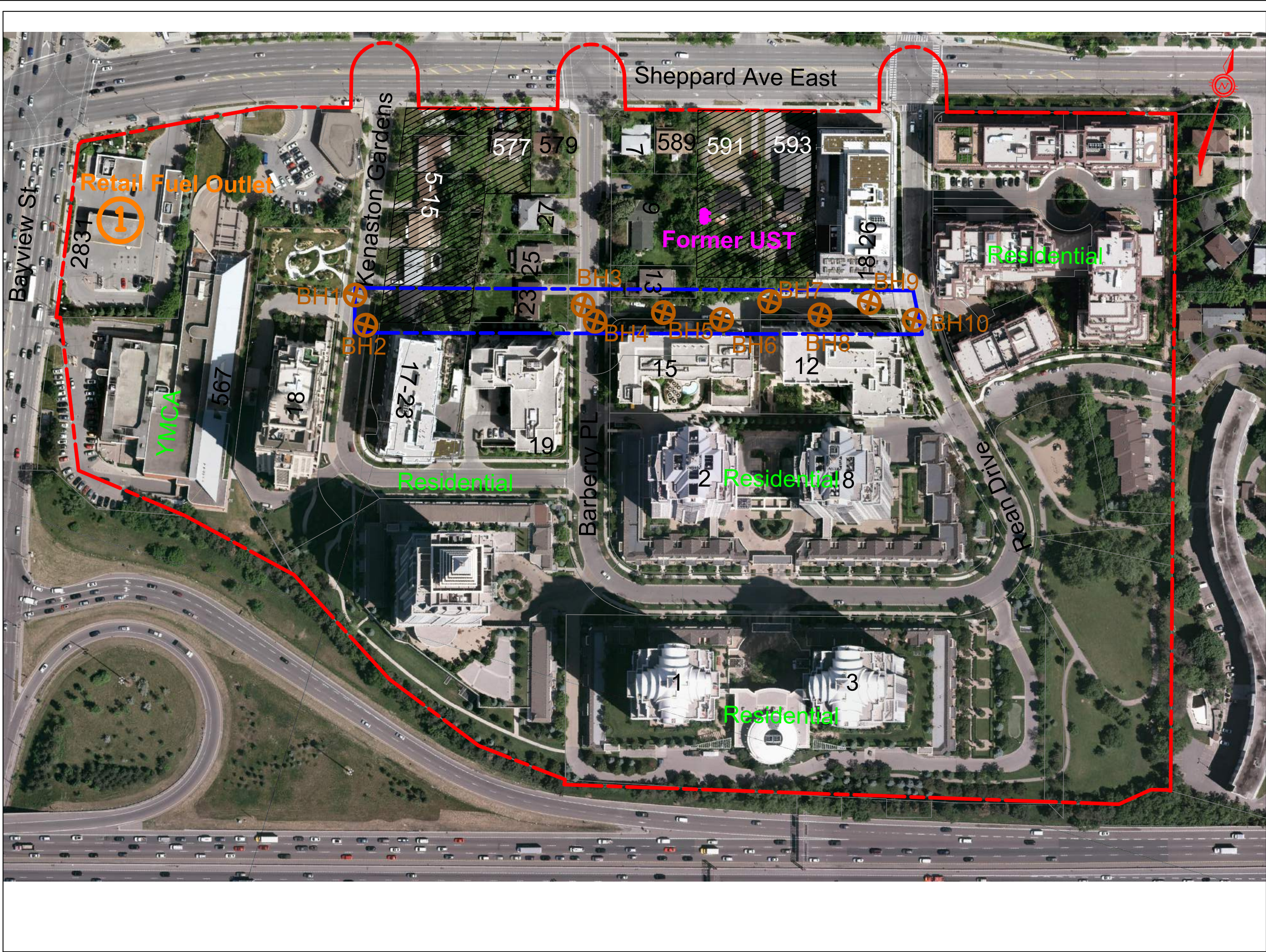
APPENDIX A: Figures

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LEGEND	
	Study Area
 MORRISON HERSHFIELD	
PROJECT: EXTENSION OF REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO	
PREPARED FOR: 	
DESIGNED BY:	CINDY ZHAO
DRAWN BY:	CINDY ZHAO
CHECKED BY:	MARIA STANEVA
DATE:	JULY 27, 2016
SCALE:	N.T.S
PROJECT NO:	1160517
TITLE: LOCATION PLAN PHASE II ENVIRONMENTAL SITE ASSESSMENT REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO	
FIGURE NO:	1

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LEGEND

Study Area

Property Parcel

Focus Area (Site)

Properties in Construction

Borehole

Potentially Contaminating Activities (PCAs)

Retail outlet with 4 USTs that has been in operation for over 50 years

MORRISON HERSHFIELD

PROJECT:

EXTENSION OF REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO

PREPARED FOR:

TORONTO

DESIGNED BY:

CINDY ZHAO

DRAWN BY:

CINDY ZHAO

CHECKED BY:

ANTHONY WEST

DATE:

NOVEMBER, 2016

SCALE:

5m 0m 10m 30m

PROJECT NO:

1160517

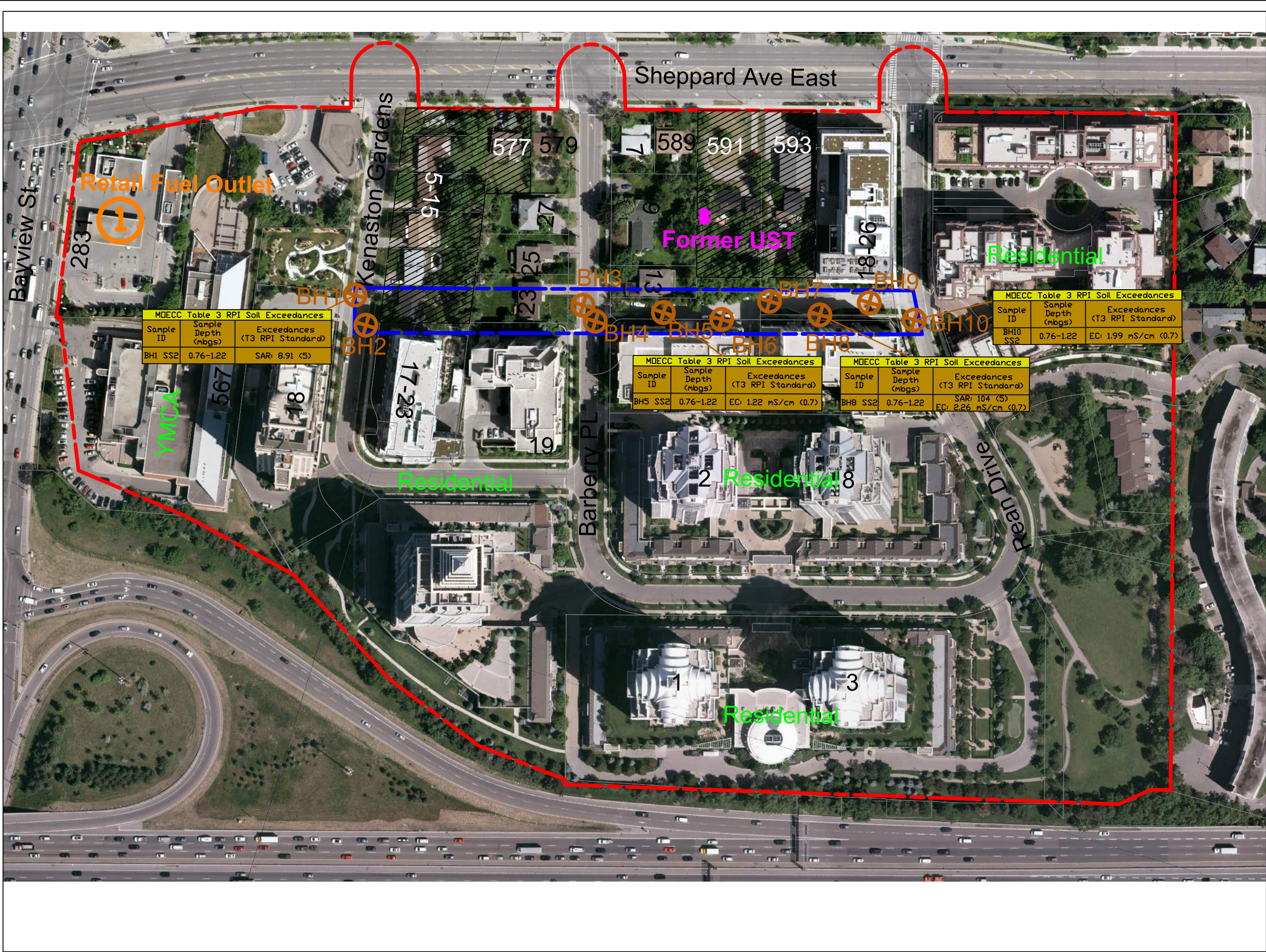
TITLE:

SITE PLAN
PHASE II ENVIRONMENTAL SITE ASSESSMENT
REAN DRIVE TO KENASTON GARDENS,
TORONTO, ONTARIO

FIGURE NO:

2

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LEGEND

- Study Area
- Property Parcel
- Focus Area (Site)
- Properties in Construction
- Borehole

Potentially Contaminating Activities (PCAs)

- 1 Retail outlet with 4 USTs that has been in operation for over 50 years

MORRISON HERSHFIELD

PROJECT:

EXTENSION OF REAN DRIVE TO KENASTON GARDENS, TORONTO, ONTARIO

PREPARED FOR:

TORONTO

DESIGNED BY: CINDY ZHAO

DRAWN BY: CINDY ZHAO

CHECKED BY: ANTHONY WEST

DATE: NOVEMBER, 2016

SCALE: 5m 0m 10m 30m

PROJECT NO: 1160517

TITLE:

ANALYTICAL RESULTS EXCEEDANCES
PHASE II ENVIRONMENTAL SITE ASSESSMENT
REAN DRIVE TO KENASTON GARDENS,
TORONTO, ONTARIO

FIGURE NO:




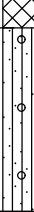
3

APPENDIX B: Borehole Logs

PROJECT: Geotechnical Investigation for Rean Drive Extension
 CLIENT: Morrison Hershfield
 PROJECT LOCATION: Toronto, Ontario
 DATUM: N/A
 BH LOCATION: See Borehole Location Plan

DRILLING DATA
 Method: Continuous Flight Auger
 Diameter: 155mm/205mm
 Date: Sep/28/2016

REF. NO.: 16-1359
 ENCL NO.: 2

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (280 mm)														
0.3	GRANULAR BASE/SUBBASE: (390 mm)		1A	AS											
0.7	FILL: sandy silt, trace gravel, brown, moist, loose		2	SS	6										
1.4	SANDY SILT TILL: trace gravel, trace clay, brown, moist, compact		3	SS	21										
2.0	END OF THE BOREHOLE Notes: 1) Borehole was open and dry upon completion of drilling.														





GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

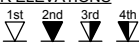
GRAPH NOTES

+ 3, × 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension							DRILLING DATA								
CLIENT: Morrison Hershfield							Method: Continuous Flight Auger								
PROJECT LOCATION: Toronto, Ontario							Diameter: 155mm/205mm								
DATUM: N/A							Date: Sep/28/2016								
BH LOCATION: See Borehole Location Plan							REF. NO.: 16-1359								
							ENCL NO.: 3								
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _P	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm ⁻³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (220 mm)														
0.2	GRANULAR BASE/SUBBASE: (390 mm)		1	AS											
0.6	FILL: sandy silt to silty sand , trace to some gravel, brown, moist, compact		2	SS	27										
1.4	SANDY SILT: trace gravel, brown, moist, very dense		3	SS	65										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th


GRAPH NOTES





+ 3, x 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension
 CLIENT: Morrison Hershfield
 PROJECT LOCATION: Toronto, Ontario
 DATUM: N/A
 BH LOCATION: See Borehole Location Plan

DRILLING DATA
 Method: Continuous Flight Auger
 Diameter: 155mm/205mm
 Date: Sep/28/2016

REF. NO.: 16-1359
 ENCL NO.: 4

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (210 mm)														GR SA SI CL
0.2	GRANULAR BASE/SUBBASE: (390 mm)		1	AS											
0.6	FILL: sandy silt, trace to some gravel, pockets of sand, brown, moist, loose		2	SS	10										
1.1	SANDY SILT TILL: trace gravel, trace clay, layers of sand, brown, moist, loose to dense		3	SS	35										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES







+ 3, × 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension
 CLIENT: Morrison Hershfield
 PROJECT LOCATION: Toronto, Ontario
 DATUM: N/A
 BH LOCATION: See Borehole Location Plan

DRILLING DATA
 Method: Continuous Flight Auger
 Diameter: 155mm/205mm
 Date: Sep/28/2016

REF. NO.: 16-1359
 ENCL NO.: 5

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (180 mm)														
0.2	GRANULAR BASE/SUBBASE: (370 mm)		1	AS											
0.6	CLAYEY SILT TILL: trace gravel, grey, moist, very stiff,														
0.9	SANDY SILT TILL: trace gravel, trace clay, brown, moist compact to dense		2	SS	29										
															
			3	SS	49										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES

+ 3, × 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension
 CLIENT: Morrison Hershfield
 PROJECT LOCATION: Toronto, Ontario
 DATUM: N/A
 BH LOCATION: See Borehole Location Plan

DRILLING DATA
 Method: Continuous Flight Auger
 Diameter: 155mm/205mm
 Date: Sep/28/2016

REF. NO.: 16-1359
 ENCL NO.: 6

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (90 mm)														GR SA SI CL
0.1	GRANULAR BASE/SUBBASE: (410 mm)		1	AS											
0.5	FILL: sandy silt, trace gravel, brown to grey, moist, loose		2	SS	7										
1.4	SANDY SILT TILL: trace clay, trace gravel, brown, moist, dense		3	SS	36										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES




+ 3, × 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension
 CLIENT: Morrison Hershfield
 PROJECT LOCATION: Toronto, Ontario
 DATUM: N/A
 BH LOCATION: See Borehole Location Plan

DRILLING DATA
 Method: Continuous Flight Auger
 Diameter: 155mm/205mm
 Date: Sep/28/2016

REF. NO.: 16-1359
 ENCL NO.: 7

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (120 mm)														GR SA SI CL
0.1	GRANULAR BASE/SUBBASE: (370 mm)		1	AS											
0.5	SANDY SILT TILL, trace gravel, trace clay, containing cobbles/boulders, brown, moist, compact to dense		2	SS	23										
			3	SS	35										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														



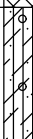

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

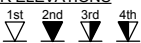
GRAPH NOTES

+ 3, × 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension								DRILLING DATA							
CLIENT: Morrison Hershfield								Method: Continuous Flight Auger							
PROJECT LOCATION: Toronto, Ontario								Diameter: 155mm/205mm				REF. NO.: 16-1359			
DATUM: N/A								Date: Sep/28/2016				ENCL NO.: 8			
BH LOCATION: See Borehole Location Plan															
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm ⁻³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (140 mm)														
0.1	GRANULAR BASE/SUBBASE: (480 mm)		1	AS											
0.6	CLAYEY SILT TILL: trace gravel, trace sand, brown, moist, stiff		2	SS	14										
1.1	SANDY SILT TILL: trace clay, trace gravel, brown, moist, compact to dense		3	SS	34										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th


GRAPH NOTES





+ 3, × 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension
 CLIENT: Morrison Hershfield
 PROJECT LOCATION: Toronto, Ontario
 DATUM: N/A
 BH LOCATION: See Borehole Location Plan

DRILLING DATA
 Method: Continuous Flight Auger
 Diameter: 155mm/205mm
 Date: Sep/28/2016

REF. NO.: 16-1359
 ENCL NO.: 9

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT. (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (80 mm)														GR SA SI CL
0.1	GRANULAR BASE/SUBBASE: (460 mm)		1	AS											
0.5	FILL: sandy silt, trace gravel, pockets of sand, brown, moist, compact		2	SS	11										
1.4	SANDY SILT TILL: trace clay, trace gravel, brown, moist, dense		3	SS	31										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														





GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th





GRAPH NOTES

+ 3, × 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension								DRILLING DATA							
CLIENT: Morrison Hershfield								Method: Continuous Flight Auger							
PROJECT LOCATION: Toronto, Ontario								Diameter: 155mm/205mm				REF. NO.: 16-1359			
DATUM: N/A								Date: Sep/28/2016				ENCL NO.: 10			
BH LOCATION: See Borehole Location Plan															
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)						
0.0	ASPHALT CONCRETE: (90 mm)														GR SA SI CL
0.1	GRANULAR BASE/SUBBASE: (610 mm)		1	AS											
0.7	FILL: sandy silt, trace gravel, layers of clayey silt, brown, moist, compact		2	SS	11										
1.4	SANDY SILT TILL: trace gravel, trace clay, brown, moist, dense		3	SS	36										
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.														






GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th
   

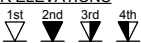
GRAPH NOTES

+ 3, × 3: Numbers refer to Sensitivity

○ ●=3% Strain at Failure

PROJECT: Geotechnical Investigation for Rean Drive Extension								DRILLING DATA															
CLIENT: Morrison Hershfield								Method: Continuous Flight Auger															
PROJECT LOCATION: Toronto, Ontario								Diameter: 155mm/205mm								REF. NO.: 16-1359							
DATUM: N/A								Date: Sep/28/2016								ENCL NO.: 11							
BH LOCATION: See Borehole Location Plan																							
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	PID Readings		PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m ³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%)								
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			HEX (ppm)	IBL (ppm)							WATER CONTENT (%)							
0.0	ASPHALT CONCRETE: (200 mm)																						
0.2	FILL: sand and gravel, trace silt, grey, moist, very dense to compact		1	AS																			
			2	SS	53																		
			3	SS	17																		
1.8	SANDY SILT: trace gravel, brown, moist, compact																						
2.0	END OF BOREHOLE Notes 1) The borehole was open and dry upon completion of drilling.																						

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th


GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

APPENDIX C: Tables

**Table C-1: Soil
Inorganics**

**Phase II Environmental Site Assessment
Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario**

		Sample ID:		BH1 SS2	BH4 SS2	BH5 SS2	BH8 SS2	BH10 SS2
		Date of Collection		28-Sep-16	28-Sep-16	28-Sep-16	28-Sep-16	28-Sep-16
		Sample Depth (mbgs)		0.76-1.22	0.76-1.22	0.76-1.22	0.76-1.22	0.76-1.22
		Stratigraphy		Fill	Silt Till	Fill	Fill	Fill
		Evidence of Contamination		None	None	None	None	None
Parameter	Units	MOE Table 1⁽¹⁾	MOE Table 3⁽²⁾					
Sodium Adsorption Ratio	SAR	2.4	5	<u>8.91</u>	Incalculable - Low Cations	2.83	<u>104</u>	3.66
Conductivity	mS/cm	0.57	0.7	0.28	0.596	<u>1.22</u>	<u>2.26</u>	<u>1.99</u>

Bold Values Exceed MOE Table 1 Standard

Values Underlined in Bold and Shaded Exceed MOE Table 3 Standard

Note: (1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 1: Full Depth Background Site Condition Standards, for Residential/Parkland/Institutional/Commercial/Industrial Property Use

(2) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Coarse-Grained Soil Standard for Residential/Parkland/Institutional Property Use



Table C-2:
Soil Metal Analyses

Phase II Environmental Site Assessment
Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario

		Sample ID:						
		BH1 SS2						
		BH4 SS2						
		BH5 SS2						
		BH8 SS2						
		BH10 SS2						
		Date of Collection						
		Sample Depth (mbgs)						
		Stratigraphy						
		Evidence of Contamination						
Parameter	Units	MOE Table 1 ⁽¹⁾	MOE Table 3 ⁽²⁾					
Antimony	µg/g	1.3	7.5	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/g	18	18	1.5	2.2	4.5	2.1	1.4
Barium	µg/g	220	390	26.2	62.9	100	67.6	25.4
Beryllium	µg/g	2.5	4	<0.50	<0.50	0.61	<0.50	<0.50
Boron	µg/g	36	120	<5.0	6.9	8.4	6.1	6.2
Boron (HWS)	µg/g	36	1.5	<0.10	<0.10	0.34	0.26	0.24
Cadmium	µg/g	1.2	1.2	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium	µg/g	70	160	7.9	16.3	23.9	14.6	9.4
Cobalt	µg/g	21	22	3.5	5.8	7.8	5.4	1.9
Copper	µg/g	92	140	5.8	10.8	17	13	4
Lead	µg/g	120	120	33.8	32.5	22.6	51.4	3.7
Mercury	µg/g	0.27	0.27	<0.0050	0.0072	0.0333	0.0105	<0.0050
Molybdenum	µg/g	2	6.9	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	µg/g	82	100	6	12.2	17.7	11	4.9
Selenium	µg/g	1.5	2.4	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	µg/g	0.5	20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	µg/g	1	1	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	µg/g	2.5	23	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	µg/g	86	86	17.3	25.7	34.4	26.8	18.8
Zinc	µg/g	290	340	17.2	29.5	51.7	28.8	26.8
Chromium (VI)	µg/g	0.66	8	<0.20	0.22	<0.20	0.25	0.66

Bold Values Exceed MOE Table 1 Standard

Values Underlined in Bold and Shaded Exceed MOE Table 3 Standard

Note: (1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 1: Full Depth Background Site Condition Standards, for Residential/Parkland/Institutional/Commercial/Industrial Property Use

(2) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Coarse-Grained Soil Standard for Residential/Parkland/Institutional Property Use



**Table C-3: Soil
PAH Analyses**

**Phase II Environmental Site Assessment
Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario**

Sample ID:	BH1 SS2	BH4 SS2	BH5 SS2	BH8 SS2	BH10 SS2
Date of Collection	28-Sep-16	28-Sep-16	28-Sep-16	28-Sep-16	28-Sep-16
Sample Depth (mbgs)	0.76-1.22	0.76-1.22	0.76-1.22	0.76-1.22	0.76-1.22
Stratigraphy	Fill	Silt Till	Fill	Fill	Fill
Evidence of Contamination	None	None	None	None	None

Parameter	Units	MOE Table 1⁽¹⁾	MOE Table 3⁽²⁾					
Acenaphthene	µg/g	0.072	7.9	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	µg/g	0.093	0.15	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	µg/g	0.16	0.67	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	µg/g	0.36	0.5	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	µg/g	0.3	0.3	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	µg/g	0.47	0.78	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	µg/g	0.68	6.6	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	µg/g	0.48	0.78	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	µg/g	2.8	7	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	µg/g	0.1	0.1	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	µg/g	0.56	0.69	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	µg/g	0.12	62	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3,-cd)pyrene	µg/g	0.23	0.38	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalene	µg/g	0.59	0.99	<0.042	<0.042	<0.042	<0.042	<0.042
1-Methylnaphthalene	µg/g	0.59	0.99	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	µg/g	0.59	0.99	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	µg/g	0.09	0.6	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/g	0.69	6.2	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	µg/g	1	78	<0.050	<0.050	<0.050	<0.050	<0.050

Bold Values Exceed MOE Table 1 Standard

Values Underlined in Bold and Exceed MOE Table 3 Standard

Note: (1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 1: Full Depth Background Site Condition Standards, for Residential/Parkland/Institutional/Commercial/Industrial Property Use

(2) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Coarse-Grained Soil Standard for Residential/Parkland/Institutional Property Use

Prepared by: CZ

Reviewed by: AW

Date: 11/22/2016

Analytical Results.xlsx



Table C-4:
Soil VOC Analyses

Phase II Environmental Site Assessment
Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario

		Sample ID:		BH2 SS3	BH6 SS3
		Date of Collection		28-Sep-15	28-Sep-15
		Sample Depth (mbgs)		1.52-1.98	1.52-1.98
		Stratigraphy		Sandy Silt	Sandy Silt Till
		Evidence of Contamination		None	None
Parameter	Units	MOE Table 1 ⁽¹⁾	MOE Table 3 ⁽²⁾		
Acetone	µg/g	0.5	16	<0.50	<0.50
Benzene	µg/g	0.02	0.21	<0.0068	<0.0068
Bromodichloromethane	µg/g	0.05	13	<0.050	<0.050
Bromoform	µg/g	0.05	0.27	<0.050	<0.050
Bromomethane	µg/g	0.05	0.05	<0.050	<0.050
Carbon tetrachloride	µg/g	0.05	0.05	<0.050	<0.050
Chlorobenzene	µg/g	0.05	2.4	<0.050	<0.050
Dibromochloromethane	µg/g	0.05	9.4	<0.050	<0.050
Chloroform	µg/g	0.05	0.05	<0.050	<0.050
1,2-Dibromoethane	µg/g	0.05	0.05	<0.050	<0.050
1,2-Dichlorobenzene	µg/g	0.05	3.4	<0.050	<0.050
1,3-Dichlorobenzene	µg/g	0.05	4.8	<0.050	<0.050
1,4-Dichlorobenzene	µg/g	0.05	0.083	<0.050	<0.050
Dichlorodifluoromethane	µg/g	0.05	16	<0.050	<0.050
1,1-Dichloroethane	µg/g	0.05	3.5	<0.050	<0.050
1,2-Dichloroethane	µg/g	0.05	0.05	<0.050	<0.050
1,1-Dichloroethylene	µg/g	0.05	0.05	<0.050	<0.050
cis-1,2-Dichloroethylene	µg/g	0.05	3.4	<0.050	<0.050
trans-1,2-Dichloroethylene	µg/g	0.05	0.084	<0.050	<0.050
Methylene Chloride	µg/g	0.05	0.1	<0.050	<0.050
1,2-Dichloropropane	µg/g	0.05	0.05	<0.050	<0.050
cis-1,3-Dichloropropene	µg/g	-	-	<0.030	<0.030
trans-1,3-Dichloropropene	µg/g	-	-	<0.030	<0.030
1,3-Dichloropropene (cis & trans)	µg/g	0.05	0.05	<0.042	<0.042
Ethylbenzene	µg/g	0.05	2	<0.018	<0.018
n-Hexane	µg/g	0.05	2.8	<0.050	<0.050
Methyl Ethyl Ketone	µg/g	0.5	16	<0.50	<0.50
Methyl Isobutyl Ketone	µg/g	0.5	1.7	<0.50	<0.50
MTBE	µg/g	0.05	0.75	<0.050	<0.050
Styrene	µg/g	0.05	0.7	<0.050	<0.050
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.058	<0.050	<0.050
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	<0.050	<0.050
Tetrachloroethylene	µg/g	0.05	0.28	<0.050	<0.050
Toluene	µg/g	0.2	2.3	<0.080	<0.080
1,1,1-Trichloroethane	µg/g	0.05	0.38	<0.050	<0.050
1,1,2-Trichloroethane	µg/g	0.05	0.05	<0.050	<0.050
Trichloroethylene	µg/g	0.05	0.061	<0.010	<0.010
Trichlorofluoromethane	µg/g	0.25	4	<0.050	<0.050
Vinyl chloride	µg/g	0.02	0.02	<0.020	<0.020
o-Xylene	µg/g	-	-	<0.020	<0.020
m+p-Xylenes	µg/g	-	-	<0.030	<0.030
Xylenes (Total)	µg/g	0.05	3.1	<0.050	<0.050

Bold Values Exceed MOE Table 1 Standard

Values Underlined in Bold and Shaded Exceed MOE Table 3 Standard

Note: (1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 1: Full Depth Background Site Condition Standards, for Residential/Parkland/Institutional/Commercial/Industrial Property Use

(2) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Coarse-Grained Soil Standard for Residential/Parkland/Institutional Property Use



Table C-5:
Soil PHC Analyses

Phase II Environmental Site Assessment
Toronto East-West Extension, Rean Drive/Kenaston Gardens, Toronto, Ontario

		Sample ID:		BH2 SS3	BH6 SS3
		Date of Collection		28-Sep-15	28-Sep-15
		Sample Depth (mbgs)		1.52-1.98	1.52-1.98
		Stratigraphy		Sandy Silt	Sandy Silt Till
		Evidence of Contamination		None	None
Parameter	Units	MOE Table 1⁽¹⁾	MOE Table 3⁽²⁾		
Benzene	µg/g	0.02	0.21	<0.0068	<0.0068
Ethylbenzene	µg/g	0.05	2	<0.018	<0.018
Toluene	µg/g	0.2	2.3	<0.080	<0.080
Xylenes (Total)	µg/g	0.05	3.1	<0.050	<0.050
PHC F1 (C6-C10)	µg/g	25	55	<5.0	<5.0
PHC F1 - BTEX	µg/g	25	55	<5.0	<5.0
PHC F2 (C10-C16)	µg/g	10	98	<10	<10
PHC F3 (C16-C34)	µg/g	240	300	<50	<50
PHC F4 (C34-C50)	µg/g	120	2800	<50	<50

Bold Values Exceed MOE Table 1 Standard

Values Underlined in Bold and Shaded Exceed MOE Table 3 Standard

Note: (1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 1: Full Depth Background Site Condition Standards, for Residential/Parkland/Institutional/Commercial/Industrial Property Use

(2) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ministry of the Environment, April 15, 2011. Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Coarse-Grained Soil Standard for Residential/Parkland/Institutional Property Use



APPENDIX D: Laboratory Certificates of Analysis



Morrison Hershfield Limited (Toronto)
ATTN: CINDY ZHAO
235 Yorkland Blvd
Suite 600
Toronto ON M2J 1T1

Date Received: 05-OCT-16
Report Date: 14-OCT-16 14:34 (MT)
Version: FINAL

Client Phone: 416-499-3110

Certificate of Analysis

Lab Work Order #: L1839952
Project P.O. #: NOT SUBMITTED
Job Reference: 16-1359
C of C Numbers: 15-573718
Legal Site Desc: N/A

Emerson Perez, B.S.E
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - April 15, 2011 Standards

			ALS ID Sampled Date Sampled Time Sample ID		L1839952-1 28-SEP-16 - BH1 SS2	L1839952-2 28-SEP-16 - BH4 SS2	L1839952-3 28-SEP-16 - BH5 SS2	L1839952-4 28-SEP-16 - BH8 SS2	L1839952-5 28-SEP-16 - BH10 SS2
Grouping	Analyte	Unit	Guide Limits #1 #2						
Physical Tests	Conductivity	mS/cm	0.7	0.7	0.280	0.596	1.22	2.26	1.99
	% Moisture	%	-	-	6.03	12.4	9.39	9.82	7.72
	pH	pH units	-	-	7.92	7.88	7.54	8.09	11.57
Cyanides	Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050	<0.050	<0.050	<0.050	<0.050
Saturated Paste Extractables	SAR	SAR	5	5	8.91	SAR:IN C Incalculable - Low Cations	2.83	SAR:Q 104	SAR:Q 3.66
	Calcium (Ca)	mg/L	-	-	1.6		117	1.8	191
Metals	Magnesium (Mg)	mg/L	-	-	1.3	<1.0	8.7	<1.0	<1.0
	Sodium (Na)	mg/L	-	-	62.3	140	118	512	184
	Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)	ug/g	18	18	1.5	2.2	4.5	2.1	1.4
	Barium (Ba)	ug/g	390	390	26.2	62.9	100	67.6	25.4
	Beryllium (Be)	ug/g	4	5	<0.50	<0.50	0.61	<0.50	<0.50
	Boron (B)	ug/g	120	120	<5.0	6.9	8.4	6.1	6.2
	Boron (B), Hot Water Ext.	ug/g	1.5	1.5	<0.10	<0.10	0.34	0.26	0.24
	Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr)	ug/g	160	160	7.9	16.3	23.9	14.6	9.4
	Cobalt (Co)	ug/g	22	22	3.5	5.8	7.8	5.4	1.9
	Copper (Cu)	ug/g	140	180	5.8	10.8	17.0	13.0	4.0
	Lead (Pb)	ug/g	120	120	33.8	32.5	22.6	51.4	3.7
	Mercury (Hg)	ug/g	0.27	1.8	<0.0050	0.0072	0.0333	0.0105	<0.0050
	Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0	<1.0	<1.0	<1.0
	Nickel (Ni)	ug/g	100	130	6.0	12.2	17.7	11.0	4.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - April 15, 2011 Standards

		ALS ID Sampled Date Sampled Time Sample ID			L1839952-1 28-SEP-16 - BH1 SS2	L1839952-2 28-SEP-16 - BH4 SS2	L1839952-3 28-SEP-16 - BH5 SS2	L1839952-4 28-SEP-16 - BH8 SS2	L1839952-5 28-SEP-16 - BH10 SS2
Grouping	Analyte	Unit	Guide Limits #1 #2						
Metals	Selenium (Se)	ug/g	2.4	2.4	<1.0	<1.0	<1.0	<1.0	<1.0
	Silver (Ag)	ug/g	20	25	<0.20	<0.20	<0.20	<0.20	<0.20
	Thallium (Tl)	ug/g	1	1	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U)	ug/g	23	23	<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)	ug/g	86	86	17.3	25.7	34.4	26.8	18.8
	Zinc (Zn)	ug/g	340	340	17.2	29.5	51.7	28.8	26.8
Speciated Metals	Chromium, Hexavalent	ug/g	8	10	<0.20	0.22	<0.20	0.25	0.66
Polycyclic Aromatic Hydrocarbons	Acenaphthene	ug/g	7.9	58	<0.050	<0.050	<0.050	<0.050	<0.050
	Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050	<0.050	<0.050	<0.050
	Anthracene	ug/g	0.67	0.74	<0.050	<0.050	<0.050	<0.050	<0.050
	Benzo(a)anthracene	ug/g	0.5	0.63	<0.050	<0.050	<0.050	<0.050	<0.050
	Benzo(a)pyrene	ug/g	0.3	0.3	<0.050	<0.050	<0.050	<0.050	<0.050
	Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050	<0.050	<0.050	<0.050
	Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050	<0.050	<0.050	<0.050	<0.050
	Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050	<0.050	<0.050	<0.050
	Chrysene	ug/g	7	7.8	<0.050	<0.050	<0.050	<0.050	<0.050
	Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050	<0.050	<0.050	<0.050	<0.050
	Fluoranthene	ug/g	0.69	0.69	<0.050	<0.050	<0.050	<0.050	<0.050
	Fluorene	ug/g	62	69	<0.050	<0.050	<0.050	<0.050	<0.050
	Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050	<0.050	<0.050	<0.050	<0.050
	1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042	<0.042	<0.042	<0.042	<0.042
	1-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030	<0.030	<0.030	<0.030

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - April 15, 2011 Standards

					ALS ID	L1839952-1	L1839952-2	L1839952-3	L1839952-4	L1839952-5
					Sampled Date	28-SEP-16	28-SEP-16	28-SEP-16	28-SEP-16	28-SEP-16
					Sampled Time	-	-	-	-	-
					Sample ID	BH1 SS2	BH4 SS2	BH5 SS2	BH8 SS2	BH10 SS2
Grouping	Analyte	Unit	Guide Limits							
			#1	#2						
Polycyclic Aromatic Hydrocarbons	2-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
	Naphthalene	ug/g	0.6	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Phenanthrene	ug/g	6.2	7.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Pyrene	ug/g	78	78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Surrogate: 2-Fluorobiphenyl	%	-	-	91.1	97.8	100.3	97.2	97.4	97.4
	Surrogate: p-Terphenyl d14	%	-	-	87.7	95.1	98.6	94.9	93.8	93.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline						
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L1839952-1	BH1 SS2	Saturated Paste Extractables	SAR	8.91	5	SAR
L1839952-3	BH5 SS2	Physical Tests	Conductivity	1.22	0.7	mS/cm
L1839952-4	BH8 SS2	Physical Tests	Conductivity	2.26	0.7	mS/cm
		Saturated Paste Extractables	SAR	104	5	SAR
L1839952-5	BH10 SS2	Physical Tests	Conductivity	1.99	0.7	mS/cm
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L1839952-1	BH1 SS2	Saturated Paste Extractables	SAR	8.91	5	SAR
L1839952-3	BH5 SS2	Physical Tests	Conductivity	1.22	0.7	mS/cm
L1839952-4	BH8 SS2	Physical Tests	Conductivity	2.26	0.7	mS/cm
		Saturated Paste Extractables	SAR	104	5	SAR
L1839952-5	BH10 SS2	Physical Tests	Conductivity	1.99	0.7	mS/cm

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:Q	Qualified SAR value: actual SAR is lower but is incalculable due to Na, Ca or Mg below detection limit.
SAR:INC	SAR is incalculable due to Ca and Mg below detection limit.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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B-HWS-R511-WT Soil Boron-HWE-O.Reg 153/04 (July 2011) HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT Soil Cyanide (WAD)-O.Reg 153/04 (July 2011) MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT Soil Hexavalent Chromium in Soil SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT Soil Conductivity (EC) MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

Reference Information

L1839952 CONT'D....
 Job Reference: 16-1359
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Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270
A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Soil	pH	MOEE E3137A
A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

15-573718

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
 mg/kg wwt - milligrams per kilogram based on wet weight of sample
 mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
 mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3569141							
WG2408321-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			96.9		%		70-130	12-OCT-16
WG2408321-6	DUP	WG2408321-5						
Mercury (Hg)		0.0094	0.0092		ug/g	2.2	40	12-OCT-16
WG2408321-3	LCS							
Mercury (Hg)			105.5		%		80-120	12-OCT-16
WG2408321-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	12-OCT-16
Batch	R3569142							
WG2408322-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			94.9		%		70-130	12-OCT-16
WG2408322-6	DUP	WG2408322-5						
Mercury (Hg)		0.0200	0.0182		ug/g	9.3	40	12-OCT-16
WG2408322-3	LCS							
Mercury (Hg)			103.0		%		80-120	12-OCT-16
WG2408322-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	12-OCT-16
MET-200.2-CCMS-WT		Soil						
Batch	R3569847							
WG2408321-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			111.8		%		70-130	12-OCT-16
Arsenic (As)			119.2		%		70-130	12-OCT-16
Barium (Ba)			129.4		%		70-130	12-OCT-16
Beryllium (Be)			104.4		%		70-130	12-OCT-16
Cadmium (Cd)			116.5		%		70-130	12-OCT-16
Chromium (Cr)			120.3		%		70-130	12-OCT-16
Cobalt (Co)			113.6		%		70-130	12-OCT-16
Copper (Cu)			110.1		%		70-130	12-OCT-16
Lead (Pb)			93.2		%		70-130	12-OCT-16
Molybdenum (Mo)			105.6		%		70-130	12-OCT-16
Nickel (Ni)			115.1		%		70-130	12-OCT-16
Selenium (Se)			103.1		%		70-130	12-OCT-16
Silver (Ag)			108.6		%		70-130	12-OCT-16
Thallium (Tl)			101.2		%		70-130	12-OCT-16
Uranium (U)			112.1		%		70-130	12-OCT-16
Vanadium (V)			119.9		%		70-130	12-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3569847							
WG2408321-2	CRM	WT-CANMET-TILL1						
Zinc (Zn)			110.3		%		70-130	12-OCT-16
WG2408321-6	DUP	WG2408321-5						
Antimony (Sb)		0.29	0.29		ug/g	0.0	30	12-OCT-16
Arsenic (As)		8.85	9.14		ug/g	3.2	30	12-OCT-16
Barium (Ba)		108	114		ug/g	4.9	40	12-OCT-16
Beryllium (Be)		0.81	0.82		ug/g	0.8	30	12-OCT-16
Boron (B)		13.6	14.6		ug/g	7.1	30	12-OCT-16
Cadmium (Cd)		0.033	0.036		ug/g	6.8	30	12-OCT-16
Chromium (Cr)		23.7	24.4		ug/g	2.8	30	12-OCT-16
Cobalt (Co)		15.4	15.3		ug/g	1.1	30	12-OCT-16
Copper (Cu)		44.4	43.8		ug/g	1.4	30	12-OCT-16
Lead (Pb)		10.3	26.7	DUP-H	ug/g	88	40	12-OCT-16
Molybdenum (Mo)		0.51	0.53		ug/g	2.3	40	12-OCT-16
Nickel (Ni)		30.2	30.4		ug/g	0.7	30	12-OCT-16
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	12-OCT-16
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	12-OCT-16
Thallium (Tl)		0.109	0.112		ug/g	2.2	30	12-OCT-16
Uranium (U)		0.487	0.495		ug/g	1.6	30	12-OCT-16
Vanadium (V)		33.5	34.8		ug/g	3.7	30	12-OCT-16
Zinc (Zn)		65.2	64.3		ug/g	1.4	30	12-OCT-16
WG2408321-4	LCS							
Antimony (Sb)			104.3		%		80-120	12-OCT-16
Arsenic (As)			93.8		%		80-120	12-OCT-16
Barium (Ba)			95.0		%		80-120	12-OCT-16
Beryllium (Be)			95.4		%		80-120	12-OCT-16
Boron (B)			95.3		%		80-120	12-OCT-16
Cadmium (Cd)			96.6		%		80-120	12-OCT-16
Chromium (Cr)			93.7		%		80-120	12-OCT-16
Cobalt (Co)			94.2		%		80-120	12-OCT-16
Copper (Cu)			92.2		%		80-120	12-OCT-16
Lead (Pb)			94.6		%		80-120	12-OCT-16
Molybdenum (Mo)			95.4		%		80-120	12-OCT-16
Nickel (Ni)			94.6		%		80-120	12-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R3569847								
WG2408321-4 LCS								
Selenium (Se)			93.1		%		80-120	12-OCT-16
Silver (Ag)			94.0		%		80-120	12-OCT-16
Thallium (Tl)			94.9		%		80-120	12-OCT-16
Uranium (U)			92.5		%		80-120	12-OCT-16
Vanadium (V)			96.7		%		80-120	12-OCT-16
Zinc (Zn)			89.2		%		80-120	12-OCT-16
WG2408321-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	12-OCT-16
Arsenic (As)			<0.10		mg/kg		0.1	12-OCT-16
Barium (Ba)			<0.50		mg/kg		0.5	12-OCT-16
Beryllium (Be)			<0.10		mg/kg		0.1	12-OCT-16
Boron (B)			<5.0		mg/kg		5	12-OCT-16
Cadmium (Cd)			<0.020		mg/kg		0.02	12-OCT-16
Chromium (Cr)			<0.50		mg/kg		0.5	12-OCT-16
Cobalt (Co)			<0.10		mg/kg		0.1	12-OCT-16
Copper (Cu)			<0.50		mg/kg		0.5	12-OCT-16
Lead (Pb)			<0.50		mg/kg		0.5	12-OCT-16
Molybdenum (Mo)			<0.10		mg/kg		0.1	12-OCT-16
Nickel (Ni)			<0.50		mg/kg		0.5	12-OCT-16
Selenium (Se)			<0.20		mg/kg		0.2	12-OCT-16
Silver (Ag)			<0.10		mg/kg		0.1	12-OCT-16
Thallium (Tl)			<0.050		mg/kg		0.05	12-OCT-16
Uranium (U)			<0.050		mg/kg		0.05	12-OCT-16
Vanadium (V)			<0.20		mg/kg		0.2	12-OCT-16
Zinc (Zn)			<2.0		mg/kg		2	12-OCT-16
Batch R3569848								
WG2408322-2 CRM		WT-CANMET-TILL1						
Antimony (Sb)			103.9		%		70-130	12-OCT-16
Arsenic (As)			106.0		%		70-130	12-OCT-16
Barium (Ba)			115.1		%		70-130	12-OCT-16
Beryllium (Be)			92.9		%		70-130	12-OCT-16
Cadmium (Cd)			99.6		%		70-130	12-OCT-16
Chromium (Cr)			103.3		%		70-130	12-OCT-16
Cobalt (Co)			103.5		%		70-130	12-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3569848							
WG2408322-2	CRM	WT-CANMET-TILL1						
Copper (Cu)			98.3		%		70-130	12-OCT-16
Lead (Pb)			87.5		%		70-130	12-OCT-16
Molybdenum (Mo)			114.3		%		70-130	12-OCT-16
Nickel (Ni)			121.4		%		70-130	12-OCT-16
Selenium (Se)			90.0		%		70-130	12-OCT-16
Silver (Ag)			105.1		%		70-130	12-OCT-16
Thallium (Tl)			96.4		%		70-130	12-OCT-16
Uranium (U)			106.0		%		70-130	12-OCT-16
Vanadium (V)			111.1		%		70-130	12-OCT-16
Zinc (Zn)			98.5		%		70-130	12-OCT-16
WG2408322-6	DUP	WG2408322-5						
Antimony (Sb)		0.20	0.27	J	ug/g	0.08	0.2	12-OCT-16
Arsenic (As)		1.97	2.01		ug/g	1.9	30	12-OCT-16
Barium (Ba)		104	99.5		ug/g	4.5	40	12-OCT-16
Beryllium (Be)		0.45	0.42		ug/g	5.1	30	12-OCT-16
Boron (B)		9.0	8.8		ug/g	2.5	30	12-OCT-16
Cadmium (Cd)		0.395	0.380		ug/g	4.1	30	12-OCT-16
Chromium (Cr)		38.2	39.6		ug/g	3.8	30	12-OCT-16
Cobalt (Co)		5.38	5.19		ug/g	3.6	30	12-OCT-16
Copper (Cu)		15.4	19.8		ug/g	25	30	12-OCT-16
Lead (Pb)		28.1	27.9		ug/g	1.0	40	12-OCT-16
Molybdenum (Mo)		0.60	0.62		ug/g	3.6	40	12-OCT-16
Nickel (Ni)		11.8	11.6		ug/g	1.8	30	12-OCT-16
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	12-OCT-16
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	12-OCT-16
Thallium (Tl)		0.110	0.106		ug/g	4.4	30	12-OCT-16
Uranium (U)		0.591	0.606		ug/g	2.6	30	12-OCT-16
Vanadium (V)		32.3	31.7		ug/g	1.9	30	12-OCT-16
Zinc (Zn)		118	115		ug/g	2.8	30	12-OCT-16
WG2408322-4	LCS							
Antimony (Sb)			112.8		%		80-120	12-OCT-16
Arsenic (As)			98.6		%		80-120	12-OCT-16
Barium (Ba)			100.0		%		80-120	12-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3569848							
WG2408322-4	LCS							
Beryllium (Be)			96.2		%		80-120	12-OCT-16
Boron (B)			94.5		%		80-120	12-OCT-16
Cadmium (Cd)			97.2		%		80-120	12-OCT-16
Chromium (Cr)			98.3		%		80-120	12-OCT-16
Cobalt (Co)			98.3		%		80-120	12-OCT-16
Copper (Cu)			95.3		%		80-120	12-OCT-16
Lead (Pb)			102.1		%		80-120	12-OCT-16
Molybdenum (Mo)			96.8		%		80-120	12-OCT-16
Nickel (Ni)			96.7		%		80-120	12-OCT-16
Selenium (Se)			96.2		%		80-120	12-OCT-16
Silver (Ag)			97.8		%		80-120	12-OCT-16
Thallium (Tl)			97.4		%		80-120	12-OCT-16
Uranium (U)			95.8		%		80-120	12-OCT-16
Vanadium (V)			100.8		%		80-120	12-OCT-16
Zinc (Zn)			90.6		%		80-120	12-OCT-16
WG2408322-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	12-OCT-16
Arsenic (As)			<0.10		mg/kg		0.1	12-OCT-16
Barium (Ba)			<0.50		mg/kg		0.5	12-OCT-16
Beryllium (Be)			<0.10		mg/kg		0.1	12-OCT-16
Boron (B)			<5.0		mg/kg		5	12-OCT-16
Cadmium (Cd)			<0.020		mg/kg		0.02	12-OCT-16
Chromium (Cr)			<0.50		mg/kg		0.5	12-OCT-16
Cobalt (Co)			<0.10		mg/kg		0.1	12-OCT-16
Copper (Cu)			<0.50		mg/kg		0.5	12-OCT-16
Lead (Pb)			<0.50		mg/kg		0.5	12-OCT-16
Molybdenum (Mo)			<0.10		mg/kg		0.1	12-OCT-16
Nickel (Ni)			<0.50		mg/kg		0.5	12-OCT-16
Selenium (Se)			<0.20		mg/kg		0.2	12-OCT-16
Silver (Ag)			<0.10		mg/kg		0.1	12-OCT-16
Thallium (Tl)			<0.050		mg/kg		0.05	12-OCT-16
Uranium (U)			<0.050		mg/kg		0.05	12-OCT-16
Vanadium (V)			<0.20		mg/kg		0.2	12-OCT-16
Zinc (Zn)			<2.0		mg/kg		2	12-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R3566916							
WG2406238-3	DUP	L1840366-2						
% Moisture		5.50	5.94		%	7.8	20	08-OCT-16
WG2406238-2	LCS							
% Moisture			101.9		%		90-110	08-OCT-16
WG2406238-1	MB							
% Moisture			<0.10		%		0.1	08-OCT-16
PAH-511-WT		Soil						
Batch	R3570715							
WG2406304-4	DUP	WG2406304-3						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-OCT-16
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-OCT-16
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-OCT-16
WG2406304-2	LCS							
1-Methylnaphthalene			96.2		%		50-140	14-OCT-16
2-Methylnaphthalene			97.5		%		50-140	14-OCT-16
Acenaphthene			95.2		%		50-140	14-OCT-16
Acenaphthylene			93.9		%		50-140	14-OCT-16
Anthracene			99.3		%		50-140	14-OCT-16
Benzo(a)anthracene			96.2		%		50-140	14-OCT-16
Benzo(a)pyrene			99.7		%		50-140	14-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R3570715							
WG2406304-2	LCS							
Benzo(b)fluoranthene			92.7		%		50-140	14-OCT-16
Benzo(g,h,i)perylene			98.2		%		50-140	14-OCT-16
Benzo(k)fluoranthene			89.1		%		50-140	14-OCT-16
Chrysene			106.6		%		50-140	14-OCT-16
Dibenzo(ah)anthracene			93.5		%		50-140	14-OCT-16
Fluoranthene			91.9		%		50-140	14-OCT-16
Fluorene			95.0		%		50-140	14-OCT-16
Indeno(1,2,3-cd)pyrene			80.3		%		50-140	14-OCT-16
Naphthalene			101.9		%		50-140	14-OCT-16
Phenanthrene			102.0		%		50-140	14-OCT-16
Pyrene			97.8		%		50-140	14-OCT-16
WG2406304-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	14-OCT-16
2-Methylnaphthalene			<0.030		ug/g		0.03	14-OCT-16
Acenaphthene			<0.050		ug/g		0.05	14-OCT-16
Acenaphthylene			<0.050		ug/g		0.05	14-OCT-16
Anthracene			<0.050		ug/g		0.05	14-OCT-16
Benzo(a)anthracene			<0.050		ug/g		0.05	14-OCT-16
Benzo(a)pyrene			<0.050		ug/g		0.05	14-OCT-16
Benzo(b)fluoranthene			<0.050		ug/g		0.05	14-OCT-16
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	14-OCT-16
Benzo(k)fluoranthene			<0.050		ug/g		0.05	14-OCT-16
Chrysene			<0.050		ug/g		0.05	14-OCT-16
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	14-OCT-16
Fluoranthene			<0.050		ug/g		0.05	14-OCT-16
Fluorene			<0.050		ug/g		0.05	14-OCT-16
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	14-OCT-16
Naphthalene			<0.050		ug/g		0.05	14-OCT-16
Phenanthrene			<0.050		ug/g		0.05	14-OCT-16
Pyrene			<0.050		ug/g		0.05	14-OCT-16
Surrogate: 2-Fluorobiphenyl			99.4		%		50-140	14-OCT-16
Surrogate: p-Terphenyl d14			96.0		%		50-140	14-OCT-16
WG2406304-5	MS	WG2406304-3						
1-Methylnaphthalene			98.5		%		50-140	14-OCT-16



Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

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Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1

Contact: CINDY ZHAO

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R3569757							
WG2408316-1	MB							
Calcium (Ca)			<1.0		mg/L		1	12-OCT-16
Sodium (Na)			<1.0		mg/L		1	12-OCT-16
Magnesium (Mg)			<1.0		mg/L		1	12-OCT-16

Quality Control Report

Workorder: L1839952

Report Date: 14-OCT-16

Client: Morrison Hershfield Limited (Toronto)
235 Yorkland Blvd Suite 600
Toronto ON M2J 1T1
Contact: CINDY ZHAO

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 15 - 573718

Page of

Report To		Contact and company name below will appear on the final report				
Company:	Morrison Herschfeld	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EOD (DIGITAL)				
Contact:	Cindy Zhao	Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO				
Phone:	416 499 3110 ext 1011124	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - Provide details below if box checked				
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				
Street:	125 Commerce Valley Drive W1st	Email 1 or Fax: czhao@morrisonherschfeld.com				
City/Province:	Markham, Ontario	Email 2: yagun@gapcoconsulting.ca				
Postal Code:	L3T 7W4	Email 3:				
Invoice To	Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				
Copy of Invoice with Report	<input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				
Company:	Morrison Herschfeld	Email 1 or Fax: czhao@morrisonherschfeld.com				
Contact:	Cindy Zhao	Email 2:				
Project Information		Oil and Gas Required Fields (client use)				
ALS Account # / Quote #:	0.24800	AFE/Coast Center:				
Job #:	16-1359	Major/Minor Code:				
PO/AEE:		Routing Code:				
LSD:		Requisitioner:				
Location:		ALS Contact:				
ALS Lab Work Order # (lab use only)	L1839952	Sampler:				
ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
-1	BH1 SS2		28-09-16	AM	Soil	✓
-2	BH4 SS2		28-09-16	AM	Soil	✓
-3	BH5 SS2		28-09-16	AM	Soil	✓
-4	BH8 SS2		28-09-16	AM	Soil	✓
-5	BH10 SS2		28-09-16	AM	Soil	✓
	TCLP		28-09-16	AM	Soil	✓
Drinking Water (DW) Samples (client use)						
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)						
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO						
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO						
MOECC Table 3 RPI (KSLMS)						
SHIPMENT RELEASE (client use)						
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:
W. Sun	2016-10-05	16:25	W. Sun	05-OCT-16	16:25	W. Sun
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION						
WHITE - LABORATORY COPY YELLOW - CLIENT COPY						
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form						

APPENDIX E: Laboratory Certificate of TCLP Analysis



GeoPro Consulting Limited (Richmond Hill)
ATTN: BuJing Guan
40 Vogell Road
Unit 22
Richmond Hill ON L4B 3N6

Date Received: 05-OCT-16
Report Date: 13-OCT-16 15:46 (MT)
Version: FINAL

Client Phone: 905-237-8336

Certificate of Analysis

Lab Work Order #: L1839783
Project P.O. #: NOT SUBMITTED
Job Reference: 16-1359
C of C Numbers: 15-573719
Legal Site Desc:

Emerson Perez, B.S.E
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]



ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - April 15, 2011 Standards

			ALS ID		L1839783-1	L1839783-2
			Sampled Date		28-SEP-16	28-SEP-16
			Sampled Time		-	-
			Sample ID		BH2 SS3	BH6 SS3
Grouping	Analyte	Unit	Guide Limits			
			#1	#2		
Physical Tests	% Moisture	%	-	-	7.21	7.32
Volatile Organic Compounds	Acetone	ug/g	0.5	-	<0.50	<0.50
	Benzene	ug/g	0.02	-	<0.0068	<0.0068
	Bromodichloromethane	ug/g	0.05	-	<0.050	<0.050
	Bromoform	ug/g	0.05	-	<0.050	<0.050
	Bromomethane	ug/g	0.05	-	<0.050	<0.050
	Carbon tetrachloride	ug/g	0.05	-	<0.050	<0.050
	Chlorobenzene	ug/g	0.05	-	<0.050	<0.050
	Dibromochloromethane	ug/g	0.05	-	<0.050	<0.050
	Chloroform	ug/g	0.05	-	<0.050	<0.050
	1,2-Dibromoethane	ug/g	0.05	-	<0.050	<0.050
	1,2-Dichlorobenzene	ug/g	0.05	-	<0.050	<0.050
	1,3-Dichlorobenzene	ug/g	0.05	-	<0.050	<0.050
	1,4-Dichlorobenzene	ug/g	0.05	-	<0.050	<0.050
	Dichlorodifluoromethane	ug/g	0.05	-	<0.050	<0.050
	1,1-Dichloroethane	ug/g	0.05	-	<0.050	<0.050
	1,2-Dichloroethane	ug/g	0.05	-	<0.050	<0.050
	1,1-Dichloroethylene	ug/g	0.05	-	<0.050	<0.050
	cis-1,2-Dichloroethylene	ug/g	0.05	-	<0.050	<0.050
	trans-1,2-Dichloroethylene	ug/g	0.05	-	<0.050	<0.050
	Methylene Chloride	ug/g	0.05	-	<0.050	<0.050
	1,2-Dichloropropane	ug/g	0.05	-	<0.050	<0.050

Guide Limit #1: T1-Soil-Res/Park/Inst/Ind/Com/Comm Property Use

-  Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - April 15, 2011 Standards

			ALS ID		L1839783-1	L1839783-2
			Sampled Date		28-SEP-16	28-SEP-16
			Sampled Time		-	-
			Sample ID		BH2 SS3	BH6 SS3
Grouping	Analyte	Unit	Guide Limits			
			#1	#2		
Volatile Organic Compounds	cis-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030
	trans-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030
	1,3-Dichloropropene (cis & trans)	ug/g	0.05	-	<0.042	<0.042
	Ethylbenzene	ug/g	0.05	-	<0.018	<0.018
	n-Hexane	ug/g	0.05	-	<0.050	<0.050
	Methyl Ethyl Ketone	ug/g	0.5	-	<0.50	<0.50
	Methyl Isobutyl Ketone	ug/g	0.5	-	<0.50	<0.50
	MTBE	ug/g	0.05	-	<0.050	<0.050
	Styrene	ug/g	0.05	-	<0.050	<0.050
	1,1,1,2-Tetrachloroethane	ug/g	0.05	-	<0.050	<0.050
	1,1,2,2-Tetrachloroethane	ug/g	0.05	-	<0.050	<0.050
	Tetrachloroethylene	ug/g	0.05	-	<0.050	<0.050
	Toluene	ug/g	0.2	-	<0.080	<0.080
	1,1,1-Trichloroethane	ug/g	0.05	-	<0.050	<0.050
	1,1,2-Trichloroethane	ug/g	0.05	-	<0.050	<0.050
	Trichloroethylene	ug/g	0.05	-	<0.010	<0.010
	Trichlorofluoromethane	ug/g	0.25	-	<0.050	<0.050
	Vinyl chloride	ug/g	0.02	-	<0.020	<0.020
	o-Xylene	ug/g	-	-	<0.020	<0.020
	m+p-Xylenes	ug/g	-	-	<0.030	<0.030
	Xylenes (Total)	ug/g	0.05	-	<0.050	<0.050
	Surrogate: 4-Bromofluorobenzene	%	-	-	101.0	101.1

Guide Limit #1: T1-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - April 15, 2011 Standards

				ALS ID	L1839783-1	L1839783-2
				Sampled Date	28-SEP-16	28-SEP-16
				Sampled Time	-	-
				Sample ID	BH2 SS3	BH6 SS3
Grouping	Analyte	Unit	Guide Limits			
			#1	#2		
Volatile Organic Compounds	Surrogate: 1,4-Difluorobenzene	%	-	-	111.1	110.7
Hydrocarbons	F1 (C6-C10)	ug/g	25	-	<5.0	<5.0
	F1-BTEX	ug/g	25	-	<5.0	<5.0
	F2 (C10-C16)	ug/g	10	-	<10	<10
	F3 (C16-C34)	ug/g	240	-	<50	<50
	F4 (C34-C50)	ug/g	120	-	<50	<50
	Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72
	Chrom. to baseline at nC50		-	-	YES	YES
	Surrogate: 2-Bromobenzotrifluoride	%	-	-	88.9	85.5
	Surrogate: 3,4-Dichlorotoluene	%	-	-	96.6	95.2

Guide Limit #1: T1-Soil-Res/Park/Inst/Ind/Com/Comm Property Use

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

(No parameter exceedances)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
--------------------------	------	---	-------------------------------------

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1
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Fractions F2, F3 and F4 are determined by extracting a soil sample with a solvent mix. The solvent recovered from the extracted soil sample is dried and treated to remove polar material. The extract is analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
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VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
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VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)
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Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
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Total xylenes represents the sum of o-xylene and m&p-xylene.

Reference Information

L1839783 CONT'D....
Job Reference: 16-1359
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13-OCT-16 15:46 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

15-573719

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.



Quality Control Report

Workorder: L1839783

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Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6

Contact: BuJing Guan

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R3568210							
WG2405867-4	DUP	WG2405867-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	50	11-OCT-16
WG2405867-2	LCS							
F1 (C6-C10)			93.4		%		80-120	11-OCT-16
WG2405867-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	11-OCT-16
Surrogate: 3,4-Dichlorotoluene			109.9		%		60-140	11-OCT-16
WG2405867-7	MS	WG2405867-6						
F1 (C6-C10)			80.8		%		60-140	11-OCT-16
F2-F4-511-WT		Soil						
Batch	R3569839							
WG2408136-3	CRM	ALS PHC2 IRM						
F2 (C10-C16)			86.1		%		70-130	12-OCT-16
F3 (C16-C34)			93.4		%		70-130	12-OCT-16
F4 (C34-C50)			92.8		%		70-130	12-OCT-16
WG2408136-5	DUP	WG2408136-4						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	12-OCT-16
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	12-OCT-16
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	12-OCT-16
WG2408136-2	LCS							
F2 (C10-C16)			81.5		%		80-120	12-OCT-16
F3 (C16-C34)			93.9		%		80-120	12-OCT-16
F4 (C34-C50)			91.6		%		80-120	12-OCT-16
WG2408136-1	MB							
F2 (C10-C16)			<10		ug/g		10	12-OCT-16
F3 (C16-C34)			<50		ug/g		50	12-OCT-16
F4 (C34-C50)			<50		ug/g		50	12-OCT-16
Surrogate: 2-Bromobenzotrifluoride			88.8		%		60-140	12-OCT-16
MOISTURE-WT		Soil						
Batch	R3566916							
WG2406238-3	DUP	L1840366-2						
% Moisture		5.50	5.94		%	7.8	20	08-OCT-16
WG2406238-2	LCS							
% Moisture			101.9		%		90-110	08-OCT-16
WG2406238-1	MB							
% Moisture			<0.10		%		0.1	08-OCT-16



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Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6

Contact: BuJing Guan

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3568210							
WG2405867-4	DUP	WG2405867-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	11-OCT-16
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	11-OCT-16
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-OCT-16
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	11-OCT-16
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-OCT-16
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	11-OCT-16
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	11-OCT-16
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	11-OCT-16
Styrene		<0.050	<0.050		ug/g			11-OCT-16



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Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6

Contact: BuJing Guan

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3568210							
WG2405867-4	DUP	WG2405867-3						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	11-OCT-16
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-OCT-16
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	11-OCT-16
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-OCT-16
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	11-OCT-16
WG2405867-2	LCS							
1,1,1,2-Tetrachloroethane			102.0		%		60-130	11-OCT-16
1,1,1,2-Tetrachloroethane			116.9		%		60-130	11-OCT-16
1,1,1-Trichloroethane			111.0		%		60-130	11-OCT-16
1,1,2-Trichloroethane			111.2		%		60-130	11-OCT-16
1,1-Dichloroethane			113.0		%		60-130	11-OCT-16
1,1-Dichloroethylene			104.6		%		60-130	11-OCT-16
1,2-Dibromoethane			112.7		%		70-130	11-OCT-16
1,2-Dichlorobenzene			105.8		%		70-130	11-OCT-16
1,2-Dichloroethane			120.8		%		60-130	11-OCT-16
1,2-Dichloropropane			116.5		%		70-130	11-OCT-16
1,3-Dichlorobenzene			102.5		%		70-130	11-OCT-16
1,4-Dichlorobenzene			107.4		%		70-130	11-OCT-16
Acetone			139.3		%		60-140	11-OCT-16
Benzene			114.2		%		70-130	11-OCT-16
Bromodichloromethane			115.3		%		50-140	11-OCT-16
Bromoform			107.9		%		70-130	11-OCT-16
Bromomethane			108.3		%		50-140	11-OCT-16
Carbon tetrachloride			111.2		%		70-130	11-OCT-16
Chlorobenzene			106.2		%		70-130	11-OCT-16
Chloroform			115.5		%		70-130	11-OCT-16
cis-1,2-Dichloroethylene			112.8		%		70-130	11-OCT-16
cis-1,3-Dichloropropene			124.6		%		70-130	11-OCT-16
Dibromochloromethane			114.9		%		60-130	11-OCT-16
Dichlorodifluoromethane			75.2		%		50-140	11-OCT-16



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Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6

Contact: BuJing Guan

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3568210							
WG2405867-2	LCS							
Ethylbenzene			95.4		%		70-130	11-OCT-16
n-Hexane			113.4		%		70-130	11-OCT-16
Methylene Chloride			119.9		%		70-130	11-OCT-16
MTBE			108.8		%		70-130	11-OCT-16
m+p-Xylenes			98.8		%		70-130	11-OCT-16
Methyl Ethyl Ketone			137.9		%		60-140	11-OCT-16
Methyl Isobutyl Ketone			133.4		%		60-140	11-OCT-16
o-Xylene			98.3		%		70-130	11-OCT-16
Styrene			98.3		%		70-130	11-OCT-16
Tetrachloroethylene			96.3		%		60-130	11-OCT-16
Toluene			100.4		%		70-130	11-OCT-16
trans-1,2-Dichloroethylene			113.9		%		60-130	11-OCT-16
trans-1,3-Dichloropropene			118.8		%		70-130	11-OCT-16
Trichloroethylene			105.5		%		60-130	11-OCT-16
Trichlorofluoromethane			106.2		%		50-140	11-OCT-16
Vinyl chloride			93.3		%		60-140	11-OCT-16
WG2405867-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	11-OCT-16
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	11-OCT-16
1,1,1-Trichloroethane			<0.050		ug/g		0.05	11-OCT-16
1,1,2-Trichloroethane			<0.050		ug/g		0.05	11-OCT-16
1,1-Dichloroethane			<0.050		ug/g		0.05	11-OCT-16
1,1-Dichloroethylene			<0.050		ug/g		0.05	11-OCT-16
1,2-Dibromoethane			<0.050		ug/g		0.05	11-OCT-16
1,2-Dichlorobenzene			<0.050		ug/g		0.05	11-OCT-16
1,2-Dichloroethane			<0.050		ug/g		0.05	11-OCT-16
1,2-Dichloropropane			<0.050		ug/g		0.05	11-OCT-16
1,3-Dichlorobenzene			<0.050		ug/g		0.05	11-OCT-16
1,4-Dichlorobenzene			<0.050		ug/g		0.05	11-OCT-16
Acetone			<0.50		ug/g		0.5	11-OCT-16
Benzene			<0.0068		ug/g		0.0068	11-OCT-16
Bromodichloromethane			<0.050		ug/g		0.05	11-OCT-16
Bromoform			<0.050		ug/g		0.05	11-OCT-16
Bromomethane			<0.050		ug/g		0.05	11-OCT-16



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Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6

Contact: BuJing Guan

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3568210							
WG2405867-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	11-OCT-16
Chlorobenzene			<0.050		ug/g		0.05	11-OCT-16
Chloroform			<0.050		ug/g		0.05	11-OCT-16
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	11-OCT-16
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	11-OCT-16
Dibromochloromethane			<0.050		ug/g		0.05	11-OCT-16
Dichlorodifluoromethane			<0.050		ug/g		0.05	11-OCT-16
Ethylbenzene			<0.018		ug/g		0.018	11-OCT-16
n-Hexane			<0.050		ug/g		0.05	11-OCT-16
Methylene Chloride			<0.050		ug/g		0.05	11-OCT-16
MTBE			<0.050		ug/g		0.05	11-OCT-16
m+p-Xylenes			<0.030		ug/g		0.03	11-OCT-16
Methyl Ethyl Ketone			<0.50		ug/g		0.5	11-OCT-16
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	11-OCT-16
o-Xylene			<0.020		ug/g		0.02	11-OCT-16
Styrene			<0.050		ug/g		0.05	11-OCT-16
Tetrachloroethylene			<0.050		ug/g		0.05	11-OCT-16
Toluene			<0.080		ug/g		0.08	11-OCT-16
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	11-OCT-16
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	11-OCT-16
Trichloroethylene			<0.010		ug/g		0.01	11-OCT-16
Trichlorofluoromethane			<0.050		ug/g		0.05	11-OCT-16
Vinyl chloride			<0.020		ug/g		0.02	11-OCT-16
Surrogate: 1,4-Difluorobenzene			116.5		%		50-140	11-OCT-16
Surrogate: 4-Bromofluorobenzene			106.6		%		50-140	11-OCT-16
WG2405867-5 MS		WG2405867-3						
1,1,1,2-Tetrachloroethane			103.9		%		50-140	11-OCT-16
1,1,2,2-Tetrachloroethane			116.7		%		50-140	11-OCT-16
1,1,1-Trichloroethane			114.9		%		50-140	11-OCT-16
1,1,2-Trichloroethane			113.3		%		50-140	11-OCT-16
1,1-Dichloroethane			117.2		%		50-140	11-OCT-16
1,1-Dichloroethylene			109.1		%		50-140	11-OCT-16
1,2-Dibromoethane			114.1		%		50-140	11-OCT-16
1,2-Dichlorobenzene			106.4		%		50-140	11-OCT-16



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Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6

Contact: BuJing Guan

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3568210							
WG2405867-5 MS		WG2405867-3						
1,2-Dichloroethane			124.1		%		50-140	11-OCT-16
1,2-Dichloropropane			118.8		%		50-140	11-OCT-16
1,3-Dichlorobenzene			102.7		%		50-140	11-OCT-16
1,4-Dichlorobenzene			107.4		%		50-140	11-OCT-16
Acetone			152.2	K	%		50-140	11-OCT-16
Benzene			116.7		%		50-140	11-OCT-16
Bromodichloromethane			117.6		%		50-140	11-OCT-16
Bromoform			109.3		%		50-140	11-OCT-16
Bromomethane			108.5		%		50-140	11-OCT-16
Carbon tetrachloride			115.1		%		50-140	11-OCT-16
Chlorobenzene			107.1		%		50-140	11-OCT-16
Chloroform			119.2		%		50-140	11-OCT-16
cis-1,2-Dichloroethylene			114.8		%		50-140	11-OCT-16
cis-1,3-Dichloropropene			115.9		%		50-140	11-OCT-16
Dibromochloromethane			117.4		%		50-140	11-OCT-16
Dichlorodifluoromethane			86.0		%		50-140	11-OCT-16
Ethylbenzene			95.5		%		50-140	11-OCT-16
n-Hexane			121.2		%		50-140	11-OCT-16
Methylene Chloride			123.9		%		50-140	11-OCT-16
MTBE			111.2		%		50-140	11-OCT-16
m+p-Xylenes			98.6		%		50-140	11-OCT-16
Methyl Ethyl Ketone			139.5		%		50-140	11-OCT-16
Methyl Isobutyl Ketone			133.2		%		50-140	11-OCT-16
o-Xylene			98.5		%		50-140	11-OCT-16
Styrene			97.5		%		50-140	11-OCT-16
Tetrachloroethylene			95.8		%		50-140	11-OCT-16
Toluene			103.8		%		50-140	11-OCT-16
trans-1,2-Dichloroethylene			114.7		%		50-140	11-OCT-16
trans-1,3-Dichloropropene			108.8		%		50-140	11-OCT-16
Trichloroethylene			106.5		%		50-140	11-OCT-16
Trichlorofluoromethane			112.9		%		50-140	11-OCT-16
Vinyl chloride			97.5		%		50-140	11-OCT-16

Quality Control Report

Workorder: L1839783

Report Date: 13-OCT-16

Client: GeoPro Consulting Limited (Richmond Hill)
40 Vogell Road Unit 22
Richmond Hill ON L4B 3N6
Contact: BuJing Guan

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
K	Matrix Spike recovery outside ALS DQO due to sample matrix effects.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

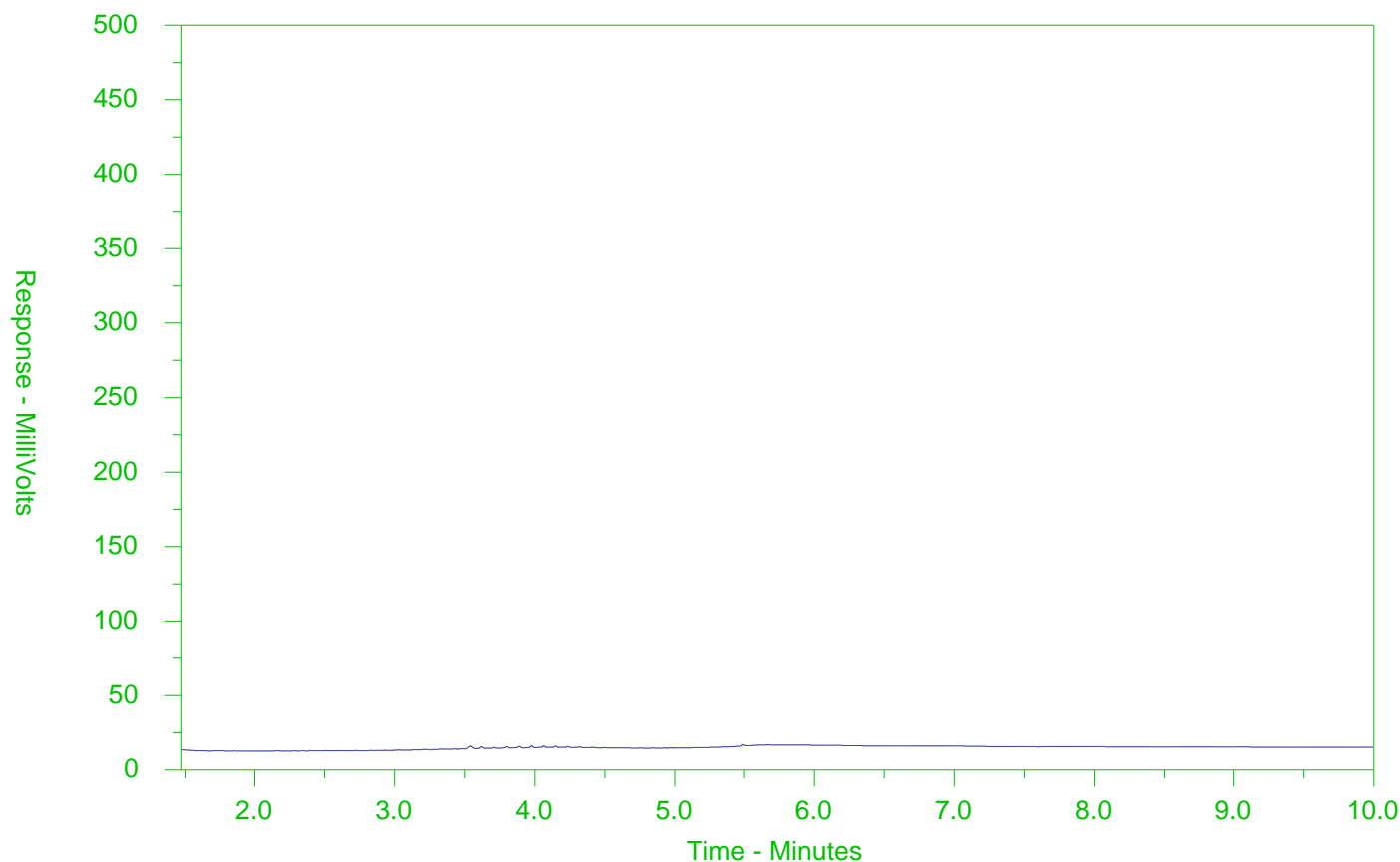
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L1839783-1
Client Sample ID: BH2 SS3



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

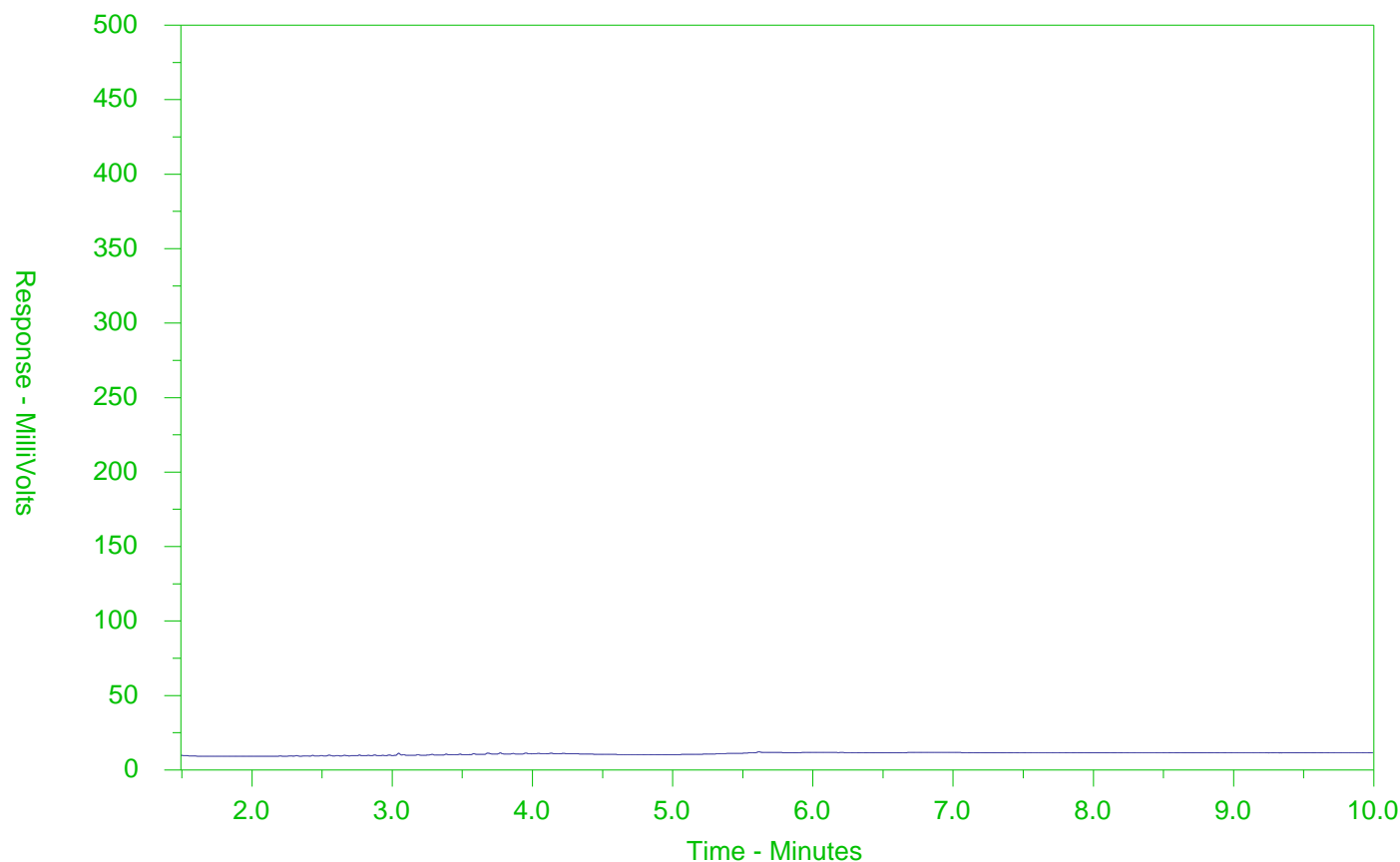
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L1839783-2
Client Sample ID: BH6 SS3



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 15 - 573719

Page 1 of 1

Report To		Contact and company name below will appear on the final report	
Company:	GeoPro Consulting		
Contact:	Bina Ewan		
Phone:	905 237 8336		
Company address below will appear on the final report			
Street:	40 Vogel Road		
City/Province:	Richmond Hill, Ontario		
Postal Code:			
Invoice To	Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked
Company:	GeoPro Consulting		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX
Contact:	Bina Ewan		Email 1 or Fax: 905 248 3699
Project Information		Email 2: bina@geoproconsulting.ca	
ALS Account # / Quote #:	Q 58286	Email 3:	
Job #:	16-1359	Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
PO / AFE:		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
LSD:		Email 1 or Fax: bina@geoproconsulting.ca	
ALS Lab Work Order # (lab use only)		ALS Contact:	
L1839783		Oil and Gas Required Fields (client use)	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)
1	BH2 SS3	28-09-2016	AM
2	BHG SS3	28-09-2016	AM
Sample Type		Sample Type	
		PHC	
		VOC	
		3	
Drinking Water (DW) Samples (client use)			
Are samples taken from a Regulated DW System?		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	
<input type="checkbox"/> YES <input type="checkbox"/> NO		MOEC Table 1	
Are samples for human drinking water use?			
<input type="checkbox"/> YES <input type="checkbox"/> NO			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Received by:	Date:
W. J. W.	2016-09-05	[Signature]	05-09-16
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION		WHITE - LABORATORY COPY YELLOW - CLIENT COPY	
Sample Condition AS RECEIVED (lab use only)		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below	
Frozen <input type="checkbox"/> Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Cooling Initiated <input type="checkbox"/>		Standard TAT if received by 3 pm - business days - no surcharges apply	
SIF Observations: Yes <input type="checkbox"/> No <input type="checkbox"/>		1 Business day (E1) <input type="checkbox"/>	
Custody seal intact: Yes <input type="checkbox"/> No <input type="checkbox"/>		Same Day, Weekend or Statutory holiday (E0) <input type="checkbox"/>	
INITIAL COOLER TEMPERATURES °C		Date and Time Required for all EAP TATs:	
6.3°C		Analysis Request	
FINAL COOLER TEMPERATURES °C			
INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Received by:	Date:

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY by the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.