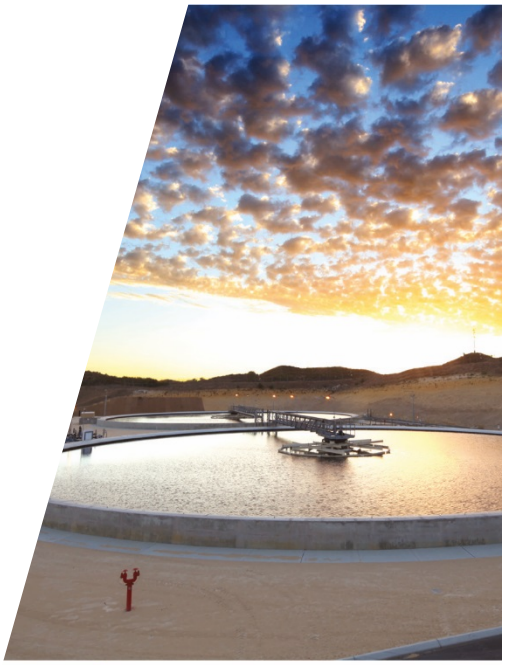
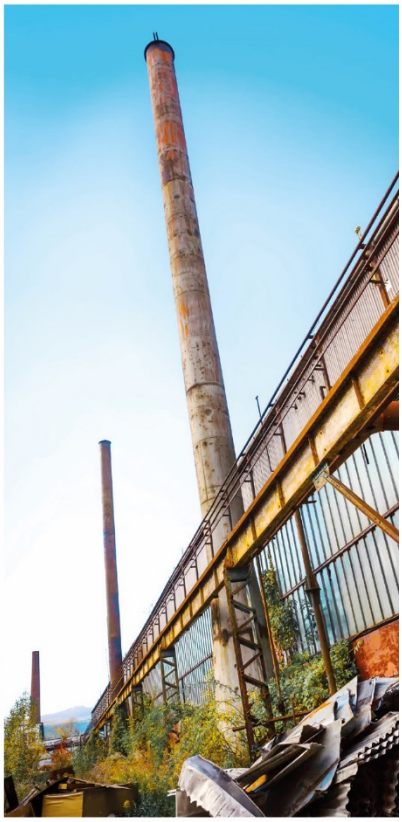


Phase Two Environmental Site Assessment

57 Lakeport Road
St. Catharines, Ontairo

Rankin Construction Inc.









Executive Summary

GHD Limited (GHD) was retained by Rankin Construction Inc. (Rankin) to conduct a Phase Two Environmental Site Assessment (ESA) of the lands and property located at 57 Lakeport Road in St. Catharines, Ontario (hereinafter referred to as the Site or Property). A Site location map is provided on Figure 1 and a Site plan is provided on Figure 2.

A Phase One ESA of the Property was completed by GHD in December 2016 on behalf of Rankin. The following Areas of Potential Environmental Concern (APECs) were identified in the Phase One ESA:

APEC#	*Area of Potential Environmental Concern*
A	Historical Land Use – Lock Maintenance and Repair Operations
B	Historical Land Use – Lock Operations to the North of the Property
C	Historical Land Use – Dry Dock Operations to the West of the Property
D	Historical Land Use – Former Auto Service Garage and Former UST Northwest of the Property
E	Former Fuel Oil UST – Associated with Lincoln Fabrics Facility to the South of the Site

Based on the Phase One ESA, a Phase Two ESA was deemed to be required to facilitate the filing of a Record of Site Condition (RSC) for the proposed redevelopment of the Property for mixed commercial and residential land use. The objective of this Phase Two ESA is to document the presence or absence of contaminants in soil and groundwater on, in or under the Property from all identified APECs in accordance with the requirements of Ontario Regulation 153/04, as amended (O. Reg. 153/04).

The Phase Two ESA activities included a review of environmental Site sensitivity and the collection of soil and groundwater samples to assess Site conditions. The Phase Two ESA investigations included the following:

- Advancement of five boreholes (MW1-17, MW3-17, MW4-17, MW5-17, and MW6-17)
- Instrumentation of five boreholes as groundwater monitoring wells (MW1-17, MW3-17, MW4-17, MW5-17, and MW6-17)
- Collection of soil and groundwater samples for screening and laboratory analysis

The applicable criteria were determined by GHD to be representative of two distinct conditions at the Site since the depth to groundwater is less than 1 metre below ground surface (m bgs) and the proximity of the Property to a surface water body. The Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use for medium to fine textured soils (MOECC Table 7 Standards) and Table 9 Generic Site Condition Standard for Use within 30 m of a Water Body in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use for medium to fine textured soils (MOECC Table 9 Standards) as provided in the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, Ministry of the Environment (MOECC), April 15, 2011.

Based on the Phase Two ESA completed at the Site, including all field and laboratory analytical data generated therefrom, the following conclusions have been developed regarding environmental Site conditions.

Geology

The stratigraphy encountered with depth during the field activities consisted of the following:

- *Asphalt* – surface cover over the majority of the Site
- *Topsoil* – surface cover in landscaped grassy areas on the west side of the parking lot
- *Fill* – sand and gravel, coarse-grained
- *Silty Sand Fill* – Sand fill with silt, medium to fine grained, brown, moist
- *Clayey Silt Fill* – silt fil with clay, fine grained with some fine gravel, brown to reddish brown, moist to wet
- *Sandy Silt Fill* – silt fill with sand, low plasticity, fine grained with occasional fine gravel, brown to grey moist to wet
- *Silty Clay* – silt with clay, medium to high plasticity, uniformly grey, dry to wet
- *Silt Till* – dense poorly graded fill, red in colour, wet, observed at one soil boring on-Site.

Soil Quality

Soils across the Site were analyzed for volatile organic compounds (VOCs), petroleum hydrocarbons fractions F_1 to F_4 (PHCs), polycyclic aromatic hydrocarbons (PAHs), metals, pH sodium adsorption ratio (SAR) and conductivity. This included examination of soils at the areas of suspected potential environmental concern. Assessment of soil quality with respect to Table 7 and Table 9 Standards identified contaminants of concern as follows:

Metals

- Antimony
- Hexavalent chromium
- Lead
- Zinc

Petroleum Hydrocarbon Fractions

- PHC Fraction F_4

Volatile Organic Compounds

- Xylenes

Polycyclic Aromatic Hydrocarbons

- Naphthalene

Inorganics

- Sodium Adsorption Ratio (SAR)

The horizontal extent of the soil impacts at the Site is presented on Figures 9 through 13. The vertical extent of the soil impacts at the Site is presented on cross-sections shown on Figures 14.1 through 14.3 and Figures 15.1 and 15.2. The maximum detected COC concentrations in soil are provided in Table 7

As the above mentioned COCs were identified in soil at the Site, soil remediation, a Risk Assessment and risk management measures are required to facilitate filing a Record of Site Condition for the proposed residential/commercial development at the Site.

Groundwater Quality

Groundwater samples across the Site were analyzed for VOCs, PHCs, PAHs and dissolved metals. This included examination of groundwater at the areas of suspected potential environmental concern. Assessment of groundwater quality with respect to MOECC Table 7 and Table 9 Standards identified no contaminants of concern. As no contaminants of concern were identified in groundwater at the Site, groundwater remediation, a groundwater Risk Assessment and groundwater risk management measures are not required to facilitate filing a Record of Site Condition for the proposed residential/commercial development at the Site.

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1. Introduction

GHD Limited (GHD) was retained by Rankin Construction Inc. (Rankin) to conduct a Phase Two Environmental Site Assessment (ESA) of the lands and associated building located at 57 Lakeport Road in St. Catharines, Ontario (Site or Property). GHD understands that the Site is owned by The Royal Canadian Legion Branch 350 and that Rankin is looking to redevelop the Property. A Site location map is shown on Figure 1 and a Site Plan is shown on Figure 2

The Property is approximately 0.22 hectares (0.54 acres) in size. The eastern-most portion of the Property is occupied by a two story building approximately 1,360 square metres (14,600 square feet) in size (Site Building). The Property is owned by The Royal Canadian Legion Branch 350.

A Phase One ESA of the Property was completed in December 2016 by GHD on behalf of Rankin. Based on the Phase One ESA, a Phase Two ESA was deemed to be required to facilitate the filing of an RSC for the proposed redevelopment of the Property for mixed residential/commercial use. The objective of this Phase Two ESA is to document the presence or absence of contaminants in soil and groundwater on, in or under the Property from all identified APECs in accordance with the requirements of O. Reg. 153/04.

The Phase Two ESA activities included a review of the environmental Site sensitivity and the collection of soil and groundwater samples to assess Site conditions.

1.1 Site Description

The Property is located in the north end of St. Catharines, Ontario, in the Port Dalhousie Heritage District in an area that has been utilized for commercial land uses for the purposes of Port activities, including operation and maintenance of wharves, locks and docks since at least the 1890s. The Site Building is currently occupied by the Royal Canadian Legion Branch 350 and is located on the eastern portion of the Site. The Site Building was originally constructed in 1890 as a repair facility to support the Old Welland Canal lock formerly operated to the south of the Site until the Royal Canadian Legion acquired and occupied the Site in 1951. The main floor is occupied by washrooms, storage space, offices, two banquet halls, a utility service room and a commercial kitchen. The second floor is occupied by washrooms, a banquet hall, a games room, a bar, a kitchen and storage rooms. The exterior portion of the Site is complete with commercial parking on an asphalt paved parking lot occupying the western portion of the Property. The Property boundaries are shown on Figure 2.

The Property is described as Part of Lot 21, Concession I, Township of Grantham, now Port Dalhousie Lot 1 and Port Dalhousie Lot 636 with a municipal address of 57 Lakeport Road located in St. Catharines, Ontario. The Property Identification Number (PIN) for the Site was 46195-0362 (LT). The Property is currently owned by the Royal Canadian Legion, Branch 350. The eastern-most parcels are owned by the Corporation of the City of St. Catharines.

A survey of the Phase Two Property is included in Appendix A.

1.2 Property Ownership

The Property is owned and operated by The Royal Canadian Legion Branch 350 which is a club for veterans, their families, and other members operated as a bar, commercial kitchen and a banquet hall.

Contact information for the Property owner's representative is listed below:

> Royal Canadian Legion Branch 350
> Attention: Mr. Bill Middler
> 57 Lakeport Road
> St. Catharines, Ontario L2N 4P6

GHD was retained by Rankin to the conduct this Phase Two ESA. Contact information for Rankin's representative is listed below:

> Rankin Construction Inc.
> Attention: Mr. Jim Frank, P. Eng., MBA
> 222 Martindale Road, Box 1116
> St. Catharines, Ontario L2R 7A3

It is GHD's understanding that the Phase Two ESA is being completed in contemplation of filing a Record of Site Condition (RSC) in accordance with O. Reg. 153/04 to support redevelopment of the Property from its most recent commercial land use to mixed commercial and residential land use.

1.3 Current and Proposed Future Uses

The Site is occupied by two-story commercial building with no basement. The building is currently operated as a members club with a bar, commercial kitchen and banquet halls available for rent. GHD understands Rankin intends to redevelop the Property for mixed residential and commercial land use and maintaining a portion of the Property for the continued operation of The Royal Canadian Legion.

1.4 Applicable Site Condition Standards

Soil and groundwater quality analytical data generated from this Phase Two ESA are assessed with respect to the generic standards provided in the Ontario Ministry of the Environment and Climate Change (MOECC) document entitled *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, dated April 15, 2011 (hereafter referred to as the MOECC Standard).

The MOECC Standard provides generic soil and groundwater quality standards for certain chemicals, based on combinations of the following Site-specific conditions:

- *Environmental sensitivity* – The Site is not in an identified area of natural significance. The Site does not include nor is it adjacent to an area of natural significance. The Property does not include land that is within 30 metres (m) of an area of natural significance or part of such an area. Based on the fact that there are no Environmental Conservation Areas, Areas of Natural or Scientific Interest (ANSI), Provincially Significant Wetlands (PSW) or significant species at risk

habitat features identified on the Site, the Property has not been evaluated as "environmentally sensitive" as defined under Ontario Regulation 153/04 .

- *Shallow soil property or water body* – Although greater than 2 metres (m) of overburden soil exists across the Site, depth to groundwater across the Site is generally less than 2 m below ground surface (bgs) and therefore the Site is being assessed to the same standard as a shallow soil condition. The east property boundary is less than 15 m west of a water body, the Old Welland Canal.
- *Property use* – The current land use of the Property is commercial with anticipated future land use of the Property being mixed commercial/residential.
- *Restoration of groundwater quality* – The shallow groundwater beneath the Site is not used for any purposes. The surrounding area is serviced by the Regional Municipality of Niagara's municipal water supply, which obtains its water supply from the Lake Erie by way of the Welland Canal. Therefore, a non-potable groundwater condition would apply at the Site (notwithstanding this, GHD has applied potable groundwater quality standards)
- *Soil texture* – Medium to fine grained soils are found at the Site. Based on results of the soil sample grain size analyses completed by GHD, the predominant soil texture at the Site is silty sand (i.e., medium to fine grained). As such, the standard for medium to fine textured soil is applied, as defined in Section 42 of O. Reg. 153/04

The applicable criteria were determined by GHD to be representative of two distinct conditions at the Site since the depth to groundwater is less than 2 m bgs and the Property being within 30 m of a surface water body. Evaluation of the Site requires the use of generic soil quality guidelines for residential/parkland/institutional use developed by the MOECC and presented in the MOECC Standard under Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for medium to fine textured soils (MOECC Table 7 Standards) and Table 9 Generic Site Condition Standard for Use within 30 m of a Water Body in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use for medium to fine textured soils (MOECC Table 9 Standards) as provided in the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, Ministry of the Environment, April 15, 2011. In the case of this Property, where two Standards are applicable to the Property, soil and groundwater analytical data will be assessed to both MOECC Table 7 and Table 9 Standards where the most stringent Standard for each parameter will be applied.

2. Background Information

2.1 Physical Setting

The Site is located in the north end of St. Catharines in the Port Dalhousie Heritage District, and was developed for commercial use. Access to the Site is from Lakeport Road to the west. The surrounding land uses adjacent to the Site are:

North: The Site is bounded to the north by an asphalt paved parking lot, landscaped areas, marina and yacht club. Other properties further north include commercial properties and the Lower Twelve Mile Creek.

West: The Site is bounded to the west by a commercial parking lot, Lakeport Road and further west by commercial properties including restaurants, a bank, and retail outlets. Rennie Park is located on the opposite side of Lakeport Road to the southwest of the Site.

South: The Site is bounded to the south by 61 Lakeport Road which is currently occupied by Pier 61 restaurant, beyond which is 63 Lakeport Road which is occupied by the Lincoln Fabrics building, a former woven industrial fabrics manufacturer.

East: The Site is bounded to the east by a port and the Old Welland Canal. Further east, across the inlet, is a yacht club.

No water bodies are located on the Site. Water bodies located in the Phase One Study Area include the inlet to Lake Ontario (Old Welland Canal) located approximately 12 metres east of the Site, the former marina and historical weir outfall area approximately 30 metres south of the Site and Martindale Pond located approximately 200 metres to the south and to the west of the Site. Lake Ontario is located approximately 375 metres north of the Site.

Storm water generated at the Site consists of rainfall that is collected on the building roof and exterior asphalt covered areas. Storm water from the building roof is directed to roof leaders which discharge to ground surface. Storm water collected on the ground surface is routed by overland flow to the east where it is discharged into the Old Welland Canal.

Based on the Phase One ESA, no parks wetlands, conservation areas, or other areas of natural significance were identified within the Phase One study area.

The Site location and regional topography are shown on Figure 1. The elevation of the Site ranges from approximately 75 to 79 m above mean sea level (amsl) sloping from Lakeport Road to the west towards the Old Welland Canal to the east. The general topography in the local and surrounding area generally slopes from Lakeport road to the west towards Old Welland Canal. Regional topography slopes gradually north towards Lake Ontario. The Site is located in a broad physiographic region identified as the sand plain[1].

A review of quaternary geological maps indicate that overburden at the Site consists primarily of anthropogenic fill material[2] that is likely associated with the construction of the Old Welland Canal. Based on five soil borings installed as part of the Phase Two ESA, bedrock is found at a depth greater than 14.33 m underneath a silty clay stratigraphic layer and a sandy silt fill/clayey silt fill deposit.

A review of the bedrock geology for the Site indicates the presence of the Queenston Formation, consisting of shale, limestone, dolostone and siltstone[3], and is approximately 20 metres bgs[4].

[1] Physiography, www.geologyontario.mndm.gov.on.ca
[2] Ontario Geologic Survey Map 2496, Quaternary Geology, Niagara-Welland, 1984
[3] Ontario Geologic Survey Map 2544, Bedrock Geology of Ontario, Southern Sheet; scale 1:1 000 000, 1991
[4] Ontario Geological Survey Preliminary Map P2400, Bedrock Topography Series, Niagara and Niagara-on-the-Lake Area, Southern Ontario; Scale 1:50 000, 1981

2.2 Past Investigations

As part of this Phase Two ESA, GHD reviewed the following environmental report:

- Phase One Environmental Site Assessment, 57 Lakeport Road, St. Catharines, Ontario dated December 2016 and prepared by GHD Limited

A copy of the Phase One ESA is provided in Appendix B. A summary the Phase One ESA is provided below along with a commentary on the adequacy of the data for use to support the filing of a RSC.

The Phase One ESA was completed to meet the requirements of O. Reg. 153/04 in support of filing a RSC. GHD completed a records review of available current and historical information sources pertaining to the Site including title history, aerial photos, Fire Insurance Plans, Property Underwriters' Report, city directories and Property Underwriters' Plans. Interviews were conducted with property representatives to determine if any current or historical operations have been a cause of concern with respect to the environmental condition of the Site and surrounding properties within the study area. The Phase One ESA identified the following APECs:

APEC A (Former Lock Maintenance and Repair Operation): The current building at the Site was formerly used to conduct lock maintenance and repair operations as identified by historical records and through interviews of knowledgeable persons. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined in O. Reg. 153/04. On this basis, the historical on-Site lock maintenance and repair operation has been identified in this report as APEC A as it represents a potential impact to soil and groundwater quality across the eastern portion of the Site with respect to volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons (PHCs) and metals.

APEC B (Former Lock Operation to the North): A lock associated with the original Welland Canal was formerly operated to the north of the Site in the early 1900s as identified by historical aerial photographs and fire insurance plans. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined in O. Reg. 153/04. Given its proximity, the historical operation of a lock to the north of the Site has been identified in this report as APEC B as it represents a potential impact to groundwater at the northeast corner of the Site with respect to VOCs, PAHs, PHCs and metals.

APEC C (Former Dry Dock Operation to the West): A dry dock associated with the former Welland Canal was operated to the west of the Site from the early 1900s to the 1950s as identified by historical aerial photographs and fire insurance plans. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined in O. Reg. 153/04. Given its proximity, the historical dry dock operation to the west of the Site has been identified in this report as APEC C as it represents a potential impact to groundwater from the southwest corner of the Site with respect to VOCs, PHCs and metals.

APEC D (Former Auto Service Garage and Former UST): An auto service garage and an associated underground storage tank was identified in historical fire insurance plans as having been operated on the northwest portion of the Site. “Gasoline and Associated Products Storage in Fixed Tanks” and “Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles” are PCA’s as defined in O. Reg. 153/04. On this basis, the historical on-Site operation of

an auto service garage and associated UST on the northwest portion of the Site was identified as APEC D as it represents a potential impact to soil and groundwater quality in the northwest portion of the Site with respect to PHCs.

APEC E (Former Fuel Oil UST on Neighbouring Property): A fuel oil UST was identified on historical fire insurance plans as having been operated on the Lincoln Fabrics property to the south of the Site. Gasoline and Associated Products Storage in Fixed Tanks is a PCA as defined in O. Reg. 153/04. Given its proximity to the Site, this former UST operation to the south of the Site has been identified in this report as APEC E as it represents a potential impact to groundwater quality at the south Property boundary with respect to PHCs.

The Phase One ESA presented a Phase One Conceptual Site Model from which the Phase Two Sampling and Analyses Program was developed by GHD for the Site. APEC D (Former Auto Service Garage and Former UST) were presented as two individual APECs in the Phase One ESA, for the Phase Two ESA, these two PCAs were consolidated into one investigative area. The Phase Two Conceptual Site Model developed based on the results of the Phase One ESA is presented on Figure 3.

3. Scope of the Investigation

3.1 Overview of Site Investigation

Beginning in March 2017, GHD conducted a Phase Two ESA to evaluate the APECs identified in the Phase One ESA (GHD, December 2016). The following activities were completed as part of the Phase Two ESA:

i) Review of environmental Site sensitivity to establish appropriate soil and groundwater quality standards

ii) Advancement of soil borings to facilitate the collection of surface and subsurface soil samples for field screening and laboratory analyses

iii) Instrumentation of soil borings as groundwater monitoring wells to facilitate the collection of groundwater samples for laboratory analyses and to determine the direction and gradient of groundwater flow across the Site

iv) Assessment of soil and groundwater analytical data with respect to the applicable MOECC Standards

v) Reporting

3.2 Media Investigated

The Phase Two activities conducted by GHD included the following:

i) Five boreholes were advanced to facilitate the collection and field screening of soil samples to document geologic and environmental conditions at the Site.

ii) Nine (9) soil samples (including one field duplicate) were collected from four borehole locations and submitted to a laboratory for chemical analyses.

iii) Five boreholes were instrumented as monitoring wells to facilitate the collection of groundwater samples and to document hydrogeological conditions at the Site.

iv) Six groundwater samples (including one field duplicate) were collected from five on-Site monitoring wells and submitted to a laboratory for chemical analyses

v) Implementation of quality assurance and control measures in the form of one soil trip blank and one groundwater trip blank for laboratory analyses of volatile organic compounds (VOCs) and petroleum hydrocarbons (PHC) fractions F_1

vi) Completion of four rounds of water level measurements to document groundwater recovery and flow direction.

The above activities were completed between March 20, 2017 and April 13, 2017.

There are no surface water bodies at the Site and as such no surface water or sediment samples were collected as part of the Phase Two ESA.

Environmental investigative locations are shown on Figure 4.

3.3 Phase One Conceptual Site Model

The Site is located in an urban area of the City of St. Catharines with history related to the Welland Canal Lock support operations dating back to the 1890s. The Property largely consists of lands that were reclaimed and/or raised to create the upstream Martindale Pond from the tail waters of Twelve Mile Creek so as to create a navigable water way for the Old Welland Canal complete with a lock and weir system. The Property is improved with a two-story commercial building (Site building) that is occupied by the Royal Canadian Legion Branch 350 with a bar, commercial kitchen and banquet halls. The Site Building occupies the eastern portion of the Property and was historically used as a repair facility to support the Old Welland Canal lock which formerly operated to the south of the Site. The western portion of the Property is occupied by an asphalt-paved commercial parking lot with small grassed landscaped areas.

No water bodies are located on the Site. The Old Welland Canal is located approximately 12 metres east of the Site. Lands to the south and west are reclaimed from former Welland Canal channels, locks and weirs. GHD reviewed the Ontario Ministry of Natural Resources and Forestry's – "Natural Heritage Information Centre" database to identify areas registered as ANSIs. GHD also consulted the ERIS ANSI database. No ANSIs or SEAs were identified for properties located within the Phase One Study Area.

Lakeport Road is located adjacent to the west of the Property and further west by commercial properties including restaurants, retail outlets and a bank. Two commercial buildings (Pier 61, and Lincoln Fabrics further to the south) and asphalt-paved parking lots are currently located adjacent to south of the Property. A fuel oil UST associated with the Lincoln Fabrics property was historically operated based on a review of the 1962 fire insurance plan. An asphalt-paved parking lot, landscaped areas, marina and a yacht club are present to the north of the Property, historically these lands were used for port activities pertaining to the original locks while in operation in the early 1900s. The Old Welland Canal is located to the west of the Property and was historically a main waterway for ships travelling through the Old Welland Canal until the early 1900s.

Site topographic relief is approximately four metres, sloping from Lakeport Road to the west towards Old Welland Canal to the east. The elevation of the Site ranges from approximately 79 metres above mean sea level (amsl) to approximately 75 metres amsl. Overburden at the Site consists primarily of anthropogenic fill material that is likely associated with the construction of the former Welland Canals. Bedrock in the area of the Site forms part of a group belonging to the Queenston Formation, consisting of shale, limestone, dolostone and siltstone, and is approximately 20 metres below ground surface. The regional groundwater flow direction is expected to be predominantly northerly/easterly towards Lake Ontario and/or Port Dalhousie Harbour.

A total of five PCAs were identified within the Phase One Study Area, including one on-Site PCAs.

Site utility services include municipal drinking water, natural gas, hydro-electricity, telephone, cable and sanitary sewers. There are no storm water catch basins located on the Property, storm water generated at the Site from the building roof and asphalt paved areas is directed by overland flow to the east where it is discharged into the Old Welland Canal. The depth to groundwater at the Property is estimated to be approximately 1 to 3 m bgs, and the utility corridors are expected to be within the water table and may act as preferential pathways for contaminant distribution and transport in the event that shallow subsurface contaminants exist at the Property.

A review of the available physiographical data indicates that the Property and the surrounding properties located within the Phase One Study Area consist of sand plains, clay plains and beaches with glaciolacustrine deposits comprised of sand and gravel with high permeability. Bedrock is expected to consist of shale, limestone, dolostone and siltstone of the Queenston Formation. The topography is considered to be mainly flat to rolling low local relief towards surface water bodies.

A summary of the current and past uses of the Site is provided below.

Year	Name of Owner	Description of Property Use	Property Use	Other Observations
1844	Nathan Pawling	Unknown	Unknown	Title Search
1846	Estate of James Drabble	Unknown	Unknown	Title Search
1844/46 - 1951	Board of Works (The King)	Lock Maintenance Building	Industrial use	Title search, aerial photographs and fire insurance plans indicate that an industrial building occupied this portion of the Site for servicing the Lock.
1951 - Present	Royal Canadian Legion Branch 350	Bar/Pub and Banquet Hall	Commercial use	Title search and fire insurance plans indicate that the former Lock maintenance building was converted and operated as Legion Branch 350.

The following Environmental Issues Matrix summarizes the areas of potential environmental concern (APECs), based on PCAs, that have been identified to be on, in, or under the Property, or located within the vicinity of the Property and having the potential to contribute to an APEC along with APECs that have been identified by the Phase One ESA records review, interviews, and Site reconnaissance.

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Area of Potential Environmental Concern	Location of Potential Environmental Concern on Phase One Property	Potential Contaminating Activity (PCA)	Location of PCA	Source of Information	Contaminants of Potential Concern	Media Potentially Impacted
APEC A: Historical Land Use – Lock Maintenance and Repair Operations	Across the Phase One Property	44. Port Activities including Operation and Maintenance of Wharves and Docks	On-Site	Interviews, Historical Records Review	VOCs, PAHs, PHCs, metals	Soil and Groundwater
APEC B: Historical Land Use – Lock Operations to the North of the Site	Across the Phase One Property	44. Port Activities including Operation and Maintenance of Wharves and Docks	Off-Site	Site Reconnaissance Historical Records Review	VOCs, PAHs, PHCs, metals	Groundwater
APEC C: Historical Land Use – Dry Dock Operations to the West of the Site	Across the Phase One Property	44. Port Activities including Operation and Maintenance of Wharves and Docks	Off-Site	Historical Records Review	VOCs, PHCs, metals	Groundwater
APEC D: Former UST – Associated with Former Auto Service Facility	Northwest Portion of Phase One Property	28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	Historical Records Review	PHCs	Soil and Groundwater
APEC D: Historical Land Use -Former Auto Service Garage	Northwest Portion of Phase One Property	27. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site	Historical Records Review	PHCs	Soil and Groundwater
APEC E: Former Fuel Oil UST – Associated with Lincoln Fabrics Facility to the South of the Site	Across the Phase One Property	28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	Historical Records Review	PHCs	Groundwater

Notes:

1 Area of Potential Environmental Concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through:

(a) Identification of past or present uses on, in or under the phase one property.

(b) Identification of potentially contaminating activity.

2 Potentially Contaminating Activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.

3. When completing this column, identify all contaminants of concern using the Method Groups as identified in the "protocol for the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011"

4. When submitting a record of site condition for filing, a copy of this table must be attached

The Phase Two Conceptual Site Model developed based on the Phase One Conceptual Site Model is shown on Figure 3.

3.4 Deviations from Sampling and Analysis Plan

A copy of the Sampling and Analysis Plan (SAP) is provided in Appendix C. Minor deviations from the soil and groundwater investigation SAP were required to address field conditions encountered as described below. Environmental investigation locations are shown on Figure 4.

- The locations of several proposed boreholes/monitoring wells had to be adjusted in the field from their original locations due to access restrictions, underground utilities and/or to maintain a safe distance from parked vehicles
- The location of proposed monitoring well MW5-17 had to be revised due to underground and overhead utilities and ground surface conditions which prevented safe drilling practices
- The proposed monitoring well MW2-17 has not been included in this this report as it does not pertain to the Phase Two Property.

Additions to the original SAP as part of this Phase Two ESA are described below.

- The advancement of boreholes deeper than proposed in the SAP to accurately classify the geology beneath the Site

3.5 Impediments

GHD did not encounter and impediments as part of this Phase Two ESA.

4. Investigation Methods

4.1 General

GHD completed the soil and groundwater quality investigation activities in March and April 2017 using a variety of investigation methods and sampling techniques. Investigations completed included the following.

- Advancement of boreholes
- Instrumentation of groundwater monitoring wells
- Collection of field screening measurements
- Collection of soil samples
- Groundwater level gauging
- Gauging of free product on the surface of groundwater
- Groundwater field measurements of water quality parameters
- Monitoring well development
- Collection of groundwater samples

- Analytical testing
- Residue management
- Quality assurance and quality control measures
- Elevation surveying

The field investigation activities were completed in accordance with methods prescribed by O. Reg. 153/04, GHD standard operating procedures (SOPs), the SAP, and standard industry practice.

Prior to completing any of the investigation activities, GHD prepared a Site-specific Health and Safety Plan (HASP). The purpose of the HASP was to provide specific guidelines and established procedures for the protection of personnel performing the Site investigation activities. In addition, GHD also completed the appropriate public utility notifications and retained private utility contractors to clear on-Site underground utilities in the areas of investigation.

4.2 Drilling and Excavating

Between March 20 and March 21, 2017, a total of five boreholes were advanced by Aardvark Drilling Inc. (Aardvark) of Guelph, Ontario, using a CME 55 truck-mounted drill rig as part of the soil and groundwater quality investigation. Each borehole was advanced using a 108-millimetre (mm) inside diameter (ID) hollow stem auger with a tri-cone drilling bit. Overburden soils were sampled using a 0.6-m long stainless steel split-spoon sampler using the standard penetration test (SPT) methodology, using a 63.6 kilogram (kg) drop hammer that was raised and lowered with a hydraulic pump. Soil samples from each split spoon interval for the full-depth of each borehole were described using the Unified Soil Classification System (USCS) for native soils with additional descriptions of visually identified features within the overburden soils.

The five boreholes advanced at the Site are identified as MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17 as shown on Figure 4. The boreholes were advanced to depths ranging from 4.27 to 14.33 m bgs. Three of the boreholes were instrumented as monitoring wells to a depth of 6.40 m bgs.

A total of nine soil samples including one field duplicate were collected for laboratory analyses of select parameters including VOCs, PHCs, PAHs, Metals, pH, SAR, and conductivity. A trip blank sample for QA/QC purposes was also for laboratory analyses of VOCs and PHC fractions F_1. A sample key summarizing the sampling information (location, identification, date, matrix, depth) as well as the analytical parameters is provided in Table 1.

Soil cuttings were containerized in 13, 210-Litre metal drums and stored on Site, at the northeast corner of the Site Building next to the waste disposal bins pending receipt of soil quality analytical data to confirm proper disposition. Prior to use and between each borehole location, the drilling and sampling equipment was thoroughly cleaned using Alconox® detergent and a potable water rinse. Wash water was containerized in two 210-Litre plastic drum and stored on-Site next to the soil cutting drums.

4.3 Soil Sampling

Continuous soil sample collection from each borehole was facilitated through the use of 0.6-m long, 50-mm (2-inch) outside diameter stainless steel split spoons advanced using SPT methodology.

Based on field screening, selected soil samples were placed in laboratory supplied containers with requisite preservative and placed in a cooler containing ice for sample preservation. Soil samples were selected from the zones exhibiting the strongest field evidence of impact to determine the vertical extent of impact. Soil samples were submitted to the laboratory for VOCs, PHCs, PAHs, metals, pH, SAR, and conductivity analyses as summarized in the field sample key presented in Table 1.

Soils encountered during drilling activities were classified according to the Unified Soil Classification System (USCS), as presented in the stratigraphic and instrumentation logs included in Appendix C. The stratigraphy encountered during the field activities consisted of the following:

- *Asphalt* – surface cover over the majority of the Site
- *Topsoil* – surface cover in landscaped grassy areas on the west side of the parking lot
- *Fill* – sand and gravel, coarse-grained
- *Silty Sand Fill* – Sand fill with silt, medium to fine grained, brown, moist
- *Clayey Silt Fill* – silt fil with clay, fine grained with some fine gravel, brown to reddish brown, moist to wet
- *Sandy Silt Fill* – silt fill with sand, low plasticity, fine grained with occasional fine gravel, brown to grey moist to wet
- *Silty Clay* – silt with clay, medium to high plasticity, uniformly grey, dry to wet
- *Silt Till* – dense poorly graded fill, red in colour, wet, observed at one soil boring on-Site.

Topsoil

Landscaped areas at the Site are backfilled with topsoil fill material brought to grade, with a grass surface. Topsoil was encountered to a depth of up to 1.0 m bgs (at MW1-17).

Fill

The Site is backfilled with sand and gravel fill material brought to grade, with an asphalt surface. Fill (i.e., sand and gravel) was encountered to a depth of up to 0.3 m bgs (at MW4-17).

Silty Sand Fill

In the western portion of the Property, the sand and gravel fill material was underlain with medium to fine grained, brown silty sand to a depth of up to 2.30 m bgs at MW1-17 and 1.5 m bgs at MW3-17. The silty sand fill was typically moist to at all depths.

Clayey Silt Fill

In the eastern portion of the property beginning at least at MW4-17, the sand and gravel fill material was underlain with medium to fine grained, brown to reddish brown low plasticity clayey silt with

occasional fine gravel to a depth of up to 5.50 m bgs (at MW4-17). The clayey silt was typically moist to wet at all depths.

Sandy Silt Fill

The clayey silt fill material was underlain with medium to fine grained, brown to grey, low plasticity sandy silt with occasional fine gravel to a depth of up to 6.7 m bgs (at MW4-17). The sandy silt fill was wet at all depths.

Silty Clay

Silt and clay was encountered on-Site at a depth from approximately 6.7 m bgs to 14.33 m bgs at MW4-17. The silty clay is soft with medium to high plasticity and is uniformly grey in colour. The deepest borehole was advanced to 14.33 m bgs (MW4-17), the silt and clay extends to an undetermined depth.

Silt Till

Silt till was encountered on-Site at a depth of approximately 3.7 to 9.3 m bgs at MW1-17 and extended to an undetermined depth. The silt till was wet, dense, poorly graded and red in colour. The silt till was not encountered at any other borehole on-Site.

Geologic cross sections are presented on Figure 5. The stratigraphy encountered from ground surface to the deepest investigated depth is presented on cross sections shown on Figure 6 and Figure 7.

4.4 Field Screening Measurements

As indicated in Section 5.2, soil sample collection was facilitated through the use of 50-mm (2-inch) outside diameter, 0.6-m long stainless steel split spoons rods using the SPT methodology. Upon opening the split-spoon, the soil was visually screened for the presence of impact (e.g. staining, sheen, presence of free product). In the absence of indications of impact, GHD placed a composite sample of soil from the length of the split spoon rod into a sealable plastic bag for headspace screening. Where applicable, the length of the soil intervals deviated from 0.6 m to a more specific interval to better assess potential impacts at specific targeted intervals. The headspace for each soil sample was screened for the presence of undifferentiated VOC vapours using a MiniRAE (2000 Model) photoionization detector (PID). The results of the VOC vapour screening were considered in selecting soil samples for submission to the laboratory for analysis.

Prior to sample collection, the PID was inspected and calibrated according to the manufacturer's recommendations. Calibrating the MiniRAE 2000 is a two-point process using “fresh air” and the standard reference gas (also known as span gas). First, a “fresh air” calibration, which contained no detectable VOC (0.0 ppm), was used to set the zero point for the sensor. Then a standard reference gas (isobutylene) that contains a known concentration (100 ppm) was used to set the second point of reference.

The PID model specifications are listed below.

MiniRAE 2000 with 11.7 eV UV lamp

Measurement Accuracy (isobutylene):

0-2000 ppm: +/- 2 ppm or 10% of reading

>2000 ppm: +/- 20% of reading

Calibration:

Two-point field calibration of zero and standard reference gas (100 ppm isobutylene, Lot No.: 7H350035MES, Expires: September 2018)

The field screening data is presented in the stratigraphic and instrumentation logs provided in Appendix D.

4.5 Groundwater Monitoring Well Installation

Under the direction of GHD, Aardvark installed a total of five permanent groundwater monitoring wells as part of this Phase Two ESA. The monitoring wells were installed at depths ranging from approximately 1.22 to 7.62 m bgs.

Groundwater monitoring wells were installed by Aardvark using 108-mm (4.25-inch) inside diameter hollow-stem augers (HSA). The monitoring wells were constructed with a 50-mm (2-inch) diameter, Schedule 40 polyvinyl chloride (PVC) riser and a 3.05-metre (10-foot), No. 10 slot size well screen. The monitoring well screens were installed in the clayey silt and sandy silt hydrogeological units at depths where the presence of groundwater was indicated based on soil saturation.

The groundwater monitoring wells were constructed with a silica sand pack in the annular space between the PVC screen/riser pipe and the borehole to a height of approximately 0.3 metres above the top of the well screen. A bentonite seal was placed directly above the sand pack and extended upwards to approximately 0.3 m bgs and aluminum flush-mounted casings were cemented in place at ground surface to approximate 0.3 m bgs. An expandable j-plug was installed on the top of the riser pipe.

Aardvark registered the monitoring well records with the MOECC. The groundwater monitoring well construction details are summarized in Table 2. The location of the boreholes and monitoring wells completed at the Site are shown on Figure 4.

Augers that were re-used during the installation of the monitoring wells were decontaminated prior to monitoring well advancement using a potable water pre-wash with manual scrubbing followed by a high pressure hot water and detergent wash and a final potable water rinse.

4.6 Groundwater Field Measurement of Water Quality Parameters

Groundwater monitoring conducted subsequent to the installation of the five wells found that all monitoring wells yielded water within 48 hours after installation. Prior to groundwater sample collection from MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17, the monitoring wells were

developed. Well development of monitoring wells was completed using dedicated Waterra tubing and a Delrin foot valve.

Groundwater monitoring wells were developed by removing groundwater until field measurements of temperature, pH, turbidity, electrical conductivity, oxygen reduction potential and dissolved oxygen stabilized. A summary of monitoring well development field stabilization parameters is provided in Table 3.

GHD used 210-litre plastic drums with a bung top seal to store development water from the monitoring wells. A total of two water drums are stored on Site, at the northeast corner of the Site Building next to soil cutting drums.

4.7 Groundwater Sampling

Groundwater level measurements were collected as part of the Phase Two ESA using both a calibrated oil-water interface probe and water level meter. The depth to water was measured relative to a specific reference point in the monitoring well (i.e., the top of the monitoring well riser pipe). Based on the monitoring well survey information, the groundwater elevation was calculated by subtracting the water level measurement from the reference point elevation. Groundwater level measurements and groundwater elevations with respect to a common assumed Site datum are provided in Table 4.

Non-aqueous phase liquid (NAPL) was not observed during monitoring well development or groundwater sampling activities.

Six groundwater samples, including a field duplicate, were collected from monitoring wells MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17 on March 24, 2017, and submitted to the laboratory for VOCs, PHC fractions F_1 through F_4, PAHs and dissolved metals analyses. The following protocol was employed during groundwater sample collection once well development had been achieved:

- Low flow sampling techniques were used to collect groundwater samples for VOCs, PHCs, PAHs, and dissolved metals analyses using a bladder pump at a rate of approximately 100 millilitres per minute (mL/min) to limit the draw-down of the water column and reduce sediment agitation and mobilization
- Groundwater samples were collected using dedicated tubing
- Groundwater samples for dissolved metals analyses were filtered at the time of sampling using a 0.45 micron (µm) in-line field filter prior to being placed into laboratory supplied bottles with requisite preservative to prevent suspended solids present in the sample volume.
- Collected samples were placed directly into per-cleaned laboratory-supplied sample bottles with requisite preservative specific to the analytical parameters, placed on ice in coolers, and submitted under chain-of-custody protocol to the laboratory for analyses

4.8 Sediment Sampling

There are no surface water bodies or water courses on Site. As such, no sediment samples were collected as part of the Phase Two ESA.

4.9 Analytical Testing

All soil and groundwater samples were submitted under chain-of-custody protocol to ALS Laboratories (ALS) for chemical analyses. ALS is an accredited laboratory under the Canadian Association for Laboratory Accreditation Inc. (CALA) and has appropriate accreditation under O. Reg. 153 to conduct soil and groundwater analyses required as part of the soil and groundwater investigation.

Copies of the laboratory analytical reports are provided in Appendix E.

4.10 Residue Management Procedures

Soil cuttings, monitoring well development water, and equipment decontamination wash water were contained in 210-litre (45-gallon) metal drums and 210-litre plastic drums on-Site pending characterization for proper off-Site disposal. A total of 13 210-litre metals drums and two 210-litre plastic water drums are stored on Site next to the garbage bins at the northeast corner of the Site Building.

4.11 Elevation Surveying

GHD used available satellite imagery of the area obtained using Microsoft© Bing mapping software as a base when GHD surveyed horizontal control for monitoring well and borehole locations since it was the most accurate imagery available to GHD and horizontal control monuments at the Site (i.e., short iron bars) were not readily accessible.

Each well was surveyed for vertical control using an assumed Site datum. The ground surface and top of riser pipe elevation of each well were surveyed with respect to that common benchmark (i.e., base of the fire hydrant collar east of Lakeport Road at the southwest corner of the Property), with an assumed elevation of 100.00 m above site datum (asd). The ground surface and top of riser reference elevations for monitoring well construction and elevations measurements for each well are summarized in Table 2.

4.12 Quality Assurance and Quality Control Measures

Quality assurance/quality control (QA/QC) measures employed by GHD during field activities included following GHD's developed Standard Operating Procedures (SOPs), which called for decontaminating sampling equipment between soil sampling locations; donning a new pair of nitrile gloves prior to collecting new soil samples and groundwater samples; and providing dedicated tubing and inertial lift pumps decontaminated prior to use at each well location to limit the potential for cross contamination between monitoring well locations. Inertial lift pumps were disassembled, rinsed with de-ionized water to remove fine particles from the equipment and cleaned using a phosphate free detergent, Alconox© and a nylon brush, the pumps were triple rinsed with deionized water before being reassembled for use at the next location. Wash waters generated from equipment decontamination procedures were containerized along with purged groundwater in a 210-Litre plastic drum. Groundwater samples collected for VOC, PAH and PHC fractions F_1 were collected using low flow sampling techniques.

Samples were placed into laboratory supplied sample containers with the requisite preservative and submitted under chain-of-custody protocol to ALS for chemical analysis. Soil samples that were submitted for analysis of volatile parameters were collected using a sealable, disposable volumetric sampling device. From the time of collection to the time of submission to the laboratory, samples were stored in a cooler and packed on ice to maintain sample integrity.

To validate the field analysis, one field duplicate QA/QC sample was submitted for every sampling event of each media and each parameter submitted for laboratory analysis. QA/QC samples also included trip blank samples for PHC fraction F_1 and VOCs.

All field monitoring equipment used as part of this soil and groundwater investigation were calibrated in accordance with the manufacturer's instructions and in accordance with GHD's ISO 9000 registered Quality System requirements.

5. Review and Evaluation

5.1 Geology

A review of the bedrock geology for the Site indicates the presence of Queenston Formation beneath the Site, which consists of shale, limestone, dolostone, and siltstone. Based on six soil borings installed as part of the Phase Two ESA, bedrock is expected to be encountered at a depth greater than 14.33 m below ground surface (bgs) beneath a silty clay stratigraphic layer, reworked sandy silt, clayey silt fill and a sand and gravel fill layer. A silt till layer was observed exclusively at MW1-17 at the southwest corner of the Property.

Soils encountered during drilling activities were classified according to the Unified Soil Classification System (USCS), as presented in the stratigraphic and instrumentation logs included in Appendix D. The stratigraphy encountered during the field activities consisted of fill, silty sand fill, clayey silt fill, sandy silt fill, silty clay and silt till.

Topsoil

Landscaped areas at the Site are backfilled with topsoil fill material brought to grade, with a grass surface. Topsoil was encountered to a depth of up to 1.0 m bgs (at MW1-17).

Fill

The Site is backfilled with sand and gravel fill material brought to grade, with an asphalt surface. Fill (i.e., sand and gravel) was encountered to a depth of up to 0.3 m bgs (at MW4-17).

Silty Sand Fill

In the western portion of the Property, the sand and gravel fill material was underlain with medium to fine grained, brown silty sand to a depth of up to 2.30 m bgs at MW1-17 and 1.5 m bgs at MW3-17. The silty sand fill was typically moist to at all depths.

Clayey Silt Fill

In the eastern portion of the property beginning at least at MW4-17, the sand and gravel fill material was underlain with medium to fine grained, brown to reddish brown low plasticity clayey silt with

occasional fine gravel to a depth of up to 5.50 m bgs (at MW4-17). The clayey silt was typically moist to wet at all depths.

Sandy Silt Fill

The clayey silt fill material was underlain with medium to fine grained, brown to grey, low plasticity sandy silt with occasional fine gravel to a depth of up to 6.7 m bgs (at MW4-17). The sandy silt fill was wet at all depths.

Silty Clay

Silt and clay was encountered on-Site at a depth from approximately 6.7 m bgs to 14.33 m bgs at MW4-17. The silty clay is soft with medium to high plasticity and is uniformly grey in colour. The deepest borehole was advanced to 14.33 m bgs (MW4-17), the silt and clay extends to an undetermined depth.

Silt Till

Silt till was encountered on-Site at a depth of approximately 3.7 to 9.3 m bgs at MW1-17 and extended to an undetermined depth. The silt till was wet, dense, poorly graded and red in colour. The silt till was not encountered at any other borehole on-Site.

5.2 Groundwater Elevations and Flow Direction

Groundwater monitoring wells MW1-17, MW3-17 MW4-17, MW5-17 and MW6-17 were screened such that the screen captured the clayey silt and sandy silt stratigraphic fill layers below the sand and gravel fill layer overly immediately overlying a low permeable silty clay. Additional monitoring wells were not screened at depths greater than 7.62 m bgs to facilitate vertical delineation of groundwater impairment or vertical gradients due to the low permeable nature of the clayey silt stratigraphic layer and the relatively shallow depth to groundwater.

Groundwater levels were measured on March 23, March 24, March 31 and April 13, 2017 using a calibrated electronic water level indicator and/or an oil-water interface probe. The depth to groundwater was measured at each accessible well location relative to the top of riser. Together with the top of riser elevation, the depth to groundwater was used to determine the relative elevation/potentiometric surface of groundwater at each monitoring well location.

On March 23, 2017 the water table was found to be between 97.23 m asd at MW1-17 and 95.68 at MW6-17 prior to monitoring well development. Approximately 24-hours after monitoring well development on the water table was found to be between 97.26 m asd at MW1-17 and 95.45 at MW6-17. During a significant rainfall event on March 31, 2017 the water table was found to be between 97.45 m asd at MW1-17 and 96.00 m asd at MW6-17. On April 13, after an extended period without significant rainfall, the water table was found to be between 97.66 m asd at MW1-17 and 95.98 m asd at MW6-17.

Based on groundwater elevation measurements the predominant groundwater flow direction across the Site is to the northeast towards the Old Welland Canal. The groundwater elevations for shallow groundwater measured on April 13, 2017 are shown on Figure 8.

On March 23, 24, 31 and April 13, 2017, each of the on-Site monitoring wells was inspected for the presence of light non-aqueous phase liquids (LNAPL) using an oil/water interface probe. No LNAPL was identified at any of the monitoring well locations. No visual evidence of oil sheen was observed on extracted groundwater during monitoring well development or during sampling activities. Based on observations made during borehole advancement, well development, and groundwater sampling, including visual and olfactory observations as well as organic vapour screening (PID readings), LNAPL is not present on groundwater at the Site.

5.3 Groundwater Hydraulic Gradients

The average horizontal hydraulic gradient in shallow overburden groundwater across the Site has been estimated to be between 5.0×10^{-7} cm/s and 3.0×10^{-7} cm/s within the sandy silt and clayey silt fill unit overlying the less permeable silty clay unit. The hydraulic conductivity of the less permeable silty clay unit has been estimated to be 5.0×10^{-8} cm/s. This is supported by the grain size analyses completed for the water bearing fill units, as provided in Appendix E.

Lateral groundwater movement through the silty clay fill and clayey silt fill units where shallow groundwater is present is expected to be predominant over vertical movement downward through the less permeable silty clay unit. Given the proximity to the Old Welland Canal and Lake Ontario, a lateral groundwater gradient is expected as opposed to a downward gradient. The downward conductivity would be limited by the hydraulic conductivity of the silty clay unit.

5.4 Soil Field Screening

During borehole advancement, GHD screened encountered soil for undifferentiated volatile organic vapours using a PID and documented visual and/or olfactory evidence of impairment, where observed. The results of the field screening and corresponding sample depth intervals are provided on the stratigraphic and instrumentation logs provided in Appendix D.

No visual or olfactory evidence of impairment were observed during field screening at MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17. PID readings of 34 ppm in the topsoil layer at MW1-17 and 28 ppm at MW6-17 were recorded during field screening were attributable to decaying vegetative matter observed in the corresponding intervals. No remaining PID readings greater than 10.5 ppm were measured in the headspace of soil samples collected. No, evidence of staining, free petroleum or chemical product was encountered in exposed soils during borehole advancement.

5.5 Soil Quality

A total of nine soil samples, including one field duplicate, were collected from soil boring locations MW3-17, MW4-17, MW5-17 and MW6-17 and selectively submitted for VOC, PHC fractions F_1 through F_4, PAHs, metals, pH, conductivity, and/or SAR analyses Soil boring location MW1-17 was advanced primarily for the instrumentation of a groundwater monitoring well for groundwater sample collection. A sample key summarizing the sampling information (location, identification, date, matrix, type and depth) as well as the analytical parameters is provided in Table 1. The soil quality analytical data are presented in Table 5 along with the generic MOECC Table 7 and Table 9 soil quality standards for comparative reference. Copies of the laboratory analytical reports are included in Appendix E. Soil sampling locations are presented on Figure 4.

The following provides a description of the soil sample analytical results in comparison to the applicable MOECC soil quality standards.

The analytical data generated from samples representative of the overburden fill material from 0.76 to 1.37 m bgs at MW3-17 contained PHC fractions F_4 at a concentration of 347 micrograms per gram (µg/g) which exceeds the MOECC Table 9 Standard of 120 µg/g. PHC fractions F_4 concentrations in soil collected at a deeper interval between 2.29 and 2.90 m bgs did not exceed the MOECC Table 9 Standard which indicates that vertical delineation of PHC fractions F_4 at MW3-17 was achieved. Elevated PHC fractions F_4 concentrations are likely attributable to the former UST and former auto service garage previously operated off-Site, northwest of the Property.

The soil samples representative of overburden soil from 0.46 to 0.91 m bgs at MW6-17 contained elevated concentrations of antimony, lead, zinc and xylenes that exceed their respective MOECC Table 9 Standards. Antimony was detected at a concentration of 1.4 µg/g which exceeds the MOECC Table 9 Standard of 1.3 µg/g, zinc was detected at a concentration of 299 µg/g which marginally exceeds the MOECC Table Standard of 290 µg/g, lead was detected at a concentration of 1070 µg/g which exceeds both the MOECC Table 7 and Table 9 Standard of 120 µg/g. An elevated xylenes concentration was detected at 0.111 µg/g which exceeds the MOECC Table 9 Standard of 0.05 µg/g. Analytical data representative of the overburden soils from 0.91 to 1.52 m bgs at MW6-17 contained an elevated concentration of hexavalent chromium of 0.9 µg/g that exceed the MOECC Table 9 Standard of 0.66 µg/g. Elevated metals and xylene concentrations at MW6-17 are likely attributable to the former lock maintenance and repair activities historically conducted on Site

The analytical data generated from samples representative of the overburden from 0 to 0.61 m bgs at MW5-17 contained concentrations of naphthalene and SAR that exceed their respective MOECC Table 9 Standards. Naphthalene was detected at a concentration of 0.105 µg/g which exceeds its MOECC Table 9 Standard of 0.09 µg/g. SAR was detected at a ratio of 7.65 which exceeds the MOECC Table 9 Standard of5. Elevated ratio of SAR is likely attributable to the lack of asphalt surface cover at MW5-17 and the infiltration of surface water runoff containing road salts due to winter de-icing activities. The elevated concentration of naphthalene and ratio of SAR may be resultant from former use of fuel oils at the Property during former lock maintenance and repair activities.

No exceedances of the MOECC Table 7 or Table 9 Standards were noted in soil samples from MW4-17.

Based on a review of the soil quality analytical data, the following parameters are identified as a contaminant of concern (COC) in soil since they were detected at concentrations greater than their respective MOECC Table 7 or Table 9 Standards. These COCs in soil medium are as follows:

Metals

- Antimony
- Hexavalent chromium
- Lead
- Zinc

Petroleum Hydrocarbon Fractions

- PHC Fraction F_4

Volatile Organic Compounds

- Xylenes

Polycyclic Aromatic Hydrocarbons

- Naphthalene

Inorganics

- Sodium adsorption ratio (SAR)

The remaining analyzed parameters were either not detected above the laboratory reporting limits, or were detected at concentrations below the MOECC Table 7 and Table 9 Standards. No other exceedances of the MOECC Table 7 or Table 9 Standards were noted from the soil quality investigation.

A summary of the horizontal extent of soil impacts at the Site is presented on Figure 9 (VOCs), Figure 10 (Metals), Figure 11 (PHCs), Figure 12 (PAHs) and Figure 13 (SAR). The vertical extent of soil impacts for cross-section A-A' are presented on Figure 14.1 (PHCs), Figure 14.2 (PAHs) and Figure 14.3 (SAR). As VOCs and metals were not detected at elevated concentrations in soil along cross-section A-A', figures delineating the vertical extent of these impacts along cross-section A-A' are not required to complete delineation.

The vertical extent of the soil impacts for cross-section B-B' are presented on Figures 15.1 (VOCs) and Figure 15.2 (Metals). As PHCs, PAHs and SAR were not detected at elevated concentrations in soil along cross-section B-B', figures delineating the vertical extent of these impacts along cross-section B-B' are not required to complete delineation.

The maximum detected concentrations in soil are provided in Table 6.

5.6 Groundwater Quality

On March 24, 2017, a total of six groundwater samples were collected, including one field duplicate, from monitoring wells MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17 and submitted to the laboratory for VOCs, PHCs, PAHs and dissolved metals analyses.

The locations of the groundwater monitoring wells are shown on Figure 4. A field sample key summarizing the sampling information (location, date, identification, type) as well as the parameters for analysis is provided in Table 1. The groundwater analytical data generated from monitoring wells MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17 are summarized in Table 7 along with the MOECC Table 7 and Table 9 Standards for comparative reference. A copy of laboratory analytical reports is included in Appendix E.

The analytical data generated from the groundwater sample at monitoring well location MW3-17 did not contain detectable concentrations of PHCs.

The remaining analyzed parameters were either not detected above the laboratory reporting limits, or were detected at concentrations below their respective MOECCTable 7 and Table 9 Standards.

No exceedances of the MOECC Standards were detected in on Site groundwater. The maximum detected concentrations in groundwater are provided in Table 8.

Based on a review of the groundwater quality analytical data generated from the groundwater investigation, no COCs were identified in groundwater since parameters, where detected, were at concentrations less than the applicable MOECC Standards. Groundwater remediation, a Risk Assessment, and/or risk management measures are not required to facilitate the filing a Record of Site Condition for the Site with respect to groundwater

5.7 Sediment Quality

No sediment samples were collected as part of the Phase Two ESA.

5.8 Quality Assurance and Quality Control Results

All field instruments used as part of this soil and groundwater investigation were calibrated in accordance with the manufacturer's instructions and in accordance with GHD's ISO 9000 registered Quality System requirements.

To validate the field analysis, one field duplicate QA/QC sample was submitted for every sampling event of each media and each parameter submitted for laboratory analysis. QA/QC samples also included trip blank samples for PHC fractions F_1 and VOCs.

QA/QC samples were also analyzed by the ALS as required by their analytical methods.

Upon receipt of analytical data from the laboratory, the data was reviewed by GHD for quality assurance/quality control. The data validation program consisted of reviewing the following parameters:

- Sample holding time and preservation
- Surrogate spike recoveries
- Laboratory control sample analyses
- Laboratory control sample duplicate analyses
- Laboratory duplicate analyses
- Matrix spike analyses
- Method Blank analyses
- Trip blank sample analysis
- Field duplicate analysis

The laboratory analytical reports received from the laboratory for soil and groundwater samples submitted as part of this Phase Two ESA complied with subsection 47(3) of O. Reg. 153/04. Further, a certificate of analysis has been received for each sample submitted for analysis and copies of those laboratory analytical reports have been included in full in Appendix E.

The soil and groundwater field duplicate results showed adequate reproducibility, indicating satisfactory sampling and laboratory precision for analytical data generated as part of this Phase Two ESA.

The results of the QA/QC evaluations conducted by GHD indicated that the analytical data were found to exhibit acceptable levels of accuracy and precision based on the provided information and may be used with the qualification noted above.

5.9 Phase Two Conceptual Site Model

The MOECC provides a list of PCAs in Schedule D of O. Reg. 153/04, under the Environmental Protection Act. A Phase One ESA of the Property was completed by GHD on behalf of Rankin in December 2016. PCAs identified to be on, in, or under the Phase Two Property, or located within the Phase One Study Area are presented in the table below along with their associated APEC.

Potential Contaminating Activity	Location of Area of Potential Environmental Concern on Phase One Property	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC A: Historical Land Use – Lock Maintenance and Repair Operations	Across the Phase One Property	On-Site	VOCs, PAHs, PHCs, Metals	Soil and Groundwater
APEC B: Historical Land Use – Lock Operations to the North of the Site	Across the Phase One Property	Off-Site	VOCs, PAHs, PHCs, Metals	Groundwater
APEC C: Historical Land Use – Dry Dock Operations to the West of the Site	Across the Phase One Property	Off-Site	VOC, PHC, Metals	Groundwater
APEC D: Historical Land use / Former UST – Former Auto Service Garage and Former UST	Northwest Portion of Phase One Property	Off-Site	PHCs	Soil and Groundwater
APEC E: Former Fuel Oil UST – Associated with Lincoln Fabrics Facility to the South of the Site	Across the Phase One Property	Off-Site	PHCs	Groundwater

5.9.1 Phase Two Property Description and Physical Setting

The Phase Two Property is an irregular-shaped parcel of land approximately 0.22 hectares (0.54 acres) in size located on the east side of Lakeport Road in the City of St. Catharines. The Property is located in the north end of St. Catharines, Ontario, in the Port Dalhousie Heritage District in an area that has been utilized for commercial land uses for the purposes of Port activities, including operation and maintenance of wharves, locks and docks since at least the 1890s. The Site Building is currently occupied by the Royal Canadian Legion Branch 350 and is located on the eastern

portion of the Site. The Site Building was originally constructed in 1890 as a repair facility to support the Old Welland Canal lock formerly operated to the south of the Site until the Royal Canadian Legion acquired and occupied the Site in 1951. The main floor is occupied by washrooms, storage space, offices, two banquet halls, a utility service room and a commercial kitchen. The second floor is occupied by washrooms, a banquet hall, a games room, a bar, a kitchen and storage rooms. A Site location map is provided on Figure 1 and a Site plan is provided on Figure 2. Based on the results of the Phase One ESA, contaminants of concern at the Site were limited to VOCs, PAHs, PHCs and Metals in soil and/or groundwater. The Phase Two Conceptual Site Model is presented on Figure 3.

Underground utilities at the Phase Two Property provide potable water, natural gas, electrical, telephone, cable and sewer services to the Site Building. These services enter the building foundation on the south side of the Site Building. No storm sewer catch basins are located on the Property, surface water is routed by overland flow to the east where is it discharged into the marina. The depth to shallow groundwater at the Phase Two Property ranges from approximately 2.88 m bgs at the west Property boundary to 0.77 m bgs at the east Property boundary nearest to the Old Welland Canal, and is within the utility corridors. Therefore, the utility corridors may influence the groundwater migration or contaminant migration with groundwater.

No water bodies are located on the Phase Two Property. The nearest water body is the Port Dalhousie Harbour located in the Old Welland Canal, which is located approximately 12 m east of the Phase Two Property. No areas of natural significance were identified within the Phase One Study Area. No drinking water wells were located on the Phase Two Property. The Phase Two Property is sloped with a topographic relief of approximately four metres from Lakeport Road to the west towards the Old Welland Canal to the east. The area surrounding the Phase Two Property slopes to the east towards the Old Welland Canal. Local and regional groundwater flow is inferred to be to the north, based on the topography of the area surrounding the Phase Two Property and the location of Lake Ontario.

5.9.2 Stratigraphy

The Site is relatively flat with a moderate designed slope towards the west Property boundary. The Site is backfilled with fill materials excavated during the construction of a lock to the north

A review of available bedrock geology mapping for the Site indicates the presence of Queenston Formation beneath the Site, which consists of shale, limestone, dolostone, and siltstone. Based on five soil borings installed as part of the Phase Two ESA, bedrock is found at a depth greater than 14.33 m bgs underneath a silty clay stratigraphic layer and a sandy silt fill layer. The soil boring locations are shown on Figure 4.

The stratigraphy encountered during the field activities consisted of the following:

- *Topsoil* – surface cover in landscaped grassy areas on the west side of the parking lot
- *Fill* – sand and gravel, coarse-grained
- *Silty Sand Fill* – Sand fill with silt, medium to fine grained, brown, moist
- *Clayey Silt Fill* – silt fil with clay, fine grained with some fine gravel, brown to reddish brown, moist to wet

- *Sandy Silt Fill* – silt fill with sand, low plasticity, fine grained with occasional fine gravel, brown to grey moist to wet
- *Silty Clay* – silt with clay, medium to high plasticity, uniformly grey, dry to wet
- *Silt Till* – dense poorly graded fill, red in colour, wet, observed at one soil boring on-Site.

Topsoil

Landscaped areas at the Site are backfilled with topsoil fill material brought to grade, with a grass surface. Topsoil was encountered to a depth of up to 1.0 m bgs (at MW1-17).

Fill

The Site is backfilled with sand and gravel fill material brought to grade, with an asphalt surface. Fill (i.e., sand and gravel) was encountered to a depth of up to 0.3 m bgs (at MW4-17).

Silty Sand Fill

In the western portion of the Property, the sand and gravel fill material was underlain with medium to fine grained, brown silty sand to a depth of up to 2.30 m bgs at MW1-17 and 1.5 m bgs at MW3-17. The silty sand fill was typically moist to at all depths.

Clayey Silt Fill

In the eastern portion of the property beginning at least at MW4-17, the sand and gravel fill material was underlain with medium to fine grained, brown to reddish brown low plasticity clayey silt with occasional fine gravel to a depth of up to 5.50 m bgs (at MW4-17). The clayey silt was typically moist to wet at all depths.

Sandy Silt Fill

The clayey silt fill material was underlain with medium to fine grained, brown to grey, low plasticity sandy silt with occasional fine gravel to a depth of up to 6.7 m bgs (at MW4-17). The sandy silt fill was wet at all depths.

Silty Clay

Silt and clay was encountered on-Site at a depth from approximately 6.7 m bgs to 14.33 m bgs at MW4-17. The silty clay is soft with medium to high plasticity and is uniformly grey in colour. The deepest borehole was advanced to 14.33 m bgs (MW4-17), the silt and clay extends to an undetermined depth.

Silt Till

Silt till was encountered on-Site at a depth of approximately 3.7 to 9.3 m bgs at MW1-17 and extended to an undetermined depth. The silt till was wet, dense, poorly graded and red in colour. The silt till was not encountered at any other borehole on-Site.

Geologic cross sections are presented on Figure 5. The stratigraphy encountered from ground surface to the deepest investigated depth is presented on cross sections shown on Figure 6 and Figure 7.

Groundwater flow across the Site was determined to be to the northeast. LNAPL was not observed in on-Site soils. PID readings of 34 ppm in the topsoil layer at MW1-17 and 28 ppm at MW6-17 were recorded during field screening were attributable to decaying vegetative matter observed in the corresponding intervals. No remaining PID readings greater than 10.5 ppm were measured in the headspace of soil samples collected. No, evidence of staining, free petroleum or chemical product was encountered in exposed soils during borehole advancement.

The findings of the Phase One ESA and a review of the stratigraphy of the five boreholes advanced for the Phase Two investigation indicate that soil backfilling occurred during initial development activities to construct the Site, as the Phase Two Property largely consists of lands that were reclaimed and/or raised to create the upstream Martindale Pond from the tail waters of Twelve Mile Creek so as to create a navigable water way complete with a lock and weir system. Additional sand and gravel fill material would have been transported to the site to facilitate the construction of the Site Building, prepare parking and access routes, and to establish drainage patterns. No areas with disturbed soil or buried debris were noted during the Site reconnaissance of the Phase One ESA.

5.9.3 Site Conditions

GHD reviewed the Ontario Ministry of Natural Resources and Forestry (MNRF) – "Natural Heritage Information Centre" database to identify areas registered as Areas of Natural or Scientific Interest (ANSI) within a one kilometre radius of the Site. No records were identified in the ANSI database for properties located within a one kilometre radius of the Site. Based on correspondence with MNRF staff, there are no provincially significant wetlands within the project area.

GHD reviewed the Niagara Escarpment Planning and Development Act (revised 2012), Provincial Parks and Conservation Reserves Act (2006), Oak Ridges Moraine Conservation Act (2001), and Wilderness Areas Act (1990) to determine if the Property was located in an area of natural significance. Based on a review of the Acts, the Phase Two Property is not in an area of natural significance as defined by each of the Acts.

GHD also completed a review of available mapping from the Niagara Region Conservation Authority (NPCA) – Watershed Explorer and contacted the NPCA to identify any environmentally significant areas in the area of the Site. A review of the NPCA Watershed Explorer and correspondence with NPCA staff indicate the Property is with an Environmental Conservation Area (ECA) for Valley Shoreline, requiring a development review to demonstrate that no negative impact on the Core Natural Heritage System or adjacent lands. Although the Property is located in an ECA, for Valley Shoreline, the Property is not classified as environmentally sensitive as a result.

The Property is not defined as environmentally sensitive under Ontario Regulation 153/04.

Following the Phase One ESA, GHD performed Phase Two ESA activities between March 20 and April 13, 2017 to confirm the presence or absence of contamination associated with the historical use of the Site.

The Phase Two activities conducted by GHD included the following:

i) Five boreholes were advanced to facilitate the collection and field screening of soil samples to document geologic and environmental conditions at the Site.

ii) Nine (9) soil samples (including one field duplicate) were collected from four borehole locations and submitted to a laboratory for chemical analyses.

iii) Five boreholes were instrumented as monitoring wells to facilitate the collection of groundwater samples and to document hydrogeological conditions at the Site.

iv) Six groundwater samples (including one field duplicate) were collected from five on-Site monitoring wells and submitted to a laboratory for chemical analyses

v) Implementation of quality assurance and control measures in the form of one soil trip blank and one groundwater trip blank for laboratory analyses of volatile organic compounds (VOCs) and petroleum hydrocarbons (PHC) fractions F_1

vi) Completion of four rounds of water level measurements to document groundwater recovery and flow direction. The groundwater elevations with respect to a common Site datum are shown on Figure 8 along with the inferred groundwater flow direction

There are no surface water bodies at the Site and as such no surface water or sediment samples were collected as part of the Phase Two ESA.

Based on all of the investigation work completed, GHD believes that the Site has been sufficiently investigated and characterized. The investigative locations are shown on Figure 4. The following presents a summary of the soil and groundwater quality at the Site.

5.9.4 On-Site Soil (Surface and Subsurface)

Between March 20 and March 21, 2017, a total of five boreholes were advanced by Aardvark Drilling Inc. (Aardvark) of Guelph, Ontario, using a CME 55 truck-mounted drill rig as part of the soil and groundwater quality investigation. Each borehole was advanced using a 108-millimetre (mm) inside diameter (ID) hollow stem auger with a tri-cone drilling bit. Overburden soils were sampled using a 0.6-m long stainless steel split-spoon sampler using the standard penetration test (SPT) methodology, using a 63.6 kilogram (kg) drop hammer that was raised and lowered with a hydraulic pump. Soil samples from each split spoon interval for the full-depth of each borehole were described using the Unified Soil Classification System (USCS) for native soils with additional descriptions of visually identified features within the overburden soils.

The five boreholes advanced at the Site are identified as MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17 as shown on Figure 4. The boreholes were advanced to depths ranging from 4.27 to 14.33 m bgs. Three of the boreholes were instrumented as monitoring wells to a depth of 6.40 m bgs.

A total of nine soil samples including one field duplicate were collected for laboratory analyses of select parameters including VOCs, PHCs, PAHs, Metals, pH, SAR, and conductivity. A trip blank sample for QA/QC purposes was also for laboratory analyses of VOCs and PHC fractions F_1.

The applicable criteria were determined by GHD to be representative of two distinct conditions at the Site since the depth to groundwater is less than 1 metre below ground surface (m bgs) and the proximity of the Property to a surface water body. The Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use for medium to fine textured soils (MOECC Table 7 Standards) and Table 9 Generic Site Condition Standard for Use within 30 m of a Water Body in a Non-Potable Groundwater

Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use for medium to fine textured soils (MOECC Table 9 Standards) as provided in the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, Ministry of the Environment (MOECC), April 15, 2011.

A summary of the horizontal extent of soil impacts at the Site is presented on Figure 9 (VOCs), Figure 10 (Metals), Figure 11 (PHCs), Figure 12 (PAHs) and Figure 13 (SAR). The vertical extent of soil impacts for cross-section A-A' are presented on Figure 14.1 (PHCs), Figure 14.2 (PAHs) and Figure 14.3 (SAR). As VOCs and metals were not detected at elevated concentrations in soil along cross-section A-A', figures delineating the vertical extent of these impacts along cross-section A-A' are not required to complete delineation.

The vertical extent of the soil impacts for cross-section B-B' are presented on Figures 15.1 (VOCs) and Figure 15.2 (Metals). PHCs, PAHs and SAR were not detected at concentrations exceeding their respective MOECC Table 7 and Table 9 Standards in soil along cross-section B-B', figures delineating the vertical extent of these impacts along cross-section B-B' are not required to complete delineation.

Based on the analytical results, the following parameters are identified as contaminants of concern (COC) in soil since they were detected at concentrations greater than the most stringent of their respective generic MOECC Table 7 or Table 9 soil quality standards.

Metals

- Antimony
- Hexavalent chromium
- Lead
- Zinc

Elevated metals concentrations were detected in soil samples collected near the east Property boundary only. The source of the metals impacts is likely to be associated with the historic lock maintenance and repairs conducted at the Property.

Elevated metals concentrations were detected in soil samples collected near the north east Property boundary. Elevated metals concentrations in soil extend laterally to the north, east and south to at least the Property boundary and to the west by soil metals results of soil samples at MW4-17 and MW5-17. The elevated PHC concentrations detected in soil in the northwest corner of the Property extend no deeper than 1.52 m bgs and are delineated vertically by soil PHC results of soil samples at MW3-17, MW4-17 and MW5-17. The source of the metals impacts is likely to be associated with the historic lock maintenance and repairs conducted at the Property.

Petroleum Hydrocarbon Fractions

- PHC Fractions F_4

Elevated PHC concentrations were detected in soil samples collected near the east Property boundary. Elevated PHC concentrations in soil extend laterally to the west, north and east to at least the Property boundary and to the south by soil PHC results of soil samples at MW4-17 and MW6-17. The elevated PHC concentrations detected in soil in the northwest corner of the Property extend no

deeper than 2.9 m bgs and are delineated vertically by soil PHC results of soil samples at MW3-17 and MW4-17. Elevated PHC fractions F_4 concentrations are likely attributable to the former UST and former auto service garage previously operated off-Site.

Volatile Organic Compounds/BTEX

- Xylenes

An elevated xylenes concentration was detected in a soil sample collected near the east Property boundary. Elevated xylene concentrations in soil extend laterally to the north, east and south to at least the Property boundary and to the west by soil VOCs results at MW4-17 and MW5-17. The elevated xylenes concentrations in soil extend no deeper than 0.91 m bgs and are delineated vertically by soil VOC results of soil samples at MW4-17 and MW5-17. The elevated xylenes concentration at MW6-17 is likely attributable to the former lock maintenance and repair activities historically conducted on Site.

Polycyclic Aromatic Hydrocarbons

- Naphthalene

An elevated naphthalene concentration was detected in a soil sample collected near the south Property boundary. Elevated naphthalene concentrations in soil extend laterally to the south at least to the Property boundary, to the north and east by the building foundation and to the west by soil PAH results at MW1-17 and MW4-17. The elevated naphthalene concentration in soil extend no deeper than 0.76 m bgs and are delineated vertically by soil PAH results of soil samples at MW1-17 and MW4-17. The elevated naphthalene result may be resultant from former localized use of fuel oils at the Property during former lock maintenance and repair activities.

Inorganics

- Sodium Adsorption Ratio (SAR)

An elevated SAR ratio was calculated in a soil sample collected from MW5-17 near the south Property boundary only. Elevated SAR concentrations in soil extend laterally to the south at least to the Property boundary, to the north and east by the building foundation and to the west by soil SAR results at MW4-17. The elevated naphthalene concentration in soil extend no deeper than 0.76 m bgs. The source of elevated SAR is likely attributable to the lack of asphalt surface cover at MW5-17 allowing the infiltration of surface water runoff containing road salts due to winter de-icing activities.

The remaining analyzed parameters (metals, PHCs, VOCs, and PAHs) were either not detected above the laboratory reporting limits, or were detected at concentrations below the MOECC Table 7 and Table 9 Standards. Based on all of the investigation work completed, GHD believes that the Site has been sufficiently investigated and characterized with respect to COCs in groundwater.

As the above mentioned COCs were identified in soil at the Site, soil remediation, a Risk Assessment and risk management measures are required to facilitate filing a Record of Site Condition for the proposed residential/commercial development at the Site.

5.9.5 On-Site Groundwater

A total of six groundwater samples were collected, including one field duplicate, from monitoring wells MW1-17, MW3-17, MW4-17, MW5-17 and MW6-17 and submitted to the laboratory for VOCs, PHCs, PAHs and dissolved metals analyses Each of the on-Site monitoring wells was inspected for the presence of LNAPL using an oil/water interface probe. No LNAPL was identified at any of the monitoring well locations. Based on a review of the analytical data and observations made during borehole advancement, well development and groundwater sampling, including visual and olfactory observations as well as organic vapour content (PID readings), LNAPL does not appear to be present on groundwater at the Site.

Based on a review of the groundwater analytical data, no COCs were identified in groundwater since there were no detected concentrations greater than the MOECC Table 7 or Table 9 Standards. Since no groundwater impacts were identified at the Site, further investigations for delineation were not required.

5.9.6 Groundwater Hydraulic Gradient

The average horizontal hydraulic gradient in shallow overburden groundwater across the Site has been estimated to be between 5.0×10^{-7} cm/s and 3.0×10^{-7} cm/s within the sandy silt and clayey silt fill unit overlying the less permeable silty clay unit. The hydraulic conductivity of the less permeable silty clay unit has been estimated to be 5.0×10^{-8} cm/s. This is supported by the grain size analyses completed for the water bearing fill units, as provided in Appendix E.

Lateral groundwater movement through the silty clay fill and clayey silt fill units where shallow groundwater is present is expected to be predominant over vertical movement downward through the less permeable silty clay unit. Given the proximity to the Old Welland Canal and Lake Ontario, a lateral groundwater gradient is expected as opposed to a downward gradient. The downward conductivity would be limited by the hydraulic conductivity of the silty clay unit.

5.9.7 Intended Land Use

Intended land use is mixed commercial/ residential. Potential human receptors given the Site conditions include construction/utilities workers during Site redevelopment and, when the Site is operational, commercial workers at the Royal Canadian Legion and residents in the proposed residential units. Since the on-Site soil will be capped by the building floor and sub-grade parking garage, any potential soil vapour exposure to residents in the upper floors of the proposed development is considered to be significantly mitigated. In addition, since drinking water is supplied via a municipal supply, human exposure pathways to groundwater are not considered significant.

Potential terrestrial ecological receptors consist of terrestrial vegetation, such as trees and grasses, terrestrial invertebrates, such as earthworms, and terrestrial wildlife, such as mammals and birds. It is expected that there will be limited exposure, if any, for terrestrial ecological receptors through direct contact, indirect food web interactions, and inhalation of particulates/volatiles given that the entire Property will be covered with a concrete floor comprising the parking garage floor and exterior asphalt-paved surfaces. Given the Site is within a developed area of St. Catharines, it is not considered to be a sensitive Site for terrestrial ecological receptors. Potential aquatic ecological receptors consist of aquatic vegetation such as algae and grasses, aquatic invertebrates such as

zebra mussels, and aquatic wildlife such as amphibians, fish and waterfowl. Given there are no groundwater COCs at the Site, aquatic receptor pathways are not considered to be significant.

6. Conclusions

Based on the Phase Two ESA completed at the Site, including all field and laboratory analytical data generated therefrom, the following conclusions have been developed regarding environmental Site conditions.

Geology

The stratigraphy encountered during the field activities consisted of the following:

- *Asphalt* – surface cover over the majority of the Site
- *Topsoil* – surface cover in landscaped grassy areas on the west side of the parking lot
- *Fill* – sand and gravel, coarse-grained
- *Silty Sand Fill* – Sand fill with silt, medium to fine grained, brown, moist
- *Clayey Silt Fill*– silt fil with clay, fine grained with some fine gravel, brown to reddish brown, moist to wet
- *Sandy Silt Fill* – silt fill with sand, low plasticity, fine grained with occasional fine gravel, brown to grey moist to wet
- *Silty Clay* – silt with clay, medium to high plasticity, uniformly grey, dry to wet
- *Silt Till* – dense poorly graded fill, red in colour, wet, observed at one boring on-Site

Soil Quality

Soils across the Site were analyzed for VOCs, PHCs, PAHs, metals, conductivity and SAR. This included examination of soils at the areas of suspected potential environmental concern. Assessment of soil quality with respect to Table 7 and Table 9 Standards identified contaminants of concern as follows:

Metals

- Antimony
- Hexavalent Chromium
- Lead
- Zinc

Petroleum Hydrocarbon Fractions

- PHC Fraction F_4

Volatile Organic Compounds

- Xylenes

Polycyclic Aromatic Hydrocarbons

- Naphthalene

Inorganics

- Sodium Adsorption Ratio (SAR)

The horizontal extent of the soil impacts at the Site is presented on Figures 9 through 13. The vertical extent of the soil impacts at the Site is presented on cross-sections shown on Figures 14.1 through 14.3 and Figures 15.1 and 15.2.

As the above mentioned COCs were identified in soil at the Site, soil remediation, a Risk Assessment and risk management measures are required to facilitate filing a Record of Site Condition for the proposed residential/commercial development at the Site.

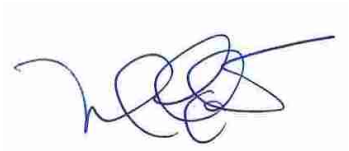
Groundwater Quality

Groundwater samples across the Site were analyzed for VOCs, PHCs, PAHs and dissolved metals. This included examination of groundwater at the areas of suspected potential environmental concern. Assessment of groundwater quality with respect to MOECC Table 7 and Table 9 Standards identified no contaminants of concern. As no contaminants of concern were identified in groundwater at the Site, groundwater remediation, a groundwater Risk Assessment and groundwater risk management measures are not required to facilitate filing a Record of Site Condition for the proposed residential/commercial development at the Site.

6.1 Signatures



Matthew Harbin B. Sc.



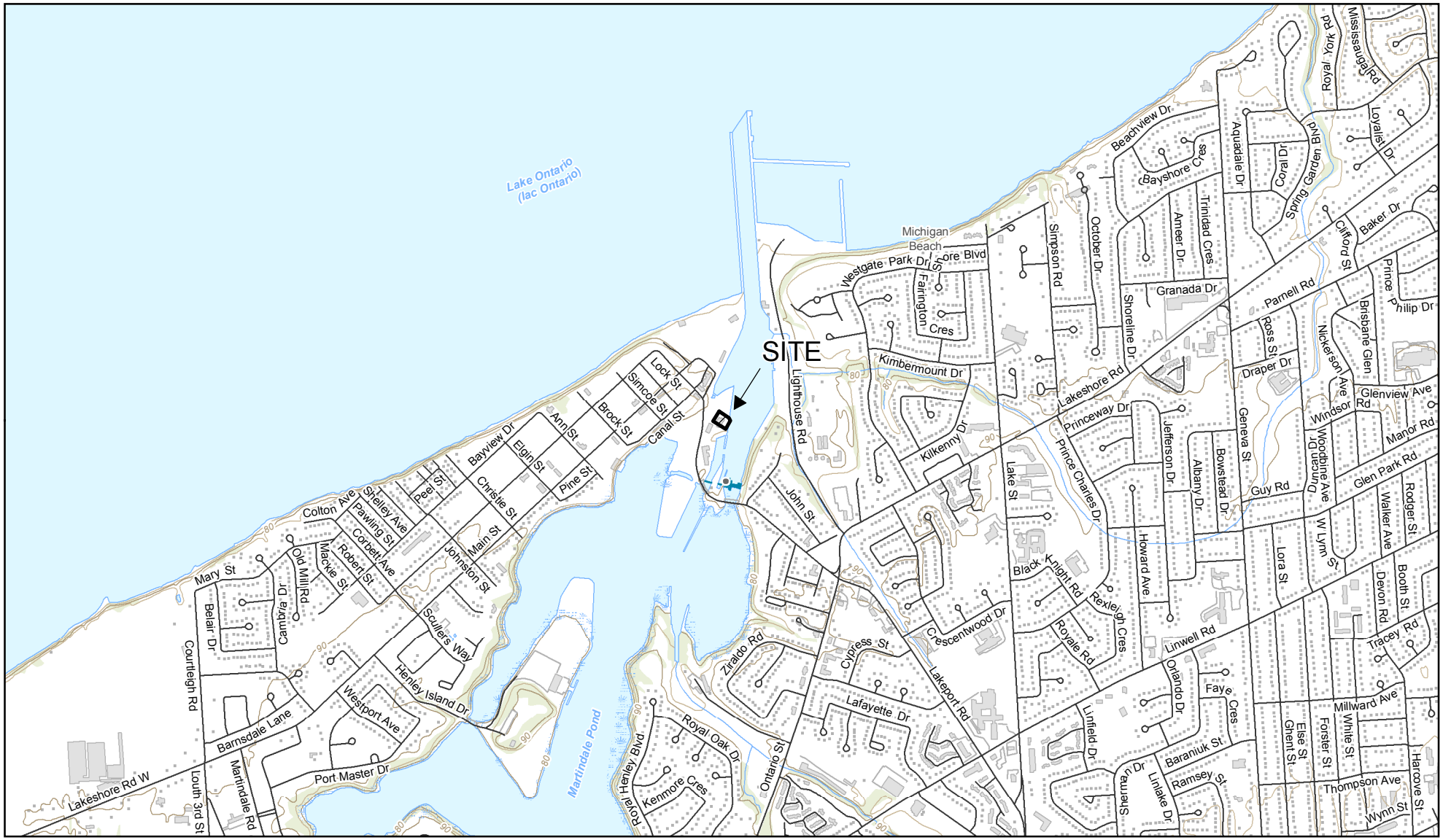
Marc Gaudet, P. Eng.

As a Qualified Person, I confirm that the Phase Two activities were carried out in accordance with O.Reg. 153/04, the results of which are accurately presented in the findings and conclusions of this report. A Record of Site Condition cannot be file on the Brownfields Environmental Site Registry because it does not meet certain Environmental Protection Act Standards, as identified herein.

7. References

Phase One Environmental Site Assessment, 57 Lakeport Road, St. Catharines, Ontario dated December 2016 and prepared by GHD Ltd.

Figures



Source: MNRF NRVIS, 2014. Produced by GHD under licence from Ontario Ministry of Natural Resources and Forestry, © Queen's Printer 2017

0 200 400 600
Meters

Coordinate System:
NAD 1983 UTM Zone 17N

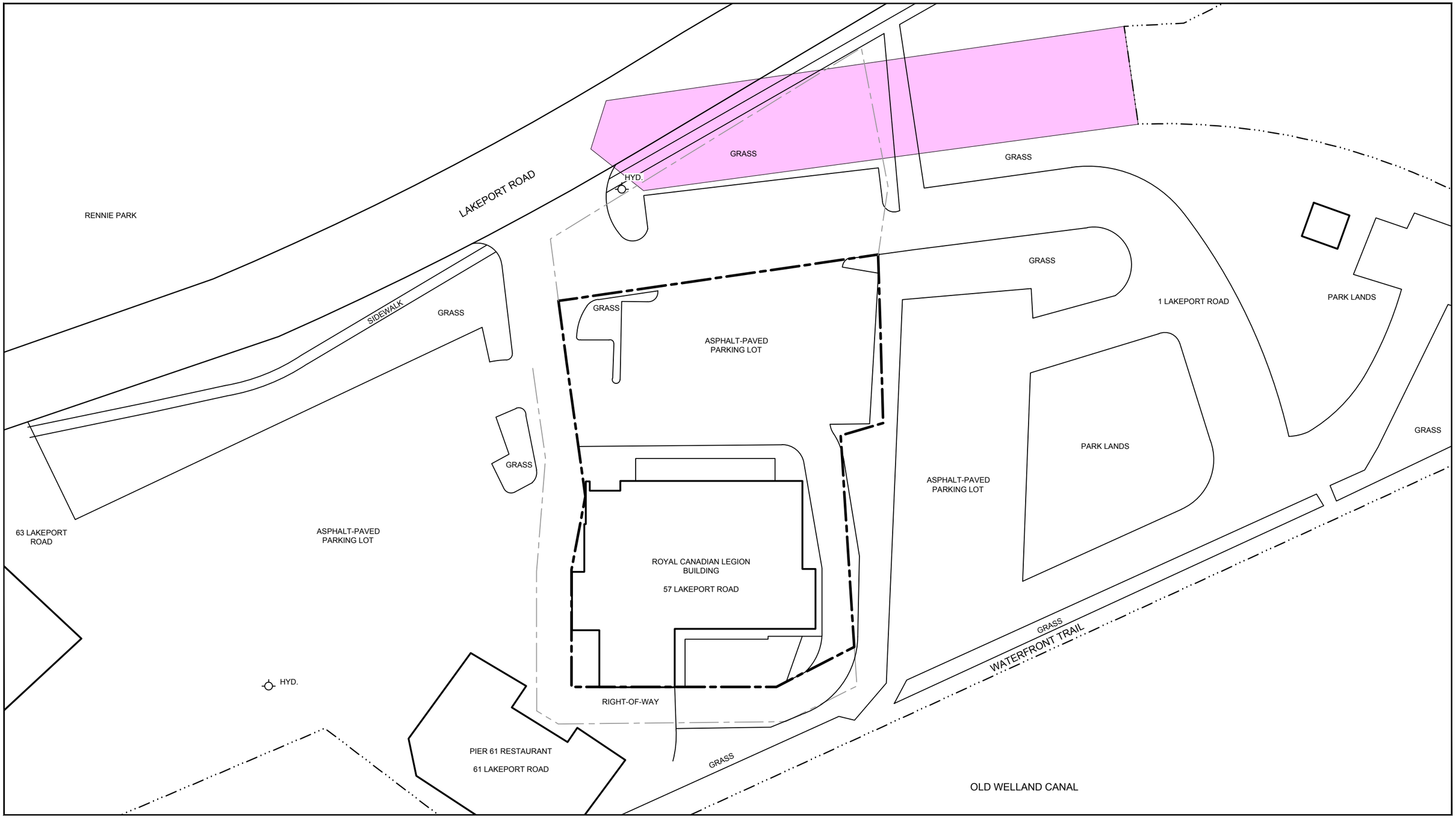
RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

11131634-20
Apr 5, 2017

SITE LOCATION MAP

FIGURE 1

GIS File: Q:\GIS\PROJECTS\11131000s\11131634\Layouts\002\11131634-20(002)GIS-OT001.mxd



0 5 10 15m

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- FORMER LOCK

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

11131634-20

Apr 20, 2017

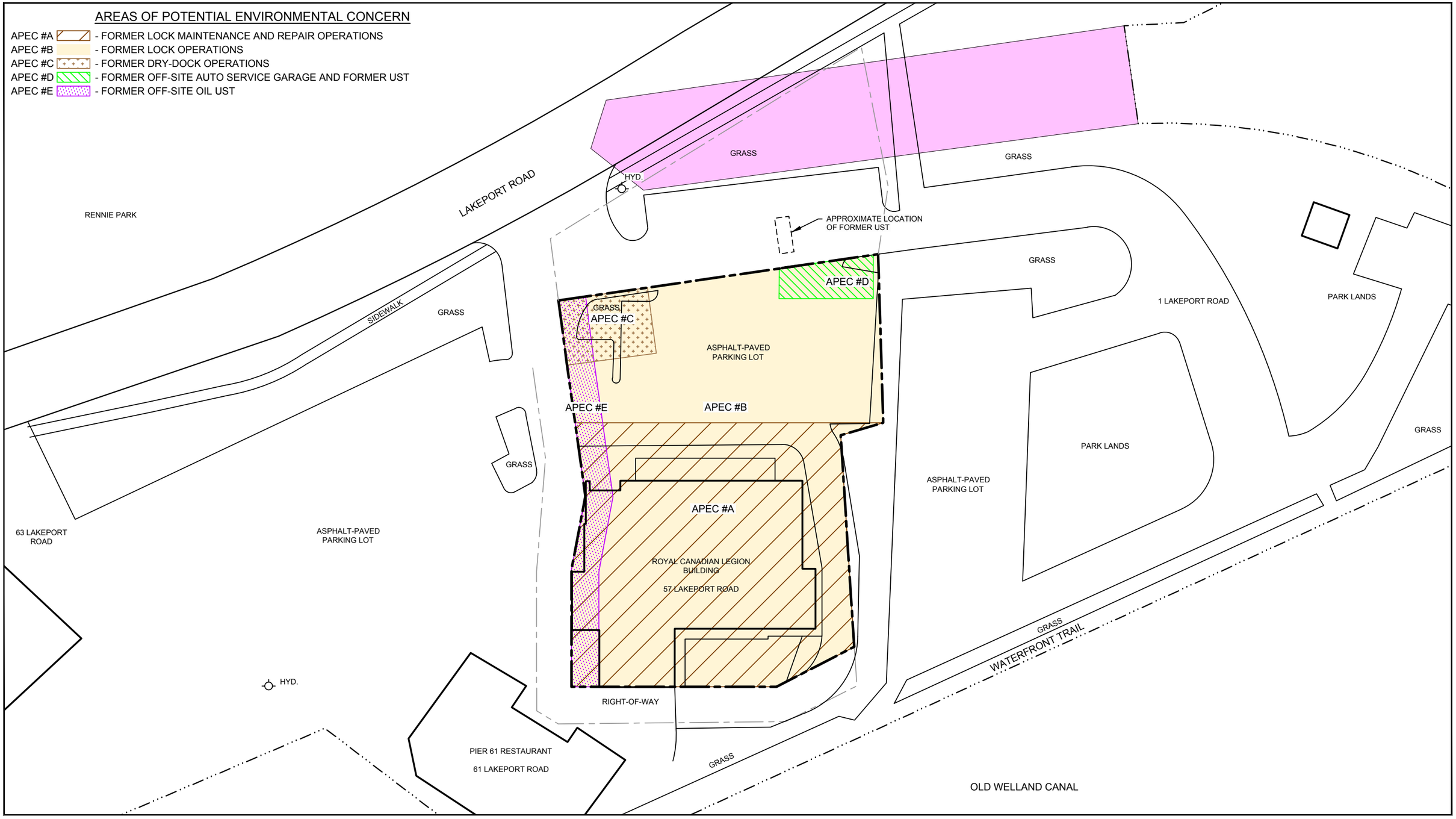
SITE PLAN

FIGURE 2

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA001.dwg

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

APEC #A - FORMER LOCK MAINTENANCE AND REPAIR OPERATIONS
APEC #B - FORMER LOCK OPERATIONS
APEC #C - FORMER DRY-DOCK OPERATIONS
APEC #D - FORMER OFF-SITE AUTO SERVICE GARAGE AND FORMER UST
APEC #E - FORMER OFF-SITE OIL UST



0 5 10 15m

LEGEND

APPROXIMATE PROPERTY BOUNDARY
SHORELINE
HYD. HYDRANT
FORMER LOCK

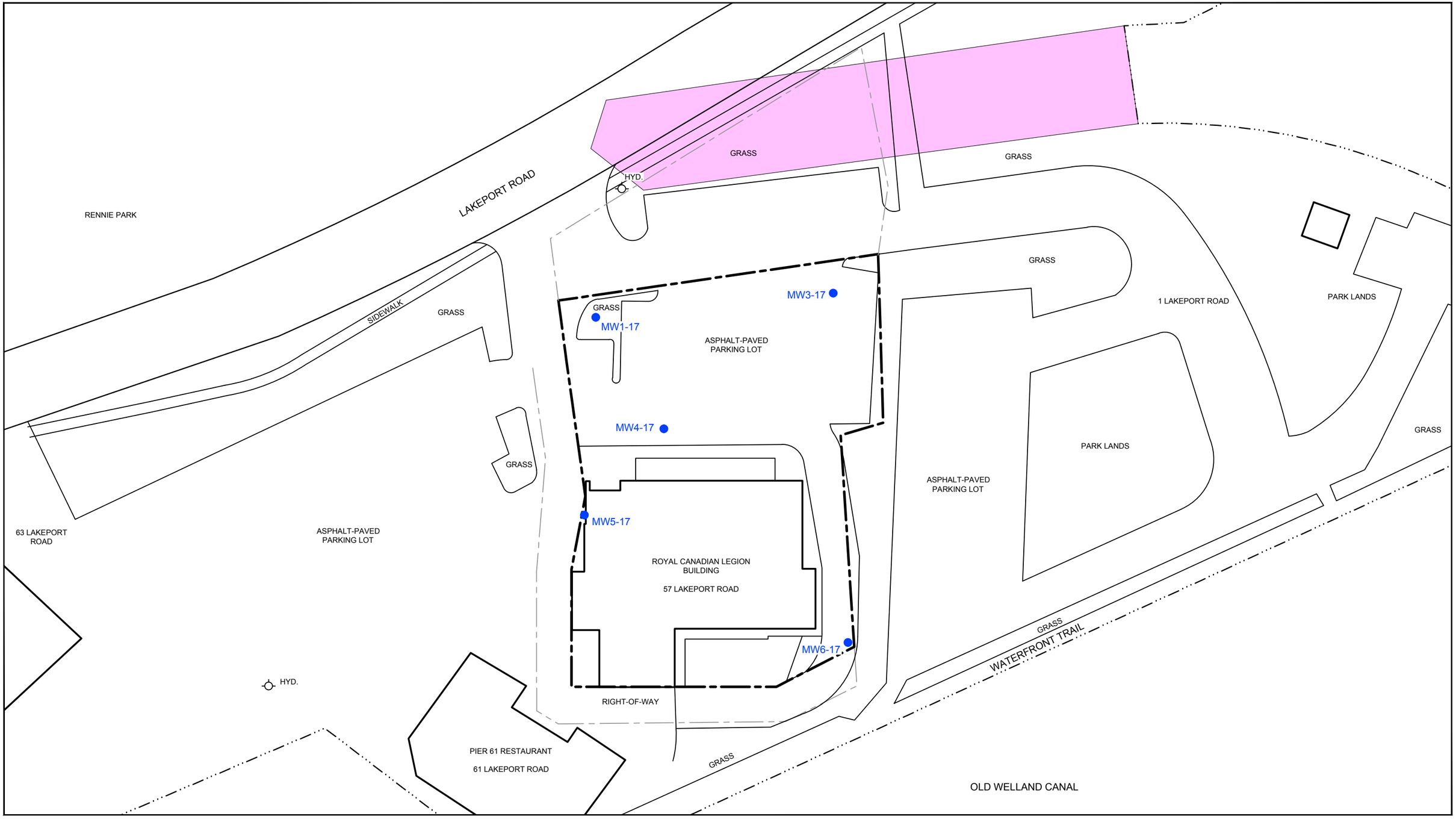
RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

11131634-20
May 4, 2017

PHASE TWO CONCEPTUAL SITE MODEL

FIGURE 3

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0 5 10 15m

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

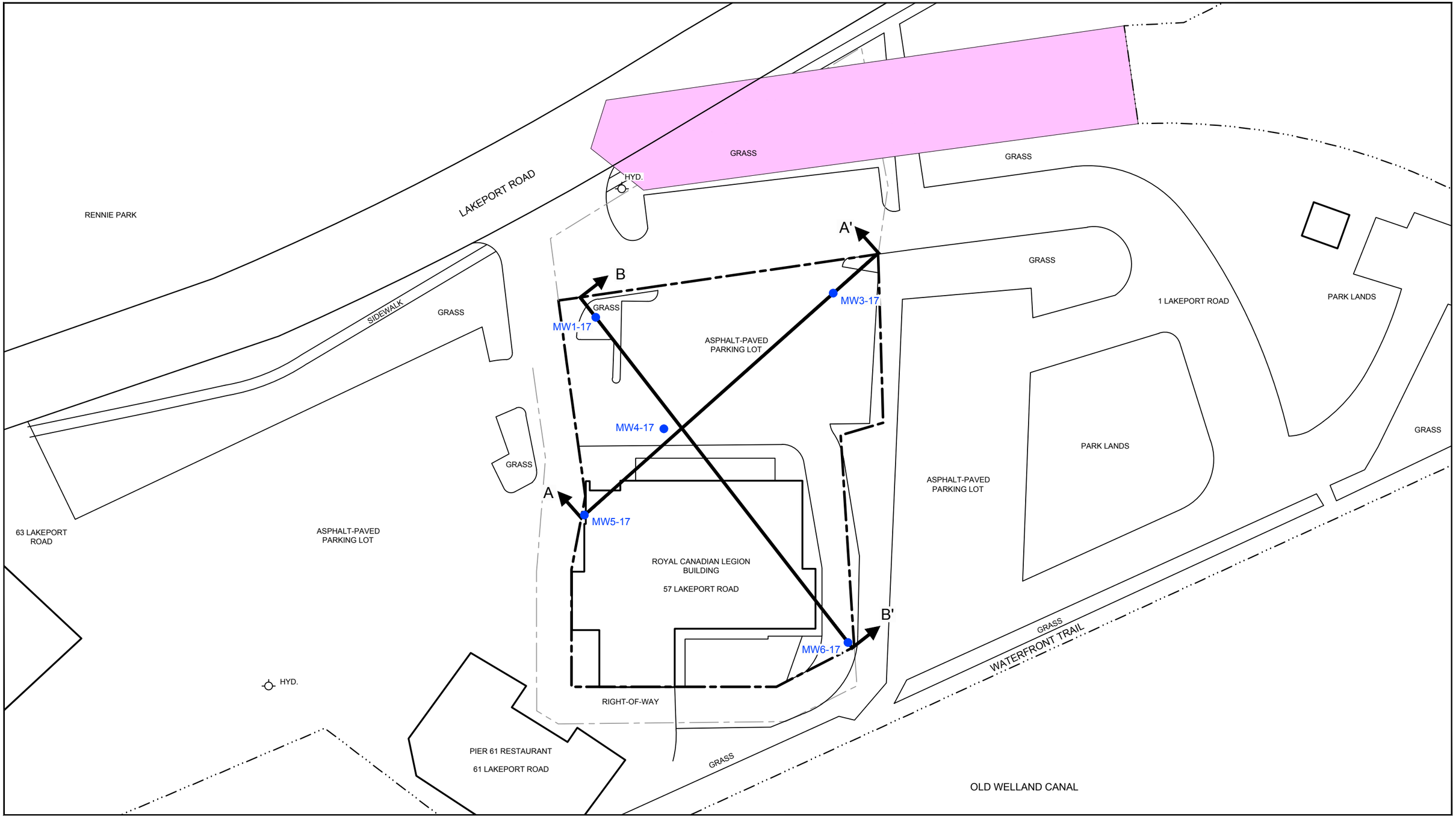
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Apr 20, 2017

ENVIRONMENTAL INVESTIGATIVE LOCATIONS

FIGURE 4

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA003.dwg



0 5 10 15m

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK
- A — A' CROSS SECTION LOCATION

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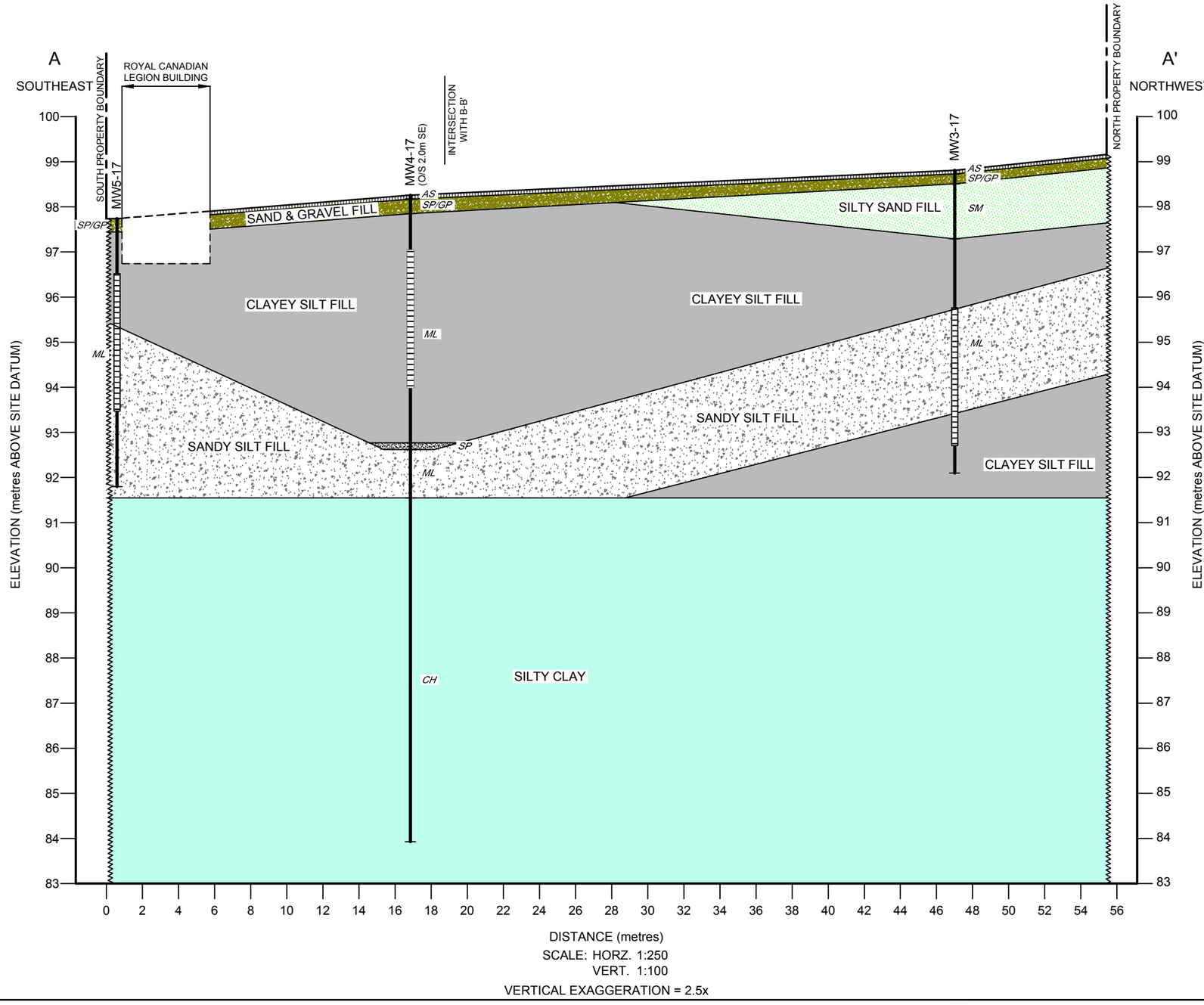
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GEOLOGIC CROSS SECTION LOCATIONS

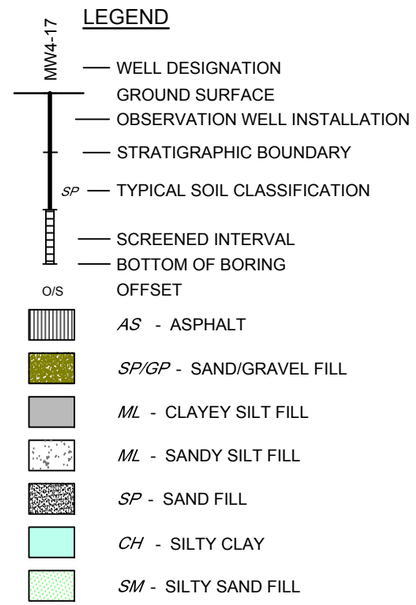
FIGURE 5

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA004.dwg



SCALE: HORZ. 1:250
VERT. 1:100

VERTICAL EXAGGERATION = 2.5x



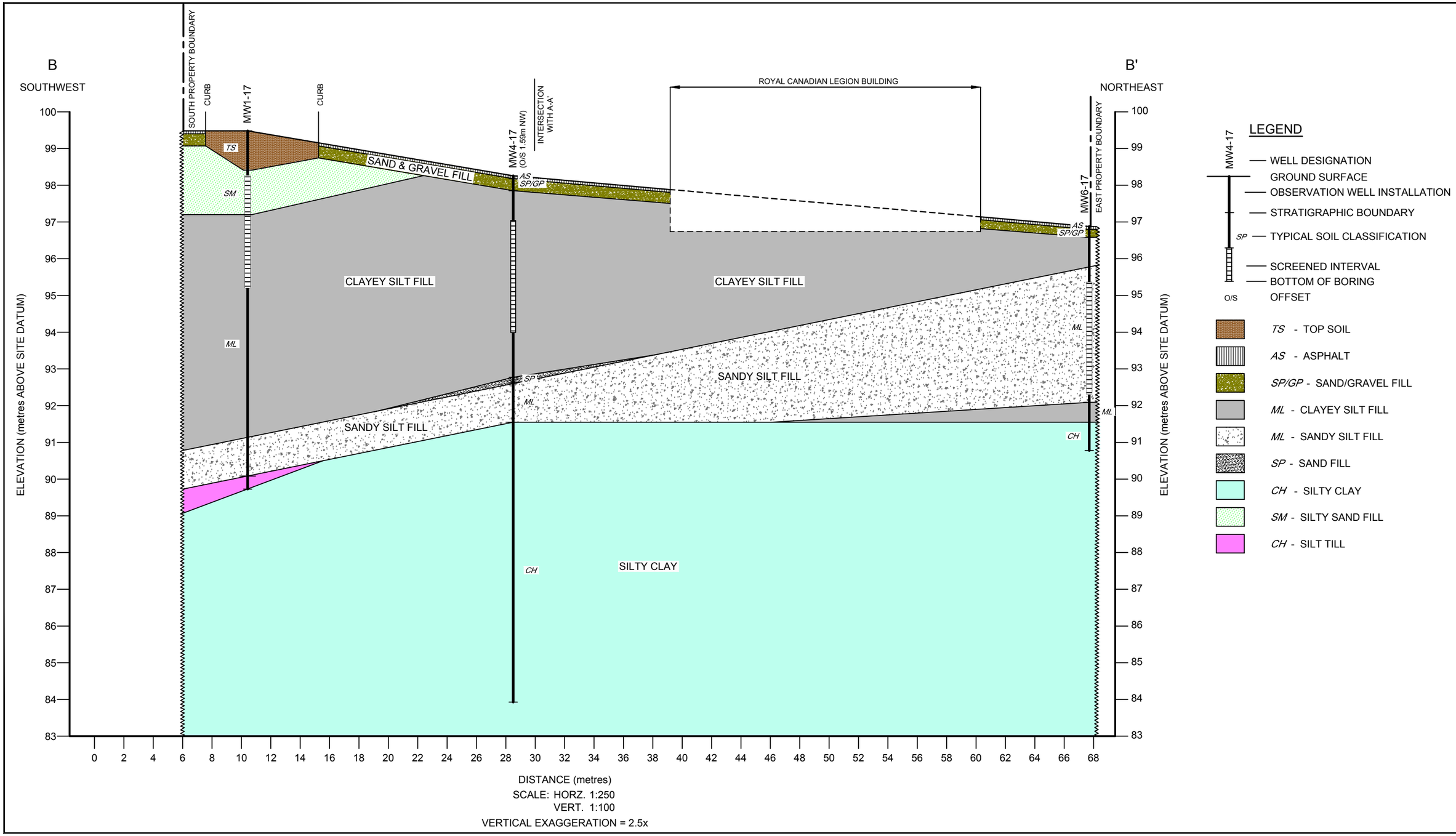
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GEOLOGIC CROSS SECTION A-A'

FIGURE 6

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA005.dwg



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GEOLOGIC CROSS SECTION B-B'

FIGURE 7

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA005.dwg

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK
- 97.0 GROUNDWATER ELEVATION CONTOUR (mASD)
- INFERRED GROUNDWATER ELEVATION CONTOUR (mASD)
- (97.66) GROUNDWATER ELEVATION (mASD)
- mASD METRES ABOVE SITE DATUM
- GROUNDWATER FLOW DIRECTION

RENNIE PARK

LAKEPORT ROAD

SIDEWALK

GRASS

HYD.

97.5

97.0

96.5

96.0

MW1-17 (97.66)

MW3-17 (96.62)

MW4-17 (96.97)

MW5-17 (96.39)

MW6-17 (95.98)

ASPHALT-PAVED PARKING LOT

1 LAKEPORT ROAD

PARK LANDS

63 LAKEPORT ROAD

ROYAL CANADIAN LEGION BUILDING

57 LAKEPORT ROAD

RIGHT-OF-WAY

WATERFRONT TRAIL

PIER 61 RESTAURANT

61 LAKEPORT ROAD

OLD WELLAND CANAL

0 5 10 15m

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GROUNDWATER ELEVATION CONTOURS - APRIL 13, 2017

FIGURE 8

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-SC005.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Xylenes (total)	ND(0.050)	ND(0.050)/ND(0.050)

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

EXCEEDS MOECC TABLE 9 STANDARD
MEETS MOECC STANDARDS

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7[1]	TABLE 9[2]
Xylenes (total)	25	0.0500

LAKEPORT ROAD
SIDEWALK
GRASS
HYD.
MW1-17
MW3-17
MW4-17
MW5-17
MW6-17
ASPHALT-PAVED PARKING LOT
1 LAKEPORT ROAD
PARK LANDS
63 LAKEPORT ROAD
ROYAL CANADIAN LEGION BUILDING
57 LAKEPORT ROAD
RIGHT-OF-WAY
PIER 61 RESTAURANT
61 LAKEPORT ROAD
WATERFRONT TRAIL
OLD WELLAND CANAL

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Xylenes (total)	ND(0.050)	ND(0.050)/ND(0.050)

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Xylenes (total)	ND(0.050)	ND(0.050)

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Xylenes (total)	0.111	ND(0.050)

0 5 10 15m

NOTES:
(1) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

(2) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards For Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

GHD

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

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HORIZONTAL EXTENT OF SOIL IMPACTS - VOC's

FIGURE 9

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-SC001.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Antimony	ND(1.0)	ND(1.0)/ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	ND(0.20)/ND(0.20)
Lead	6.6	12.7/5.8
Zinc	48.1	45.8/44.2

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

- EXCEEDS MOECC TABLE 9 STANDARD
- EXCEEDS BOTH MOECC TABLE 7 AND TABLE 9 STANDARD
- MEETS MOECC STANDARDS

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7 (1)	TABLE 9 (2)
Antimony	75	1.3
Chromium VI (hexavalent)	10	0.66
Lead	120	120
Zinc	340	290

LAKEPORT ROAD
SIDEWALK
GRASS
HYD.
MW1-17
MW3-17
MW4-17
MW5-17
MW6-17
ASPHALT-PAVED PARKING LOT
1 LAKEPORT ROAD
PARK LANDS
63 LAKEPORT ROAD
ROYAL CANADIAN LEGION BUILDING
57 LAKEPORT ROAD
RIGHT-OF-WAY
PIER 61 RESTAURANT
61 LAKEPORT ROAD
WATERFRONT TRAIL
OLD WELLAND CANAL

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Antimony	ND(1.0)	ND(1.0)/ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	ND(0.20)/ND(0.20)
Lead	6.6	12.7/5.8
Zinc	48.1	45.8/44.2

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Antimony	ND(1.0)	ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	0.30
Lead	49.1	25.5
Zinc	82.0	54.5

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Antimony	1.4	ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	0.90
Lead	1070	14.3
Zinc	299	40.1

0 5 10 15m

NOTES:
(1) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

(2) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards For Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

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RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

HORIZONTAL EXTENT OF SOIL IMPACTS METALS

11131634-20
Apr 20, 2017

FIGURE 10

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-SC002.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK

MW3-17	3/21/2017 (0.76-1.37) m	3/21/2017 (2.29-2.9) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	73	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	347	53

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

EXCEEDS MOECC TABLE 9 STANDARD

MEETS MOECC STANDARDS

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7(1)	TABLE 9(2)
Petroleum hydrocarbons F1 (C6-C10)	65	25
Petroleum hydrocarbons F2 (C10-C16)	150	10
Petroleum hydrocarbons F3 (C16-C34)	1300	240
Petroleum hydrocarbons F4 (C34-C50)	5600	120

LAKEPORT ROAD
GRASS
HYD.
GRASS
SIDEWALK
GRASS
MW3-17
GRASS
MW1-17
ASPHALT-PAVED PARKING LOT
1 LAKEPORT ROAD
PARK LANDS
MW4-17
PARK LANDS
GRASS
GRASS
MW5-17
63 LAKEPORT ROAD
ASPHALT-PAVED PARKING LOT
ROYAL CANADIAN LEGION BUILDING
57 LAKEPORT ROAD
MW6-17
GRASS
WATERFRONT TRAIL
OLD WELLAND CANAL
HYD.
RIGHT-OF-WAY
PIER 61 RESTAURANT
61 LAKEPORT ROAD
GRASS

MW3-17	3/21/2017 (0.76-1.37) m	3/21/2017 (2.29-2.9) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	73	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	347	53

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)/ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)/ND(10)
Petroleum hydrocarbons F3 (C16-C34)	ND(50)	ND(50)/ND(50)
Petroleum hydrocarbons F4 (C34-C50)	ND(50)	ND(50)/ND(50)

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	ND(50)	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	ND(50)	ND(50)

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	156	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	64	ND(50)

0 5 10 15m

NOTES:
(1) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

(2) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards For Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

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57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

11131634-20

Apr 20, 2017

HORIZONTAL EXTENT OF SOIL IMPACTS - PHCs

FIGURE 11

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-SC003.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Naphthalene	0.105	ND(0.050)

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

EXCEEDS MOECC TABLE 9 STANDARD
MEETS MOECC STANDARDS

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7[1]	TABLE 9[2]
Naphthalene	0.75	0.09

LAKEPORT ROAD
GRASS
HYD.
GRASS
SIDEWALK
GRASS
MW3-17
GRASS
MW1-17
ASPHALT-PAVED PARKING LOT
GRASS
1 LAKEPORT ROAD
PARK LANDS
MW4-17
PARK LANDS
GRASS
GRASS
MW5-17
63 LAKEPORT ROAD
ASPHALT-PAVED PARKING LOT
ROYAL CANADIAN LEGION BUILDING
57 LAKEPORT ROAD
MW6-17
GRASS
WATERFRONT TRAIL
OLD WELLAND CANAL
HYD.
RIGHT-OF-WAY
PIER 61 RESTAURANT
61 LAKEPORT ROAD
GRASS

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Naphthalene	ND(0.050)	ND(0.050)/ND(0.050)

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Naphthalene	0.105	ND(0.050)

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Naphthalene	0.053	ND(0.050)

0 5 10 15m

NOTES:
(1) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

(2) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards For Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

GHD

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57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

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HORIZONTAL EXTENT OF SOIL IMPACTS - PAHs

FIGURE 12

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-SC004.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE
- HYD. HYDRANT
- MONITORING WELL
- FORMER LOCK

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m	LOCATION / SAMPLE DATE / SAMPLE DEPTH
Sodium adsorption ratio (SAR)	7.65	1.29	RESULT (SAR) / PARAMETER

- EXCEEDS MOECC TABLE 9 STANDARD
- MEETS MOECC STANDARDS

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7 (1)	TABLE 9 (2)
Sodium adsorption ratio (SAR)	12	5

LAKEPORT ROAD
GRASS
HYD.
GRASS
GRASS
SIDEWALK
GRASS
MW3-17
GRASS
MW1-17
1 LAKEPORT ROAD
PARK LANDS
ASPHALT-PAVED PARKING LOT

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Sodium adsorption ratio (SAR)	4.22	3.34/4.28

MW4-17
PARK LANDS
GRASS
ASPHALT-PAVED PARKING LOT
GRASS
MW5-17
63 LAKEPORT ROAD
ASPHALT-PAVED PARKING LOT

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Sodium adsorption ratio (SAR)	7.65	1.29

ROYAL CANADIAN LEGION BUILDING
57 LAKEPORT ROAD
MW6-17
GRASS
WATERFRONT TRAIL
HYD.
RIGHT-OF-WAY

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Sodium adsorption ratio (SAR)	1.44	1.30

PIER 61 RESTAURANT
61 LAKEPORT ROAD
GRASS
OLD WELLAND CANAL

0 5 10 15m

NOTES:
(1) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

(2) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act Generic Site Condition Standards For Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

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PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

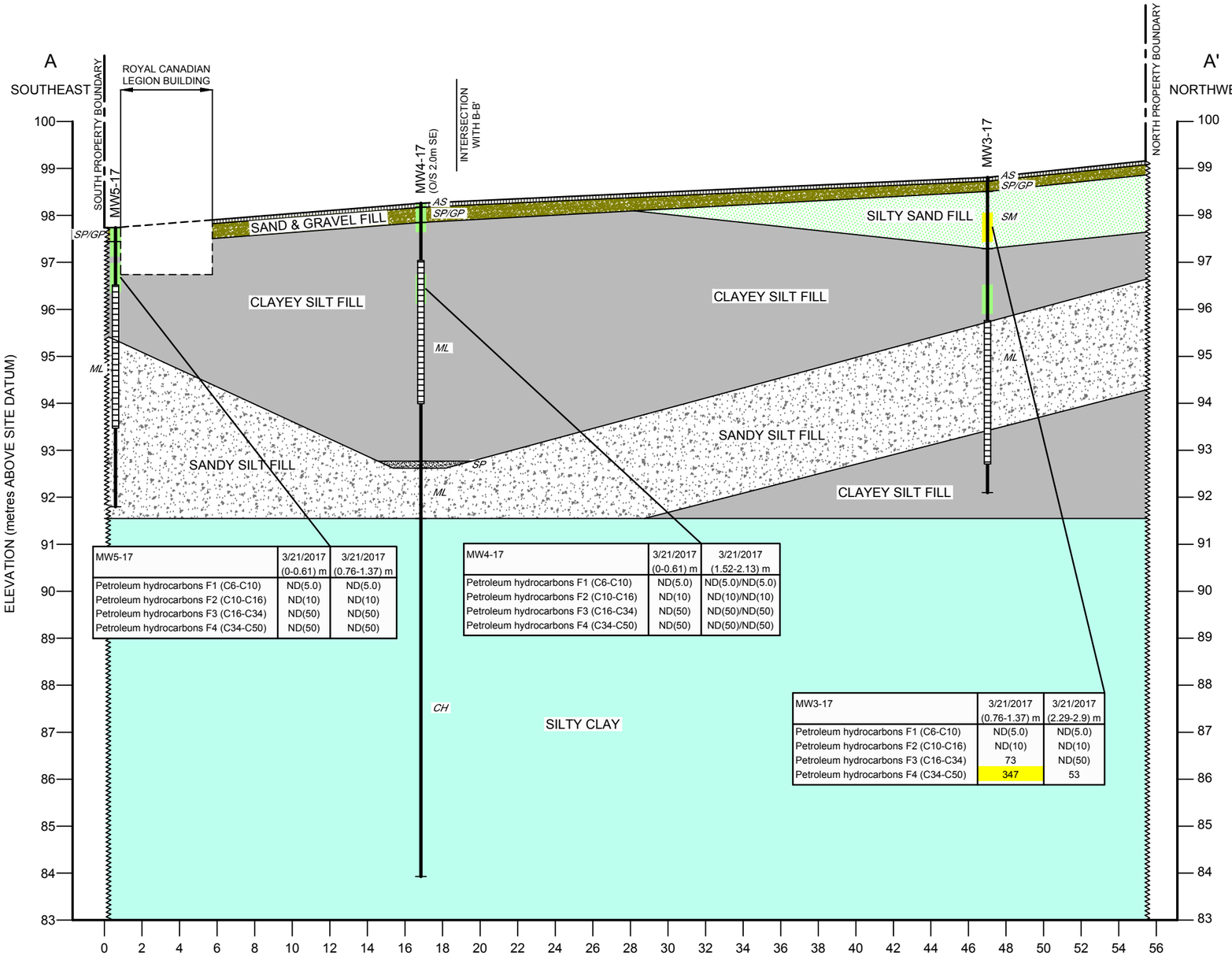
HORIZONTAL EXTENT OF SOIL IMPACTS SAR

11131634-20

Apr 20, 2017

FIGURE 13

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-SC006.DWG



MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	ND(50)	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	ND(50)	ND(50)

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)/ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)/ND(10)
Petroleum hydrocarbons F3 (C16-C34)	ND(50)	ND(50)/ND(50)
Petroleum hydrocarbons F4 (C34-C50)	ND(50)	ND(50)/ND(50)

MW3-17	3/21/2017 (0.76-1.37) m	3/21/2017 (2.29-2.9) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	73	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	347	53

DISTANCE (metres)

SCALE: HORZ. 1:250
VERT. 1:100

VERTICAL EXAGGERATION = 2.5x

LEGEND

MW4-17 — WELL DESIGNATION

GROUND SURFACE

OBSERVATION WELL INSTALLATION

STRATIGRAPHIC BOUNDARY

SP — TYPICAL SOIL CLASSIFICATION

SCREENED INTERVAL

BOTTOM OF BORING

O/S — OFFSET

AS - ASPHALT

SP/GP - SAND/GRAVEL FILL

ML - CLAYEY SILT FILL

ML - SANDY SILT FILL

SP - SAND FILL

CH - SILTY CLAY

SM - SILTY SAND FILL

MW3-17	3/21/2017 (0.76-1.37) m	3/21/2017 (2.29-2.9) m
Petroleum hydrocarbons F1 (C6-C10)	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F2 (C10-C16)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34)	73	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	347	53

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

MEETS MOECC STANDARD

EXCEEDS MOECC TABLE 9 STANDARD

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7[1]	TABLE 9[2]
Petroleum hydrocarbons F1 (C6-C10)	65	25
Petroleum hydrocarbons F2 (C10-C16)	150	10
Petroleum hydrocarbons F3 (C16-C34)	1300	240
Petroleum hydrocarbons F4 (C34-C50)	5600	120

NOTES:

1) Table 7 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

2) Table 9 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

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PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

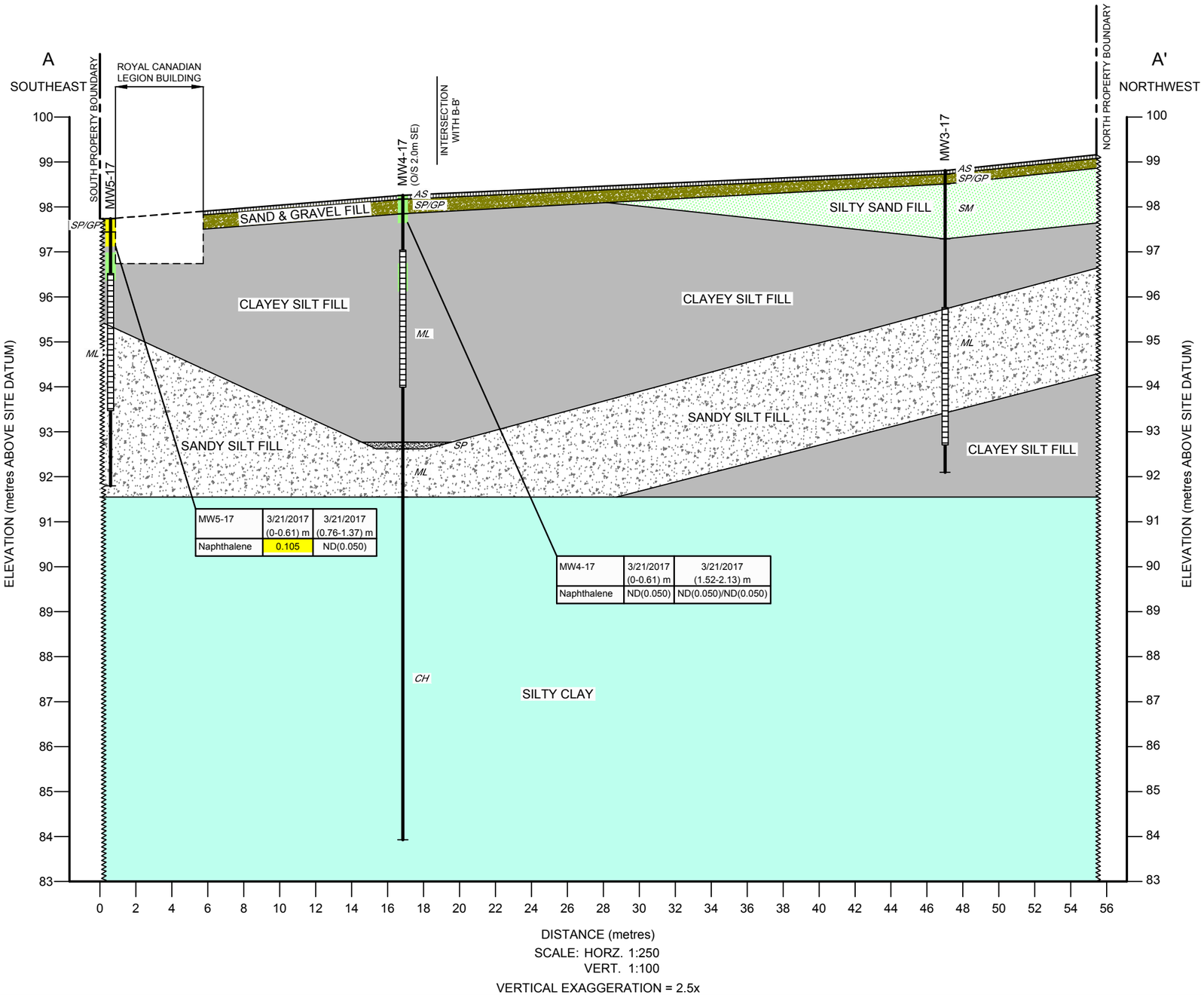
GEOLOGIC CROSS SECTION A-A' AND VERTICAL EXTENT OF IMPACTS - PHCs

11131634-20

Apr 24, 2017

FIGURE 14.1

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA006.dwg



MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Naphthalene	0.105	ND(0.050)

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Naphthalene	ND(0.050)	ND(0.050)/ND(0.050)

SCALE: HORZ. 1:250
VERT. 1:100

VERTICAL EXAGGERATION = 2.5x

LEGEND

MW4-17
- WELL DESIGNATION
- GROUND SURFACE
- OBSERVATION WELL INSTALLATION
- STRATIGRAPHIC BOUNDARY
- SP — TYPICAL SOIL CLASSIFICATION
- SCREENED INTERVAL
- BOTTOM OF BORING
- O/S — OFFSET
- *AS* - ASPHALT
- *SP/GP* - SAND/GRAVEL FILL
- *ML* - CLAYEY SILT FILL
- *ML* - SANDY SILT FILL
- *SP* - SAND FILL
- *CH* - SILTY CLAY
- *SM* - SILTY SAND FILL

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Naphthalene	0.105	ND(0.050)

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

MEETS MOECC STANDARD

EXCEEDS MOECC TABLE 9 STANDARD

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7[1]	TABLE 9[2]
Naphthalene	0.75	0.09

NOTES:

1) Table 7 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

2) Table 9 - soil, Groundwater, and Sediment Standards for Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

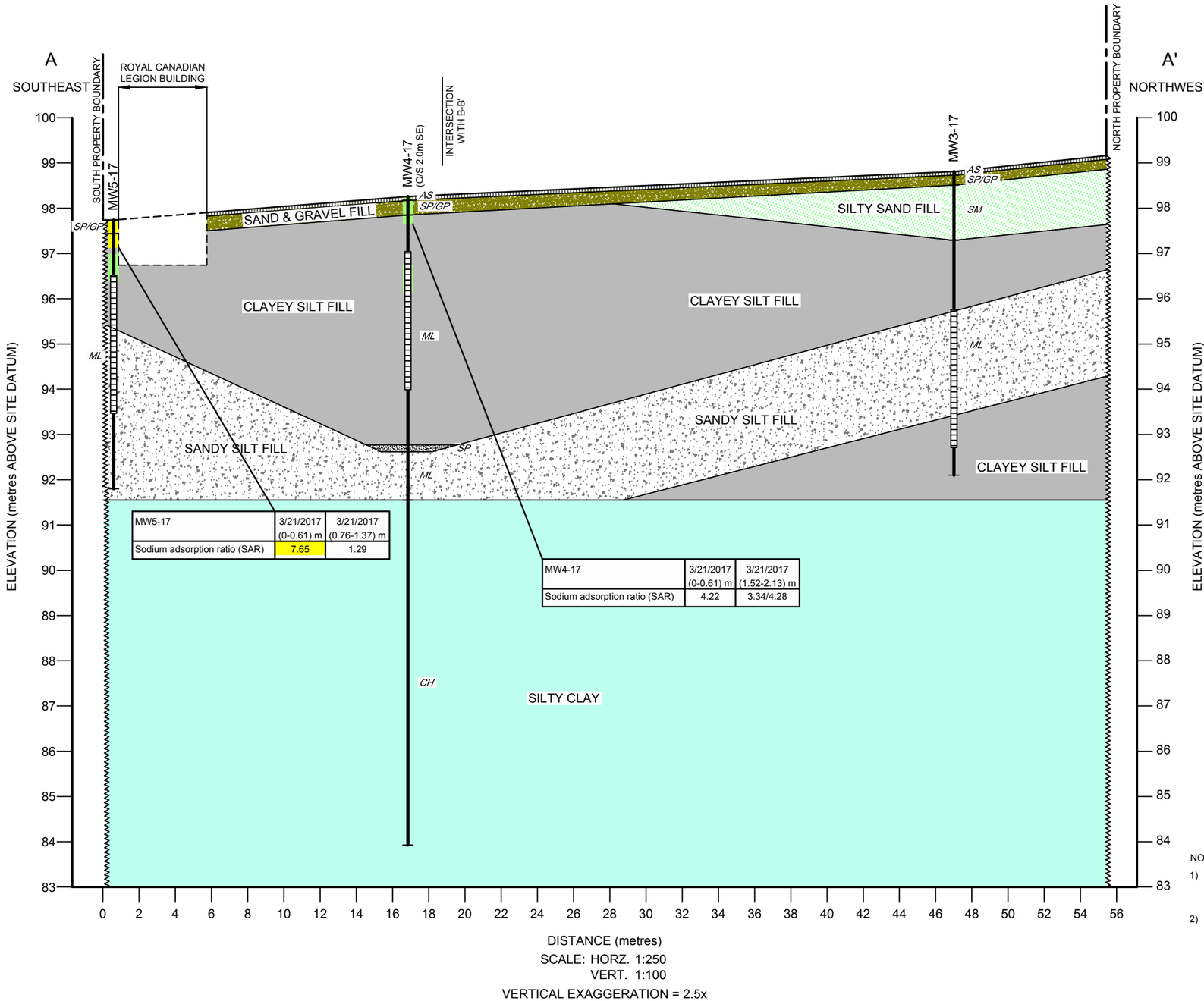
RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

GEOLOGIC CROSS SECTION A-A' AND VERTICAL EXTENT OF IMPACTS - PAHs

Apr 24, 2017

FIGURE 14.2

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA007.dwg



MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Sodium adsorption ratio (SAR)	7.65	1.29

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Sodium adsorption ratio (SAR)	4.22	3.34/4.28

LEGEND

- MW4-17 — WELL DESIGNATION
- GROUND SURFACE
- OBSERVATION WELL INSTALLATION
- STRATIGRAPHIC BOUNDARY
- SP — TYPICAL SOIL CLASSIFICATION
- SCREENED INTERVAL
- BOTTOM OF BORING
- O/S — OFFSET
- *AS* - ASPHALT
- *SP/GP* - SAND/GRAVEL FILL
- *ML* - CLAYEY SILT FILL
- *ML* - SANDY SILT FILL
- *SP* - SAND FILL
- *CH* - SILTY CLAY
- *SM* - SILTY SAND FILL

MW5-17	3/21/2017 (0-0.61) m	3/21/2017 (0.76-1.37) m
Sodium adsorption ratio (SAR)	7.65	1.29

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT
PARAMETER

MEETS MOECC STANDARD

EXCEEDS MOECC TABLE 9 STANDARD

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7[1]	TABLE 9 [2]
Sodium adsorption ratio (SAR)	12	5

NOTES:

1) Table 7 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

2) Table 9 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

GEOLOGIC CROSS SECTION A-A' AND VERTICAL EXTENT OF IMPACTS - SAR

11131634-20

Apr 24, 2017

FIGURE 14.3

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA008.dwg

B

SOUTHWEST

B'

NORTHEAST

SOUTH PROPERTY BOUNDARY

CURB

MW1-17

CURB

MW4-17
(O/S 1.59m NW)

INTERSECTION
WITH A-A'

ROYAL CANADIAN LEGION BUILDING

MW6-17

EAST PROPERTY BOUNDARY

TS

SM

SAND & GRAVEL FILL

AS

SP/GP

CLAYEY SILT FILL

CLAYEY SILT FILL

ML

SANDY SILT FILL

SP

ML

SANDY SILT FILL

ML

ML

CH

CH

SILTY CLAY

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Xylenes (total)	ND(0.050)	ND(0.050)/ND(0.050)

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Xylenes (total)	0.111	ND(0.050)

ELEVATION (metres ABOVE SITE DATUM)

100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68

DISTANCE (metres)

SCALE: HORZ. 1:250
VERT. 1:100

VERTICAL EXAGGERATION = 2.5x

LEGEND

MW4-17 — WELL DESIGNATION

GROUND SURFACE

OBSERVATION WELL INSTALLATION

STRATIGRAPHIC BOUNDARY

SP — TYPICAL SOIL CLASSIFICATION

SCREENED INTERVAL

BOTTOM OF BORING

O/S — OFFSET

- *TS* - TOP SOIL
- *AS* - ASPHALT
- *SP/GP* - SAND/GRAVEL FILL
- *ML* - CLAYEY SILT FILL
- *ML* - SANDY SILT FILL
- *SP* - SAND FILL
- *CH* - SILTY CLAY
- *SM* - SILTY SAND FILL
- *CH* - SILT TILL

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Xylenes (total)	ND(0.050)	ND(0.050)/ND(0.050)

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

MEETS MOECC STANDARD

EXCEEDS MOECC TABLE 9 STANDARD

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7[1]	TABLE 9[2]
Xylenes (total)	25	0.0500

NOTES:

1) Table 7 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

2) Table 9 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

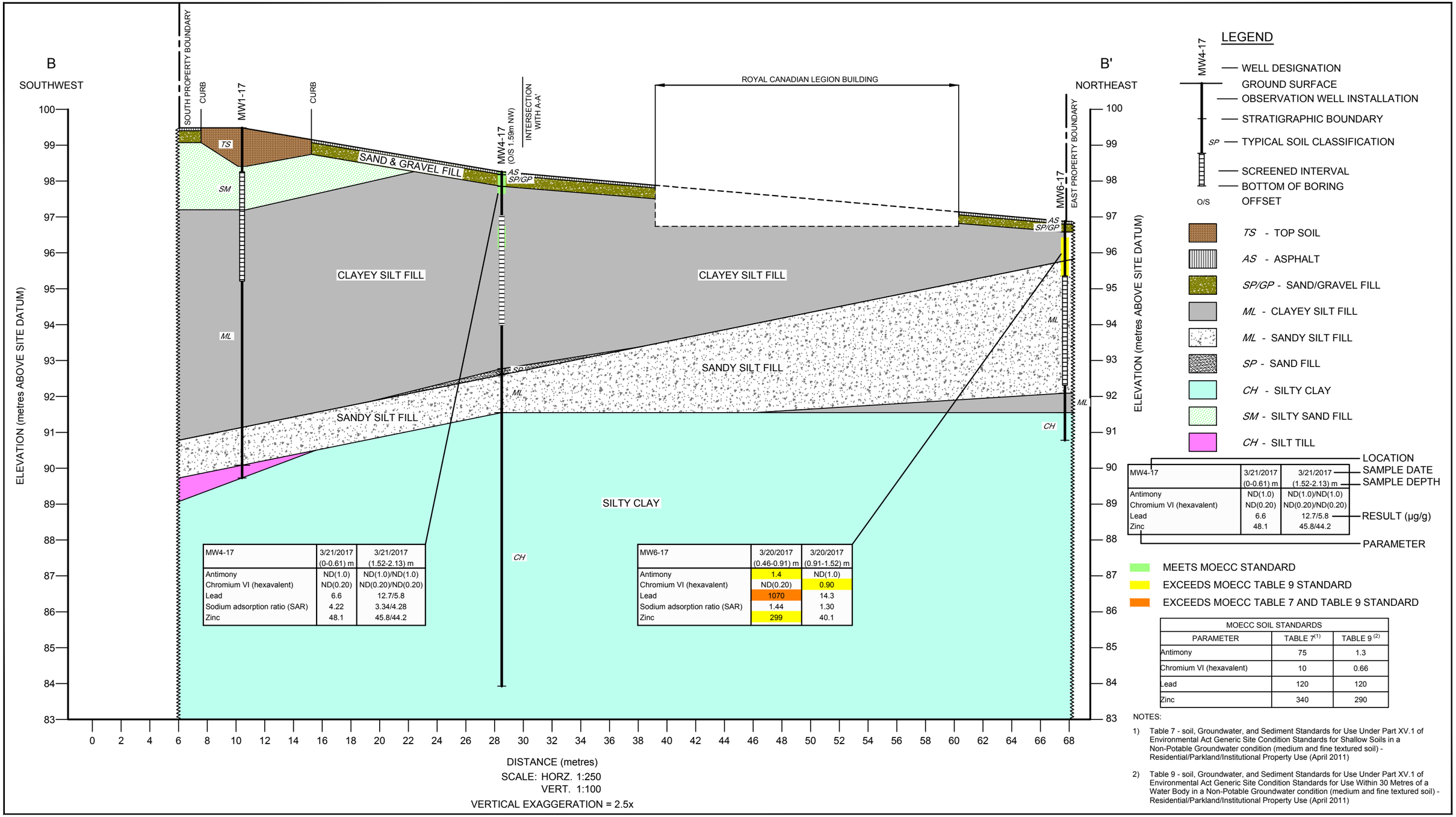
GEOLOGIC CROSS SECTION B-B'
AND VERTICAL EXTENT OF SOIL IMPACTS - VOCs

11131634-20

Apr 24, 2017

FIGURE 15.1

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA009.dwg



MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Antimony	ND(1.0)	ND(1.0)/ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	ND(0.20)/ND(0.20)
Lead	6.6	12.7/5.8
Sodium adsorption ratio (SAR)	4.22	3.34/4.28
Zinc	48.1	45.8/44.2

MW6-17	3/20/2017 (0.46-0.91) m	3/20/2017 (0.91-1.52) m
Antimony	1.4	ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	0.90
Lead	1070	14.3
Sodium adsorption ratio (SAR)	1.44	1.30
Zinc	299	40.1

LEGEND

MW4-17 — WELL DESIGNATION
GROUND SURFACE
OBSERVATION WELL INSTALLATION
STRATIGRAPHIC BOUNDARY
SP — TYPICAL SOIL CLASSIFICATION
SCREENED INTERVAL
BOTTOM OF BORING
O/S — OFFSET

- *TS* - TOP SOIL
- *AS* - ASPHALT
- *SP/GP* - SAND/GRAVEL FILL
- *ML* - CLAYEY SILT FILL
- *ML* - SANDY SILT FILL
- *SP* - SAND FILL
- *CH* - SILTY CLAY
- *SM* - SILTY SAND FILL
- *CH* - SILT TILL

MW4-17	3/21/2017 (0-0.61) m	3/21/2017 (1.52-2.13) m
Antimony	ND(1.0)	ND(1.0)/ND(1.0)
Chromium VI (hexavalent)	ND(0.20)	ND(0.20)/ND(0.20)
Lead	6.6	12.7/5.8
Zinc	48.1	45.8/44.2

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (µg/g)
PARAMETER

MEETS MOECC STANDARD
EXCEEDS MOECC TABLE 9 STANDARD
EXCEEDS MOECC TABLE 7 AND TABLE 9 STANDARD

MOECC SOIL STANDARDS		
PARAMETER	TABLE 7 (1)	TABLE 9 (2)
Antimony	75	1.3
Chromium VI (hexavalent)	10	0.66
Lead	120	120
Zinc	340	290

NOTES:

1) Table 7 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

2) Table 9 - soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of Environmental Act Generic Site Condition Standards for Use Within 30 Metres of a Water Body in a Non-Potable Groundwater condition (medium and fine textured soil) - Residential/Parkland/Institutional Property Use (April 2011)

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

GEOLOGIC CROSS SECTION B-B' AND VERTICAL EXTENT OF SOIL IMPACTS - METALS

11131634-20
Apr 24, 2017

FIGURE 15.2

CAD File: P:\drawings\11131000s\11131634\11131634-REPORTS\11131634-20(003)\11131634-20(003)GN\11131634-20(003)GN-WA010.dwg

Tables

Table 1

Sample Key
Phase Two Environmental Site Assessment
57 Lakeport Road St. Catharines, Ontario
Rankin Construction Inc.

Sample Location	Sample ID	Sample Date	Sample Matrix	Sample Type	Sample Depth (m bgs)	Analytical				
						VOC	PHC F1-F4	PAH	Metals	Inorganics
Soil										
MW3-17	S-11131634-032117-TB-012	03/21/17	Soil	N	0.76 - 1.37		X			
MW3-17	S-11131634-032117-TB-013	03/21/17	Soil	N	2.29 - 2.90		X			
MW4-17	S-11131634-032117-TB-007	03/21/17	Soil	N	0.00 - 0.61	X	X	X	X	X
MW4-17	S-11131634-032117-TB-008	03/21/17	Soil	N	1.52 - 2.13	X	X	X	X	X
MW4-17	S-11131634-032117-TB-009	03/21/17	Soil	FD	1.52 - 2.13	X	X	X	X	X
MW5-17	S-11131634-032117-TB-010	03/21/17	Soil	N	0.00 - 0.61	X	X	X	X	X
MW5-17	S-11131634-032117-TB-011	03/21/17	Soil	N	0.76 - 1.37	X	X	X	X	X
MW6-17	S-11131634-032017-TB-001	03/20/17	Soil	N	0.46 - 0.91	X	X	X	X	X
MW6-17	S-11131634-032017-TB-002	03/20/17	Soil	N	0.91 - 1.52	X	X	X	X	X
Trip Blank	S-11131634-032117-TB-TB1	03/21/17	Soil	FD	N/A	X				

Sample Location	Sample ID	Sample Date	Sample Matrix	Sample Type	Screened Interval (m bgs)	Analytical			
						VOC	PHC F1-F4	PAH	Metals [1]
Groundwater									
MW1-17	GW-11131634-032417-TB-007	03/24/17	Water	N	1.22 - 4.27	X	X	X	X
MW3-17	GW-11131634-032417-TB-003	03/24/17	Water	N	3.05 - 6.10		X		
MW4-17	GW-11131634-032417-TB-004	03/24/17	Water	N	1.22 - 4.27	X	X	X	X
MW5-17	GW-11131634-032417-TB-006	03/24/17	Water	N	1.22 - 4.27	X	X	X	X
MW6-17	GW-11131634-032417-TB-001	03/24/17	Water	N	1.52 - 4.57	X	X	X	X
MW6-17	GW-11131634-032417-TB-002	03/24/17	Water	FD	1.52 - 4.57	X	X	X	X
QA/QC	Trip Blank	03/24/17	Water	QA/QC	N/A	X			

Notes:

m bgs	metres below ground surface
VOC	volatile organic compounds
PAH	polycyclic aromatic hydrocarbons
PHC F1-F4	petroleum hydrocarbons fractions F1 through F4
Metals [1]	metals in groundwater field filtered and submitted for dissolved metals analyses
Inorganics	pH, sodium adsorption ratio, conductivity
N/A	not applicable
QA/QC	quality assurance
FD	field duplicate
N	normal
X	sample analyzed for specified parameter

Table 2

Monitoring Well Construction Details
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Monitoring Well Location	Ground Surface Elevation (m asd)	Measuring Point Elevation (m asd)	Screened Interval (m asd)	Sand Pack Interval (m asd)	Geologic Unit Screened
MW1-17	99.48	99.36	98.26 - 95.21	98.87 - 94.91	Clayey Silt Fill
MW3-17	98.81	98.62	95.76 - 92.71	98.66 - 92.71	Sandy Silt Fill
MW4-17	98.26	98.18	97.04 - 93.99	97.65 - 93.69	Clayey Silt Fill
MW5-17	97.74	97.65	96.52 - 93.47	96.83 - 93.47	Clayey Silt Fill
MW6-17	96.88	96.77	95.36 - 92.31	95.66 - 92.31	Sandy Silt Fill

Notes:
m asd metres above site datum
Measuring point elevation is the top of riser pipe
Vertical control was surveyed with respect to fire hydrant collar located along the west Property boundary north of the southwest Property corner with an assumed elevation of 100.00 metres above the site datum point.

Table 3

Field Stabilization Parameter Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Monitoring Well Location	Date	Depth to Water (mbtor)	Volume Purged (litres)	pH (s.u.)	Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Colour	Odour
MW1-17	**03/24/17**	2.10	4.50	6.90	2.70	9.05	1.93	76	10.78	Clear	No
		2.10	5.78	6.92	2.72	9.35	1.95	87	10.21	Clear	No
		2.10	7.06	6.93	2.75	9.63	2.03	95	9.98	Clear	No
		2.10	7.70	6.93	2.78	9.64	2.08	96	9.21	Clear	No
MW3-17	**03/24/17**	2.86	9.00	6.99	3.29	11.17	0.10	23	8.35	Clear	No
		2.86	13.50	7.00	3.40	10.24	0.10	26	8.87	Clear	No
		2.86	18.00	7.00	3.40	10.29	25.40	27	8.87	Clear	No
		2.86	22.50	7.00	3.40	10.47	26.10	26	8.85	Clear	No
		2.86	27.00	7.01	3.40	10.53	27.30	24	8.91	Clear	No
MW4-17	**03/24/17**	1.22	10.00	7.09	4.47	7.88	22.50	-27	5.95	Clear	No
		1.22	10.50	7.12	4.48	9.22	24.80	-32	5.78	Clear	No
		1.22	10.83	7.13	4.51	9.44	24.80	-35	5.57	Clear	No
		1.22	11.00	7.14	4.52	9.83	28.60	-36	5.63	Clear	No
MW5-17	**03/24/17**	1.16	6.00	7.15	3.89	10.40	32.50	-37	4.17	Clear	No
		1.16	6.66	7.15	3.94	10.01	1200.00	-38	4.11	Clear	No
		1.16	7.31	7.15	3.97	9.84	195.00	-41	4.08	Clear	No
		1.16	8.65	7.16	3.98	9.61	139.00	-45	3.69	Clear	No
		1.16	9.31	7.16	3.98	9.58	137.00	-47	3.49	Clear	No
		1.16	9.97	7.16	3.99	9.55	133.00	-49	3.36	Clear	No
MW6-17	**03/24/17**	1.32	8.50	7.28	1.32	7.39	0.00	-18	7.63	Clear	No
		1.32	8.83	7.32	1.31	6.64	0.00	-32	6.91	Clear	No
		1.32	9.17	7.32	1.30	6.40	0.00	-40	6.43	Clear	No
		1.32	9.50	7.30	1.30	6.43	0.00	-39	6.49	Clear	No
		1.32	9.83	7.29	1.29	6.36	0.00	-37	6.44	Clear	No

Notes:

mbtor	metres below top of riser
s.u.	scientific units
mS/cm	millisiemens per centimetre
°C	degrees Celsius
NTU	nephelometric turbidity units
mV	millivolts
mg/L	milligrams per litre

Table 4

Groundwater Elevation Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Monitoring Well Location	Top of Riser Elevation (m asd)	Screened Interval (m asd)	03/23/17 Depth to Groundwater (m btor)	03/23/17 Depth to Product (m btor)	03/23/17 Groundwater Elevation (m asd)	03/24/17 Depth to Groundwater (m btor)	03/24/17 Depth to Product (m btor)	03/24/17 Groundwater Elevation (m asd)
MW1-17	99.36	98.26 - 95.21	2.13	NP	97.23	2.10	NP	97.26
MW3-17	98.62	95.76 - 92.71	2.61	NP	***96.01***	2.81	NP	***95.81***
MW4-17	98.18	97.04 - 93.99	1.22	NP	96.96	1.26	NP	96.92
MW5-17	97.65	96.52 - 93.47	1.32	NP	96.33	1.16	NP	96.49
MW6-17	96.77	95.36 - 92.31	1.09	NP	***95.68***	1.32	NP	***95.45***

Monitoring Well Location	Top of Riser Elevation (m asd)	Screened Interval (m asd)	3/31/17 [1] Depth to Groundwater (m btor)	3/31/17 [1] Depth to Product (m btor)	3/31/17 [1] Groundwater Elevation (m asd)	04/13/17 Depth to Groundwater (m btor)	04/13/17 Depth to Product (m btor)	04/13/17 Groundwater Elevation (m asd)
MW1-17	99.36	98.26 - 95.21	1.91	NP	97.45	1.70	NP	97.66
MW3-17	98.62	95.76 - 92.71	2.15	NP	***96.47***	2.00	NP	***96.62***
MW4-17	98.18	97.04 - 93.99	1.18	NP	97.00	1.21	NP	96.97
MW5-17	97.65	96.52 - 93.47	1.03	NP	***96.62***	1.26	NP	96.39
MW6-17	96.77	95.36 - 92.31	0.77	NP	***96.00***	0.79	NP	***95.98***

Notes:

[1] Water levels collected during 3-day period of heavy rainfall, elevated surface water conditions noted.
m asd metres above site datum (fire hydrant collar by Lakeport Road)
mbtor metres below top of riser
NP no product identified on the surface of the groundwater
96.18 Water level above screened interval

Table 5

Summary of Soil Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

				Sample Location:	**MW3-17**	**MW3-17**	**MW4-17**	**MW4-17**	**MW4-17**
				Sample ID:	**S-11131634-032117-TB-012**	**S-11131634-032117-TB-013**	**S-11131634-032117-TB-007**	**S-11131634-032117-TB-008**	**S-11131634-032117-TB-009**
				Sample Depth Interval (m bgs):	**0.76 - 1.37**	**2.29 - 2.90**	**0 - 0.60**	**1.52 - 2.13**	**1.52 - 2.13**
				Sample Date:	**3/20/17**	**3/20/17**	**3/21/17**	**3/21/17**	**3/21/17**
									Duplicate
Parameters	**Units**	**MOECC T7 Standards [a]**	**MOECC T9 Standards [b]**						
Total Metals									
Antimony (Sb)	µg/g	7.5	1.3		-	-	ND(1.0)	ND(1.0)	ND(1.0)
Arsenic (As)	µg/g	18	18		-	-	5.3	4.6	4.2
Barium (Ba)	µg/g	390	220		-	-	76	95.2	104
Beryllium (Be)	µg/g	5	2.5		-	-	ND(0.50)	ND(0.50)	ND(0.50)
Boron (B), Hot Water Ext.	µg/g	1.5	1.5		-	-	0.21	0.21	0.15
Boron (B)	µg/g	120	36		-	-	7.7	6.5	5.4
Cadmium (Cd)	µg/g	1.2	1.2		-	-	ND(0.50)	ND(0.50)	ND(0.50)
Chromium (Cr)	µg/g	160	70		-	-	13.7	16.5	14.7
Chromium, Hexavalent	µg/g	10	0.66		-	-	ND(0.20)	ND(0.20)	ND(0.20)
Cobalt (Co)	µg/g	22	22		-	-	8.20	9.1	8.40
Copper (Cu)	µg/g	180	92		-	-	24.70	27	27.40
Lead (Pb)	µg/g	120	120		-	-	6.60	12.7	5.80
Mercury (Hg)	µg/g	1.8	0.27		-	-	0.01	0.0396	0.01
Molybdenum (Mo)	µg/g	6.9	2		-	-	ND(1.0)	ND(1.0)	ND(1.0)
Nickel (Ni)	µg/g	130	82		-	-	16.40	18.4	16.80
Selenium (Se)	µg/g	2.4	1.5		-	-	ND(1.0)	ND(1.0)	ND(1.0)
Silver (Ag)	µg/g	25	0.5		-	-	ND(0.20)	ND(0.20)	ND(0.20)
Thallium (Tl)	µg/g	1	1		-	-	ND(0.50)	ND(0.50)	ND(0.50)
Uranium (U)	µg/g	23	2.5		-	-	ND(1.0)	ND(1.0)	ND(1.0)
Vanadium (V)	µg/g	86	86		-	-	21.20	25.3	23.80
Zinc (Zn)	µg/g	340	290		-	-	48.10	45.8	44.20
Volatile Organic Compounds									
Acetone	µg/g	28	0.5		-	-	ND(0.50)	ND(0.50)	ND(0.50)
Benzene	µg/g	0.17	0.02		-	-	ND(0.0068)	ND(0.0068)	ND(0.0068)
Bromodichloromethane	µg/g	13	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Bromoform	µg/g	0.26	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Bromomethane	µg/g	0.05	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	µg/g	0.12	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Chlorobenzene	µg/g	2.7	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Dibromochloromethane	µg/g	9.4	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Chloroform	µg/g	0.18	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dibromoethane	µg/g	NC	NC		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichlorobenzene	µg/g	4.3	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,3-Dichlorobenzene	µg/g	6	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,4-Dichlorobenzene	µg/g	0.097	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Dichlorodifluoromethane	µg/g	25	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethane	µg/g	11	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloroethane	µg/g	0.05	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethylene	µg/g	0.05	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,2-Dichloroethylene	µg/g	30	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
trans-1,2-Dichloroethylene	µg/g	0.75	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Methylene Chloride	µg/g	0.96	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloropropane	µg/g	0.085	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,3-Dichloropropene	µg/g	0.083	0.05		-	-	ND(0.030)	ND(0.030)	ND(0.030)
trans-1,3-Dichloropropene	µg/g	0.083	0.05		-	-	ND(0.030)	ND(0.030)	ND(0.030)
1,3-Dichloropropene (cis & trans)	µg/g	0.083	0.05		-	-	ND(0.042)	ND(0.042)	ND(0.042)
Ethylbenzene	µg/g	15	0.05		-	-	ND(0.018)	ND(0.018)	ND(0.018)
n-Hexane	µg/g	34	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Methyl Ethyl Ketone	µg/g	44	0.5		-	-	ND(0.50)	ND(0.50)	ND(0.50)
Methyl Isobutyl Ketone	µg/g	4.3	0.5		-	-	ND(0.50)	ND(0.50)	ND(0.50)
MTBE	µg/g	1.4	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Styrene	µg/g	2.2	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Tetrachloroethylene	µg/g	2.3	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Toluene	µg/g	6	0.2		-	-	ND(0.080)	ND(0.080)	ND(0.080)
1,1,1-Trichloroethane	µg/g	3.4	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2-Trichloroethane	µg/g	0.05	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Trichloroethylene	µg/g	0.52	0.05		-	-	ND(0.010)	ND(0.010)	ND(0.010)
Trichlorofluoromethane	µg/g	5.8	0.25		-	-	ND(0.050)	ND(0.050)	ND(0.050)
Vinyl chloride	µg/g	0.022	0.02		-	-	ND(0.020)	ND(0.020)	ND(0.020)
Xylenes (Total)	µg/g	25	0.05		-	-	ND(0.050)	ND(0.050)	ND(0.050)

Table 5

Summary of Soil Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Parameters	Units	MOECC T7 Standards [a]	MOECC T9 Standards [b]	Sample Location: MW3-17 / Sample ID: S-11131634-032117-TB-012 / Depth: 0.76 - 1.37 / Date: 3/20/17	Sample Location: MW3-17 / Sample ID: S-11131634-032117-TB-013 / Depth: 2.29 - 2.90 / Date: 3/20/17	Sample Location: MW4-17 / Sample ID: S-11131634-032117-TB-007 / Depth: 0 - 0.60 / Date: 3/21/17	Sample Location: MW4-17 / Sample ID: S-11131634-032117-TB-008 / Depth: 1.52 - 2.13 / Date: 3/21/17	Sample Location: MW4-17 / Sample ID: S-11131634-032117-TB-009 / Depth: 1.52 - 2.13 / Date: 3/21/17 / Duplicate
Petroleum Hydrocarbons								
F1 (C6-C10)	µg/g	65	25	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
F2 (C10-C16)	µg/g	150	10	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
F3 (C16-C34)	µg/g	1300	240	73	ND(50)	ND(50)	ND(50)	ND(50)
F4 (C34-C50)	µg/g	5600	120	**347** [b]	53	ND(50)	ND(50)	ND(50)
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/g	58	0.072	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Acenaphthylene	µg/g	0.17	0.093	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Anthracene	µg/g	0.74	0.22	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(a)anthracene	µg/g	0.63	0.36	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(a)pyrene	µg/g	0.3	0.3	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(b)fluoranthene	µg/g	0.78	0.47	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(g,h,i)perylene	µg/g	7.8	0.68	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(k)fluoranthene	µg/g	0.78	0.48	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Chrysene	µg/g	7.8	2.8	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Dibenzo(ah)anthracene	µg/g	0.1	0.1	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Fluoranthene	µg/g	0.69	0.69	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Fluorene	µg/g	69	0.19	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.23	-	-	ND(0.050)	ND(0.050)	ND(0.050)
1+2-Methylnaphthalenes	µg/g	3.4	0.59	-	-	ND(0.042)	ND(0.042)	ND(0.042)
1-Methylnaphthalene	µg/g	3.4	0.59	-	-	ND(0.030)	ND(0.030)	ND(0.030)
2-Methylnaphthalene	µg/g	3.4	0.59	-	-	ND(0.030)	ND(0.030)	ND(0.030)
Naphthalene	µg/g	0.75	0.09	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Phenanthrene	µg/g	7.8	0.69	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Pyrene	µg/g	78	1	-	-	ND(0.050)	ND(0.050)	ND(0.050)
Physical Tests								
Electrical Conductivity	mS/cm	1.4	0.7	-	-	0.265	0.661	0.532
% Moisture	%	NC	NC	-	-	9.55	16.1	16.2
pH	s.u.	(C)	(C)	-	-	7.79	7.64	7.55
Sodium Adsorption Ratio	SAR	12	5	-	-	4.22	3.34	4.28
Calcium	mg/L	NC	NC	-	-	5.2	27.3	14.2
Magnesium	mg/L	NC	NC	-	-	ND(1.0)	12.1	6.8
Sodium	mg/L	NC	NC	-	-	35.1	83.4	78.4
Cyanide	µg/g	0.051	0.051	-	-	ND(0.050)	ND(0.050)	ND(0.050)

Table 5

Summary of Soil Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

			Sample Location:	**MW5-17**	**MW5-17**	**MW6-17**	**MW6-17**	**Trip Blank**
			Sample ID:	**S-11131634-032117-TB-010**	**S-11131634-032117-TB-011**	**S-11131634-032017-TB-001**	**S-11131634-032017-TB-002**	**S-11131634-032117-TB-TB1**
			Sample Depth Interval (m bgs):	**0 - 0.61**	**0.76 - 1.37**	**0.46 - 0.91**	**0.91 - 1.52**	**NA**
			Sample Date:	**3/21/17**	**3/21/17**	**3/20/17**	**3/20/17**	**3/21/17**
Parameters	**Units**	**MOECC T7 Standards [a]**	**MOECC T9 Standards [b]**					
Total Metals								
Antimony (Sb)	µg/g	7.5	1.3	ND(1.0)	ND(1.0)	**1.4 [b]**	ND(1.0)	-
Arsenic (As)	µg/g	18	18	5.8	6	13.6	3.7	-
Barium (Ba)	µg/g	390	220	80.5	88.7	184	53.5	-
Beryllium (Be)	µg/g	5	2.5	ND(0.50)	ND(0.50)	0.51	ND(0.50)	-
Boron (B), Hot Water Ext.	µg/g	1.5	1.5	0.23	0.17	1.15	0.25	-
Boron (B)	µg/g	120	36	8.2	7.4	10.7	6.3	-
Cadmium (Cd)	µg/g	1.2	1.2	ND(0.50)	ND(0.50)	0.85	ND(0.50)	-
Chromium (Cr)	µg/g	160	70	14	19.5	15.6	13.8	-
Chromium, Hexavalent	µg/g	10	0.66	ND(0.20)	0.3	ND(0.20)	**0.9 [b]**	-
Cobalt (Co)	µg/g	22	22	7.9	10.6	7.6	7	-
Copper (Cu)	µg/g	180	92	30.2	29.6	45.2	20.4	-
Lead (Pb)	µg/g	120	120	49.1	25.5	**1070 [ab]**	14.3	-
Mercury (Hg)	µg/g	1.8	0.27	0.0311	0.0284	0.212	0.0148	-
Molybdenum (Mo)	µg/g	6.9	2	ND(1.0)	ND(1.0)	1	ND(1.0)	-
Nickel (Ni)	µg/g	130	82	26.8	21.9	20.2	14.9	-
Selenium (Se)	µg/g	2.4	1.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	-
Silver (Ag)	µg/g	25	0.5	ND(0.20)	ND(0.20)	0.31	ND(0.20)	-
Thallium (Tl)	µg/g	1	1	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	-
Uranium (U)	µg/g	23	2.5	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	-
Vanadium (V)	µg/g	86	86	21	29.6	22	24.2	-
Zinc (Zn)	µg/g	340	290	82	54.5	**299 [b]**	40.1	-
Volatile Organic Compounds								
Acetone	µg/g	28	0.5	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Benzene	µg/g	0.17	0.02	ND(0.0068)	ND(0.0068)	ND(0.0068)	ND(0.0068)	ND(0.0068)
Bromodichloromethane	µg/g	13	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Bromoform	µg/g	0.26	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Bromomethane	µg/g	0.05	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	µg/g	0.12	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chlorobenzene	µg/g	2.7	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Dibromochloromethane	µg/g	9.4	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chloroform	µg/g	0.18	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dibromoethane	µg/g	NC	NC	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichlorobenzene	µg/g	4.3	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,3-Dichlorobenzene	µg/g	6	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,4-Dichlorobenzene	µg/g	0.097	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Dichlorodifluoromethane	µg/g	25	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethane	µg/g	11	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloroethane	µg/g	0.05	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethylene	µg/g	0.05	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,2-Dichloroethylene	µg/g	30	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
trans-1,2-Dichloroethylene	µg/g	0.75	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Methylene Chloride	µg/g	0.96	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloropropane	µg/g	0.085	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,3-Dichloropropene	µg/g	0.083	0.05	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)
trans-1,3-Dichloropropene	µg/g	0.083	0.05	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)
1,3-Dichloropropene (cis & trans)	µg/g	0.083	0.05	ND(0.042)	ND(0.042)	ND(0.042)	ND(0.042)	ND(0.042)
Ethylbenzene	µg/g	15	0.05	ND(0.018)	ND(0.018)	0.02	ND(0.018)	ND(0.018)
n-Hexane	µg/g	34	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Methyl Ethyl Ketone	µg/g	44	0.5	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Methyl Isobutyl Ketone	µg/g	4.3	0.5	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
MTBE	µg/g	1.4	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Styrene	µg/g	2.2	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Tetrachloroethylene	µg/g	2.3	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Toluene	µg/g	6	0.2	ND(0.080)	ND(0.080)	0.087	ND(0.080)	ND(0.080)
1,1,1-Trichloroethane	µg/g	3.4	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2-Trichloroethane	µg/g	0.05	0.05	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Trichloroethylene	µg/g	0.52	0.05	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichlorofluoromethane	µg/g	5.8	0.25	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Vinyl chloride	µg/g	0.022	0.02	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Xylenes (Total)	µg/g	25	0.05	ND(0.050)	ND(0.050)	**0.111 [b]**	ND(0.050)	ND(0.050)

Table 5

Summary of Soil Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

			Sample Location:	**MW5-17**	**MW5-17**	**MW6-17**	**MW6-17**	**Trip Blank**
			Sample ID:	**S-11131634-032117-TB-010**	**S-11131634-032117-TB-011**	**S-11131634-032017-TB-001**	**S-11131634-032017-TB-002**	**S-11131634-032117-TB-TB1**
			Sample Depth Interval (m bgs):	**0 - 0.61**	**0.76 - 1.37**	**0.46 - 0.91**	**0.91 - 1.52**	**NA**
			Sample Date:	**3/21/17**	**3/21/17**	**3/20/17**	**3/20/17**	**3/21/17**
Parameters	**Units**	**MOECC T7 Standards [a]**	**MOECC T9 Standards [b]**					
Petroleum Hydrocarbons								
F1 (C6-C10)	µg/g	65	25	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
F2 (C10-C16)	µg/g	150	10	ND(10)	ND(10)	ND(10)	ND(10)	-
F3 (C16-C34)	µg/g	1300	240	ND(50)	ND(50)	156	ND(50)	-
F4 (C34-C50)	µg/g	5600	120	ND(50)	ND(50)	64	ND(50)	-
								-
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/g	58	0.072	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	-
Acenaphthylene	µg/g	0.17	0.093	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	-
Anthracene	µg/g	0.74	0.22	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	-
Benzo(a)anthracene	µg/g	0.63	0.36	0.085	ND(0.050)	0.131	ND(0.050)	-
Benzo(a)pyrene	µg/g	0.3	0.3	0.071	ND(0.050)	0.124	ND(0.050)	-
Benzo(b)fluoranthene	µg/g	0.78	0.47	0.11	ND(0.050)	0.194	ND(0.050)	-
Benzo(g,h,i)perylene	µg/g	7.8	0.68	ND(0.050)	ND(0.050)	0.095	ND(0.050)	-
Benzo(k)fluoranthene	µg/g	0.78	0.48	ND(0.050)	ND(0.050)	0.063	ND(0.050)	-
Chrysene	µg/g	7.8	2.8	0.077	ND(0.050)	0.175	ND(0.050)	-
Dibenzo(ah)anthracene	µg/g	0.1	0.1	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	-
Fluoranthene	µg/g	0.69	0.69	0.164	ND(0.050)	0.282	ND(0.050)	-
Fluorene	µg/g	69	0.19	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	-
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.23	ND(0.050)	ND(0.050)	0.086	ND(0.050)	-
1+2-Methylnaphthalenes	µg/g	3.4	0.59	0.215	ND(0.042)	0.162	ND(0.042)	-
1-Methylnaphthalene	µg/g	3.4	0.59	0.092	ND(0.030)	0.089	ND(0.030)	-
2-Methylnaphthalene	µg/g	3.4	0.59	0.123	ND(0.030)	0.073	ND(0.030)	-
Naphthalene	µg/g	0.75	0.09	**0.105 [b]**	ND(0.050)	0.053	ND(0.050)	-
Phenanthrene	µg/g	7.8	0.69	0.117	ND(0.050)	0.296	ND(0.050)	-
Pyrene	µg/g	78	1	0.14	ND(0.050)	0.238	ND(0.050)	-
Physical Tests								
Electrical Conductivity	mS/cm	1.4	0.7	0.368	0.61	0.428	0.214	-
% Moisture	%	NC	NC	10	13.9	18.5	16.3	ND(0.10)
pH	s.u.	(C)	(C)	7.84	7.62	7.09	7.34	-
Sodium Adsorption Ratio	SAR	12	5	**7.65 [b]**	1.29	1.44	1.3	-
Calcium	mg/L	NC	NC	3.7	52.9	35	12	-
Magnesium	mg/L	NC	NC	1.1	15	2.8	2.2	-
Sodium	mg/L	NC	NC	65.5	41.2	32.9	18.6	-
Cyanide	µg/g	0.051	0.051	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	-

Table 5

Summary of Soil Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Notes:

(a)	Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (medium and fine textured soils) Residential/Parkland/Institutional Property Use.
(b)	Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 9 Generic Site Condition Standards for Use within 30 metres of a Water Body in a Non-Potable Groundwater Condition Residential/Parkland/Institutional/Industrial.Commercial/Community Property Use.
(c)	Surface soil (to 1.5 mBGS) pH must be greater than 5 and less than 9. Subsurface soil (greater than 1.5 mBGS) pH must be greater than 5 and less than 11 s.u. Soil pH range criteria presented in Ontario Regulation 153/04 - "Records of Site Condition"
ND(1.0)	Parameter not detected above associated laboratory detection limit shown in parentheses
BOLD [ab]	Parameter exceeds the associated standard
m bgs	metres below ground surface
µg/g	micrograms per gram
s.u.	scientific units
%	percent
NC	no criteria
-	parameter not analyzed
SAR	sodium adsorption ratio (unitless)
mg/L	milligrams per Litre
mS/cm	milliSiemens per centimetre

Table 6

Soil Maximum Concentration Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Parameters	Units	MOECC T7 Standards [a]	MOECC T9 Standards [b]	Maximum Concentration on Site	Sample Location	Sampled Interval (m asd)
Total Metals						
Antimony (Sb)	µg/g	7.5	1.3	**1.4** [ab]	MW6-17	96.42 - 95.97
Arsenic (As)	µg/g	18	18	13.6	MW6-17	96.42 - 95.97
Barium (Ba)	µg/g	390	220	184	MW6-17	96.42 - 95.97
Beryllium (Be)	µg/g	5	2.5	0.51	MW6-17	96.42 - 95.97
Boron (B), Hot Water Ext.	µg/g	1.5	1.5	1.15	MW6-17	96.42 - 95.97
Boron (B)	µg/g	120	36	10.7	MW6-17	96.42 - 95.97
Cadmium (Cd)	µg/g	1.2	1.2	0.85	MW6-17	96.42 - 95.97
Chromium (Cr)	µg/g	160	70	19.5	MW5-17	96.98 - 96.37
Chromium, Hexavalent	µg/g	10	0.66	**0.9** [b]	MW6-17	95.97 - 95.36
Cobalt (Co)	µg/g	22	22	10.6	MW5-17	96.98 - 96.37
Copper (Cu)	µg/g	180	92	45.2	MW6-17	96.42 - 95.97
Lead (Pb)	µg/g	120	120	**1070** [ab]	MW6-17	96.42 - 95.97
Mercury (Hg)	µg/g	1.8	0.27	0.212	MW6-17	96.42 - 95.97
Molybdenum (Mo)	µg/g	6.9	2	1	MW6-17	96.42 - 95.97
Nickel (Ni)	µg/g	130	82	26.8	MW5-17	97.74 - 97.13
Selenium (Se)	µg/g	2.4	1.5	ND(1.0)	N/A	N/A
Silver (Ag)	µg/g	25	0.5	0.31	MW6-17	96.42 - 95.97
Thallium (Tl)	µg/g	1	1	ND(0.50)	N/A	N/A
Uranium (U)	µg/g	23	2.5	ND(1.0)	N/A	N/A
Vanadium (V)	µg/g	86	86	29.6	MW5-17	96.98 - 96.37
Zinc (Zn)	µg/g	340	290	**299** [b]	MW6-17	96.42 - 95.97
Volatile Organic Compounds						
Acetone	µg/g	28	0.5	ND(0.50)	N/A	N/A
Benzene	µg/g	0.17	0.02	ND(0.0068)	N/A	N/A
Bromodichloromethane	µg/g	13	0.05	ND(0.050)	N/A	N/A
Bromoform	µg/g	0.26	0.05	ND(0.050)	N/A	N/A
Bromomethane	µg/g	0.05	0.05	ND(0.050)	N/A	N/A
Carbon tetrachloride	µg/g	0.12	0.05	ND(0.050)	N/A	N/A
Chlorobenzene	µg/g	2.7	0.05	ND(0.050)	N/A	N/A
Dibromochloromethane	µg/g	9.4	0.05	ND(0.050)	N/A	N/A
Chloroform	µg/g	0.18	0.05	ND(0.050)	N/A	N/A
1,2-Dibromoethane	µg/g	NC	NC	ND(0.050)	N/A	N/A
1,2-Dichlorobenzene	µg/g	4.3	0.05	ND(0.050)	N/A	N/A
1,3-Dichlorobenzene	µg/g	6	0.05	ND(0.050)	N/A	N/A
1,4-Dichlorobenzene	µg/g	0.097	0.05	ND(0.050)	N/A	N/A
Dichlorodifluoromethane	µg/g	25	0.05	ND(0.050)	N/A	N/A
1,1-Dichloroethane	µg/g	11	0.05	ND(0.050)	N/A	N/A
1,2-Dichloroethane	µg/g	0.05	0.05	ND(0.050)	N/A	N/A
1,1-Dichloroethylene	µg/g	0.05	0.05	ND(0.050)	N/A	N/A
cis-1,2-Dichloroethylene	µg/g	30	0.05	ND(0.050)	N/A	N/A
trans-1,2-Dichloroethylene	µg/g	0.75	0.05	ND(0.050)	N/A	N/A
Methylene Chloride	µg/g	0.96	0.05	ND(0.050)	N/A	N/A
1,2-Dichloropropane	µg/g	0.085	0.05	ND(0.050)	N/A	N/A
cis-1,3-Dichloropropene	µg/g	0.083	0.05	ND(0.030)	N/A	N/A
trans-1,3-Dichloropropene	µg/g	0.083	0.05	ND(0.030)	N/A	N/A
1,3-Dichloropropene (cis & trans)	µg/g	0.083	0.05	ND(0.042)	N/A	N/A
Ethylbenzene	µg/g	15	0.05	0.02	MW6-17	96.42 - 95.97
n-Hexane	µg/g	34	0.05	ND(0.050)	N/A	N/A
Methyl Ethyl Ketone	µg/g	44	0.5	ND(0.50)	N/A	N/A
Methyl Isobutyl Ketone	µg/g	4.3	0.5	ND(0.50)	N/A	N/A
MTBE	µg/g	1.4	0.05	ND(0.050)	N/A	N/A
Styrene	µg/g	2.2	0.05	ND(0.050)	N/A	N/A
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05	ND(0.050)	N/A	N/A
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	ND(0.050)	N/A	N/A
Tetrachloroethylene	µg/g	2.3	0.05	ND(0.050)	N/A	N/A
Toluene	µg/g	6	0.2	0.087	MW6-17	96.42 - 95.97
1,1,1-Trichloroethane	µg/g	3.4	0.05	ND(0.050)	N/A	N/A
1,1,2-Trichloroethane	µg/g	0.05	0.05	ND(0.050)	N/A	N/A
Trichloroethylene	µg/g	0.52	0.05	ND(0.010)	N/A	N/A
Trichlorofluoromethane	µg/g	5.8	0.25	ND(0.050)	N/A	N/A
Vinyl chloride	µg/g	0.022	0.02	ND(0.020)	N/A	N/A
Xylenes (Total)	µg/g	25	0.05	**0.111** [b]	MW6-17	96.42 - 95.97

Table 6

Soil Maximum Concentration Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Parameters	Units	MOECC T7 Standards [a]	MOECC T9 Standards [b]	Maximum Concentration on Site	Sample Location	Sampled Interval (m asd)
Petroleum Hydrocarbons						
F1 (C6-C10)	µg/g	65	25	ND(5.0)	N/A	N/A
F2 (C10-C16)	µg/g	150	10	ND(10)	N/A	N/A
F3 (C16-C34)	µg/g	1300	240	156	MW6-17	96.42 - 95.97
F4 (C34-C50)	µg/g	5600	120	**347** [b]	MW3-17	98.05 - 97.44
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	µg/g	58	0.072	ND(0.050)	N/A	N/A
Acenaphthylene	µg/g	0.17	0.093	ND(0.050)	N/A	N/A
Anthracene	µg/g	0.74	0.22	ND(0.050)	N/A	N/A
Benzo(a)anthracene	µg/g	0.63	0.36	0.131	MW6-17	96.42 - 95.97
Benzo(a)pyrene	µg/g	0.3	0.3	0.124	MW6-17	96.42 - 95.97
Benzo(b)fluoranthene	µg/g	0.78	0.47	0.194	MW6-17	96.42 - 95.97
Benzo(g,h,i)perylene	µg/g	7.8	0.68	0.095	MW6-17	96.42 - 95.97
Benzo(k)fluoranthene	µg/g	0.78	0.48	0.063	MW6-17	96.42 - 95.97
Chrysene	µg/g	7.8	2.8	0.175	MW6-17	96.42 - 95.97
Dibenzo(ah)anthracene	µg/g	0.1	0.1	ND(0.050)	N/A	N/A
Fluoranthene	µg/g	0.69	0.69	0.282	MW6-17	96.42 - 95.97
Fluorene	µg/g	69	0.19	ND(0.050)	N/A	N/A
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.23	0.086	MW6-17	96.42 - 95.97
1+2-Methylnaphthalenes	µg/g	3.4	0.59	0.215	MW5-17	97.74 - 97.13
1-Methylnaphthalene	µg/g	3.4	0.59	0.092	MW5-17	97.74 - 97.13
2-Methylnaphthalene	µg/g	3.4	0.59	0.123	MW5-17	97.74 - 97.13
Naphthalene	µg/g	0.75	0.09	**0.105** [b]	MW5-17	97.74 - 97.13
Phenanthrene	µg/g	7.8	0.69	0.296	MW6-17	96.42 - 95.97
Pyrene	µg/g	78	1	0.238	MW6-17	96.42 - 95.97
Physical Tests						
Electrical Conductivity	mS/cm	1.4	0.7	**0.661** [b]	MW4-17	96.74 - 96.13
% Moisture	%	NC	NC	18.5	MW6-17	96.42 - 95.97
pH	s.u.	(C)	(C)	7.84	MW5-17	97.74 - 97.13
Sodium Adsorption Ratio	SAR	12	5	**7.65** [b]	MW5-17	97.74 - 97.13
Calcium	mg/L	NC	NC	52.9	MW5-17	96.98 - 96.37
Magnesium	mg/L	NC	NC	15	MW5-17	96.98 - 96.37
Sodium	mg/L	NC	NC	83.4	MW4-17	96.74 - 96.13
Cyanide	µg/g	0.051	0.051	ND(0.050)	N/A	N/A

Notes:

(a) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (medium and Fine Textured Soils) Residential/Parkland/Institutional Property Use.

(b) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 9 Generic Site Condition Standards for Use within 30 metres of a Water Body in a Non-Potable Groundwater Condition, Residential/Parkland/Institutional/Industrial.Commercial/Community Property Use.

(c) Surface soil (to 1.5 mBGS) pH must be greater than 5 and less than 9. Subsurface soil (greater than 1.5 mBGS) pH must be greater than 5 and less than 11 s.u. Soil pH range criteria presented in Ontario Regulation 153/04 - "Records of Site Condition"

ND(1.0) Parameter not detected above associated laboratory detection limit shown in parentheses

BOLD [ab] Parameter exceeds the associated standard

m asd metres above site datum
µg/g micrograms per gram
s.u. standard units
% percent
NC no criteria
- parameter not analyzed
SAR sodium adsorption ratio (unitless)
mg/L milligrams per Litre
mS/cm milliSiemens per centimetre
N/A not applicable

Table 7

Summary of Groundwater Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

				Sample Location:	MW1-17	MW3-17	MW4-17	MW5-17
				Sample ID:	GW-11131634-032417-TB-006	GW-11131634-032417-TB-003	GW-11131634-032417-TB-004	GW-11131634-032417-TB-007
				Sample Date:	03/24/17	03/24/17	03/24/17	03/24/17
Parameters	**Units**	**MOECC T7 Standards [(a)]**	**MOECC T9 Standards [(b)]**					
Dissolved Metals								
Antimony	µg/L	16000	16000		ND(1.0)	-	ND(1.0)	ND(0.10)
Arsenic	µg/L	1500	1500		8.2	-	ND(1.0)	4.87
Barium	µg/L	23000	23000		85.5	-	108	79.1
Beryllium	µg/L	53	53		ND(1.0)	-	ND(1.0)	ND(0.10)
Boron	µg/L	36000	36000		ND(100)	-	ND(100)	86
Cadmium	µg/L	2.1	2.1		ND(0.10)	-	ND(0.10)	0.027
Chromium, Total	µg/L	640	640		ND(5.0)	-	ND(5.0)	ND(0.50)
Chromium, Hexavalent	µg/L	110	110		ND(1.0)	-	ND(1.0)	ND(1.0)
Cobalt	µg/L	52	52		ND(1.0)	-	ND(1.0)	0.94
Copper	µg/L	69	69		ND(2.0)	-	ND(2.0)	0.83
Lead	µg/L	20	20		ND(0.50)	-	ND(0.50)	0.096
Mercury	µg/L	0.1	0.29		ND(0.010)	-	ND(0.010)	ND(0.010)
Molybdenum	µg/L	7300	7300		2.89	-	0.6	1.82
Nickel	µg/L	390	390		ND(5.0)	-	ND(5.0)	1.98
Selenium	µg/L	50	50		ND(0.50)	-	ND(0.50)	0.359
Silver	µg/L	1.2	1.2		ND(0.50)	-	ND(0.50)	ND(0.050)
Sodium	µg/L	1800000	1800000		308000	-	382000	223000
Thallium	µg/L	400	400		ND(0.10)	-	ND(0.10)	0.036
Uranium	µg/L	330	330		2.88	-	1.01	4.17
Vanadium	µg/L	200	200		ND(5.0)	-	ND(5.0)	1.21
Zinc	µg/L	890	890		ND(10)	-	ND(10)	2.3
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/L	17	600		ND(0.020)	-	ND(0.020)	ND(0.020)
Acenaphthylene	µg/L	1	1.4		ND(0.020)	-	ND(0.020)	ND(0.020)
Anthracene	µg/L	1	1		ND(0.020)	-	ND(0.020)	ND(0.020)
Benzo(a)anthracene	µg/L	1.8	1.8		ND(0.020)	-	ND(0.020)	ND(0.020)
Benzo(a)pyrene	µg/L	0.81	0.81		ND(0.010)	-	ND(0.010)	ND(0.010)
Benzo(b)fluoranthene	µg/L	0.75	0.75		ND(0.020)	-	ND(0.020)	ND(0.020)
Benzo(g,h,i)perylene	µg/L	0.2	0.2		ND(0.020)	-	ND(0.020)	ND(0.020)
Benzo(k)fluoranthene	µg/L	0.4	0.4		ND(0.020)	-	ND(0.020)	ND(0.020)
Chrysene	µg/L	0.7	0.7		ND(0.020)	-	ND(0.020)	ND(0.020)
Dibenzo(ah)anthracene	µg/L	0.4	0.4		ND(0.020)	-	ND(0.020)	ND(0.020)
Fluoranthene	µg/L	44	73		ND(0.020)	-	ND(0.020)	ND(0.020)
Fluorene	µg/L	290	290		ND(0.020)	-	ND(0.020)	ND(0.020)
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2		ND(0.020)	-	ND(0.020)	ND(0.020)
1+2-Methylnaphthalenes	µg/L	1500	1500		ND(0.028)	-	ND(0.028)	ND(0.028)
1-Methylnaphthalene	µg/L	1500	1500		ND(0.020)	-	ND(0.020)	ND(0.020)
2-Methylnaphthalene	µg/L	1500	1500		ND(0.020)	-	ND(0.020)	ND(0.020)
Naphthalene	µg/L	7	1400		ND(0.050)	-	ND(0.050)	ND(0.050)
Phenanthrene	µg/L	380	380		ND(0.020)	-	ND(0.020)	ND(0.020)
Pyrene	µg/L	5.7	5.7		ND(0.020)	-	ND(0.020)	ND(0.020)

Table 7

Summary of Groundwater Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

				Sample Location:	MW1-17	MW3-17	MW4-17	MW5-17
				Sample ID:	GW-11131634-032417-TB-006	GW-11131634-032417-TB-003	GW-11131634-032417-TB-004	GW-11131634-032417-TB-007
				Sample Date:	03/24/17	03/24/17	03/24/17	03/24/17
Parameters	**Units**	**MOECC T7 Standards [(a)]**	**MOECC T9 Standards [(b)]**					
Volatile Organic Compounds								
Acetone	µg/L	100000	100000		ND(30)	-	ND(30)	ND(30)
Benzene	µg/L	0.5	44		ND(0.50)	-	ND(0.50)	ND(0.50)
Bromodichloromethane	µg/L	67000	67000		ND(2.0)	-	ND(2.0)	ND(2.0)
Bromoform	µg/L	5	380		ND(5.0)	-	ND(5.0)	ND(5.0)
Bromomethane	µg/L	0.89	5.60		ND(0.50)	-	ND(0.50)	ND(0.50)
Carbon tetrachloride	µg/L	0.2	0.79		ND(0.20)	-	ND(0.20)	ND(0.20)
Chlorobenzene	µg/L	140	500		ND(0.50)	-	ND(0.50)	ND(0.50)
Dibromochloromethane	µg/L	65000	65000		ND(2.0)	-	ND(2.0)	ND(2.0)
Chloroform	µg/L	2	2.4		ND(1.0)	-	ND(1.0)	ND(1.0)
1,2-Dibromoethane	µg/L	NC	NC		ND(0.20)	-	ND(0.20)	ND(0.20)
1,2-Dichlorobenzene	µg/L	150	4600		ND(0.50)	-	ND(0.50)	ND(0.50)
1,3-Dichlorobenzene	µg/L	7600	7600		ND(0.50)	-	ND(0.50)	ND(0.50)
1,4-Dichlorobenzene	µg/L	0.5	8		ND(0.50)	-	ND(0.50)	ND(0.50)
Dichlorodifluoromethane	µg/L	3500	3500		ND(2.0)	-	ND(2.0)	ND(2.0)
1,1-Dichloroethane	µg/L	11	320		ND(0.50)	-	ND(0.50)	ND(0.50)
1,2-Dichloroethane	µg/L	0.5	1.6		ND(0.50)	-	ND(0.50)	ND(0.50)
1,1-Dichloroethylene	µg/L	0.5	1.6		ND(0.50)	-	ND(0.50)	ND(0.50)
cis-1,2-Dichloroethylene	µg/L	1.6	1.6		ND(0.50)	-	ND(0.50)	ND(0.50)
trans-1,2-Dichloroethylene	µg/L	1.6	1.6		ND(0.50)	-	ND(0.50)	ND(0.50)
Methylene Chloride	µg/L	26	16		ND(5.0)	-	ND(5.0)	ND(5.0)
1,2-Dichloropropane	µg/L	0.58	5.2		ND(0.50)	-	ND(0.50)	ND(0.50)
cis-1,3-Dichloropropene	µg/L	0.5	5.2		ND(0.30)	-	ND(0.30)	ND(0.30)
trans-1,3-Dichloropropene	µg/L	0.5	5.2		ND(0.30)	-	ND(0.30)	ND(0.30)
1,3-Dichloropropene (cis & trans)	µg/L	0.5	5.2		ND(0.50)	-	ND(0.50)	ND(0.50)
Ethylbenzene	µg/L	54	1800		ND(0.50)	-	ND(0.50)	ND(0.50)
n-Hexane	µg/L	5	51		ND(0.50)	-	ND(0.50)	ND(0.50)
Methyl Ethyl Ketone	µg/L	21000	470000		ND(20)	-	ND(20)	ND(20)
Methyl Isobutyl Ketone	µg/L	5200	140000		ND(20)	-	ND(20)	ND(20)
MTBE	µg/L	15	190		ND(2.0)	-	ND(2.0)	ND(2.0)
Styrene	µg/L	43	1300		ND(0.50)	-	ND(0.50)	ND(0.50)
1,1,1,2-Tetrachloroethane	µg/L	1.1	3.3		ND(0.50)	-	ND(0.50)	ND(0.50)
1,1,2,2-Tetrachloroethane	µg/L	0.5	3.2		ND(0.50)	-	ND(0.50)	ND(0.50)
Tetrachloroethylene	µg/L	0.5	1.6		ND(0.50)	-	ND(0.50)	ND(0.50)
Toluene	µg/L	320	14000		ND(0.50)	-	ND(0.50)	ND(0.50)
1,1,1-Trichloroethane	µg/L	23	640		ND(0.50)	-	ND(0.50)	ND(0.50)
1,1,2-Trichloroethane	µg/L	0.5	4.7		ND(0.50)	-	ND(0.50)	ND(0.50)
Trichloroethylene	µg/L	0.5	1.6		ND(0.50)	-	ND(0.50)	ND(0.50)
Trichlorofluoromethane	µg/L	2000	2000		ND(5.0)	-	ND(5.0)	ND(5.0)
Vinyl chloride	µg/L	0.5	0.5		ND(0.50)	-	ND(0.50)	ND(0.50)
o-Xylene	µg/L	72	3300		ND(0.30)	-	ND(0.30)	ND(0.30)
m+p-Xylenes	µg/L	72	3300		ND(0.40)	-	ND(0.40)	ND(0.40)
Xylenes (Total)	µg/L	72	3300		ND(0.50)	-	ND(0.50)	ND(0.50)
Petroleum Hydrocarbons								
F1 (C6-C10)	µg/L	420	420		ND(25)	ND(25)	ND(25)	ND(25)
F2 (C10-C16)	µg/L	150	150		ND(100)	ND(100)	ND(100)	ND(100)
F3 (C16-C34)	µg/L	500	500		ND(250)	ND(250)	ND(250)	ND(250)
F4 (C34-C50)	µg/L	500	500		ND(250)	ND(250)	ND(250)	ND(250)

Table 7

Summary of Groundwater Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

				Sample Location:	MW6-17	MW6-17	Trip Blank
				Sample ID:	GW-11131634-032417-TB-001	GW-11131634-032417-TB-002	TRIP BLANK
				Sample Date:	03/24/17	03/24/17 Duplicate	03/24/17
Parameters	**Units**	**MOECC T7 Standards [a]**	**MOECC T9 Standards [b]**				
Dissolved Metals							
Antimony	µg/L	16000	16000		ND(0.10)	ND(0.10)	-
Arsenic	µg/L	1500	1500		6	6.3	-
Barium	µg/L	23000	23000		903	938	-
Beryllium	µg/L	53	53		ND(0.10)	ND(0.10)	-
Boron	µg/L	36000	36000		140	142	-
Cadmium	µg/L	2.1	2.1		ND(0.010)	ND(0.010)	-
Chromium, Total	µg/L	640	640		ND(0.50)	ND(0.50)	-
Chromium, Hexavalent	µg/L	110	110		ND(1.0)	1	-
Cobalt	µg/L	52	52		0.18	0.17	-
Copper	µg/L	69	69		0.38	0.34	-
Lead	µg/L	20	20		ND(0.050)	ND(0.050)	-
Mercury	µg/L	0.1	0.29		ND(0.010)	ND(0.010)	-
Molybdenum	µg/L	7300	7300		4.68	4.73	-
Nickel	µg/L	390	390		0.56	0.57	-
Selenium	µg/L	50	50		0.102	0.108	-
Silver	µg/L	1.2	1.2		ND(0.050)	ND(0.050)	-
Sodium	µg/L	1800000	1800000		69900	69200	-
Thallium	µg/L	400	400		0.02	0.019	-
Uranium	µg/L	330	330		1.24	1.2	-
Vanadium	µg/L	200	200		0.64	0.63	-
Zinc	µg/L	890	890		2.6	1.6	-
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/L	17	600		ND(0.020)	ND(0.020)	-
Acenaphthylene	µg/L	1	1.4		ND(0.020)	ND(0.020)	-
Anthracene	µg/L	1	1		ND(0.020)	ND(0.020)	-
Benzo(a)anthracene	µg/L	1.8	1.8		ND(0.020)	ND(0.020)	-
Benzo(a)pyrene	µg/L	0.81	0.81		ND(0.010)	ND(0.010)	-
Benzo(b)fluoranthene	µg/L	0.75	0.75		ND(0.020)	ND(0.020)	-
Benzo(g,h,i)perylene	µg/L	0.2	0.2		ND(0.020)	ND(0.020)	-
Benzo(k)fluoranthene	µg/L	0.4	0.4		ND(0.020)	ND(0.020)	-
Chrysene	µg/L	0.7	0.7		ND(0.020)	ND(0.020)	-
Dibenzo(ah)anthracene	µg/L	0.4	0.4		ND(0.020)	ND(0.020)	-
Fluoranthene	µg/L	44	73		ND(0.020)	ND(0.020)	-
Fluorene	µg/L	290	290		ND(0.020)	ND(0.020)	-
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2		ND(0.020)	ND(0.020)	-
1+2-Methylnaphthalenes	µg/L	1500	1500		ND(0.028)	ND(0.028)	-
1-Methylnaphthalene	µg/L	1500	1500		ND(0.020)	ND(0.020)	-
2-Methylnaphthalene	µg/L	1500	1500		ND(0.020)	ND(0.020)	-
Naphthalene	µg/L	7	1400		ND(0.050)	ND(0.050)	-
Phenanthrene	µg/L	380	380		ND(0.020)	ND(0.020)	-
Pyrene	µg/L	5.7	5.7		ND(0.020)	ND(0.020)	-

Table 7

Summary of Groundwater Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

				Sample Location:	MW6-17	Trip Blank
				Sample ID:	GW-11131634-032417-TB-001	GW-11131634-032417-TB-002	TRIP BLANK
				Sample Date:	03/24/17	03/24/17 Duplicate	03/24/17
Parameters	**Units**	**MOECC T7 Standards [a]**	**MOECC T9 Standards [b]**				
Volatile Organic Compounds							
Acetone	µg/L	100000	100000		ND(30)	ND(30)	ND(30)
Benzene	µg/L	0.5	44		ND(0.50)	ND(0.50)	ND(0.50)
Bromodichloromethane	µg/L	67000	67000		ND(2.0)	ND(2.0)	ND(2.0)
Bromoform	µg/L	5	380		ND(5.0)	ND(5.0)	ND(5.0)
Bromomethane	µg/L	0.89	5.60		ND(0.50)	ND(0.50)	ND(0.50)
Carbon tetrachloride	µg/L	0.2	0.79		ND(0.20)	ND(0.20)	ND(0.20)
Chlorobenzene	µg/L	140	500		ND(0.50)	ND(0.50)	ND(0.50)
Dibromochloromethane	µg/L	65000	65000		ND(2.0)	ND(2.0)	ND(2.0)
Chloroform	µg/L	2	2.4		ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane	µg/L	NC	NC		ND(0.20)	ND(0.20)	ND(0.20)
1,2-Dichlorobenzene	µg/L	150	4600		ND(0.50)	ND(0.50)	ND(0.50)
1,3-Dichlorobenzene	µg/L	7600	7600		ND(0.50)	ND(0.50)	ND(0.50)
1,4-Dichlorobenzene	µg/L	0.5	8		ND(0.50)	ND(0.50)	ND(0.50)
Dichlorodifluoromethane	µg/L	3500	3500		ND(2.0)	ND(2.0)	ND(2.0)
1,1-Dichloroethane	µg/L	11	320		ND(0.50)	ND(0.50)	ND(0.50)
1,2-Dichloroethane	µg/L	0.5	1.6		ND(0.50)	ND(0.50)	ND(0.50)
1,1-Dichloroethylene	µg/L	0.5	1.6		ND(0.50)	ND(0.50)	ND(0.50)
cis-1,2-Dichloroethylene	µg/L	1.6	1.6		ND(0.50)	ND(0.50)	ND(0.50)
trans-1,2-Dichloroethylene	µg/L	1.6	1.6		ND(0.50)	ND(0.50)	ND(0.50)
Methylene Chloride	µg/L	26	16		ND(5.0)	ND(5.0)	ND(5.0)
1,2-Dichloropropane	µg/L	0.58	5.2		ND(0.50)	ND(0.50)	ND(0.50)
cis-1,3-Dichloropropene	µg/L	0.5	5.2		ND(0.30)	ND(0.30)	ND(0.30)
trans-1,3-Dichloropropene	µg/L	0.5	5.2		ND(0.30)	ND(0.30)	ND(0.30)
1,3-Dichloropropene (cis & trans)	µg/L	0.5	5.2		ND(0.50)	ND(0.50)	ND(0.50)
Ethylbenzene	µg/L	54	1800		ND(0.50)	ND(0.50)	ND(0.50)
n-Hexane	µg/L	5	51		ND(0.50)	ND(0.50)	ND(0.50)
Methyl Ethyl Ketone	µg/L	21000	470000		ND(20)	ND(20)	ND(20)
Methyl Isobutyl Ketone	µg/L	5200	140000		ND(20)	ND(20)	ND(20)
MTBE	µg/L	15	190		ND(2.0)	ND(2.0)	ND(2.0)
Styrene	µg/L	43	1300		ND(0.50)	ND(0.50)	ND(0.50)
1,1,1,2-Tetrachloroethane	µg/L	1.1	3.3		ND(0.50)	ND(0.50)	ND(0.50)
1,1,2,2-Tetrachloroethane	µg/L	0.5	3.2		ND(0.50)	ND(0.50)	ND(0.50)
Tetrachloroethylene	µg/L	0.5	1.6		ND(0.50)	ND(0.50)	ND(0.50)
Toluene	µg/L	320	14000		ND(0.50)	ND(0.50)	ND(0.50)
1,1,1-Trichloroethane	µg/L	23	640		ND(0.50)	ND(0.50)	ND(0.50)
1,1,2-Trichloroethane	µg/L	0.5	4.7		ND(0.50)	ND(0.50)	ND(0.50)
Trichloroethylene	µg/L	0.5	1.6		ND(0.50)	ND(0.50)	ND(0.50)
Trichlorofluoromethane	µg/L	2000	2000		ND(5.0)	ND(5.0)	ND(5.0)
Vinyl chloride	µg/L	0.5	0.5		ND(0.50)	ND(0.50)	ND(0.50)
o-Xylene	µg/L	72	3300		ND(0.30)	ND(0.30)	ND(0.30)
m+p-Xylenes	µg/L	72	3300		ND(0.40)	ND(0.40)	ND(0.40)
Xylenes (Total)	µg/L	72	3300		ND(0.50)	ND(0.50)	ND(0.50)
Petroleum Hydrocarbons							
F1 (C6-C10)	µg/L	420	420		ND(25)	ND(25)	ND(25)
F2 (C10-C16)	µg/L	150	150		ND(100)	ND(100)	-
F3 (C16-C34)	µg/L	500	500		ND(250)	ND(250)	-
F4 (C34-C50)	µg/L	500	500		ND(250)	ND(250)	-

Table 7

Summary of Groundwater Quality Analytical Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Notes:

(a)	Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition All Types of Property Use.
(b)	Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 9 Generic Site Condition Standards for Use within 30 metres of a Water Body in a Non-Potable Groundwater Condition All Types of Property Use.
ND(1.0)	Parameter not detected at associated laboratory detection limit shown in parentheses
NC	no criteria
µg/L	micrograms per litre
-	parameter not analyzed

Table 8

Groundwater Maximum Concentration Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Parameters	Units	MOECC T7 Standards [(a)]	MOECC T9 Standards [(b)]	Maximum Concentration on Site	Sample Location	Screened Interval (m asd)	Screened Interval (m bgs)
Dissolved Metals							
Antimony	µg/L	16000	16000	ND(1.0)	N/A	N/A	N/A
Arsenic	µg/L	1500	1500	8.2	MW1-17	98.26 - 95.21	1.22 - 4.27
Barium	µg/L	23000	23000	938	MW6-17	95.36 - 92.31	1.52 - 4.57
Beryllium	µg/L	53	53	ND(1.0)	N/A	N/A	N/A
Boron	µg/L	36000	36000	142	MW6-17	95.36 - 92.31	1.52 - 4.57
Cadmium	µg/L	2.1	2.1	0.027	MW5-17	96.52 - 93.47	1.22 - 4.27
Chromium, Total	µg/L	640	640	ND(5.0)	N/A	N/A	N/A
Chromium, Hexavalent	µg/L	110	110	1	MW6-17	95.36 - 92.31	1.52 - 4.57
Cobalt	µg/L	52	52	0.94	MW5-17	96.52 - 93.47	1.22 - 4.27
Copper	µg/L	69	69	0.83	MW5-17	96.52 - 93.47	1.22 - 4.27
Lead	µg/L	20	20	0.096	MW5-17	96.52 - 93.47	1.22 - 4.27
Mercury	µg/L	0.1	0.29	ND(0.010)	N/A	N/A	N/A
Molybdenum	µg/L	7300	7300	4.73	MW6-17	95.36 - 92.31	1.52 - 4.57
Nickel	µg/L	390	390	1.98	MW5-17	96.52 - 93.47	1.22 - 4.27
Selenium	µg/L	50	50	0.359	MW5-17	96.52 - 93.47	1.22 - 4.27
Silver	µg/L	1.2	1.2	ND(0.50)	N/A	N/A	N/A
Sodium	µg/L	1800000	1800000	382000	MW4-17	97.04 - 93.99	1.22 - 4.27
Thallium	µg/L	400	400	0.036	MW5-17	96.52 - 93.47	1.22 - 4.27
Uranium	µg/L	330	330	4.17	MW5-17	96.52 - 93.47	1.22 - 4.27
Vanadium	µg/L	200	200	1.21	MW5-17	96.52 - 93.47	1.22 - 4.27
Zinc	µg/L	890	890	2.6	MW6-17	95.36 - 92.31	2.38 - 5.43
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/L	17	600	ND(0.020)	N/A	N/A	N/A
Acenaphthylene	µg/L	1	1.4	ND(0.020)	N/A	N/A	N/A
Anthracene	µg/L	1	1	ND(0.020)	N/A	N/A	N/A
Benzo(a)anthracene	µg/L	1.8	1.8	ND(0.020)	N/A	N/A	N/A
Benzo(a)pyrene	µg/L	0.81	0.81	ND(0.010)	N/A	N/A	N/A
Benzo(b)fluoranthene	µg/L	0.75	0.75	ND(0.020)	N/A	N/A	N/A
Benzo(g,h,i)perylene	µg/L	0.2	0.2	ND(0.020)	N/A	N/A	N/A
Benzo(k)fluoranthene	µg/L	0.4	0.4	ND(0.020)	N/A	N/A	N/A
Chrysene	µg/L	0.7	0.7	ND(0.020)	N/A	N/A	N/A
Dibenzo(ah)anthracene	µg/L	0.4	0.4	ND(0.020)	N/A	N/A	N/A
Fluoranthene	µg/L	44	73	ND(0.020)	N/A	N/A	N/A
Fluorene	µg/L	290	290	ND(0.020)	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	ND(0.020)	N/A	N/A	N/A
1+2-Methylnaphthalenes	µg/L	1500	1500	ND(0.028)	N/A	N/A	N/A
1-Methylnaphthalene	µg/L	1500	1500	ND(0.020)	N/A	N/A	N/A
2-Methylnaphthalene	µg/L	1500	1500	ND(0.020)	N/A	N/A	N/A
Naphthalene	µg/L	7	1400	ND(0.050)	N/A	N/A	N/A
Phenanthrene	µg/L	380	380	ND(0.020)	N/A	N/A	N/A
Pyrene	µg/L	5.7	5.7	ND(0.020)	N/A	N/A	N/A

Table 8

Groundwater Maximum Concentration Data
Phase Two Environmental Site Assessment
57 Lakeport Road, St. Catharines, Ontario
Rankin Construction Inc.

Parameters	Units	MOECC T7 Standards [(a)]	MOECC T9 Standards [(b)]	Maximum Concentration on Site	Sample Location	Screened Interval (m asd)	Screened Interval (m bgs)
Volatile Organic Compounds							
Acetone	µg/L	100000	100000	ND(30)	N/A	N/A	N/A
Benzene	µg/L	0.5	44	ND(0.50)	N/A	N/A	N/A
Bromodichloromethane	µg/L	67000	67000	ND(2.0)	N/A	N/A	N/A
Bromoform	µg/L	5	380	ND(5.0)	N/A	N/A	N/A
Bromomethane	µg/L	0.89	5.60	ND(0.50)	N/A	N/A	N/A
Carbon tetrachloride	µg/L	0.2	0.79	ND(0.20)	N/A	N/A	N/A
Chlorobenzene	µg/L	140	500	ND(0.50)	N/A	N/A	N/A
Dibromochloromethane	µg/L	65000	65000	ND(2.0)	N/A	N/A	N/A
Chloroform	µg/L	2	2.4	ND(1.0)	N/A	N/A	N/A
1,2-Dibromoethane	µg/L	NC	NC	ND(0.20)	N/A	N/A	N/A
1,2-Dichlorobenzene	µg/L	150	4600	ND(0.50)	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L	7600	7600	ND(0.50)	N/A	N/A	N/A
1,4-Dichlorobenzene	µg/L	0.5	8	ND(0.50)	N/A	N/A	N/A
Dichlorodifluoromethane	µg/L	3500	3500	ND(2.0)	N/A	N/A	N/A
1,1-Dichloroethane	µg/L	11	320	ND(0.50)	N/A	N/A	N/A
1,2-Dichloroethane	µg/L	0.5	1.6	ND(0.50)	N/A	N/A	N/A
1,1-Dichloroethylene	µg/L	0.5	1.6	ND(0.50)	N/A	N/A	N/A
cis-1,2-Dichloroethylene	µg/L	1.6	1.6	ND(0.50)	N/A	N/A	N/A
trans-1,2-Dichloroethylene	µg/L	1.6	1.6	ND(0.50)	N/A	N/A	N/A
Methylene Chloride	µg/L	26	16	ND(5.0)	N/A	N/A	N/A
1,2-Dichloropropane	µg/L	0.58	5.2	ND(0.50)	N/A	N/A	N/A
cis-1,3-Dichloropropene	µg/L	0.5	5.2	ND(0.30)	N/A	N/A	N/A
trans-1,3-Dichloropropene	µg/L	0.5	5.2	ND(0.30)	N/A	N/A	N/A
1,3-Dichloropropene (cis & trans)	µg/L	0.5	5.2	ND(0.50)	N/A	N/A	N/A
Ethylbenzene	µg/L	54	1800	ND(0.50)	N/A	N/A	N/A
n-Hexane	µg/L	5	51	ND(0.50)	N/A	N/A	N/A
Methyl Ethyl Ketone	µg/L	21000	470000	ND(20)	N/A	N/A	N/A
Methyl Isobutyl Ketone	µg/L	5200	140000	ND(20)	N/A	N/A	N/A
MTBE	µg/L	15	190	ND(2.0)	N/A	N/A	N/A
Styrene	µg/L	43	1300	ND(0.50)	N/A	N/A	N/A
1,1,1,2-Tetrachloroethane	µg/L	1.1	3.3	ND(0.50)	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	µg/L	0.5	3.2	ND(0.50)	N/A	N/A	N/A
Tetrachloroethylene	µg/L	0.5	1.6	ND(0.50)	N/A	N/A	N/A
Toluene	µg/L	320	14000	ND(0.50)	N/A	N/A	N/A
1,1,1-Trichloroethane	µg/L	23	640	ND(0.50)	N/A	N/A	N/A
1,1,2-Trichloroethane	µg/L	0.5	4.7	ND(0.50)	N/A	N/A	N/A
Trichloroethylene	µg/L	0.5	1.6	ND(0.50)	N/A	N/A	N/A
Trichlorofluoromethane	µg/L	2000	2000	ND(5.0)	N/A	N/A	N/A
Vinyl chloride	µg/L	0.5	0.5	ND(0.50)	N/A	N/A	N/A
o-Xylene	µg/L	72	3300	ND(0.30)	N/A	N/A	N/A
m+p-Xylenes	µg/L	72	3300	ND(0.40)	N/A	N/A	N/A
Xylenes (Total)	µg/L	72	3300	ND(0.50)	N/A	N/A	N/A
Petroleum Hydrocarbons							
F1 (C6-C10)	µg/L	420	420	ND(25)	N/A	N/A	N/A
F2 (C10-C16)	µg/L	150	150	ND(100)	N/A	N/A	N/A
F3 (C16-C34)	µg/L	500	500	ND(250)	N/A	N/A	N/A
F4 (C34-C50)	µg/L	500	500	ND(250)	N/A	N/A	N/A

Notes:

(a) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, All Types of Property Use.

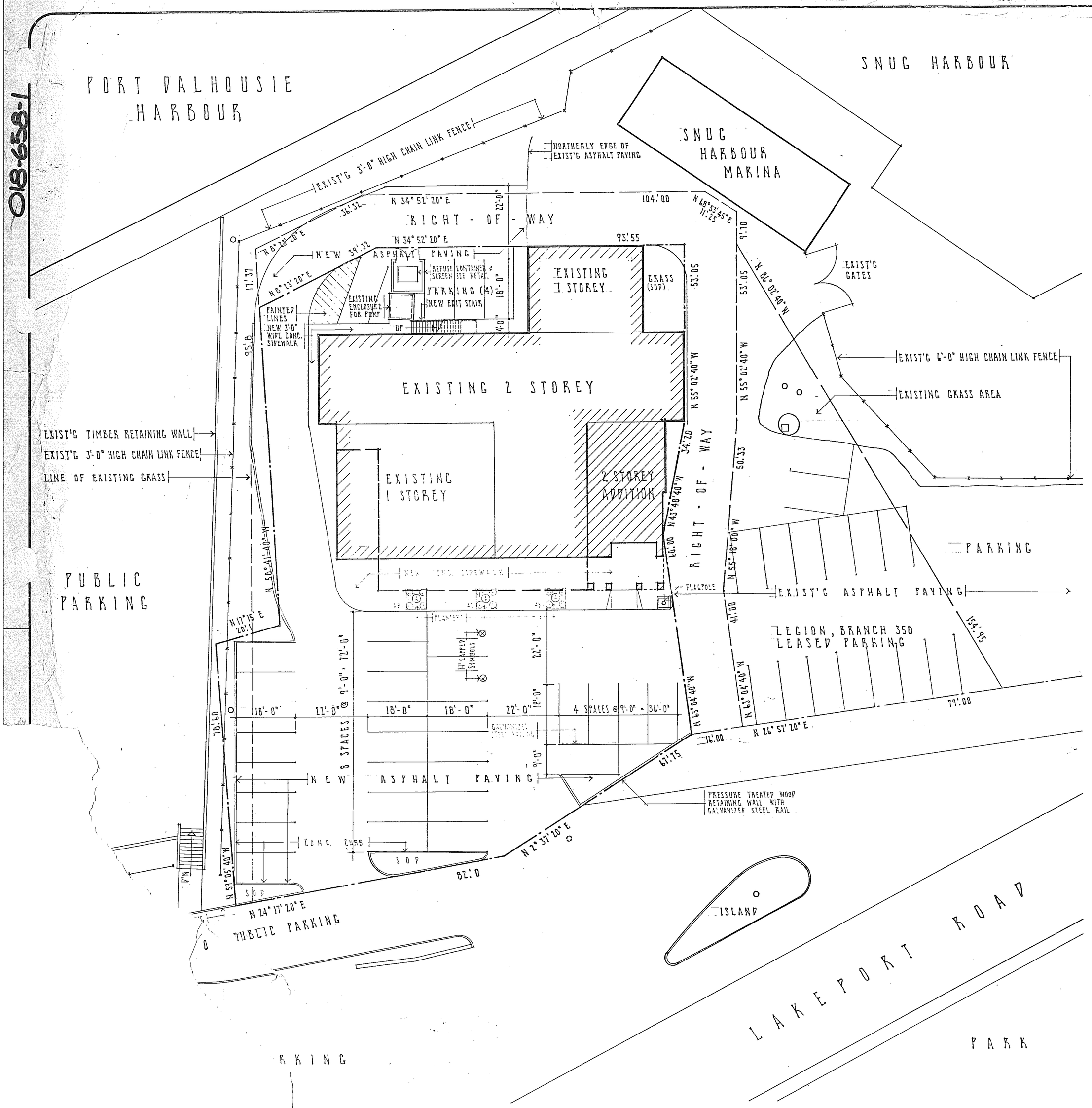
(b) Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act April 15, 2011, Table 9 Generic Site Condition Standards for Use within 30 metres of a Water Body in a Non-Potable Groundwater Condidtion, All Types of Property Use.

ND(1.0) Parameter not detected at associated laboratory detection limit shown in parentheses
NC no criteria
m asd metres above site datum
m bgs metres below ground surface
µg/L micrograms per litre
N/A not applicable

Appendices

Appendix A
Survey of the Phase Two Property

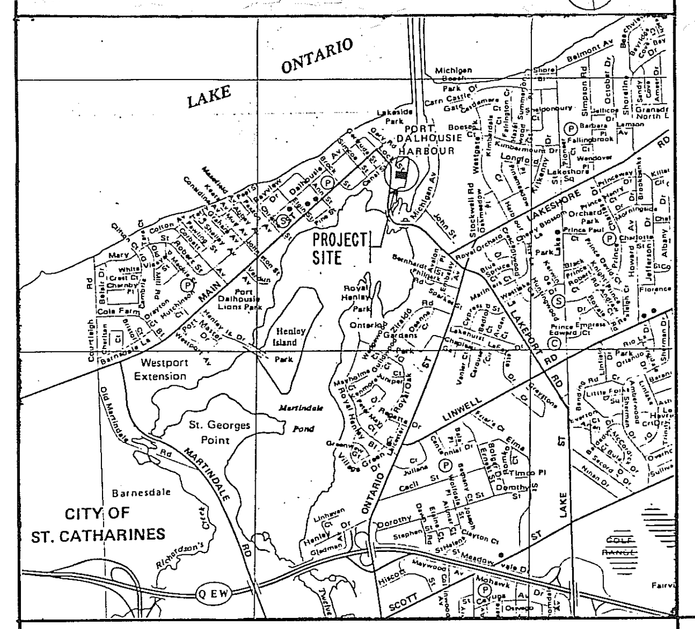
018-658-1



SITE PLAN

SCALE : 1/16" = 1'-0"

KEY PLAN



COVERAGE TABLE

LOT AREA	22 986.18 SQ.FT.		
RIGHT - OF - WAY	4 773.02 SQ.FT.		
TOTAL LOT AREA BY-LAW 86-188 SCHEDULE 'A'	27 759.20 SQ.FT.	0.637 ACRES	
BUILDING COVERAGE			
EXISTING	6 963.33 SQ.FT.		
ADDITION	1 200.00 SQ.FT.		
TOTAL	8 163.33 SQ.FT.	29.4 %	
PARKING & DRIVEWAYS COVERAGE	16 867.34 SQ.FT.	60.8 %	
LANDSCAPE COVERAGE	2 720.40 SQ.FT.	9.8	
Nº OF PARKING SPACES	32		
BUILDING HEIGHT	26 FT.		

SITE DESCRIPTION

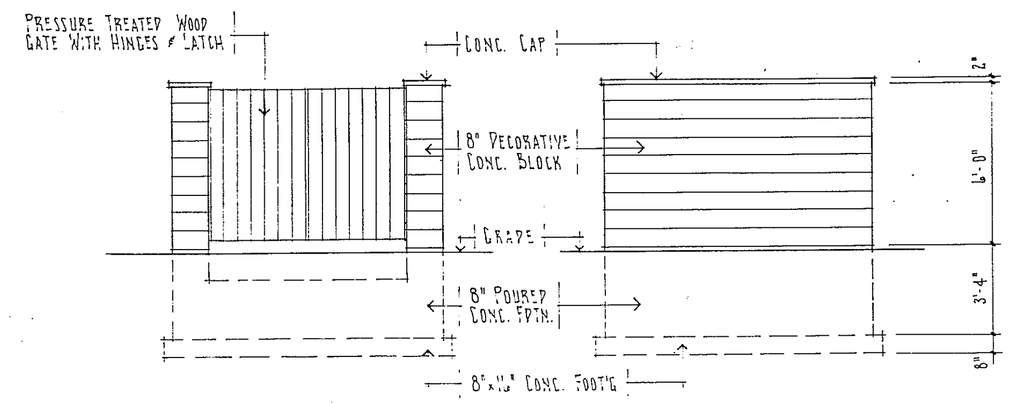
THIS INFORMATION TAKEN FROM A PLAN OF SURVEY BY PETER PAVLIN, O.L.S., FEBRUARY 13, 1979.
PART OF LOT 21, CONCESSION 1, TOWNSHIP OF GRANTHAM AND TOWN OF PORT DALHOUSIE NOW IN THE CITY OF ST.CATHARINES, REGIONAL MUNICIPALITY OF NIAGARA.

LANDSCAPE SCHEDULE

INDEX	COMMON NAME / BOTANICAL NAME	SIZE	ROOT	SPACING	QUANTITY	REMARKS
A	WEEPING PEASHRUB / CARAGANA ARBORESCENS 'PENDULA'	100 cm	FIBRE POT		3	
B	SARCOXIE EUONYMUS / EUONYMUS FORTUNEI 'SARCOXIE'	25 cm	FIBRE POT		8	
C	GREEN GEM BOX / BUXUS 'GREEN GEM'	25 cm	FIBRE POT		4	

NOTE : ALL LANDSCAPED AREAS TO BE SODDED. ALL PARKING AREAS TO BE ASPHALT.

REFUSE CONTAINER SCREEN



THE CITY OF ST. CATHARINES

DEPT.

DATE

NOTE THE DIMENSIONS, AREAS AND LOCATIONS OF THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FINAL DESIGN PROVIDING THE INTENT AND PURPOSE OF THE ORIGINAL PLAN IS MAINTAINED AND ALL RELEVANT ZONING REGULATIONS COMPLIED WITH. FURTHER, AND NOTWITHSTANDING ANYTHING SHOWN ON THIS PLAN TO THE CONTRARY, ALL SITE SERVICING, GRADING AND DRAINAGE SHALL BE IN ACCORDANCE WITH PLANS FILED IN THE CITY ENGINEER'S OFFICE AND APPROVED BY THE ENGINEER

GENERAL NOTES:

TRUE NORTH

PROJECT NORTH

REVISIONS:

1	SITE PLAN AGREEMENT, CITY OF ST. CATHARINES, DATED AUGUST 30, 1988 — SEPT. 9, 1988
2	
3	
4	
5	
6	
7	
8	
9	
10	

JOB TITLE:

ADDITION & ALTERATIONS TO ROYAL CANADIAN LEGION BRANCH Nº 350

57 LAKEPORT ROAD ST.CATHARINES

DRAWING TITLE:

SITE PLAN AGREEMENT

SCALE: AS SHOWN

DRAWN BY: C.R.S.

CHECKED BY:

DATE: JULY , 1988

architects

WILLIAMS WOODRUFF and ELMES

St. Catharines, Ontario

ONTARIO ASSOCIATION OF ARCHITECTS

DRWG. No. 1

PROJECT Nº 88-120

Appendix B
Previous Environmental Reports

Draft for Review



Phase One Environmental Site Assessment

57 Lakeport Road
St. Catharines, Ontario

Rankin Construction Inc.

GHD | 261 Martindale Rd., Unit 3 St. Catharines Ontario L2W 1A2
11131634 | Report No 1 | December 05 2016

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1. Executive Summary

GHD Limited (GHD) was retained by Rankin Construction Inc. (Rankin) to conduct a Phase One Environmental Site Assessment (ESA) of the buildings and associated lands located at 57 Lakeport Road in St. Catharines, Ontario (hereinafter referred to as Site or Property). The Property is shown on the Site Location Map (Figure 1) and Site Plan (Figure 2).

The Property consists of three parcels of land that, combined, are approximately 0.33 hectares (0.82 acres) in size. The eastern-most parcel is occupied by a two story commercial building approximately 1,360 square metres (14,600 square feet) in size. The remaining three parcels are occupied by asphalt paved parking spaces and access ways as well as landscaped boulevards fronting onto Lakeport Road. The eastern-most parcel is owned by The Royal Canadian Legion Branch 350 while the other three parcels are owned by the City of St. Catharines. It is GHD's understanding that Rankin is considering acquiring the Property for redevelopment for mixed commercial and residential use and that this Phase One ESA is being completed to potentially support filing a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04, as amended (O. Reg. 153/04).

Based on the results of the Phase One ESA, including the records review, the Site reconnaissance, and interviews with persons knowledgeable of the historical and current Site operations, and pending receipt and review of information from the Ontario Ministry of the Environment and Climate Change (MOECC), the following Areas of Potential Environmental Concern (APECs) were identified to be associated with the Site:

2. Introduction

2.1 Phase One Property Information

GHD was retained by Rankin to conduct a Phase One Environmental Site Assessment (ESA) of the building and associated lands located at 57 Lakeport Road in St. Catharines, Ontario (hereinafter referred to as Site or Property). The Property is shown on the Site Location Map (Figure 1) and on the Site Plan (Figure 2).

The purpose of the Phase One ESA was to identify, through a non-intrusive investigation, the existence of potentially contaminating activities (PCAs) at and around the Site that represent APECs.

The Property consists of three parcels of land that, combined, are approximately 0.33 hectares (0.82 acres) in size. The eastern-most parcel is occupied by a two story building approximately 1,360 square metres (14,600 square feet) in size. The remaining three parcels are occupied by asphalt paved parking spaces and access ways as well as landscaped boulevards fronting onto Lakeport Road. The eastern-most parcel is owned by The Royal Canadian Legion Branch 350 while the other three parcels are owned by the City of St. Catharines.

Contact information for the Property owner's representative is listed below:

Royal Canadian Legion Branch 350
Attention: Mr. Bill Middler
57 Lakeport Road
St. Catharines, Ontario L2N 4P6

GHD was retained by Rankin to the conduct this Phase One ESA. Contact information for Rankin's representative is listed below:

Rankin Construction Inc.
Attention: Mr. Jim Frank, P. Eng., MBA
222 Martindale Road, Box 1116
St. Catharines, Ontario L2R 7A3

It is GHD's understanding that the Phase One ESA is being completed in contemplation of filing a Record of Site Condition (RSC) in accordance with O. Reg. 153/04 to support redevelopment of the Property from its most recent commercial use to mixed commercial and residential use.

3. Scope of Investigation

This Phase One ESA was conducted in accordance with the requirements of O. Reg. 153/04 by Mr. Andrew Hunter, and was reviewed by Mr. Marc Gaudet of GHD. The qualifications of Mr. Hunter and Mr. Gaudet are presented in Appendix A. The following tasks were conducted as part of the Phase One ESA:

- Review of an electronic environmental database search of federal, provincial, and private source databases
- Review of Property title records
- Review of available historical records including Fire Insurance Plans, aerial photographs of the Site and surrounding area, regional geological information, and previous environmental reports
- Review of past and current Property usage and adjacent property occupancy
- Inspection of the facilities, equipment, utility services, operations, and associated records for the Site
- Observations of conditions that represented PCAs and/or APECs
- Inquiries with regulatory agencies and interviews with persons knowledgeable of the Site and Site operations

In completing the Phase One ESA, GHD relied upon information received from all parties as being accurate unless contradicted by written documentation or field observations.

The following report summarizes the information gathered by GHD during the Phase One ESA and identifies the existence of APECs associated with the Site, if any. As required by O. Reg. 153/04, this Phase One ESA also identifies potential contamination migration pathways and receptors associated with the Property, to the extent that the data compiled allows.

This Phase One ESA report has been prepared for the use of Rankin and may not be relied upon by others without the written consent of GHD and Rankin.

4. Records Review

4.1 General

Historical land use of the Site was investigated by GHD through a review of available Fire Insurance Plans (FIPs), Property title records, historical city directories, environmental databases, aerial photographs of the Site and surrounding area, and regional geological information.

4.1.1 Phase One ESA Study Area Determination

The Phase One ESA study area included the Site and all properties located wholly or partially within 250 metres (m) of the boundary of the Site. GHD has determined, based on a review of local geology and the presence of surface water, that PCAs beyond 250 m from the Site are not likely to impact the Property given the low permeability of the silty overburden, inferred groundwater flow direction, and the presence of surface water to the east of the Property. Therefore, GHD's records review and Site reconnaissance were limited to the 250 m Phase One ESA study area boundary.

The properties adjacent to the Site were visually inspected, without accessing the properties, for evidence of existing or potential environmental concerns related to the Phase One ESA. GHD also visually inspected other properties in the vicinity of the Site that were visible from the Site or surrounding streets. The following buildings or features were located on the properties adjacent to the Site:

North: The Site is bounded to the north by an asphalt paved parking lot, landscaped areas, marina and yacht club. Other properties further north include commercial properties and the Lower Twelve Mile Creek.

West: The Site is bounded to the west by Lakeport Road and further west by commercial properties including restaurants, a bank, and retail outlets. Rennie Park is located on the opposite side of Lakeport Road to the southwest of the Site.

South: The Site is bounded to the south by 61 Lakeport Road which is currently occupied by Pier 61 restaurant, beyond which is 63 Lakeport Road which is occupied by the Lincoln Fabrics building, a former woven industrial fabrics manufacturer.

East: The Site is bounded to the east by a port and the Lower Twelve Mile Creek. Further east, across the inlet, is a yacht club.

As discussed in Section 5, GHD interviewed the current Property owner’s representatives who are familiar with the Site operations as a Legion from at least 1994. Facility personnel were not aware of any environmental impacts to the Site attributable to operations conducted on adjacent lands. No visual evidence of environmental impact to the Property from surrounding land uses was observed by GHD at the time of the Site inspection.

4.1.2 First Developed Use Determination

According to Site representatives, the Site was first developed for industrial land use in approximately 1890 with the first documented use being Port Activities associated with a Welland Canal Lock repair/maintenance building that operated at the Site. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined by O. Reg. 153/04 that represents an APEC at the Property. On this basis, the former lock repair/maintenance building operations is identified as APEC A.

4.1.3 Fire Insurance Plans

Fire Insurance Plans (FIPs) assist in the identification of historical land use and commonly indicate the existence and location of aboveground and underground storage tanks, structures, improvements, and facility operations. GHD contracted Opta Information Intelligence (Opta) to search for available historical FIPs, inspection reports, and Site-specific plans. GHD was provided with a copy of Fire Insurance Plans covering the Site and/or portions of the Phase One Study Area for 1905, 1922, 1962, 1975, 1994 and 2001, copies of which are provided in Appendix B.

The Site is not located on the 1905 FIP. Only lands to the northwest of the Site are shown on the 1905 FIP. Review of the 1905 FIP indicates that the Old Welland Canal (second canal) Lock No. 1 was located north of the Site. A ship lock falls under Port Activities including Operation and Maintenance of Wharves and Docks and is a PCA which, given its proximity to the Site, is an APEC. On this basis, the former Lock 1 operation to the north of the Site is identified as APEC B.

Land use further north and to the west of the Site as indicated in the 1905 FIP included a dry dock, a ship supplies storage building, a bakery, residential dwellings, hotels, ice houses, a billiards room, drug stores and a community hall. A dry dock falls under Port Activities including Operation and Maintenance of Wharves and Docks and is a PCA which, given its proximity to the Site, is an APEC. On this basis, the former dry dock operation to the west of the Site is identified as APEC C.

The Site is not located on the 1922 FIP. Only lands to the northwest of the Site are shown on the 1922 FIP. Review of the 1922 FIP indicates that the lands to the northwest of the Site remained generally unchanged from the 1905 FIP other than the development of additional residential and commercial buildings.

The 1962 FIP indicates that the Legion Hall was located on Site and that a boiler room was located in the southeast corner of the building. The FIP indicates that a vacant auto service building and associated underground storage tank were located on the northwest portion of the Site. Gasoline and Associated Products Storage in Fixed Tanks is a PCA. On this basis, the former presence of an underground storage tank associated with former auto servicing operations on the northwest portion of the Site is identified as APEC D. In addition, Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles is a PCA. On this basis, the former automotive garage operation conducted on the northwest portion of the Site is identified as APEC E.

A rowing club including two boat houses and a hall were located to the west of the Site. Further to the west, the Old Welland Canal (second canal) had been filled in to facilitate reclamation of lands to accommodate the construction of Lakeport Road through to Front Street. The placement of fill is a PCA, however, it does not represent an APEC as the fill was not placed on the Site. Lake Sand

and Building Supplies also occupied lands comprising the adjacent property to the north of the Site. This included an office building, storage building and exterior piles of sand. The Old Welland Canal (third canal) was located east of the Site. The FIP indicates that the adjacent property to the south of the Site was occupied by a water inlet. A vacant four-story building operated by Lincoln Fabrics was located further south of the Site. A fuel oil UST is identified as having been operated outside the north wall of the former Lincoln Fabrics building. Gasoline and Associated Products Storage in Fixed Tanks is a PCA. The presence of a fuel oil UST on the Lincoln Fabrics property to the south is a PCA which, given its proximity to the Site, is an APEC. On this basis, the former presence of a fuel oil UST on the property to the south of the Site is identified as APEC F.

A review of the 1975 Royal Canadian Legion Site plan report identified a two-story building on Site, two boat houses were located west of the Site and a small unidentified structure were identified south of the Site. No other buildings were identified on the 1975 Site plan.

A review of the 1994 Royal Canadian Legion Site plan identifies a two-story building on Site equipped with an elevator. The land surrounding the south, west and north of the on-Site building were used for parking. The exterior to the east of the on-Site building was occupied by the Old Welland Canal (third canal). A restaurant was located on the adjacent property south of the Site. No other buildings were identified on the 1994 Site plan.

A review of the 1994 Multirisk report identifies the Royal Canadian Legion has occupied the location and in operation since 1950. The on Site building was constructed in the 1800s with an addition constructed in 1958 and renovation completed in 1980 occupying a total area of approximately 1382 square metres. The walls of the building are concrete blocks (25%) and brick (75%), the floors of the building consist of concrete (55%) and wood joist (45%), and the roof consists of wood joist with tar and gravel (14%) resurfaced in 1994 and asphalt shingles (86%) resurfaced in 1993. No basements, mezzanines or outbuildings were identified in the 1994 report. The building is heated with natural gas roof mounted units that were replaced in 1994. The plumbing was upgraded and replaced in 1980 however the building is not sprinklered and the electrical was upgraded and replaced in 1994. There is no history of flooding associated with the Site, the nearest body of water is the river/canal approximately 20 metres east of the Site and the building is not located on flood plain. The capacity of the building is 634 occupants. The building was occupied by three banquet halls and a kitchen.

A review of the 1994 Cope report indicates that the two-story on Site building was constructed in 1898 and was cooled with central air conditioning. Information reported in the 1994 Cope report was similar to that provided in the 1994 Multirisk report.

Review of the 2001 Inspection report indicates the building was in good condition and was well maintained. The kitchen cooking facilities were used on special occasions for fund raising events as well as for catering private parties and members functions in the banquet hall. The second floor area had a licensed capacity of 273 in three separate rooms. The first floor was licensed for 185 persons. The first floor was occupied as a reception area, kitchen and members' lounge. The second floor consisted of a banquet hall, games room, office and meeting room. The total floor area was 1244 square metres with 701 square metres on the ground surface and no basement. Additions were constructed in the 1970's and 1990 and included a members lounge and main

entrance. The building was equipped with roof top HVAC units and internal forced air furnace heating as well as a security alarm system that was installed in 1985.

4.1.4 Chain of Title

GHD contracted Blaylock & Associates to conduct a search of the Property title records. Blaylock & Associates obtained information from the applicable Land Registry Office through access to the electronic Land Titles system.

The Property is described as Part of Lot 21, Concession I, Township of Grantham, now Port Dalhousie Lot 1 and Port Dalhousie Lot 636. The Property Identification Number (PIN) for the Site was 46195-0362 (LT). The following entities were reported to be associated with ownership or occupation of the Property:

Eastern Portion of the Site

Registered Owner(s)	***Ownership Period***
Nathan Pawling	to September 3, 1844 and
Estate of James Drabble	to February 1846
The Board of Works (The King)	Sept 1844/Feb 1846 – July 17, 1951
R. Ross, W. Finch, G. Wing (Trustees of Cdn Legion No. 350)	July 17, 1951 – May 15, 1990
Royal Canadian Legion, Branch. 350	May 15, 1990 – Present

Southwestern Portion of the Site

Registered Owner(s)	***Ownership Period***
Harriet E. Kennedy	to June 4, 1888
The Queen	June 4, 1888 - June 11, 1962
The Corporation of the City of St. Catharines	June 11, 1962 – Present

Northwestern Portion of the Site

Registered Owner(s)	***Ownership Period***
Stephen Andrews	to March 8, 1877
The Queen	March 8, 1877 - July 3, 1958
Douglas Carr	July 3, 1958 – Feb 22, 1960
Supertest Petroleum Corporation Limited	Feb 22, 1960 – March 10, 1975
Nick Zitano	March 10, 1975 – June 3, 1977
John S. Miller	June 3, 1977 – Aug 4, 1986
The Corporation of the City of St. Catharines	Aug 4, 1986 – Present

No easements were identified at the Site and no leases, environmental liens, identified encumbrances, or other interests of potential environmental concern were reported to be associated with the Site through completion of the Property title search. A copy of the Property title search documents that were obtained by GHD are provided in Appendix C.

A survey plan dated 1988 was also included with the chain-of-title information. The survey identifies the Legion Building in its present-day configuration. This survey plan also indicates that a right-of-way exists along the south and east Property boundaries A copy of the survey plan is included in Appendix D.

4.1.5 Historical City Directories

Historical city directories generally document the occupants of municipal addresses on a yearly basis. GHD contracted Environmental Risk Information Services (ERIS) to provide historical city directories for the Site. ERIS summarized city directories for the years 1947, 1952, 1962, 1967, 1977, 1982, 1987, 1992, 1997, 2002, 2007, and 2012. According to the Eris historical city directories, the Site was occupied by the Canadian Legion from 1952 to 2012. There were no listings for the Site in 1947.

The adjacent property to the south at 61 Lakeport Road was occupied by Snug Harbour Marina in 1977, 1982, and 1987.

The city directory search indicated that, for the years searched, surrounding properties have historically consisted of mixed commercial, industrial and residential use including retail and office use.

A copy of the City directory search documents that were obtained by GHD are provided in Appendix E.

4.1.6 Environmental Reports

According to Site representatives, no previous environmental reports were completed for the Site. GHD was advised that environmental reports were completed for the adjacent Lincoln Fabrics property, which included:

- Phase I Environmental Site Assessment, 61 and 63 Lakeport Road, St. Catharines, ON (EXP Servies Inc, March 15, 2016)
- Phase II Environmental Site Assessment, 61 and 63 Lakeport Road, St. Catharines, ON (EXP Servies Inc, April 20, 2016)

A summary of each of the environmental reports reviewed by GHD is provided below and reflects the conditions at the time that the reports were prepared.

4.1.6.1 2016 Phase I ESA

EXP conducted a Phase I ESA of the adjacent and neighbouring properties located at 61 and 63 Lakeport Road in St. Catharines, Ontario. Based on the findings of the Phase I ESA, a Phase II ESA was recommended to investigate potential soil and groundwater impacts at the properties located at 61 and 63 Lakeport Road.

4.1.6.2 2016 PHASE II ESA

EXP conducted a Phase II ESA at the adjacent and neighbouring properties located at 61 and 63 Lakeport Road in 2016. Based on the results of the Phase II ESA activities conducted on the

adjacent and neighbouring properties, including all field and laboratory analytical data generated, no impacts to groundwater quality were identified. It was concluded however, that soil quality impacts existed at the Site, including:

- Soil at the neighbouring property was found to contain elevated concentrations of petroleum hydrocarbons, polycyclic aromatic hydrocarbons, and metals

Based on the reported observations made at the time of soil sampling and collection, the identified soil impacts were attributed to the poor quality fill material that was imported to the Site during the development and/or redevelopment of the area. The PAH impacts may also be associated with an historical fire that occurred at 63 Lakeport Road. The fill material at these locations ranges in depth between approximately 0.3 and 3.0 metres below ground surface (m bgs).

4.2 Environmental Source Information

4.2.1 Regulatory Review

Facility personnel reported that no concerns, complaints, notices of violation, or directives of an environmental nature have been issued against the Site by federal, provincial, or municipal environmental regulatory agencies.

The Ontario Ministry of the Environment and Climate Change (MOECC) was contacted by GHD to provide information regarding any past complaints, violations, and/or MOECC directives concerning the Site through a Freedom of Information Act request. Information received from the MOECC indicates that, after a thorough search of their files, they identified no records associated with the Site. A copy of the MOECC response is provided in Appendix F.

The Technical Standards and Safety Authority (TSSA) was contacted by GHD and asked to provide information concerning licensed (retail fuel outlets) or registered (private fuel outlet) underground storage tanks (USTs) located at the Site. TSSA personnel provided email correspondence to GHD dated August 17, 2016 indicating that their records did not identify any registered or licensed fuel storage tanks associated with the Site. A copy of the correspondence from the TSSA is provided in Appendix F.

4.2.2 Environmental Databases Search

GHD contracted Environmental Risk Information Services (ERIS) to conduct a search of available federal, provincial, and private environmental databases. Based on the address of the Site, the database search was completed to assess environmental conditions within the Phase One Study Area. The number of records identified for the Site and for the Phase One ESA Study Area is identified in the following table. A radius of 0.25 kilometres was selected to ensure that all properties within the Phase One Study Area were included in the database search. A summary of the pertinent findings from the database search related to the Site is provided below.

Database	Number of Records	
	Phase One Property	Phase One Study Area (0 - 250 m)
Federal Databases		
Environmental Effects Monitoring (**EEM**)	None	0
Environmental Issues Inventory System (**EIIS**)	None	0
Federal Convictions (**FCON**)	None	0
Federal Contaminated Sites (**FCS**)	None	0
Fisheries & Oceans Fuel Tanks (**FOFT**)	None	0
Indian & Northern Affairs Fuel Tanks (**IAFT**)	None	0
National Analysis of Trends in Emergencies System (**NATES**)	None	0
National Defence & Canadian Forces Fuel Tanks (**NDFT**)	None	0
National Defence & Canadian Forces Spills (**NDSP**)	None	0
National Defence & Canadian Forces Waste Disposal Sites (**NDWD**)	None	0
National Environmental Emergencies System (**NEES**)	None	0
National PCB Inventory (**NPCB**)	None	0
National Pollutant Release Inventory (**NPRI**)	None	0
Parks Canada Fuel Storage Tanks (**PCFT**)	None	0
Transport Canada Fuel Storage Tanks (**TCFT**)	None	0
Provincial Databases		
Aggregate Inventory (**AAGR**)	None	0
Aggregate Inventory (**AGR**)	None	0
Abandoned Mines Information System (**AMIS**)	None	0
Boreholes (**BORE**)	None	2
The BORE database indicates varied stratigraphy within the Phase One Study area. One record in the BORE indicates that stratigraphy in the area generally consists of sand and gravel fill with silt and wood to approximately 3 metres below ground surface which overlies silt till with sand to a depth of 6.9 metres below ground surface. Weathered shale bedrock is present at approximately 6.9 metres below ground surface. The second record in BORE identified fill material consisting of sand and clay overlying 8.5 metres of soft organic rich clay which in turn overlies weathered shale bedrock encountered at a depth of 9.3 metres below ground surface.		
Certificates of Approval (**CA**)	None	10
Six records were identified for the Regional Municipality of Niagara related to the construction of water mains and sewers (five records), and industrial air approval for a standby generator (one record). Two records were identified for the City of St. Catharines related to the municipal water approval.		

Database	Number of Records	
	Phase One Property	Phase One Study Area (0 - 250 m)
One record was identified for 1049569 Ontario Inc. and one record was identified for Blue Onion Delhi related to industrial air approval.		
Commercial Fuel Oil Tanks (**CFOT**)	None	0
Coal Gasification Plants (**COAL**)	None	0
Compliance and Convictions (**CONV**)	None	0
Certificates of Property Use (**CPU**)	None	0
Drill Holes (**DRL**)	None	0
Environmental Activity and Sector Registry (**EASR**)	None	0
Environmental Registry (**EBR**)	None	0
Environmental Compliance Approval (**ECA**)	None	0
List of TSSA Expired Facilities (**EXP**)	None	0
Fuel Storage Tank (**FST**)	None	0
Fuel Storage Tank – Historical (**FSTH**)	None	0
Ontario Regulation 347 Waste Generators Summary (**GEN**)	None	25
Ten records were pertaining to Lincoln Fabrics Ltd., seven records were pertaining to St. Catharines hydro Generation Inc., six records were pertaining to Compressor Systems International Inc., and one record each pertaining to Seymour Hall Inc. and Bell Canada.		
TSSA Historical Incidents (**HINC**)	None	1
One record pertaining to a release of natural gas (air) was identified at 12 Main Street, approximately 245 m northwest of the Site which occurred due to a pipeline strike in May 2009. A natural gas release to air is not likely to affect soil or groundwater quality at the Site.		
TSSA Incidents (**INC**)	None	0
Landfill Inventory Management Ontario (**LIMO**)	None	0
Mineral Occurrences (**MNR**)	None	0
Non-Compliance Reports (**NCPL**)	None	0
Ontario Oil and Gas Wells (**OOGW**)	None	0
Ontario Inventory of PCB Storage Sites (**OPCB**)	None	0
Orders (**ORD**)	None	0
Pesticide Register (**PES**)	None	0
TSSA Pipeline Incidents (**PINC**)	None	0
Private and Retail Fuel Storage Tanks (**PRT**)	None	0
Permit to Take Water (**PTTW**)	None	0
Ontario Regulation 347 Waste Receivers Summary (**REC**)	None	0
Record of Site Condition (**RSC**)	None	0

Database	Number of Records	
	Phase One Property	Phase One Study Area (0 - 250 m)
Ontario Spills (**SPL**)	None	4
Four records associated with an unknown reason for incident, raw sewage release, equipment failure and container overflow were identified in the Phase One Study Area. One record associated with a release of 1,820 litres of diesel fuel on the west side of Twelve Restaurant located on the adjacent property to the west of the Site at 61 Lakeport Road in 2005. This record indicates that diesel fuel was released to Lake Ontario and surface water pollution may have resulted. One record associated with the release of raw unchlorinated sewage from a forcemain break was identified at the corner of Lakeport Street and Lock Street, approximately 100 m north west of the Site. This record indicates that environmental impacts were not anticipated. One record associated with the release of 115 litres of hydraulic oil to pavement from truck equipment failure was identified at 26 Lakeport Road, approximately 140 m northwest of the Site. This record indicates that environmental impacts were not anticipated. One record associated with the release of an unknown quantity of grease from an overflowing grease bin was identified at the corner of Lock and Main Streets, approximately 228 m northwest of the Site. Given the record indicates the spill was to a lot and nearby catch basins, any releases to the environment at this property are not likely to affect Site groundwater.		
Wastewater Discharger Registration Database (**SRDS**)	None	0
Variances for Abandonment of Underground Storage Tanks (**VAR**)	None	0
Waste Disposal Sites – MOE CA Inventory (**WDS**)	None	0
Waste Disposal Sites – MOE 1991 Historical Approval Inventory (**WDSH**)	None	1
One closed record was identified for a property on Lakeport Road approximately 160 m southwest of the Site. No other information was given in the record other than there was no potential for impact to humans or the environment.		
Water Well Information System (**WWIS**)	None	1
One record was identified in WWIS for property located 230 m northwest of the Site which primary use was as a monitoring well.		
Private Databases		
Anderson's Waste Disposal Sites (**ANDR**)	None	1
One closed record was identified for the former Lakeport Road dump located at the corner of Lakeport Road and Canal Street approximately 140 m west of the Site. The dump was reportedly used for municipal waste disposal in the 1960s and 1970s. Given that this was operated on the opposite side of the former Welland Canal, which has long since been infilled and developed upon, historical disposal of municipal waste at this location is not likely to have impacted soil or groundwater quality at the Site. Therefore, although waste disposal and waste management is a PCA, this PCA does not represent an APEC at the Site.		
Automobile Wrecking & Supplies (**AUWR**)	None	0
Chemical Register (**CHEM**)	None	0

Database	Number of Records	
	Phase One Property	Phase One Study Area (0 - 250 m)
ERIS Historical Searches (**EHS**)	1	1
One record was identified in the EHS for the Site and was associated with Fire Insurance Maps and/or Site Plans ordered in a standard report in June 2013.		
Canadian Mine Locations (**MINE**)	None	0
Oil and Gas Wells (**OGW**)	None	0
Canadian Pulp and Paper (**PAP**)	None	0
Retail Fuel Storage Tanks (**RST**)	None	0
Scott's Manufacturing Directory (**SCT**)	None	3
Three records were identified for the property located at 63 Lakeport Road occupied by Lincoln Fabrics Ltd established in 1955 and is described as a broad-woven fabric and manmade fiber and silk mill that is located approximately 125 metres southwest of the Site.		
Anderson's Storage Tanks (**TANK**)	None	0

The complete database search report, which also identifies limitations associated with this information, is included in Appendix G.

4.3 Physical Setting Sources

The Site is located in an urban area of St. Catharines. The Royal Canadian Legion has operated at the Site since the 1950s. The surrounding area was developed since at least the early 1890s for industrial and commercial land use.

4.3.1 Aerial Photographs

Aerial photographs were reviewed to generally document the development of the Site and properties in the vicinity of the Site, and to identify the existence of any PCAs or APECs at the Site. Aerial photographs of the Site and surrounding area were obtained by GHD from the National Air Photo Library for the years 1931, 1954, 1973 and 1988, and for the years 2000, 2002, 2006, and 2013 from aerial imagery available through Niagara Navigator[1]. Aerial photographs were selected by finding the optimum combination of scale and photographic coverage for a particular year, and to document major changes/development to the Site and/or Phase One Study Area from the time of the earliest aerial photograph to present day. Copies of the aerial photographs obtained from the National Air Photo Library are included in Appendix H.

1931 Aerial Photograph (Scale 1:15,000): Review of the 1931 aerial photograph indicates that the Site was developed at that time and the eastern portion of the Site was occupied by what appears to have been an industrial building associated with ship navigation lock operations. The western portion of the Site was occupied by a yard area/parking lot and an industrial building extending onto the western portion of the Property from the adjacent property to the north. A roadway occupied the

[1] http://maps.niagararegion.ca/Navigator/, accessed August 10 ,2015

western-most portion of the Property at that time. A number of industrial buildings occupied the lands to the north of the Site. A small building and a water inlet fed by two weirs was located south of the Site, further south of which was a large industrial building (Lincoln Fabrics building) and a ship navigation lock. The Site was bounded to the east by the port and associated ship mooring. An industrial building occupied the lands immediately west of the Site, further west of which was a water inlet that fed one of the weirs associated with the lock operations.

1954 Aerial Photograph (Scale 1:15,000): Review of the 1954 aerial photograph indicates that there had been no significant changes in land use on the Site since 1931. While industrial buildings remain present on the adjacent property to the north, these lands also appear to have been used for material stockpiling at that time (identified as sand in the 1963 FIP). One of two weirs feeding the water inlet immediately south of the Site was no longer evident as it appears to have been replaced with reclaimed land. A second much larger weir had been constructed to the southeast that resulted in the displacement of a significant portion of land on the opposite side of the shipping channel and lock from the Site.

1965 Aerial Photograph (Scale 1:15,000): Review of the 1965 aerial photograph indicates that the Site building had undergone some renovation and the footprint became consistent with that of the present day building. A small commercial building occupied the northern portion of the Site at that time. The 1962 fire insurance plan suggests that this building was operated as an auto service garage. The adjacent property north of the Site continued to be used for stockpiling material (identified as sand in the 1963 FIP) and the former buildings are no longer evident. The image shows a second industrial building had been constructed on the adjacent property south of the Site. It appears that the entirety of Martindale Pond had been drained upstream of the Site and that land reclamation around Henley Island to the south of the Site was underway at that time.

1973 Aerial Photograph (Scale 1:20,000): The 1973 aerial photograph indicates that the footprint of the Site building is consistent with the current layout. A small commercial building occupied the northwestern portion of the Site. The 1975 fire insurance plan and the title search information suggest that this was an auto service garage. The 1973 aerial photograph also indicates that the second building connected to the Lincoln Fabrics building west of Lakeport Road had been demolished and the docking bay of the shipyard on Martindale pond had been backfilled and reclaimed. The spillway north of the Lincoln Fabrics building appears to have been backfilled and the lock associated with the shipping channel of the Old Welland Canal had been backfilled and reclaimed at its upstream end. The inlet south of the Site had been converted to a marina for leisure and recreational water craft. Weirs associated with the former lock remained in operation to sustain water levels in the upstream portion of Twelve Mile Creek comprising Martindale Pond. The Henley Island land reclamation appears to have been completed.

1988 Aerial Photograph (Scale 1:9,000): The 1988 aerial photograph indicates that the footprint of the Site building is consistent with the current layout. The auto service garage is no longer evident on the northwest portion of the Site. The entire western portion of the Site has been transformed into a parking lot. The 1988 aerial photograph also indicates that areas of Martindale Pond southwest of the Site had been backfilled and reclaimed for use as parking lots and parkland. The photograph indicates that the two rectangular boat house buildings on the adjacent property south of the Site had been demolished. A marina (Snug Harbour Marina) was located further south of the Site at that time. The lands to the north of the Site had been redeveloped into parking lots and parks

for the marina further to the north. Lands to the west were occupied by Lakeport Road, further west of which was a parking lot and park land. The weirs associated with the former lock remain present to the south.

2000-2013 Niagara Navigator Image: Review of the aerial photographs from 2000 to 2013 indicate that there had been no significant changes in land use on the Site since 1988. The 2000 to 2013 aerial photographs also indicate the building located on the adjacent property south of the Site had undergone significant expansion since 1988. The marina further south of the Site is no longer present. Further land reclamation activities extending into Martindale Pond had been undertaken to the south to form the present day Rennie Park.

4.3.2 Topography, Hydrology, and Geology

The topography of the Site and surrounding area is shown on Figure 1. Site topographic relief is four metres, sloping from Lakeport Road to the west towards Port Dalhousie Harbour to the east. The elevation of the Site ranges from 75 metres above mean sea level (AMSL) to approximately 79 metres AMSL.

Quaternary geological maps indicate that overburden at the Site consists primarily anthropogenic fill material[2] that is likely associated with the construction of the former Welland Canal. Bedrock in the area of the Site forms part of a group belonging to the Queenston Formations, consisting of shale, limestone, dolostone and siltstone[3], and is approximately 20 metres below ground surface[4].

A topographic map is included in Appendix I.

4.3.3 Fill Materials

Facility personnel were not aware of fill material having been imported and placed on Site. This is consistent with observations made by GHD at the time of the Site inspection and the review of historical aerial photographs. No evidence of imported fill material was observed by GHD, however, based on quanternary maps and historical Site development, the surrounding lands consist of anthropogenic fill material. The fill material used to reclaim lands in the vicinity of the Site is a PCA, however, this PCA does not represent an APEC.

4.3.4 Water Bodies and Areas of Natural Significance

No water bodies are located on the Site. Water bodies located in the Phase One Study Area include the inlet to Lake Ontario (Lower Twelve Mile Creek) located approximately 12 metres east of the Site, the former marina and historical weir outfall area approximately 30 metres south of the Site and Martindale Pond located approximately 200 metres to the south and to the west of the Site. Lake Ontario is located approximately 375 metres north of the Site.

GHD reviewed the Ontario Ministry of Natural Resources and Forestry's – "Natural Heritage Information Centre" database and the Niagara Peninsula Conservation Authority (NPCA) to identify areas registered as Areas of Natural or Scientific Interest (ANSI). GHD also consulted the ERIS ANSI database. At the time of this report, GHD did not receive a response for the MNRF. The

[2] Ontario Geologic Survey Map 2496, Quaternary Geology, Niagara-Welland, 1984
[3] Ontario Geologic Survey Map 2544, Bedrock Geology of Ontario, Southern Sheet; scale 1:1 000 000, 1991
[4] Ontario Geological Survey Preliminary Map P2400, Bedrock Topography Series, Niagara and Niagara-on-the-Lake Area, Southern Ontario; Scale 1:50 000, 1981

NPCA indicated that the Site is susceptible to flooding at 76.15 metres AMSL. As such, no building openings or construction is permitted below this elevation. A copy of the NPCA's response email and ERIS ANSI database is provided in Appendix F.

No ANSIs or significant ecological areas (SEAs) were identified for properties located within the Phase One Study Area.

4.3.5 Well Records

A search of the MOECC Water Well Information System database was conducted as a component of the Ecolog ERIS database search outlined in Section 4.2.2. No water wells were identified at the Site.

One water well was identified in the WWIS database within 250 metres of the Phase One Property. The record is for a monitoring well approximately 230 metres to the northwest of the Site. This record indicates that an observation monitoring well was advanced to 9.1 m bgs in 2010. The stratigraphy encountered at this monitoring well reportedly consisted of soft clay from 2 metres to 9.1 metres below ground surface, at which point dense rock was encountered.

There were no potable groundwater wells identified in the database search at the Site or within the Phase One Study Area.

4.4 Site Operating Records

The following information was requested from facility personnel and, where available, reviewed by GHD as part of the Phase One ESA.

- Environmental Regulatory Permits and Records
- Material Safety Data Sheets
- Underground Utility Drawings
- Inventories of Chemicals, Chemical Usage, and Chemical Storage Areas
- Inventory of Aboveground Storage Tanks and Underground Storage Tanks
- Environmental monitoring data, including data created in response to an order or request of the MOECC
- Waste management records, including current and historical waste storage locations and waste generator and waste receiver information maintained by the Ministry of Environment
- Process, production, and maintenance documents
- Records of spills and records of discharges of contaminants, including records of spills and records of discharges of contaminants of which notice is required to be given to the Ministry of Environment under the Environmental Protection Act and records of such spills and discharges required to be kept pursuant to Ontario Regulation 675/98
- Emergency response and contingency plans, including spill prevention and contingency plans prepared pursuant to Section 91.1 of the Environmental Protection Act, and Ontario Regulation 224/07

- Environmental audit reports
- A Site plan of the facility showing areas of production and manufacturing

The Site is operated by the local Legion as a bar/pub and banquet hall. According to Site personnel none of the above operating records associated with the current commercial activities apply to the current Site operations. This is consistent with GHD's understanding of current Site operations and observations made at the time of the Site inspection.

5. Interviews

On August 19, 2016, Mr. Marc Gaudet of GHD interviewed the following Legion personnel at the Site as part of the Phase One ESA:

Facility Contact	Position	Years Familiar with the Property
Mr. Bill Middler	Building Committee Chair	23
Ms. Donna Henderson	Past President	46 (30 years as member)

The above-listed facility personnel were identified to GHD as being the most knowledgeable about the historical and current use of the Property. Mr. Middler is the Legion's current building chair and is responsible for all facility maintenance. Ms. Henderson is a past president of the Legion and has been familiar with the Property for the last 46 years.

The interview completed with facility personnel was focused on the information obtained from the records review, the historical and current use of the Property, and the topics listed in Sections 13 and 14 of Schedule D of O. Reg. 153/04. The information provided to GHD during the interview was compared to other information sources reviewed by GHD. Where contradictions were identified, written documentation was relied upon. Relevant information provided to GHD during the interview has been summarized in the following sections of the report.

6. Site Reconnaissance

6.1 General Requirements

On August 19, 2016, Mr. Marc Gaudet of GHD completed a Site inspection of the building and lands located at 57 Lakeport Road in St. Catharines, Ontario. Weather conditions during the Site inspection were sunny with an ambient air temperature of approximately 25 degrees Celsius. At the time of the Site inspection, the building was operating for commercial use. GHD was accompanied by Mr. Middler and Ms. Henderson during the inspection of the Property. The length of time of the inspection and interview was approximately three hours and commenced at 2:00 pm.

The Site reconnaissance included a walk-through of the Property to confirm the current Site conditions and identify any current PCAs that may represent APECs for the Site. Adjoining and neighbouring properties were observed from the Site and public access ways.

Photographs of the building and Property are included in Appendix J.

6.2 Specific Observations at the Phase One ESA Property

6.2.1 Buildings and Property

The Property is approximately 0.33 hectares (0.82 acres) in size occupied by a 1,360 square metre (14,600 square foot) building, an asphalt paved parking lot, an asphalt paved laneway, and landscaped boulevards fronting onto Lakeport Road. Properties adjacent to the Site include landscape areas, marina, restaurants, a bank, retail outlets, parkland and parking lots.

The Site building is a two-story commercial building with no basement. The main floor is occupied by washrooms, storage space, offices, two banquet halls, a utility services room, and a commercial kitchen. The second floor is occupied by washrooms, a banquet hall, a games room, a bar, a kitchen, and storage rooms.

The foundation of the Site building is constructed with cinder block and stone. Stone foundation walls in the southern portion of the building have been parged. Exterior wall consist of either concrete block stone or brick veneer. Interior walls are constructed with drywall and some wood paneling. The main floor has a poured concrete floor covered with floor tile. The second floor is comprised of wood floor joist overlain with carpet. The supports for the first floor were covered with drywall at the time of the Site inspection. All first floor walls were covered with paneling and drywall. The exterior west and north walls (i.e., 1958 addition and 1980 renovation) are finished with exposed painted cinder block. The exterior south and east walls (i.e., original building construction) are finished with exposed brick veneer. Portions of the building are finished with a flat roof while other portions of the building are finished with a sloped roof. The flat roof consists of tar and gravel that was last resurfaced in 1994 and the sloped portion of the roof consists of asphalt shingles resurfaced in 1993.

A grease trap is operated in the kitchen. The grease is removed and stored on Site in a Rothsay container for off Site recycling. Other than the grease, all waste and recyclables are removed by Canadian Waste Handlers.

The Site building includes a kitchen vent for the exhaust overtop of the deep-fryers in the kitchen. A natural gas-fired hot water heater is located in the utility room and roof mounted HVAC units are operated at the Site. The HVAC units are serviced by Peninsula Heating and Cooling.

The Site is equipped with an elevator. Facility personnel indicated that the elevator is inspected monthly by Brock Elevators Ltd but no records of the inspections were maintained on Site.

A sump is located within the on-Site building. The sump is used to collect water below the building floor slab and pump it into the adjacent marina.

6.2.2 Current Site Operations

The Site is currently operated as a Royal Canadian Legion which is a club for veterans and their families as well as other members. The building is operated as a bar/pub, and as a banquet hall. Facilities supporting these operations include a kitchen, administration offices, storage rooms, banquet halls, a bar and a games room. The Legion has three bartenders and one book keeper and

operates between 4:00 pm and 11:00 pm six days a week. The banquet halls are available for booking by the general public within and beyond these normal hours of operation. Executive meetings occur once a month and all member meetings occur once a month.

6.2.3 Historical Site Operations

Based on review of historical documentation and conversations with the Property owner, historical operations conducted at the Site included a repair service facility to support the Old Welland Canal lock formerly operated to the south of the Site. These operations date back to the time the original building was constructed at the Site in the 1890s and continued until the Royal Canadian Legion acquired and occupied the Site in the 1950s.

6.2.4 Utility Services

According to facility personnel and based on a review of available documentation, electrical service to the Site is available through St. Catharines Hydro and natural gas service is available through Enbridge. The Site is serviced with municipal potable water and sanitary sewer services. Storm water is directed overland to the adjacent lower Twelve Mile Creek comprising the port. No catch basins are located on Site.

According to facility personnel there has never been a water supply well or septic system located at the Site. At the time of the Site inspection, GHD did not observe any evidence suggesting that the Site contains a water supply well or on Site septic system.

According to Site personnel, a boiler was formerly operated in the lighthouse room near the ground floor kitchen within the eastern portion of the building and was likely coal-fired.

6.2.5 Underground Storage Tanks (USTs)

According to facility personnel, no USTs have been or are presently owned or operated at the Site, to their knowledge. No physical evidence suggesting the presence of USTs (e.g., vent pipes, fill pipes, etc.) was observed by GHD at the time of the Site inspection. This is consistent with the findings of the environmental databases review and the information provided by the TSSA.

6.2.6 Aboveground Storage Tanks (ASTs)

According to facility personnel no ASTs are operated at the Site. At the time of the Site inspection, GHD did not observe any active ASTs or evidence suggesting the past presence of ASTs or releases therefrom. According to facility personnel, the Site has not been heated by fuel oil in the past. This is consistent with the findings of the environmental databases review and the information provided by the TSSA.

6.2.7 Floor Drains, Pits, and Sumps

Floor drains are located in the washrooms and kitchen. The floor drains are reportedly connected to the municipal sanitary sewer system.

GHD observed one sump in the utility room. The concrete floor surrounding the sump was observed to be in good condition, with no evidence of cracking or deterioration near the floor drain at the time

of the Site inspection. According to facility personnel, the sump is used to maintain water levels below the ground floor slab by collecting the water and pumping it underground to the adjacent marina.

No other floor drains, pits, or sumps were observed by GHD during the Site inspection.

6.2.8 Wastewater/Sewers

No process wastewaters are currently generated at the Site. Wastewater generated at the Site consists of domestic wastewater from kitchen sinks and restrooms. Wastewaters are discharged directly to the municipal sanitary sewer system. According to facility personnel, there is grease trap on-Site within the kitchen used to collect grease. At the time of the Site inspection the grease tarp was not accessible. Facility personnel indicated the grease trap is cleaned regularly and the grease is stored in dedicated containers outside the east wall of the building for regular removal by Rothsay for recycling at their facility in Rothsay, Ontario.

6.2.9 Stormwater/Surface Water

Stormwater generated at the Site consists of rainfall that is collected on the building roof and exterior asphalt covered areas. Stormwater from the building roof is directed to rainwater leaders which discharge to ground surface. Stormwater collected on the ground surface is routed by overland flow to the east where it is discharged into the marina.

Stormwater runoff from adjacent properties to the west and south was observed by GHD to be directed towards the Site. At the time of the Site inspection, no visual evidence of impact from storm water run-on from the adjacent properties was observed.

6.3 Enhanced Investigation Property

In accordance with O. Reg. 153/04 subsections 13(3) and 32(1)(b), a Phase One ESA Property is considered to be an Enhanced Investigation Property if it is currently used or has ever been used in whole or in part for industrial use, or as an automotive repair garage, a bulk liquid dispensing facility (including a gasoline outlet), or for the operation of dry cleaning equipment. The Site is not currently in use for these purposes (i.e., commercial land use); however the Site has historically been used for industrial purposes associated with Welland Canal lock repair/maintenance services prior to the Royal Canadian Legion occupying the Site and as an automotive repair garage. As such, the Site is considered an Enhanced Investigation Property.

All reasonable inquiries were made to obtain and review the material referred to in Section 4.4 by GHD with respect to the former industrial use at the Site, however no records are available dating back to the 1950s and earlier.

According to Site personnel, no operating records associated with the historical industrial Site operations exist.

According to facility personnel and based on GHD's observations, current chemical use and storage at the Site is limited to institutional strength cleaners and disinfectants and are stored in the supplies storage room.

Facility personnel indicated that the on-Site elevator is inspected monthly by Brock Elevators Ltd. At the time of the Site inspection, GHD observed an inspection log book maintained in the elevator service room by Brock Elevators Ltd. confirming that inspections are completed on a monthly basis.

6.4 Written Description of Investigation

The Phase One ESA included a records review, interviews with facility personnel, Site reconnaissance, and a review and evaluation of the information obtained during the assessment. The Site reconnaissance included a walk-through of the Property to confirm the current Site conditions and identify any PCAs that represent APECs for the Site. Adjoining and neighbouring properties were observed from the Site and public access ways and land usage within the Phase One Study Area was reviewed.

The findings from the assessment carried out pursuant to Sections 13 and 14 of Schedule D of O. Reg. 153/04 were previously discussed in Section 4 (records review) and Section 6 (interviews and Site reconnaissance).

7. Review and Evaluation of Information

7.1 Current and Past Uses

A summary of the current and past uses of the Site is provided below.

Eastern Portion of the Site

Year	Name of Owner	Description of Property Use	Property Use	Other Observations
1844	Nathan Pawling	Unknown	Unknown	Title Search
1846	Estate of James Drabble	Unknown	Unknown	Title Search
1844/46 - 1951	Board of Works (The King)	Lock Maintenance Building	Industrial use	Title search, aerial photographs and fire insurance plans indicate that an industrial building occupied this portion of the Site for servicing the Lock.
1951 - Present	Royal Canadian Legion Branch 350	Bar/Pub and Banquet Hall	Commercial use	Title search and fire insurance plans indicate that the former Lock maintenance building was converted and operated as Legion Branch 350.

Northwestern Portion of the Site

Year	Name of Owner	Description of Property Use	Property Use	Other Observations
1877	Stephen D. Andrews	Unknown	Unknown	Title Search
1877 - 1958	The Queen	Unknown	Unknown	Aerial photos depict an unidentified structure on this portion of the Site.
1958 - 1960	Douglas Carr	Unknown	Unknown	Aerial photos depict an unidentified structure on this portion of the Site.
1960 - 1975	Supertest Petroleum Corporation Limited	Gas Station	Commercial Use	FIPs show an auto service garage with underground storage tank to the north of the Site. Aerial photos depict an unidentified structure on this portion of the Site.
1975 - 1977	Nick Zitano	Unknown	Unknown	No coverage during this two year period.
1977 - 1986	John S. Miller	Parking Lot	Community Use	Aerial Photographs.

Southwestern Portion of the Site

Year	Name of Owner	Description of Property Use	Property Use	Other Observations
1888	Harriet E. Kennedy	Unknown	Unknown	Title Search
1888 - 1962	The Queen	Roadway	Community use	Title search, aerial photos and fire insurance plans indicate the parcel was occupied by a road.
1962 - Present	The Corporation of the City of St. Catharines	Roadway and parking lot	Community use	Title search, aerial photos and fire insurance plans indicate the parcel was occupied by a road and parking lot.

7.2 Potentially Contaminating Activity and Areas of Potential Environmental Concern

The MOECC provides a list of PCAs in Schedule D of Ontario Regulation 153/04, as amended under the Environmental Protection Act. The PCAs identified in the Phase One Study Area are presented on Figure 3. The following Environmental Issues Matrix summarizes PCAs that have been identified to be on, in, or under the Phase One Property, or located within the Phase One Study Area and having the potential to contribute to an APEC along with APECs that have been identified by the Phase One ESA records review, interviews, and Site reconnaissance.

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Area of Potential Environmental Concern	Location of Potential Environmental Concern on Phase One Property	Potential Contaminating Activity (PCA)	Location of PCA	Source of Information	Contaminants of Potential Concern	Media Potentially Impacted
APEC A: Historical Land Use – Lock Maintenance and Repair Operations	Across the Phase One Property	Port Activities including Operation and Maintenance of Wharves and Docks	On-Site	Interviews, Historical Records Review	VOCs, PAHs, PHCs, metals	Soil and Groundwater
APEC B: Historical Land Use – Lock Operations to the North of the Site	Across the Phase One Property	Port Activities including Operation and Maintenance of Wharves and Docks	Off-Site	Site Reconnaissance Historical Records Review	VOCs, PAHs, PHCs, metals	Groundwater
APEC C: Historical Land Use – Dry Dock Operations to the West of the Site	Across the Phase One Property	Port Activities including Operation and Maintenance of Wharves and Docks	Off-Site	Historical Records Review	VOCs, PHCs, metals	Groundwater
APEC D: Former UST – Associated with Former Auto Service Facility	Northwest Portion of Phase One Property	Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Historical Records Review	PHCs	Soil and Groundwater
APEC E: Historical Land Use -Former Auto Service Garage	Northwest Portion of Phase One Property	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	On-Site	Historical Records Review	PHCs	Soil and Groundwater
APEC F: Former Fuel Oil UST – Associated with Lincoln Fabrics Facility to the South of the Site	Across the Phase One Property	Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	Historical Records Review	PHCs	Groundwater

7.3 Phase One Conceptual Site Model

The Site is located in an urban area of the City of St. Catharines with history related to the Welland Canal Lock support operations dating back to the 1890s. The Phase One Study Area largely consists of lands that were reclaimed and/or raised to create the upstream Martindale Pond from the tail waters of Twelve Mile Creek so as to create a navigable water way complete with a lock and weir system.

It is GHD's understanding that the Phase One ESA is being completed to support potential redevelopment of the Site for mixed commercial and residential land use. As such, the fling of an RSC in accordance with O. Reg. 153/04 is required.

Site topographic relief is four metres, sloping from Lakeport Road to the west towards Port Dalhousie Harbour to the east. The elevation of the Site ranges from 75 metres above mean sea level (AMSL) to approximately 79 metres AMSL. Overburden at the Site consists primarily anthropogenic fill material that is likely associated with the construction of the former Welland Canal. Bedrock in the area of the Site forms part of a group belonging to the Queenston Formations, consisting of shale, limestone, dolostone and siltstone, and is approximately 20 metres below ground surface. The regional groundwater flow direction is expected to be predominantly northerly/easterly towards Lake Ontario and/or Port Dalhousie Harbour.

No water bodies are located on the Site. Port Dalhousie Harbour is located approximately 12 metres east of the Site. Lands to the south and west are reclaimed from earlier Canal channels, locks and weirs. GHD reviewed the Ontario Ministry of Natural Resources and Forestry's – "Natural Heritage Information Centre" database to identify areas registered as ANSIs. GHD also consulted the ERIS ANSI database. No ANSIs or SEAs were identified for properties located within the Phase One Study Area.

Historical operations at the Site and at off-Site locations as outlined in Section 4 through Section 6 have potentially impacted the environmental quality of the Site. The current and past uses of the Site are summarized in tabular format in Section 7.1. The APECs and contaminants of concern (COCs) are summarized in tabular format in Section 7.2.

The Phase One Conceptual Site Model is shown on Figure 4. The Phase One Conceptual Site Model is based on the information obtained and evaluated as part of this Phase One ESA. While all reasonable inquiry has been made in accordance with O. Reg. 153/04, the accuracy and completeness of all information obtained as part of the Phase One ESA cannot be confirmed. The Phase One Conceptual Site Model evaluated PCAs for the Phase One Study Area based upon diligent professional effort and assessment of the information from the various resources available. Given the inherent limitations of some of the information obtained as part of the Phase One ESA, the Phase One Conceptual Site Model may not represent actual conditions and should only be used by Qualified Persons.

8. Conclusions

8.1 Summary of APECs

Based on the results of the Phase One ESA, including the Site inspection, information provided by Site representatives and regulatory agencies, documents reviewed, the review of Site history, and review of information from the MOECC, the following APECs were identified to be associated with the Site.

APEC A (Former Lock Maintenance and Repair Operation): The current building at the Site was formerly used to conduct Lock maintenance and repair operations as identified by historical records and through interviews of knowledgeable persons. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined in O. Reg. 153/04. On this basis, the historical on-Site lock maintenance and repair operation has been identified in this report as APEC A as it represents a potential impact to soil and groundwater quality across the Site with respect to volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons (PHCs) and metals.

APEC B (Former Lock Operation to the North): A lock associated with the original Welland Canal was formerly operated to the north of the Site in the early 1900s as identified by historical aerial photographs and fire insurance plans. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined in O. Reg. 153/04. Given its proximity, the historical operation of a lock to the north of the Site has been identified in this report as APEC B as it represents a potential impact to groundwater across the Site with respect to VOCs, PAHs, PHCs and metals.

APEC C (Former Dry Dock Operation to the West): A dry dock associated with the former Welland Canal was operated to the west of the Site from the early 1900s to the 1950s as identified by historical aerial photographs and fire insurance plans. Port Activities including Operation and Maintenance of Wharves and Docks is a PCA as defined in O. Reg. 153/04. Given its proximity, the historical dry dock operation to the west of the Site has been identified in this report as APEC C as it represents a potential impact to groundwater across the Site with respect to VOCs, PHCs and metals.

APEC D (Former on-Site UST): An underground storage tank was identified as having been operated on the northwest portion of the Site on historical fire insurance plans. The chain of title information indicates that the northwest portion of the Site was owned by Supertest Petroleum Corporation at that time. Gasoline and Associated Products Storage in Fixed Tanks is a PCA as defined in O. Reg. 153/04. On this basis, the historical on-Site operation of the UST has been identified in this report as APEC D as it represents a potential impact to soil and groundwater quality across the northwest portion of the Site with respect to PHCs.

APEC E (Former Auto Service Garage): An auto service garage was identified in historical fire insurance plans as having been operated on the northwest portion of the Site. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles is a PCA as defined in O. Reg. 153/04. On this basis, the historical on-Site operation of an auto service garage on the

northwest portion of the Site was identified as APEC E as it represents a potential impact to soil and groundwater quality across the northwest portion of the Site with respect to PHCs.

APEC F (Former Fuel Oil UST on Neighbouring Property): A fuel oil UST was identified on historical fire insurance plans as having been operated on the Lincoln Fabrics property to the south of the Site. Gasoline and Associated Products Storage in Fixed Tanks is a PCA as defined in O. Reg. 153/04. Given its proximity to the Site, this former UST operation to the south of the Site has been identified in this report as APEC F as it represents a potential impact to groundwater quality across the Site with respect to PHCs.

8.2 Phase Two Requirement Before an RSC is Submitted

Based on the information obtained in completing this Phase One ESA, a Phase Two ESA is required before an RSC can be filed with the MOECC. The Phase Two ESA should evaluate the risk of soil and/or groundwater impact to the Site from all identified APECs in accordance with the requirements of O. Reg. 153/04.

8.3 Record of Site Condition Based on Phase One ESA Alone

Based on the information obtained in completing this Phase One ESA, a Phase Two ESA is required to support the filing of an RSC for the Property. A Phase One ESA alone cannot be used to support an RSC fling for the Property given that it has been identified as an Enhanced Investigation Property. The Phase Two ESA should evaluate the risk of impact to soil and groundwater quality at the Site from all identified APECs in accordance with the requirements of O. Reg. 153/04.

8.4 Signatures

The Phase One ESA was completed by the GHD employees named herein. All findings and conclusions of the Phase One ESA are included in the report.

Andrew Hunter, P. Eng.

Marc Gaudet, P. Eng.

9. References

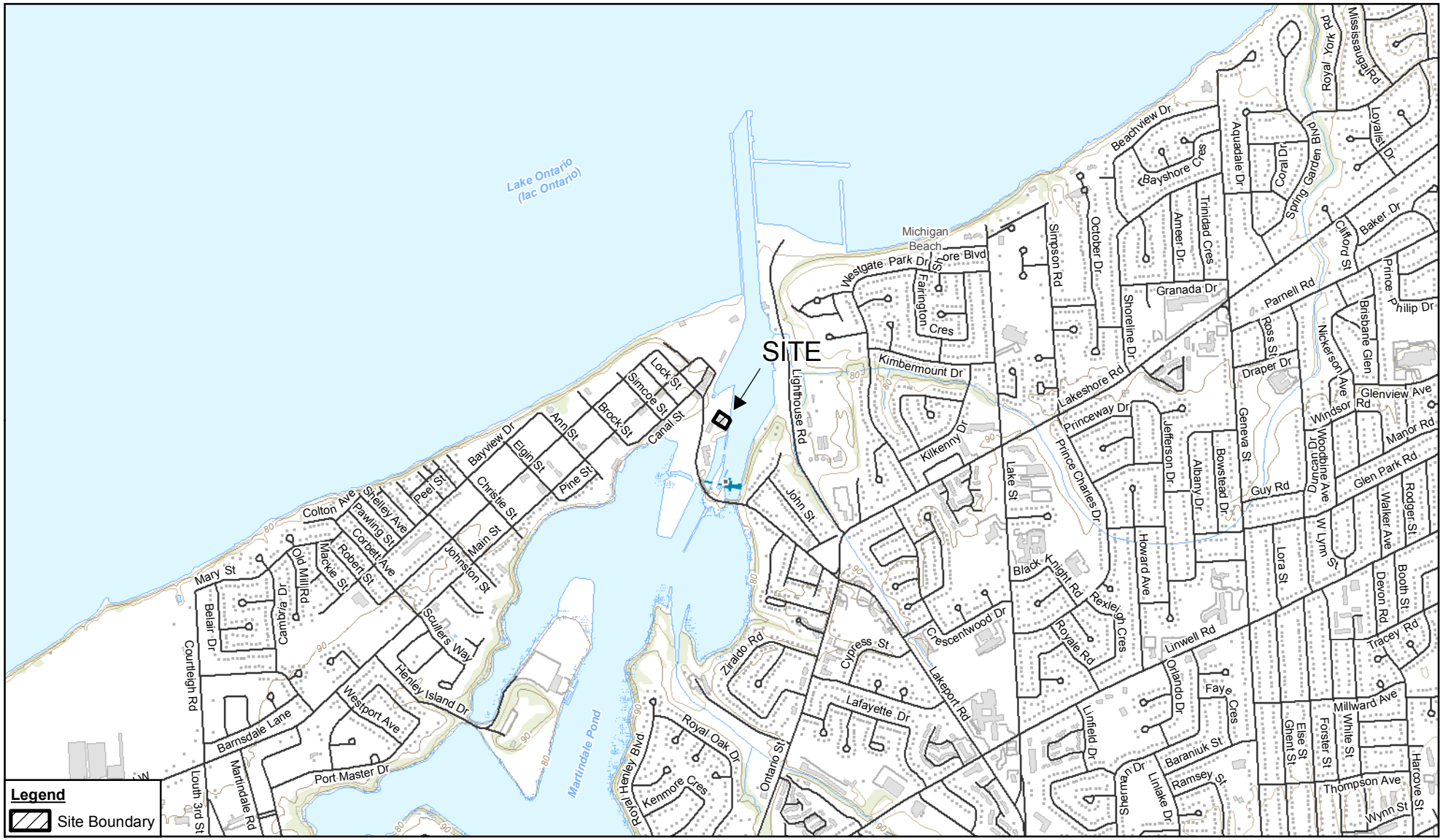
Records of Site Condition, Environmental Protection Act - Ontario Regulation 153/04, January 1, 2014

Physiographic Regions, www.atlas.nrcan.gc.ca

Ontario Geological Survey, Map P. 2204, Quaternary Geology, Toronto and Surrounding Area, 1980

Ontario Ministry of Northern Development and Mines, www.mndm.gov.on.ca

Figures



Source: MNRF NRVIS, 2014. Produced by GHD under licence from Ontario Ministry of Natural Resources and Forestry, © Queen's Printer 2016

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

11131634-00
Aug 29, 2016

SITE LOCATION MAP

FIGURE 1

GIS File: Q:\GIS\PROJECTS\11131000s\11131634\layouts\001\11131634-00(001)GIS-WA001.mxd

RENNIE PARK

LAKEPORT ROAD

SIDEWALK

GRASS

GRASS

GRASS

GRASS

GRASS

GRASS

GRASS

GRASS

ASPHALT-PAVED PARKING LOT

ASPHALT-PAVED PARKING LOT

ASPHALT-PAVED PARKING LOT

1 LAKEPORT ROAD

PARK LANDS

PARK LANDS

63 LAKEPORT ROAD

ROYAL CANADIAN LEGION BUILDING

57 LAKEPORT ROAD

RIGHT-OF-WAY

PIER 61 RESTAURANT

61 LAKEPORT ROAD

GRASS

WATERFRONT TRAIL

GRASS

OLD WELLAND CANAL

0 5 10 15m

LEGEND

APPROXIMATE PROPERTY BOUNDARY

SHORELINE

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

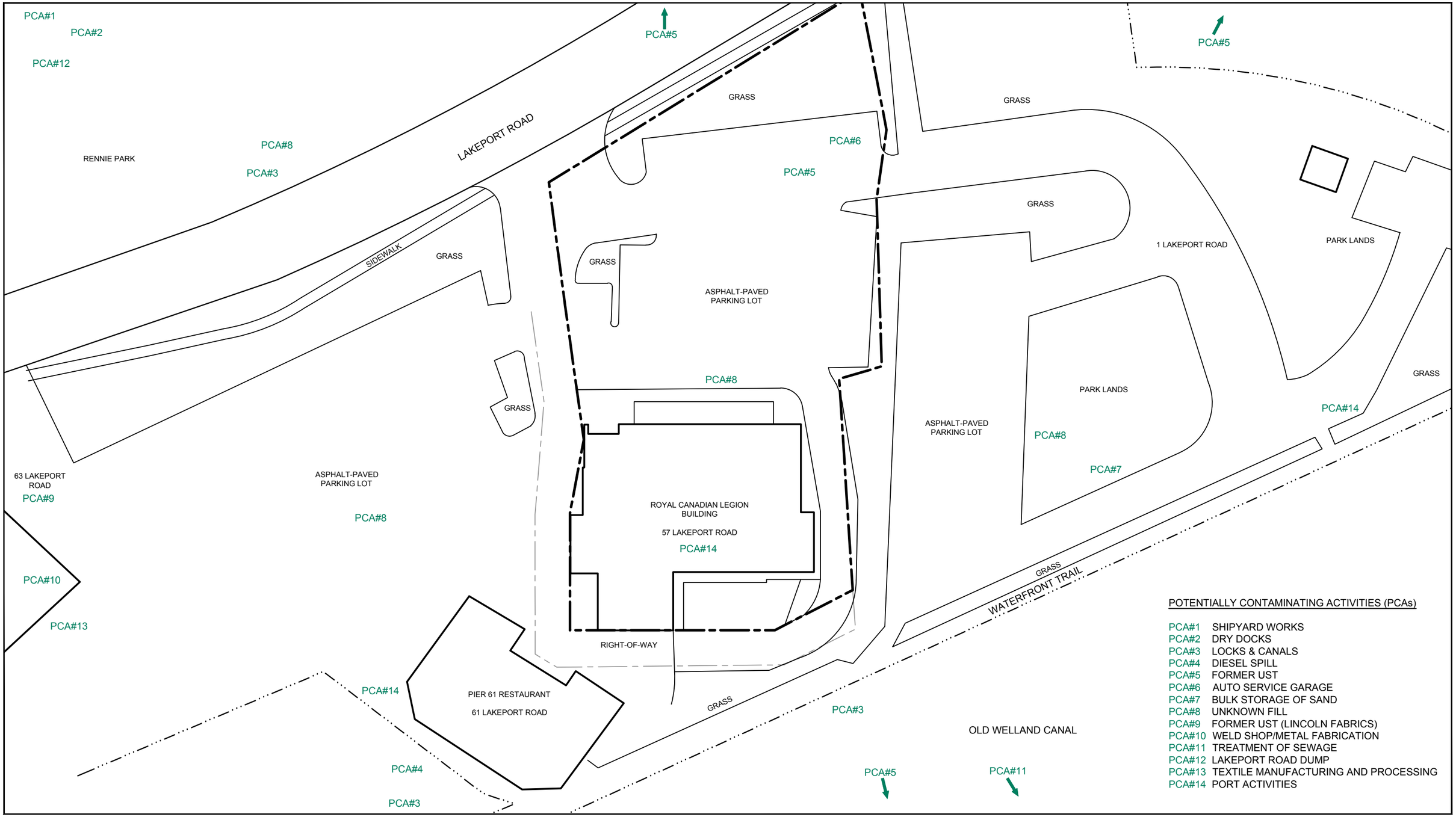
11131634-00

Dec 2, 2016

SITE PLAN

FIGURE 2

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POTENTIALLY CONTAMINATING ACTIVITIES (PCAs)

PCA#1	SHIPYARD WORKS
PCA#2	DRY DOCKS
PCA#3	LOCKS & CANALS
PCA#4	DIESEL SPILL
PCA#5	FORMER UST
PCA#6	AUTO SERVICE GARAGE
PCA#7	BULK STORAGE OF SAND
PCA#8	UNKNOWN FILL
PCA#9	FORMER UST (LINCOLN FABRICS)
PCA#10	WELD SHOP/METAL FABRICATION
PCA#11	TREATMENT OF SEWAGE
PCA#12	LAKEPORT ROAD DUMP
PCA#13	TEXTILE MANUFACTURING AND PROCESSING
PCA#14	PORT ACTIVITIES

0 5 10 15m

LEGEND

APPROXIMATE PROPERTY BOUNDARY

SHORELINE

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

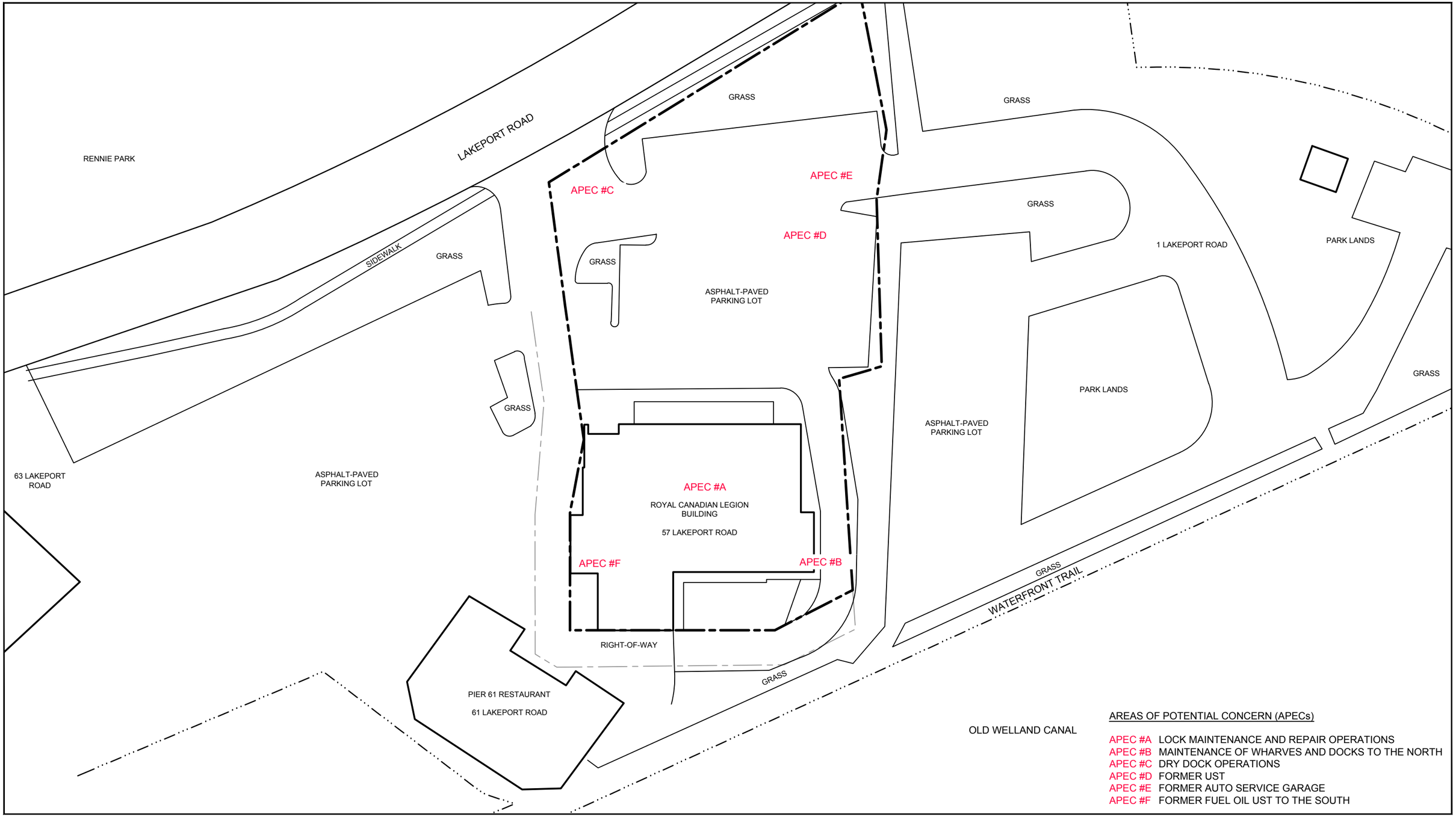
SITE PLAN OF POTENTIALLY CONTAMINATING ACTIVITIES (PCAs)

11131634-00

Dec 2, 2016

FIGURE 3

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-00(001)\11131634-00(001)GN\11131634-00(001)GN-SC002.dwg



AREAS OF POTENTIAL CONCERN (APECs)

- APEC #A LOCK MAINTENANCE AND REPAIR OPERATIONS
- APEC #B MAINTENANCE OF WHARVES AND DOCKS TO THE NORTH
- APEC #C DRY DOCK OPERATIONS
- APEC #D FORMER UST
- APEC #E FORMER AUTO SERVICE GARAGE
- APEC #F FORMER FUEL OIL UST TO THE SOUTH

0 5 10 15m

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SHORELINE

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

11131634-00

Dec 2, 2016

CONCEPTUAL SITE MODEL

FIGURE 4

CAD File: I:\DRAWINGS\11130000s\11131000s\11131634\11131634-REPORT\11131634-00(001)\11131634-00(001)GN\11131634-00(001)GN-SC003.dwg

Appendices

Appendix A
Project Personnel Curriculum Vitae

Andrew Hunter
Project Engineer

Qualified (Education: B. Sc. Chemical Engineering, 2009

Connected (professional affiliations): Registered Professional Engineer (Ontario)

Professional Summary: Andrew has over six years of experience in Phase I and Phase II Environmental Site Assessments, soil, groundwater, soil vapour and indoor air quality monitoring, demolishing oversight, construction oversight, designated substances and hazardous materials surveys, waste management, spill response, site remediation, and operation, maintenance and monitoring programs.

Project Engineer
Building Demolition Environmental Investigations | Emco Corporation | London, Ontario

Responsible for to identifying, quantifying and overseeing remaining designated substances and regulated materials removal, disposal, cleaning, and abatement associated with facility decommissioning. Investigation activities included:

- Conducted an industrial hygiene monitoring programs to assess worker exposure to various contaminants including airborne asbestos, lead, and polychlorinated biphenyls
- Completed multiple Occupational Health and Safety air clearance testing programs
- Coordinated sampling and characterization of liquid waste and hazardous materials for off-site disposal
- Conducted sampling of concrete cores and suspected asbestos-containing materials survey for analyses,
- Coordination pricing from subcontractors for transportation and disposal of hazardous materials and PCB waste, regulatory support, and assistance with hazardous waste registration
- Coordinated spill response source delineation, containment, remediation, waste characterization, and contractor oversight for the transportation and disposal of impacted soils related to an abandoned and unidentified underground poured concrete holding tank

Project Engineer
Emissions Modelling and Materials Testing | ASW Steel | Welland, Ontario

Responsible for project coordination, materials sampling, fugitive emissions testing, analytical assessment and development of a best management practices plan for facilitate emissions summary and dispersion modelling in support of an environmental compliance approval for air at a specialty steel processing plant.

Project Coordinator
Ambient Air Quality Monitoring | OxyVinyls Canada | Thorold, Ontario

Project coordination of third party review of the integrated ambient air monitoring program requested by the Ontario Ministry of Environment and Climate Change (MOECC) for a polyvinyl chloride processing facility which included perimeter, source area and rail car ambient air monitoring.

Project Coordinator
Combustible Gas Monitoring | Rankin Construction | St. Catharines, Ontario

Project coordination of sub-surface combustible gas monitoring and assessment to facilitate the design of a multi-venue sports complex.

Project Coordinator
Environmental and Geotechnical Investigations | Praxair | Niagara Falls, New York

Responsible for oversight of environmental and geotechnical investigations to facilitate the construction of a gas separator facility.

Project Coordinator
Groundwater Pump and Treat System | Regional Municipality of Niagara | Niagara Falls, Ontario

Project coordination for long term operation, maintenance, and monitoring of a groundwater pump and treatment system consisting of an ethyl lactate infiltration gallery to remediate impacted overburden soil, and a groundwater pump and treatment system to remove and treat impacted bedrock groundwater at an industrial facility. Project activities included source area investigation, groundwater quality monitoring, discharge monitoring, replacement of spent granular activated carbon, filter bag replacement, compliance reporting, infiltration gallery injections and flushing, and system maintenance.

Project Coordinator
Mount Dennis Bus Garage | Toronto Transit Commission | Toronto, Ontario

Coordinated and monitored soil, groundwater, deep soil vapour, shallow soil vapour and indoor air quality over an

area of approximately 50 hectares to assist with empirical and theoretical modelling of soil vapour.

Conducted water level measurements and topographic surveys of groundwater monitoring wells to facilitate the development of a conceptual Site model to show groundwater flow direction and impacted groundwater plume delineation.

Assisted with the development of MOECC Tier II Modified Generic Risk Assessment criteria for industrial and residential land uses to assess groundwater and soil vapour quality that may pose a human health risk due to exposure to select volatile organic compounds

Project Engineer
UST Removal and Groundwater Monitoring | C.G. Power Systems | Winnipeg, Manitoba

Project Engineer responsible for overseeing environmental due diligence including a Phase I ESA, a Phase II ESA and remediation on behalf of C.G. Power at their Winnipeg, Manitoba facility to facilitate delisting the Site as an impacted Site and to facilitate the potential sale of the facility.

Project Coordinator
Court Valve Remediation | Court Holdings Limited | Niagara Region, Ontario

Project coordination of a soil quality investigation and remediation of impacted soil at a former automotive parts production plant. Project activities included oversight of the removal and disposal of petroleum impacted groundwater and soil from beneath the building floor slab and along the building foundations as well as reinstatement

Project Coordinator
CPU Risk Management Measures | Arkema | Oakville, Ontario

Responsible for monitoring risk management measures in accordance with the requirements of a Certificate of Property Use issued by the MOECC necessary to prevent, eliminate or ameliorate an adverse effect at an industrial facility pursuant to a Risk Assessment and a Record of Site Condition filing.

Project Coordinator/ Field Technician
PCB Storage Building Decommissioning | ASW Steel | Welland, Ontario

Responsible for project coordination and oversight of construction contractors decommissioning of a PCB storage facility at a steel processing plant.

Field Technician
UST Removal | Fuel Retailer | St. Catharines, Ontario

Provided oversight of the removal of fuel underground storage tanks and confirmatory soil sampling at a retail fuel dispensing station including confirmatory soil sampling and closure reporting.

Field Technician
Transformer Oil Spill Response | Transformer Manufacturer | Stoney Creek, Ontario

Project coordination of spill response source area delineation, remediation and confirmatory soil sampling at a transformer manufacturing facility following the release of mineral oil from an aboveground storage tank.

Project Coordinator
Indoor Air Quality Monitoring | CRA Developments (1999) Limited | Wallaceburg, Ontario

Assisted in project coordination of volatile organic compounds impact assessment to indoor air quality, design of a sub-slab venting system and submittal of an Application for Environmental Compliance Approval (Air) for a former manufacturing building.

Project Coordinator
William Thomas Building Property | LIUNA | Hamilton, Ontario

Project Coordinator responsible for overseeing an MOECC approved Risk Assessment and Risk Management Plan on behalf of LIUNA for implementation at a former commercial/residential block in downtown Hamilton, Ontario to support a Record of Site Condition filing and facilitate its redevelopment as a high rise residential and commercial condominium

Work history

April 2010 – present	GHD (formerly Conestoga-Rovers & Associates), St. Catharines, Ontario

Marc Gaudet

Qualified: Bachelor of Applied Science (B.A.Sc.) – Civil Engineering/Water Resources Option (The University of Waterloo)

Connected: Registered Professional Engineer (Ontario); Qualified Person (QP) as defined in Ontario Regulation 153/04; Executive Member of Niagara PEO Chapter; Director, BLOOM (not for profit organization whose mission is to bring together public and private sector stakeholders to achieve sustainable outcomes that manage risk and deliver economic, environmental and social benefit)

Professional Summary: Mr. Gaudet has over 24 years of professional experience in environmental engineering and remediation with areas of specialty in brownfield redevelopment and environmental due diligence. Mr. Gaudet has been extensively involved in Site Investigations, Phase One and Phase Two ESAs, Site Remediation, and Brownfield Redevelopment in Canada and the United States. Past experience also includes the planning and implementation of Environmental Compliance Assessments in Canada and the United States.

Decommissioning/Brownfield Redevelopment

- Project Manager responsible for overseeing an MOECC approved Risk Assessment and Risk Management Plan on behalf of LIUNA for implementation at a former commercial/residential block in downtown Hamilton, Ontario to support a Record of Site Condition filing and facilitate its redevelopment as a high rise residential and commercial condominium.
- Project Manager responsible for overseeing environmental due diligence including a Phase I ESA, a Phase II ESA and remediation on behalf of LIUNA at the former Lister Building in downtown Hamilton, Ontario to facilitate its redevelopment as a high rise residential and commercial condominium.
- Project Manager responsible for overseeing the development and implementation of a decommissioning and remediation plan for a 100-year old farm implement manufacturing plant for Deere and Company in Welland, Ontario including the successful filing of a Record of Site Condition to facilitate sale and redevelopment of the property.
- Project Manager responsible for overseeing environmental due diligence including completion of a Phase One ESA, a Phase Two ESA, Risk Assessment, and filing of a Record of Site Condition for a former chemical blending plant on behalf of Arkema Canada Inc. in Oakville, Ontario to successfully facilitate its sale for redevelopment.
- Project Manager responsible for overseeing the completion of a building decommissioning assessment on behalf of Libbey Glass at their former glass plant in City of Industry, California. Included preparation and oversight of a decommissioning plan, completion of a Phase I ESA, Phase II ESA, arsenic contaminated soil remediation, and preparation of a Risk Assessment to address chlorinated solvent impacted groundwater. Project successfully supported the sale of the property for redevelopment as a shipping and receiving terminal.

Remedial Design

- Project Manager overseeing a chlorinated solvent impacted groundwater investigation on behalf of Toronto Transit Commission involving 150 potentially impacted residential dwellings including source area investigation, groundwater monitoring, soil vapour monitoring, residential indoor air quality monitoring and a Risk Assessment to develop soil vapour and groundwater target concentrations for chlorinated solvents. Included extensive client representation to MOECC and Toronto Public Health.
- Project Manager responsible for overseeing a 3,000-tonne soil and associated groundwater remediation project on behalf of Court Holdings Inc. related to historical petroleum hydrocarbon releases beneath a former plating plant building floor in St. Catharines, Ontario.
- Project Manager responsible for a 5,000-tonne soil and associated groundwater remediation project on behalf of Court Holdings Inc. related to historical petroleum hydrocarbon releases beneath a former tool and die shop building floor in Beamsville, Ontario.
- Project Manager responsible for remediation/management of chlorinated solvent contaminated soil and groundwater on behalf of Libbey Glass at their former glass plant in Wallaceburg, Ontario. Remediation included chemical oxidation of chlorinated solvent impacted soil and groundwater, groundwater quality monitoring, indoor air quality monitoring, and implementation of a passive soil vapour venting system including application for and receipt of all necessary MOECC approvals.

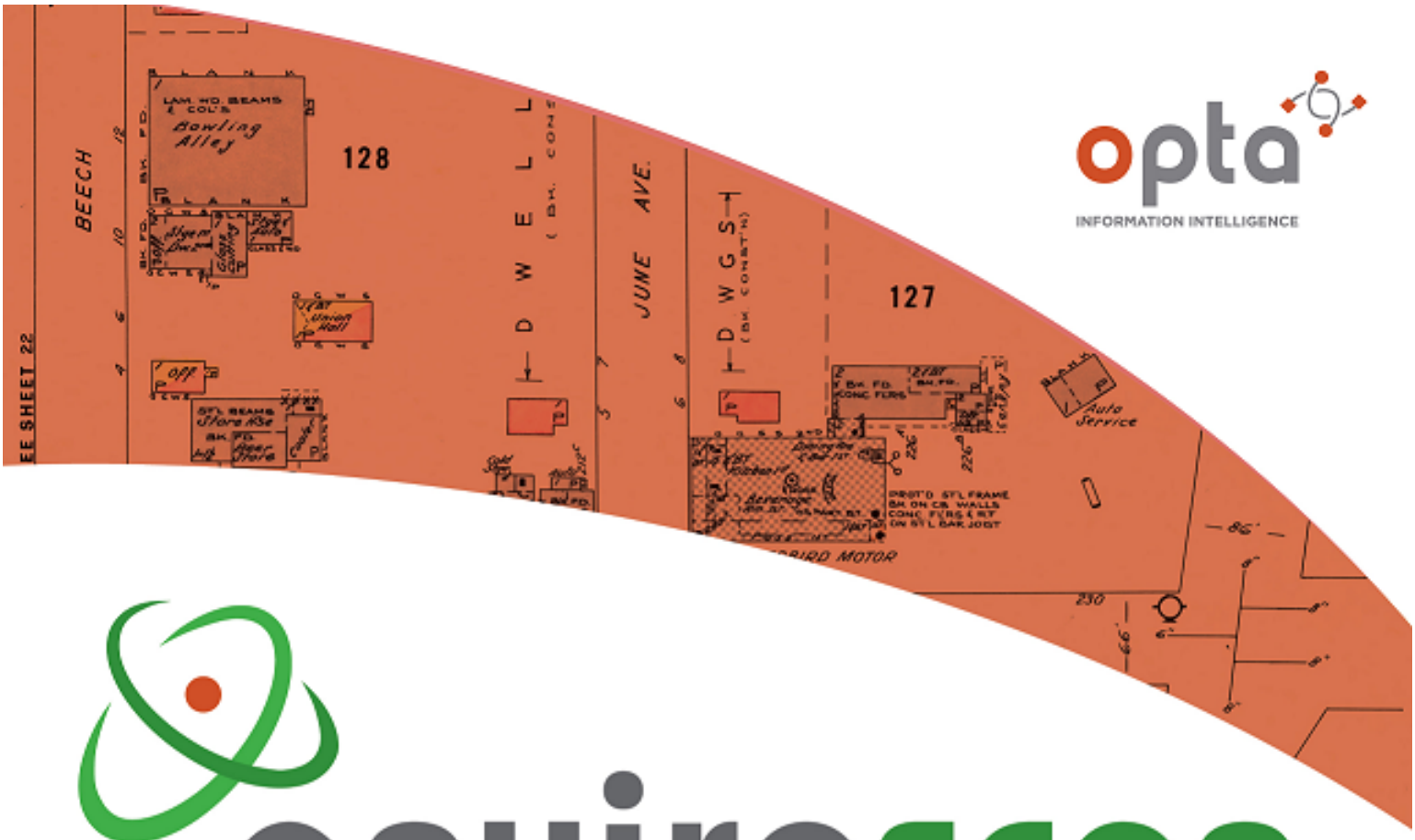
Environmental Due Diligence

- Completion of multiple Phase I ESAs and Phase II ESAs on behalf of St. Clair College as pre-purchase/sale environmental due diligence including:
  - A vacant property on Crawford Avenue in Windsor, Ontario preparatory to purchase by St. Clair for redevelopment.
  - A vacant building and associated land in Windsor, Ontario preparatory to purchase by St. Clair for redevelopment.
  - The former Thamesview Lodge long-term care facility in Windsor, Ontario preparatory to purchase by St. Clair for redevelopment.
- Completion of over 500 Phase I Environmental Site Assessments and Phase II Environmental Site Assessments at facilities in Canada and the United States. Selected experience listed below:
  - Steel manufacturing plants
  - Bus maintenance garages
  - Automotive parts manufacturing
  - Large aggregate extraction and processing.
  - Closed and operating landfill sites
  - International equipment manufacturer and retailer
  - 1.5-million-square-foot diesel electric locomotive and light armored vehicle manufacturing facility
  - Funeral homes, cemeteries, and crematories
  - Metal fabrication facilities
  - Chemical blending facilities
  - Paint manufacturing facility
  - Refrigerated warehouse facility
  - Trucking and distribution facilities
  - Drycleaning facilities
  - Railway lines and service facilities
  - Numerous rental car facilities
  - Dairy facilities
  - Lighting fixture manufacturing facilities
  - Glass manufacturing facilities

Work history

May 1991 – present	Principal/Vice President, GHD (formerly Conestoga-Rovers & Associates), St. Catharines, ON
	Named Principal, 2007
	Named Associate, 2002

Appendix B
Fire Insurance Plans



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175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:

Anthony

Site Address:

57 Lakeport Road Saint Catharines ON Canada

Project No:

Requested by:

Andrew Hunter
GHD Limited

Opta Order ID:

29017

Date Completed:

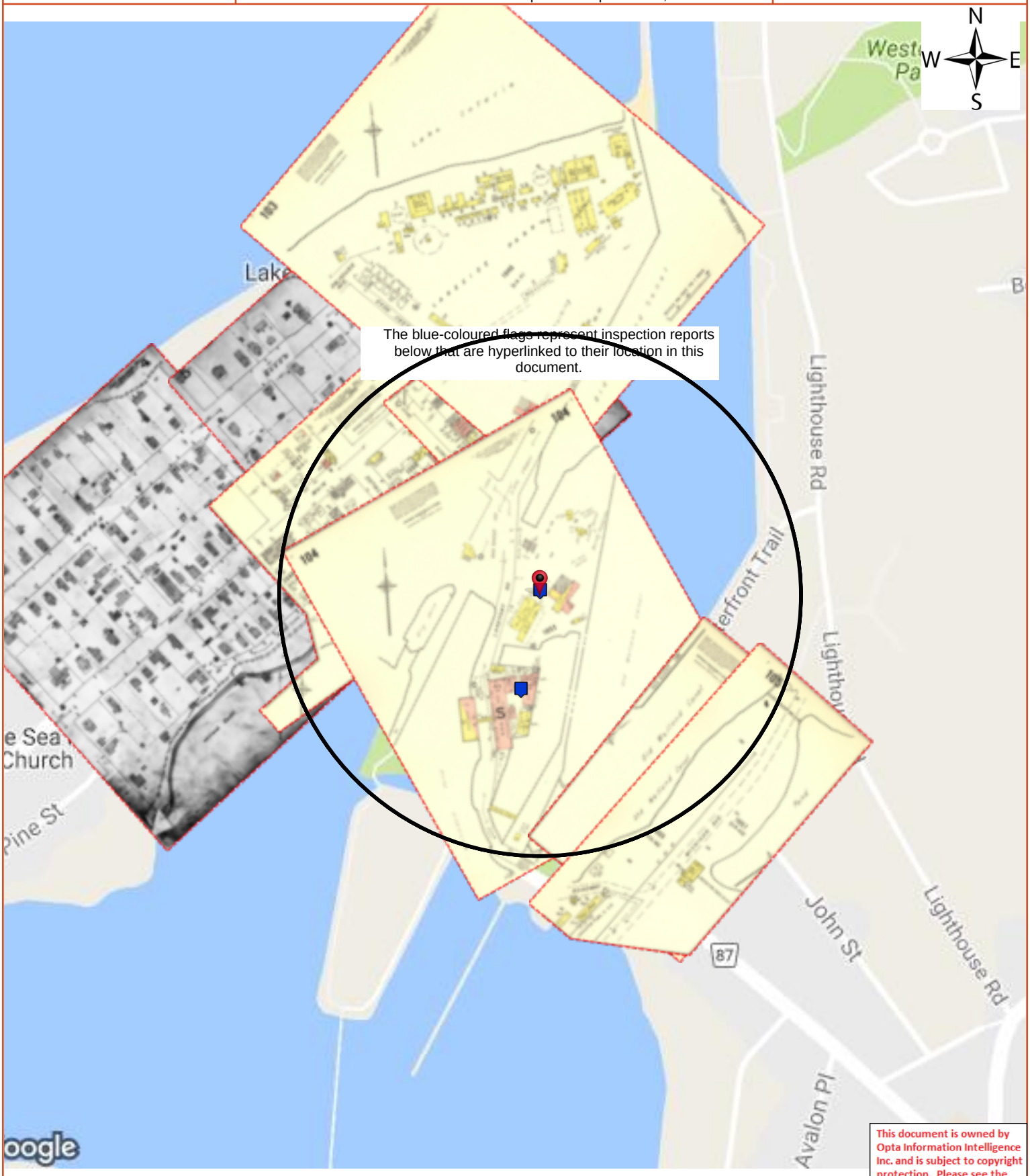
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ENVIROSCAN Report

Search Area: 57 Lakeport Road Saint Catharines ON Canada

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Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

175 Commerce Valley Drive W
Markham, Ontario
L3T 7Z3

T: 905.882.6300
Toll Free: 905.882.6300
F: 905.882.6300

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ENVIROSCAN Report

Report Index

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8 (1922) Volume: Port Dalhousie Firemap: 4
10 (1922) Volume: Port Dalhousie Firemap: 5
12 (1962) Volume: St Catharines Volume 1 Firemap: 102
14 (1962) Volume: St Catharines Volume 1 Firemap: 102
16 (1962) Volume: St Catharines Volume 1 Firemap: 103
18 (1962) Volume: St Catharines Volume 1 Firemap: 104
20 (1962) Volume: St Catharines Volume 1 Firemap: 105
22 (1962) Volume: St Catharines Volume 1 Firemap: 105
23 (1994) Multirisk Report - 1994 ROYAL CANADIAN LEGION BRANCH #350 57 LAKEPORT RD ST CATHARINES ON L2N 4P6 Reference No: 70251212 (distance = 195 metres*)
39 (1994) COPE Report - 1994 ROYAL CANADIAN LEGION BR 350 57 LAKEPORT RD ST CATHARINES ON L2N 4P6 Reference No: 10626786 (distance = 195 metres*)
42 (2001) Inspection Report - 2001 Members of the Royal Canadian Legion Branch 350 57 Lakeport Road St. Catharines ON L2N 4P6 (distance = 195 metres*)
52 (1994) Siteplan Report - 1994 Royal Canadian Legion 57 Lakeport Road Saint Catharines ON a (distance = 0 metres*)
54 (1975) Siteplan Report - 1975 Royal Canadian Legion 57 Lakeport Road Saint Catharines ON a (distance = 0 metres*)

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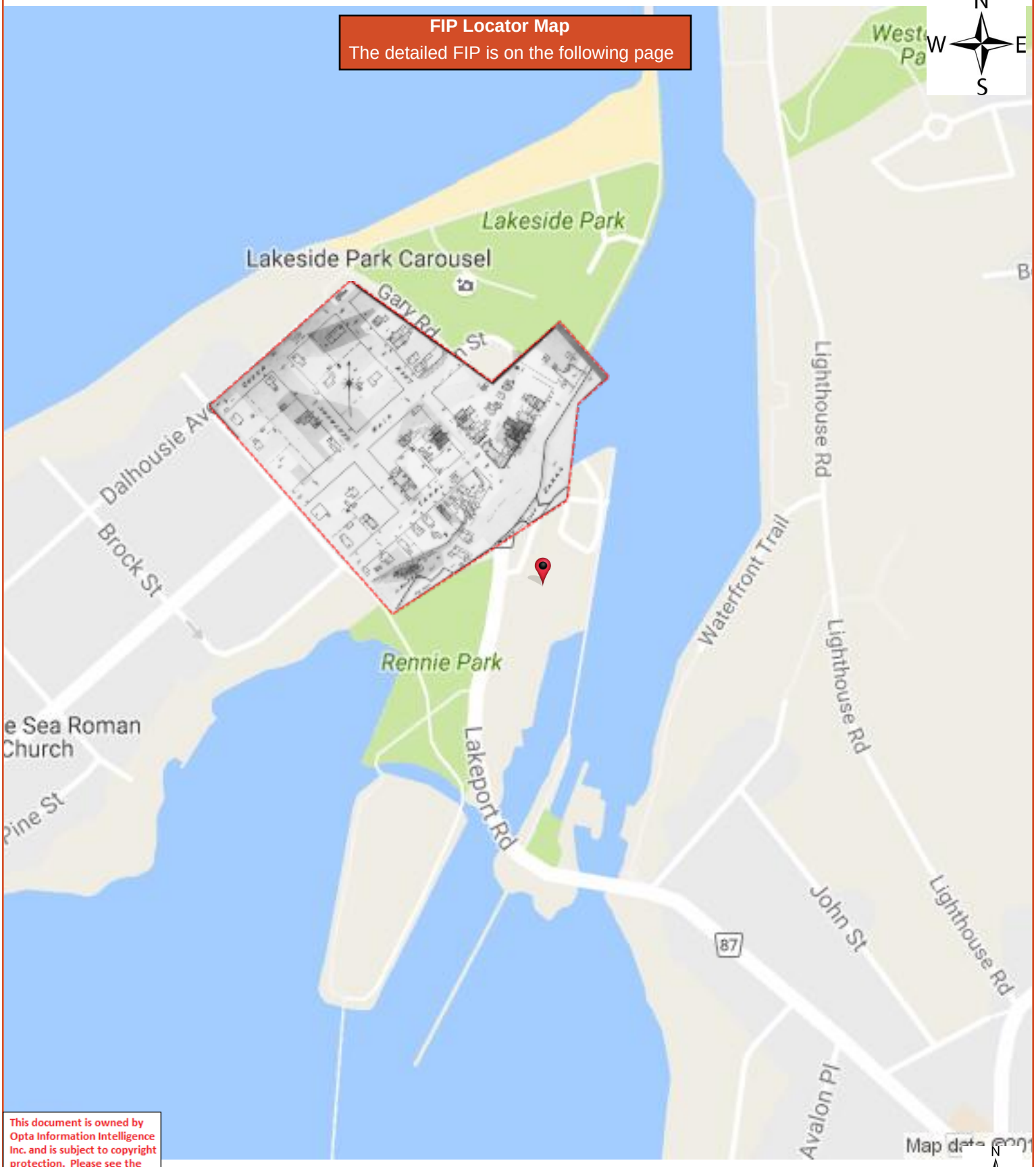
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Sheet: 1 (1905)

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1922 Volume: Port Dalhousie Firemap: 4
Port Dalhousie Plan: 1569 (1909)
Sheet: 4 (1922)

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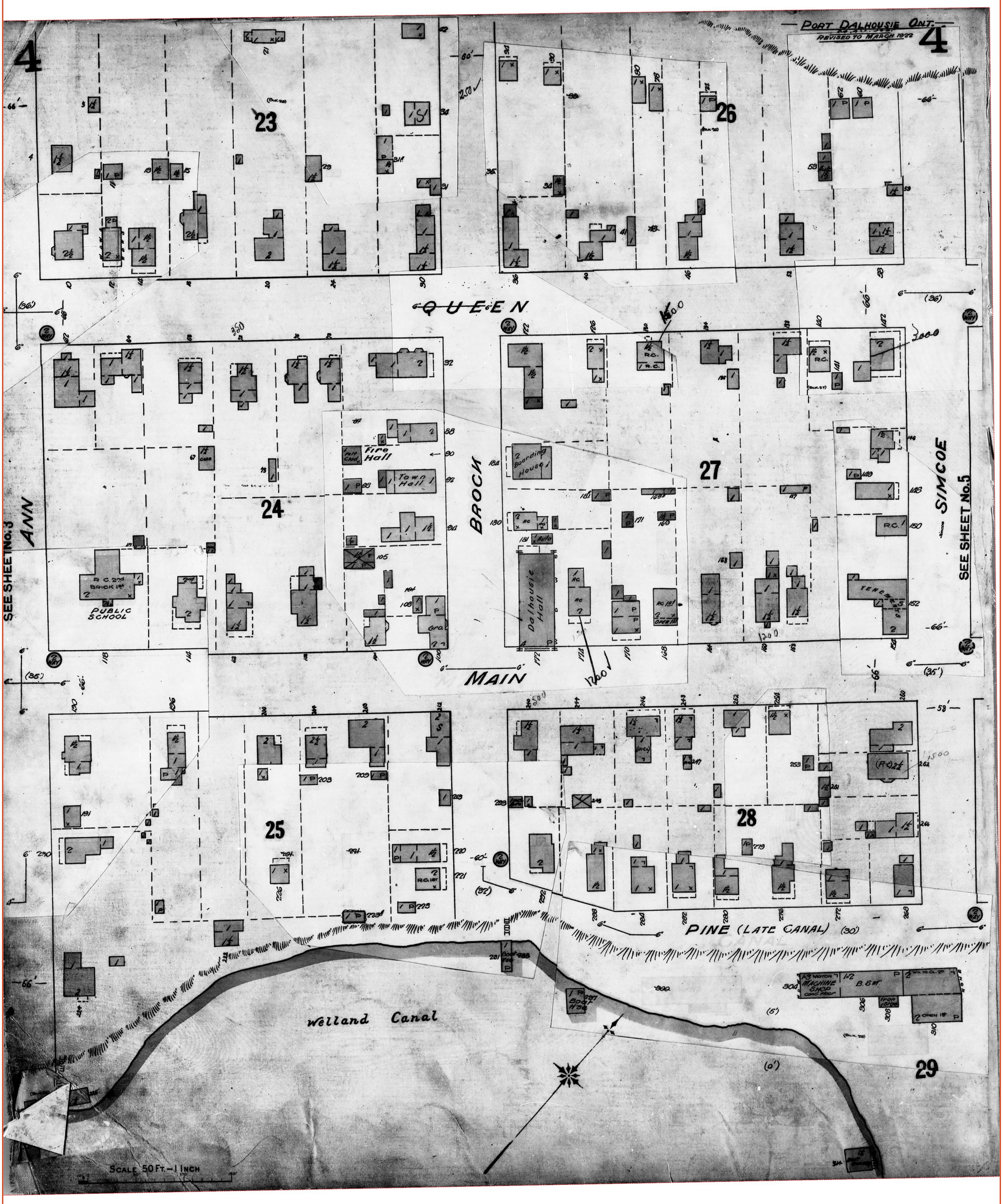
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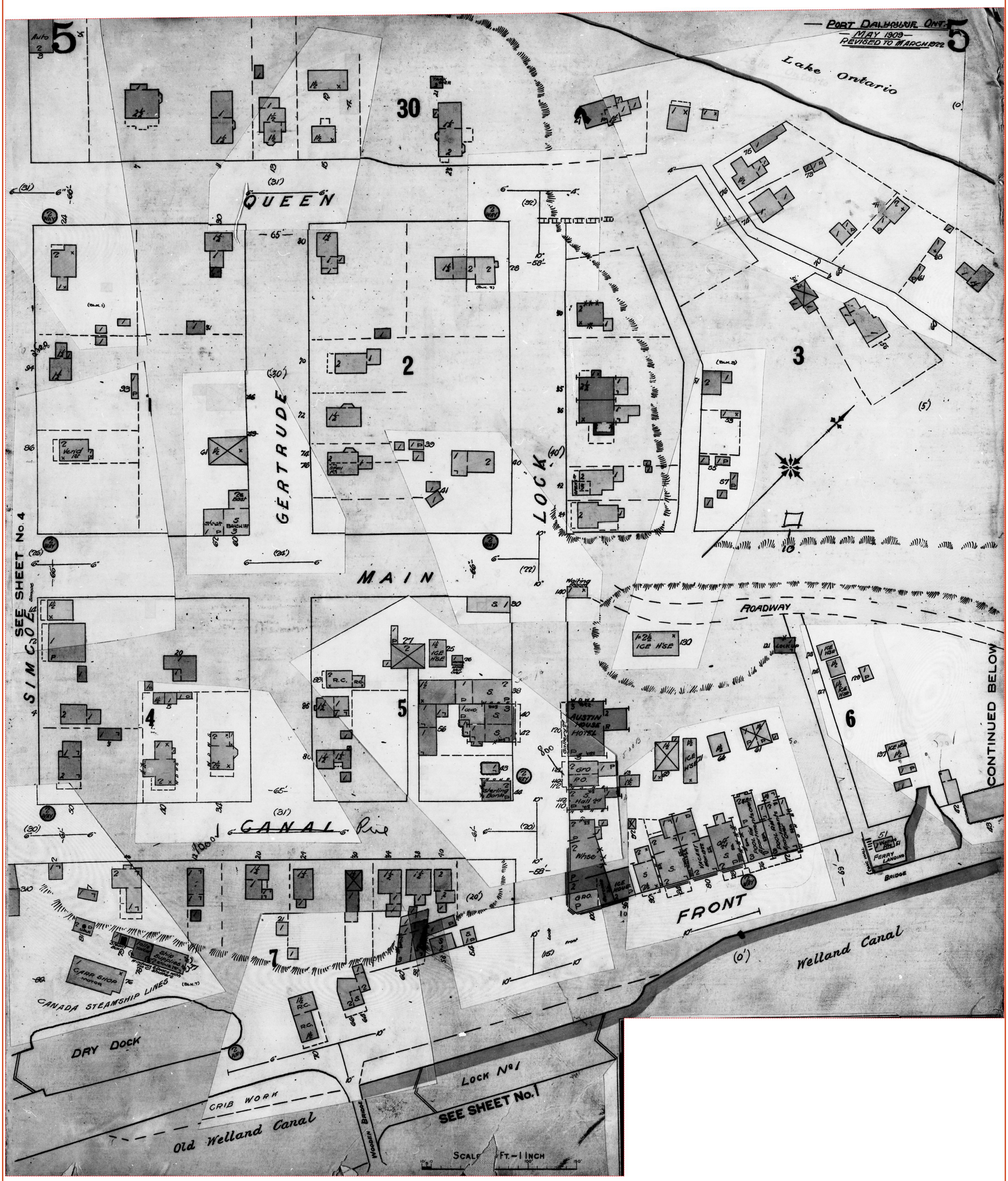
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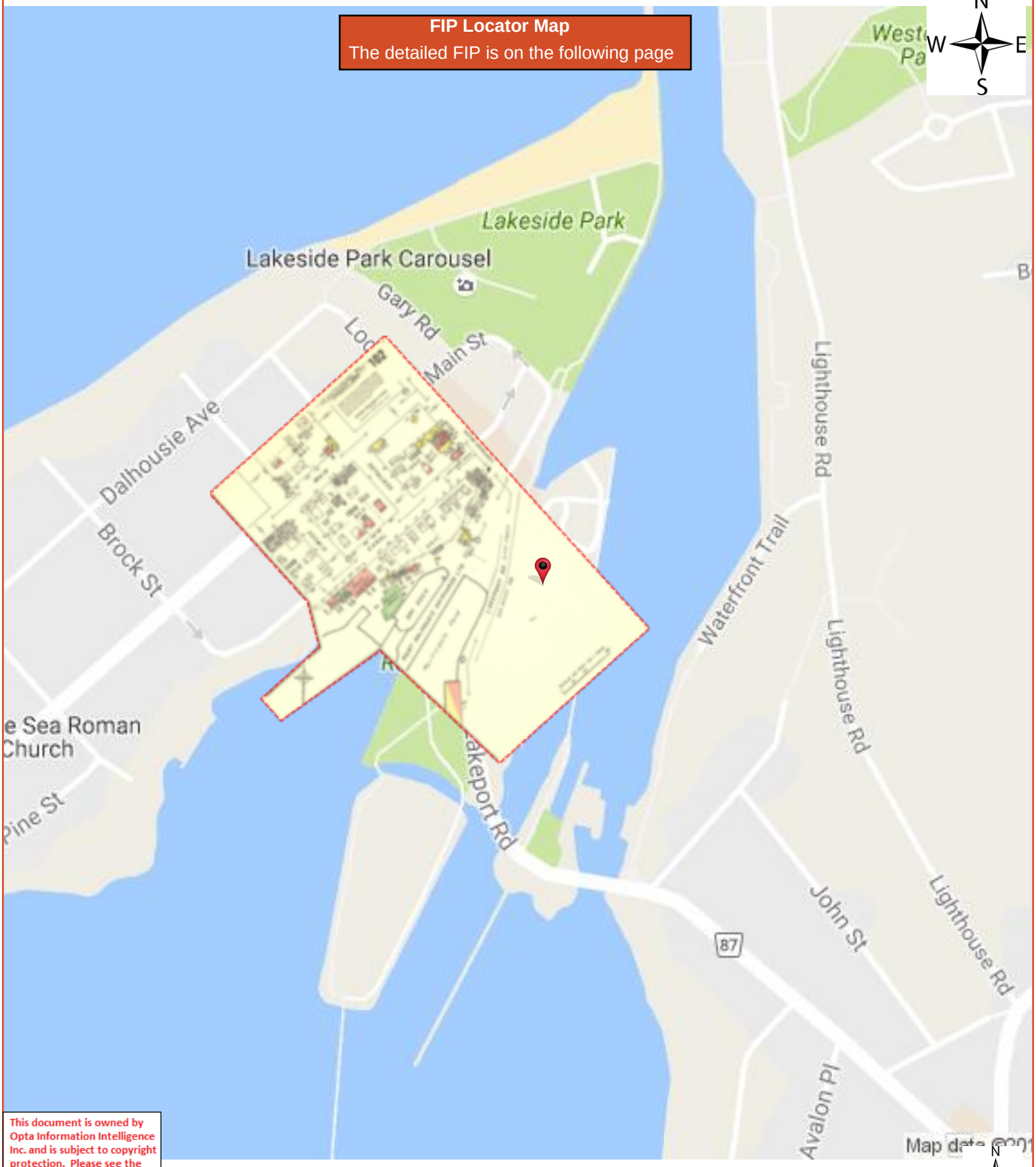
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City of St. Catharines Vol.1 Plan: 1685 (1963)
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The detailed FIP is on the following page



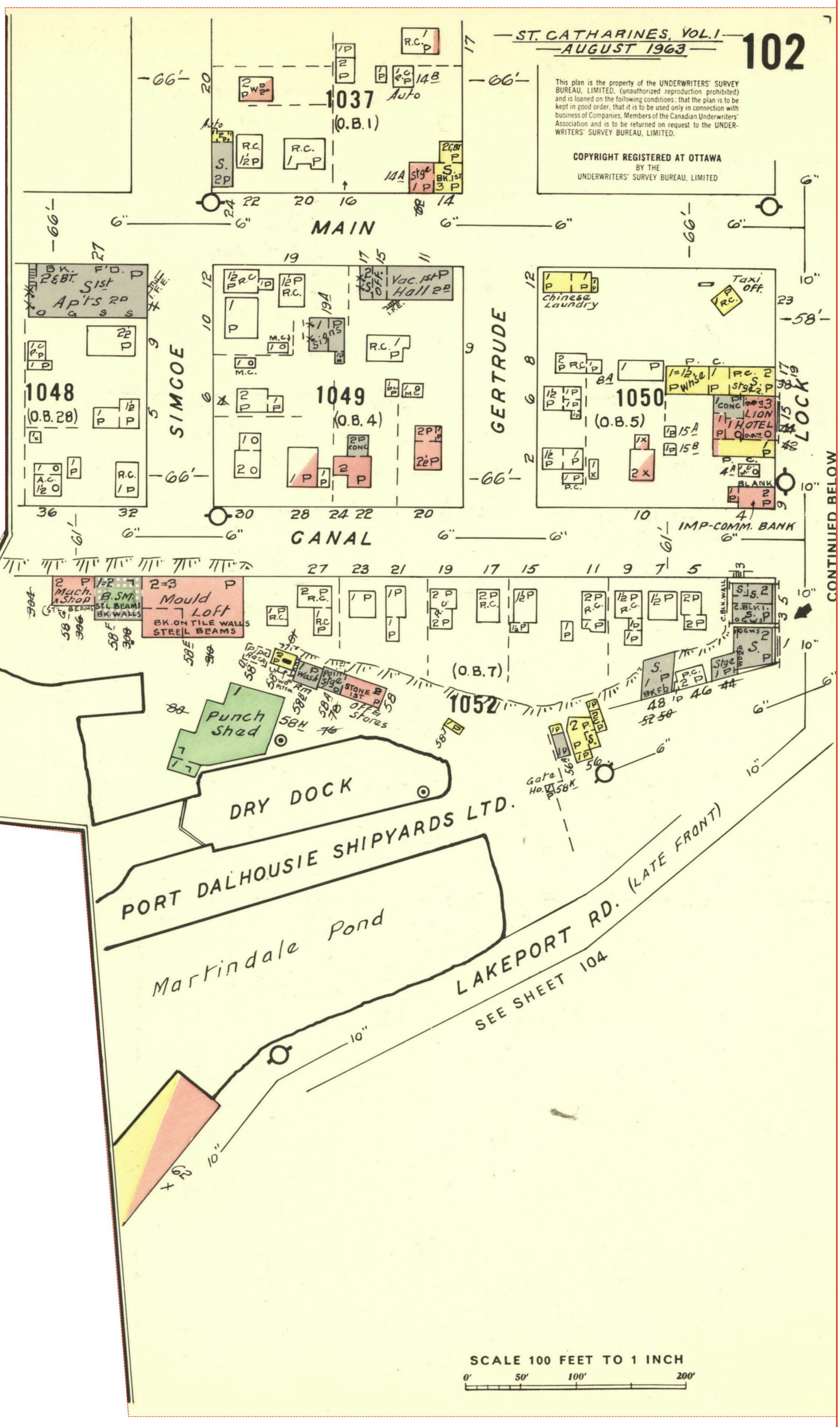
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HEIRS Report

1962 Volume: St Catharines 1 Firemap: 102
City of St. Catharines Vol.1 Plan: 1685 (1963)
Sheet: 102 (1962)

Requested by:
Andrew Hunter
Date Completed: September 6, 2016 09:25:07

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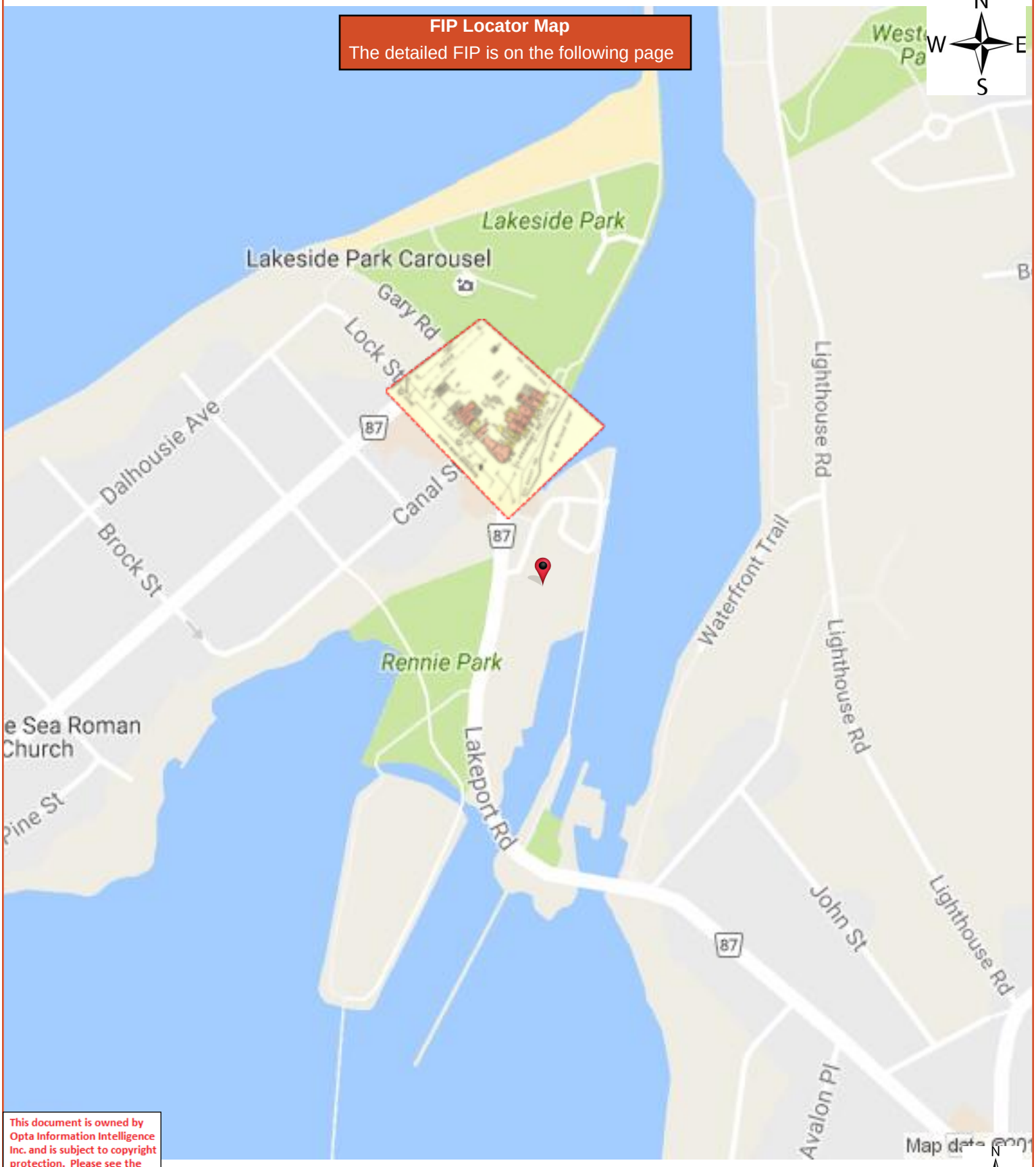
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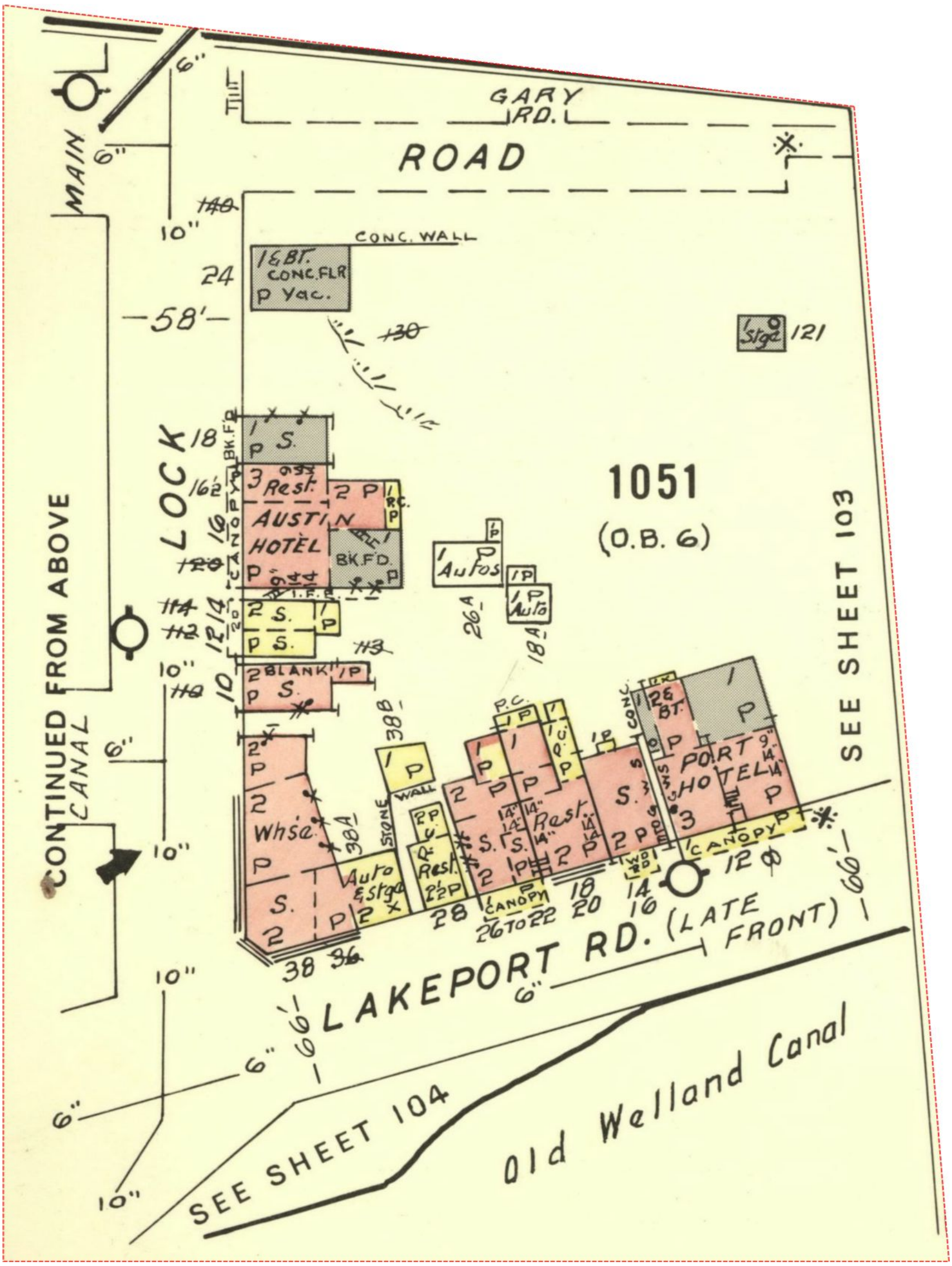
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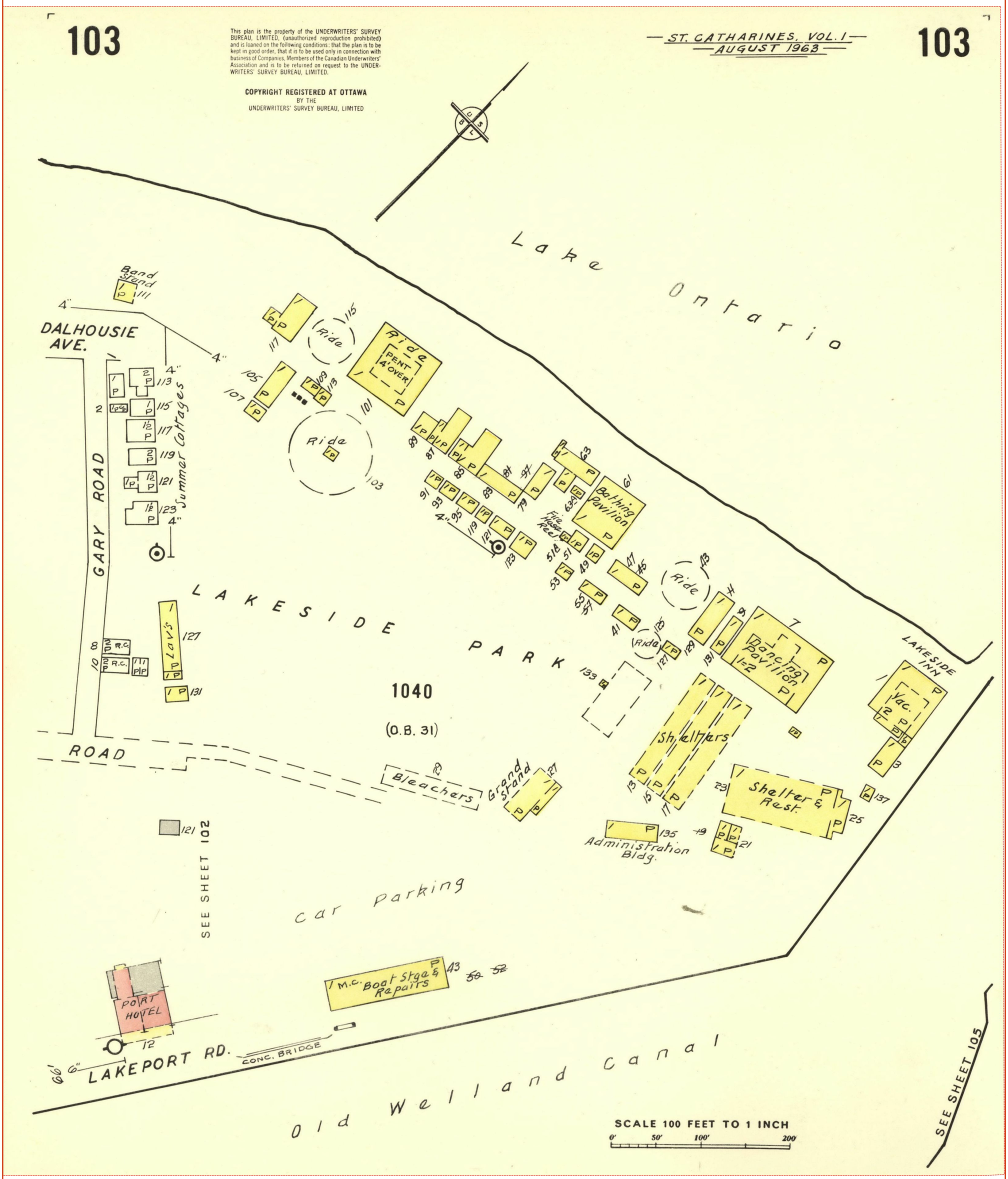
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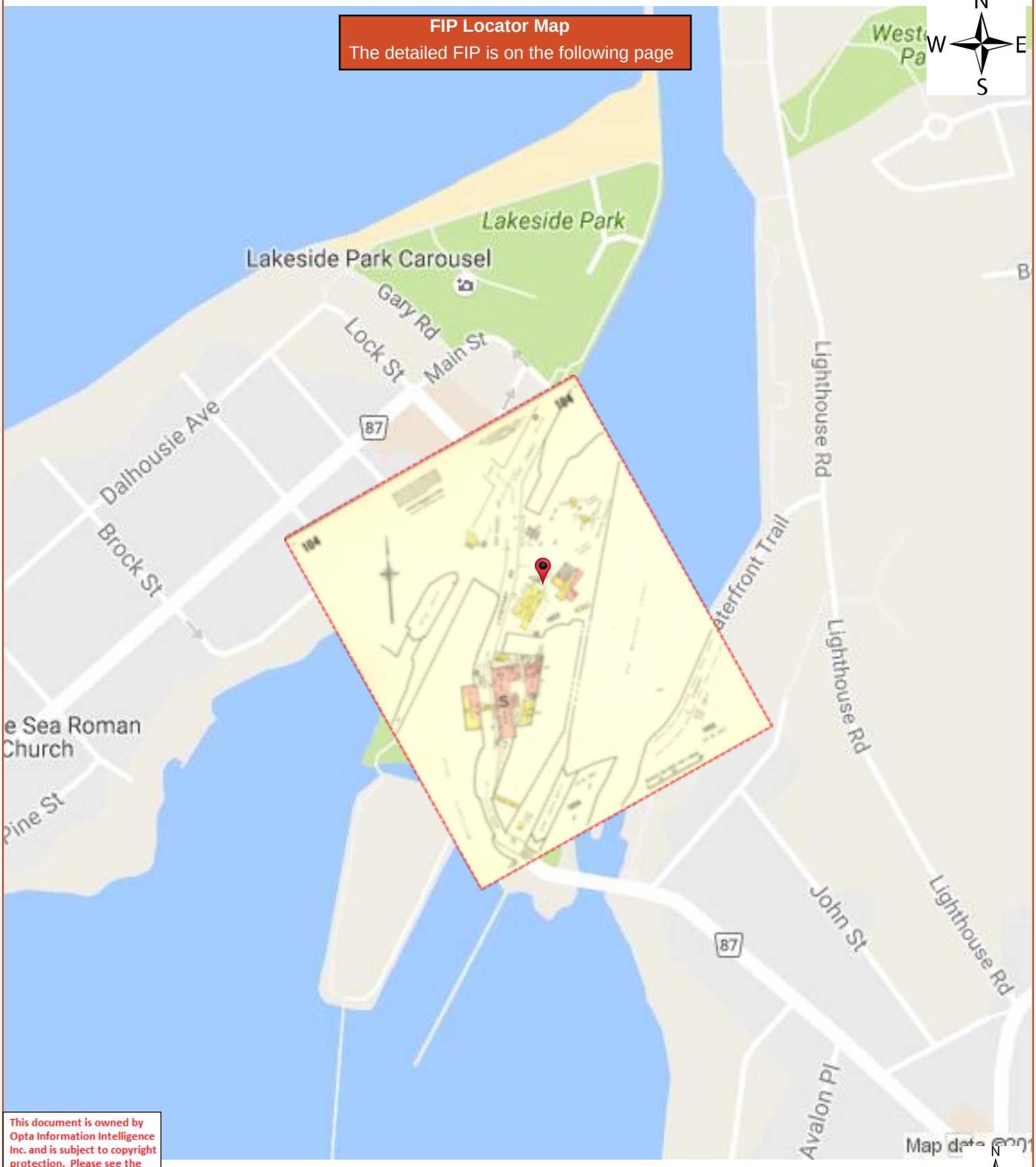
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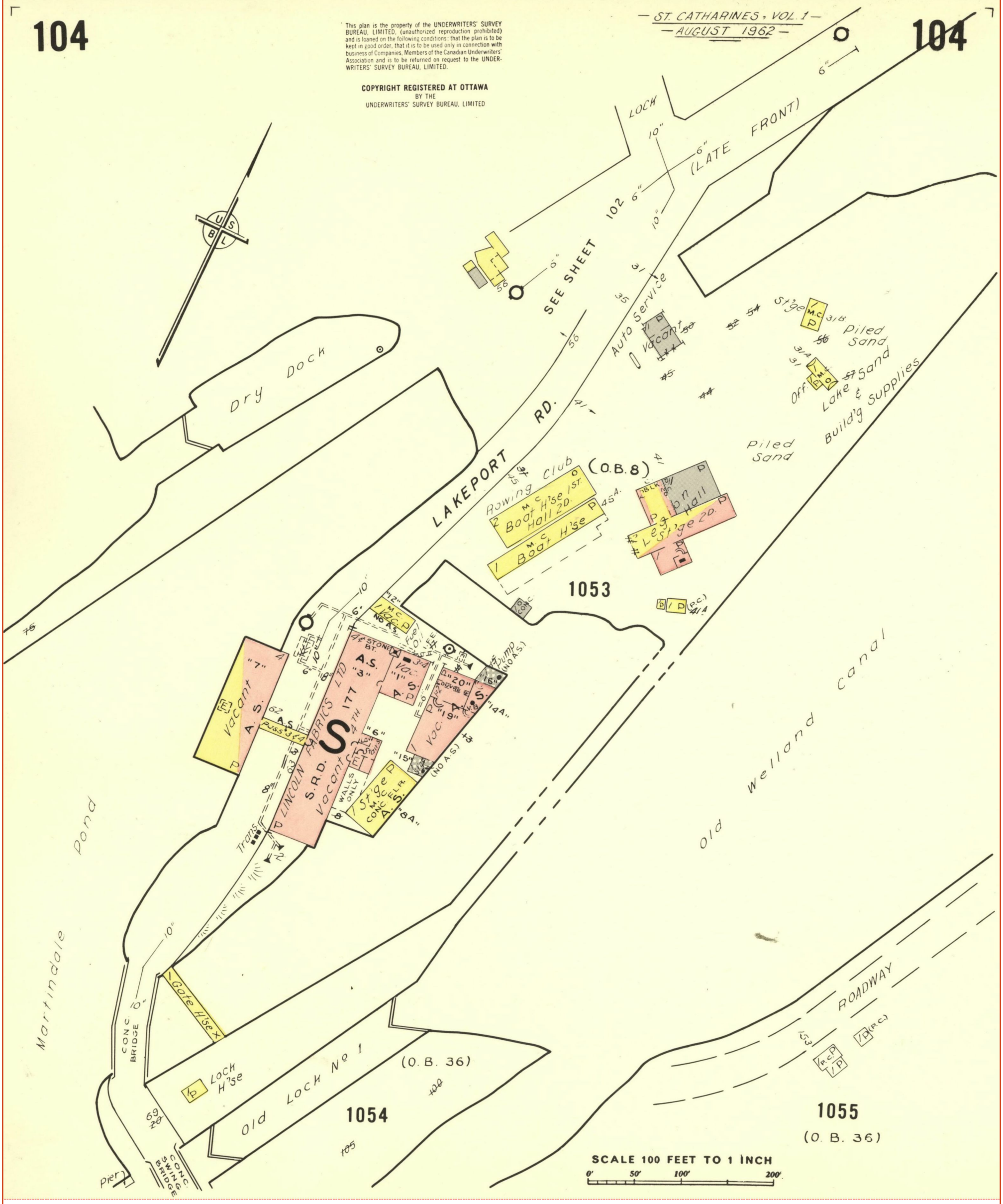
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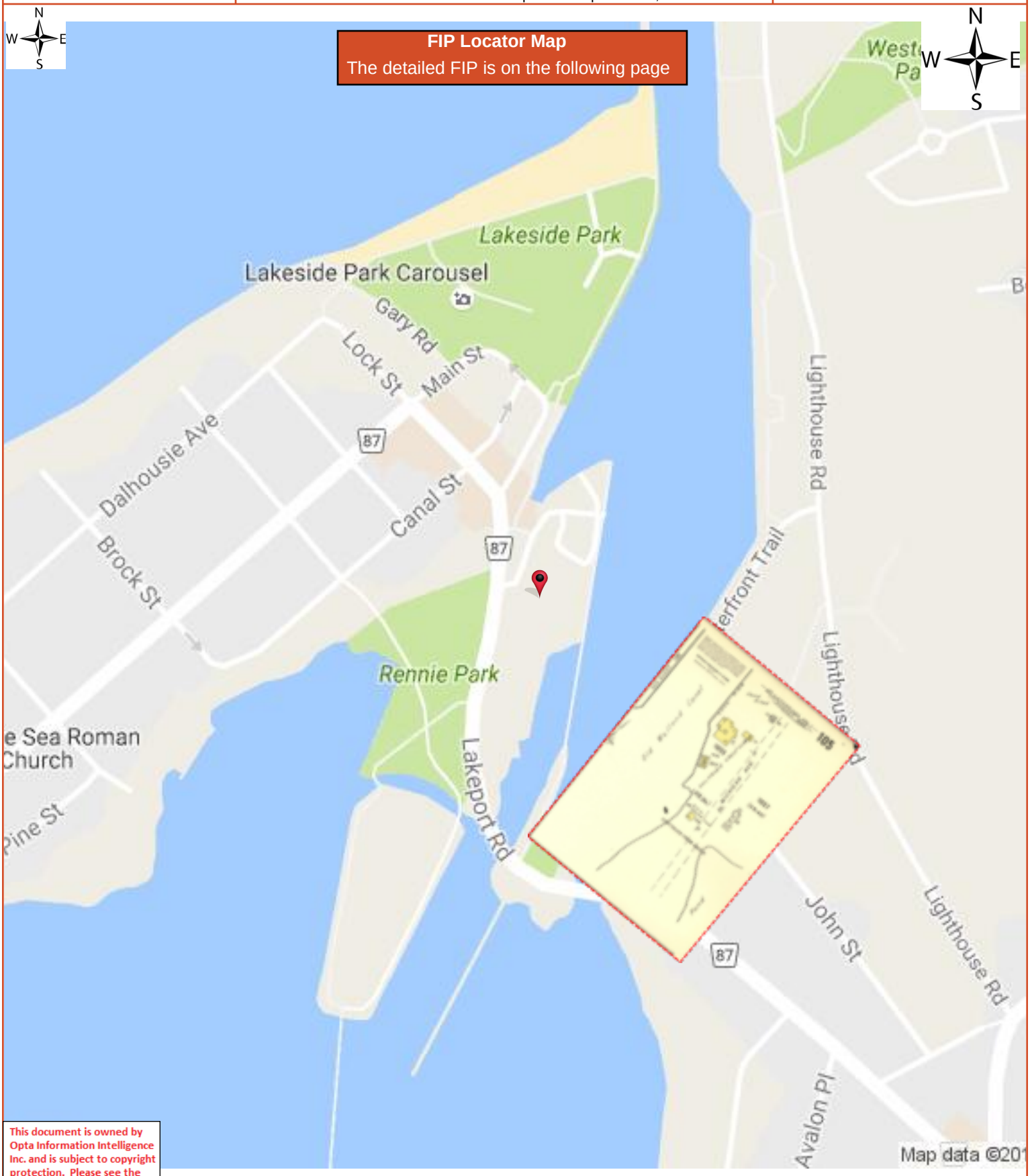
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— ST. CATHARINES, VOL. 1 —
— AUGUST 1962 —

105

SEE SHEET 103

Old Welland Canal

CONC. PIER

Sand Piled

Auto 1 P

81

77

75

1055

DALHOUSIE YACHT CLUB

75A

Locker Dam

(O.B.36)

MICHIGAN AVE.

84

1057

(O.B.40)

D.Y.C. & JUNIOR CLUB

75B

R.C.

CONTINUED FROM ABOVE

Pond

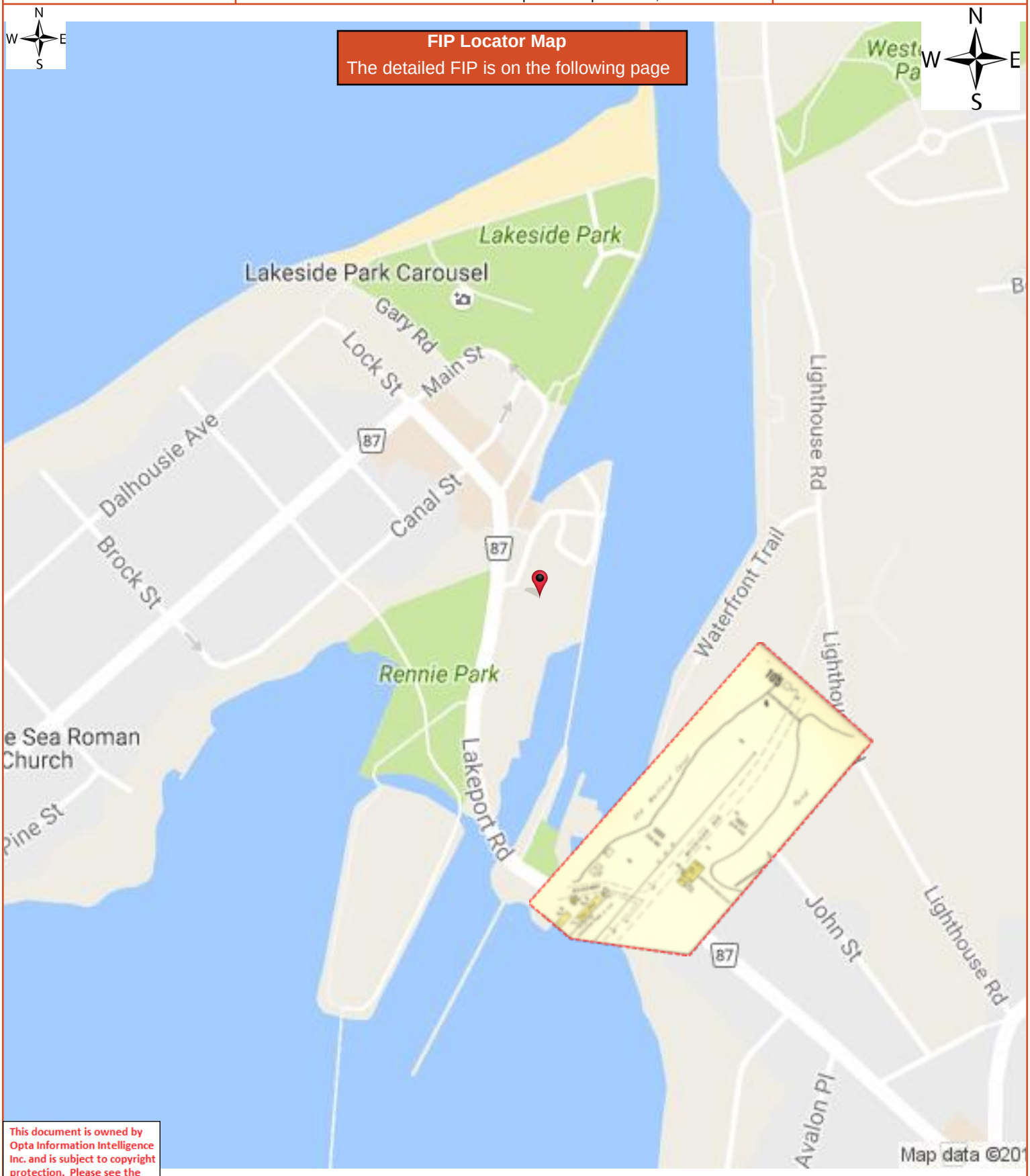
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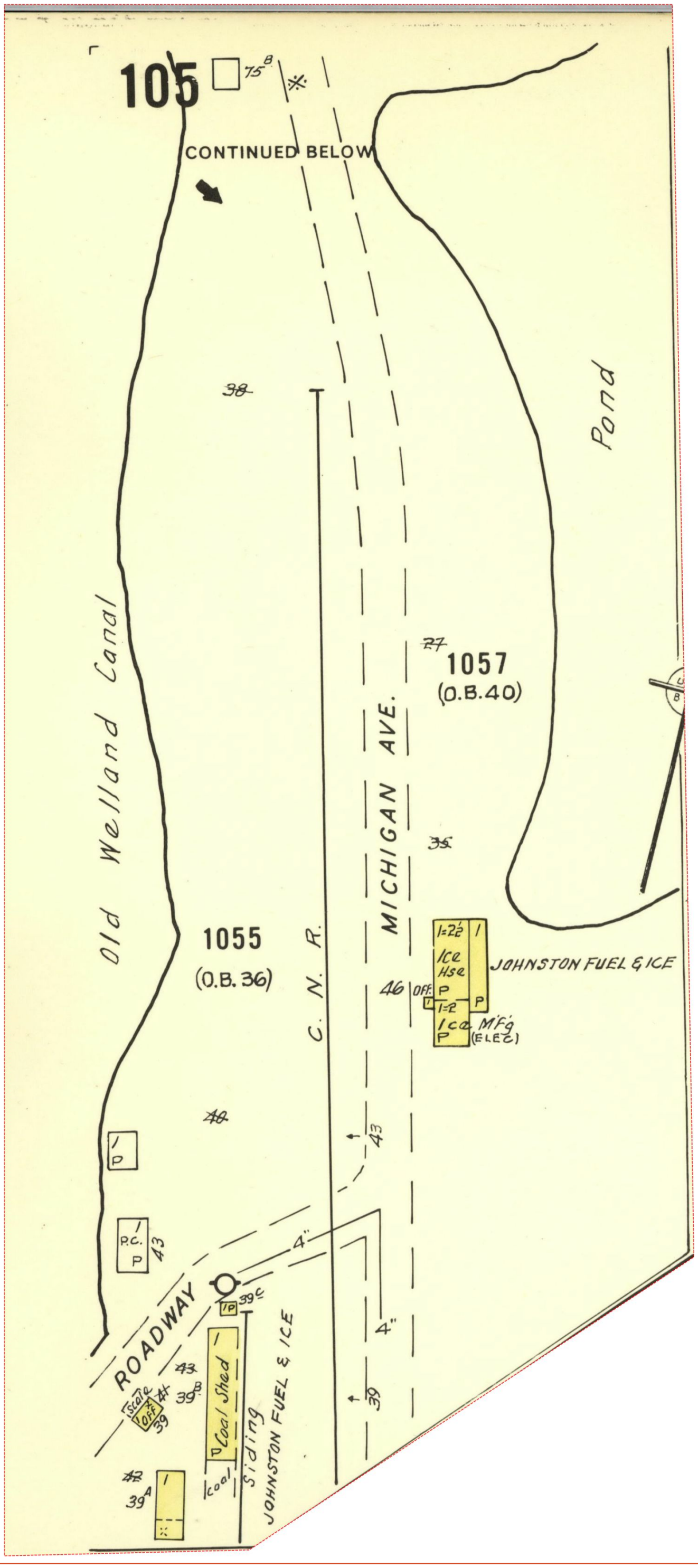
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Multirisk Report - 1994 ROYAL CANADIAN LEGION BRANCH #350 57 LAKEPORT RD ST CATHARINES ON L2N 4P6 Reference No: 70251212

Requested by: Andrew Hunter
Date Completed: September 6, 2016 09:25:07

AIS Ref No.: 70251212

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Ontario Branch
Confidential Report

MULTIRISK SURVEY

Insured:	ROYAL CANADIAN LEGION BRANCH #350
Location Surveyed:	57 LAKEPORT RD ST CATHARINES, ONTARIO L2N 4P6
Person Contacted:	Ron Galway
Telephone Number:	(905) 934-1261
Policy Number:	
AIS Reference:	70251212
Surveyed by:	Rejent Guay
Date of Survey:	1994.09.14

Committed to Service Excellence

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ENVIROSCAN Report

Multirisk Report - 1994 ROYAL CANADIAN LEGION BRANCH #350 57 LAKEPORT RD ST CATHARINES ON L2N 4P6 Reference No: 70251212

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NOTE: The sole purpose of this report is to provide insurance pricing and underwriting information about the particular insured and location named. Only the person requesting this survey will receive a copy of the report, and IAO asks that it be kept strictly confidential. This report does not guarantee compliance with any standards or with any federal, provincial or municipal codes, ordinances or regulations. Tests of fire and other protection equipment have not been conducted or witnessed during this survey.

IAO reports, prepared in compliance with commonly accepted risk control standards existing at the time services are rendered, are developed from a survey of the premises and/or from data supplied by or on behalf of the Purchaser. IAO does not purport to list all hazards. While changes and modifications, referred to in the reports are designed to upgrade protection and loss prevention of the premises, IAO assumes no responsibility for management and control of these activities. IAO will not be responsible to the Purchaser for any loss or damages, whether consequential or other, however caused, incurred or suffered, as a result of the services being provided.

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ROYAL CANADIAN LEGION BRANCH #350
57 RD LAKEPORT; ST CATHARINES, ONTARIO

M U L T I R I S K - F I R E, L I A B I L I T Y A N D
B A S I C C R I M E

OCCUPANCY:

The insured is an owner/occupant at this location. They have been in operation since 1950. The insured has been at this location for a length of time that could not be determined at the time of the survey. They occupy 1382 sq. m and are the major occupant, having N/A employees. The premises are in good condition. The insured is interested in loss prevention, however there have not been any losses during the last 3 years.

* Occupancy Description (Insured / major tenant if insured is non-occupant)

  Legion hall with three banquet rooms, kitchen with commercial range only

* Other Classes of Occupants

  None

* Undersirable Features

  Occasionally up to $2,000.00 cash is best in a cash box in the building overnight

Risk is rateable under the Commercial Property Fire Schedule.
It is recommended that this location be resurveyed in 2 year(s).

BUILDING:

* Built - 1800 (est.) Height: Storey(s) (excluding basement) - 1, 2
* Addition(s) - 1958
* Renovation(s) - 1980
* Building condition - Good

* Area: Ground Floor - 781 sq. m Total (including basement) - 1382 sq. m

---

BASIC CONSTRUCTION:

* Walls - 25% Masonry - Concrete blocks
  75% Brick/stone veneer - Brick

* Floors - (excluding basement) 55% Concrete; 45% Wood joist

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* Roof - 14% - Wood joist
  - Surface material(s) - Tar and gravel
  - Resurfaced in 1994.
- 86% - Wood joist
  - Surface material(s) - Asphalt shingles
  - Resurfaced in 1993.

INTERIOR FINISH:

* Walls - 30% combustible - Wood panel
  - 70% non-combustible

* Ceilings - 30% combustible - Combustible ceiling tile
  - 70% non-combustible

BASEMENTS: None

VERTICAL OPENINGS:

* Stairs - Non-fire rated enclosure

MEZZANINE: None

OUTBUILDINGS: None

HEATING:

* roof mounted units - 100% - Natural gas
  - Upgraded in 1994, 100% replaced.
  - Installation appears safe

* Fuel Tanks/Supply:
  - Supply - UG Natural Gas connection

* Chimneys:
  - Other : None - Standard

ELECTRICAL:

* Condition - Good and appeared safe at the time of the survey.
* Wiring - BX
* Overcurrent protection - Circuit Breakers.
* Electrical system - Upgraded in 1994, 100% replaced.

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PLUMBING:

* Condition - Good at the time of the survey.
* Piping is Copper
* Plumbing - Upgraded in 1980, 100% replaced.

EXPOSURES: (within 15m of the risk):

* FRONT: OPEN

* REAR: TO BUILDING
  Construction - Combustible.
  Occupancy - Restaurant(s).
  Distance - 5 m
  Protection - Blank masonry wall Grading - Moderate

* LEFT: OPEN

* RIGHT: OPEN

MUNICIPAL PROTECTION:

* The FUS Public Fire Protection Classification is 3
* Responding (career) fire department St.Catharines H.P.A
* Distance from risk less than 2.5 km
* Access via paved roads. Year-round.

* The building itself is easily accesible to the fire department.
* Two hydrants within 155m (standard)

PRIVATE PROTECTION at this location includes the following:

* Standard extinguishers
* Fire detection/alarm system - Local - Full Heat & Smoke
* Restaurant cooking protection - Supplement attached

* An automatic sprinkler system is not present.

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M U L T I R I S K - L I A B I L I T Y

OCCUPANCY - GENERAL INFORMATION

* Neighbourhood is predominantly commercial
* Insured - owner/occupant Area occupied - 1382 sq. m
* 100% accessible to public. Public access is considered moderate
* Gross revenue - $360,000

PREMISES information at the time of this survey

* The following appeared to be SATISFACTORY:

  Stairs, ramps, handrails; Floor surfaces & coverings; Wall & ceilings; Inerior Lighting; Exterior Lighting; Emergency Lighting; Interior Housekeeping; Exterior Housekeeping; Washrooms; Sidewalks, Yards & Parking Lots; Snow & ice removal; Signs & Awnings; Roof attachments; Fire exits; Fire alarms; Fire escapes

* Other features present:

  Sale of food, Sale of alcohol

* Other recreational facilities present:

  Three banquet halls

ELEVATING DEVICES

* 1 Passenger
  - Current license is present.
  - Maintenance contract - Yes Company - Break elevator

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M U L T I R I S K - E X P A N D E D C R I M E

BUSINESS:

The insured operates a legion hall at this location, with Normal business hours 11:00a.m. - 1:00a.m. Monday - Saturday; 11:00a.m. - 11:00p.m. Sunday. The present inventory value is approximately $100, whereas the maximum target stock value is about $4,000, and the average target stock value would be $2,000.

* Inventory taken - Weekly
* Typical Stock - Food (hot dogs, beef)
* Target Stock - Cigarettes - $200.00; Beer, liquor, wine - $4,000.00

* There is a low smash and grab exposure at this location

NEIGHBOURHOOD:

* Predominantly commercial / residential
* Stable
* Best described as having a moderate crime rate.

SECURITY ALARMS:

* General Information
  - Confirmed by - Insured
  - Installed by - National Guardian
  - Year - 1980
  - Monitoring facility - Type - ULC Monitoring Station
    - Name - National Guardian
  - Equipment is not ULC listed
  - Alarm system is not certified by ULC therefore the level of line security and extent of protection is not defined.

* Coverage and Devices
  - Coverage - Accessible openings; Space protection.
  - Devices - Infrared detector; Magnetic contacts.
  - System line security could not be determined
  - Extent of protection could not be determined

* Additional Features
  - Monitored opening/closing, Telephone line is buried underground.

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* System Status
  - There has been 8 false alarms in the past 12 months.
  - The system is not under suspension.
  - System has not been suspended in the last 3 years.
  - Serviced by - National Guardian

GENERAL PROTECTION at the time of this survey:

* The following appeared to be SATISFACTORY:

  Exterior Lighting, Interior Lighting, Roof Accessability, Target stock protection, Police Patrols

* Guard Service - None

DOOR DETAILS:

* Front - 2
  - Construction - Glass without Bars with plain glass panels
  - Type - person
  - Equipped with Panic Bar
  - Wired to alarm system

* Side - 2
  - Construction - Glass without Bars with plain glass panels
  - Type - person
  - Equipped with Panic Bar
  - Wired to alarm system

* Rear - 2
  - Construction - Metal with no panels
  - Type - person
  - Equipped with Single Cylinder Dead Bolt, Panic Bar
  - Wired to alarm system

* Front - 1
  - Construction - Glass without Bars with wired glass panels
  - Type - person
  - Equipped with Panic Bar
  - Wired to alarm system

WINDOW DETAILS:

* Front - 12
  - Type - fixed - plain glass
  - Burglary screens - No
  - Burglary Bars - No
  - Windows not wired to alarm system

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* Side - 36
  - Type - fixed - plain glass
  - Burglary screens - No
  - Burglary Bars - No
  - Windows not wired to alarm system

* Rear - 7
  - Type - fixed - plain glass
  - Burglary screens - No
  - Burglary Bars - No
  - Windows not wired to alarm system

* Front - 4
  - Type - removable - plain glass
  - Burglary screens - No
  - Burglary Bars - No
  - Windows not wired to alarm system

MONEY ON HAND:

* Currency - Ave $10,000 - Max $2,000 - Overnight $0
* Cheques - Ave $500 - Max $1,000 - Overnight $0

CHEQUES:

* Cashed - Yes
* Type - Government
* Endorsed - Properly endorsed for deposit on receipt

DEPOSITS:

* Frequency - Daily
* Deposits made during daytime Hours vary
* Distance is 2 km No staff accompany

SAFE: There is no safe on the premises.

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ROYAL CANADIAN LEGION BRANCH #350
57 RD LAKEPORT; ST CATHARINES, ONTARIO

M U L T I R I S K - A L L R I S K

EARTHQUAKE: Zone 1 History of earthquakes - No

FLOOD:

* Nearest body of water - River/Canal
* Distance from risk - 20 m.
* Risk is not located on a flood plain
* There is no history of flooding
* No evidence of water damage

WATER DAMAGE:

* Plumbing - Copper
* Evidence of corrosion - None
* Building is not sprinklered

* At time of survey, the following appeared to be SATISFACTORY:

  - Stock susceptibility to water damage
  - Adequacy of sealing of Window/Skylight openings
  - Unusual damage exposure from air conditioning equipment
  - Adequacy of Roof covering material

* Most recent roof repair date - 1993 - 1994
* Water damage protection - Shelving

* History of water damage - None
* Evidence of water damage - None

SEWER BACK-UP:

* History of sewer back-up - None
* Protection devices in place - could not be determined

VERIFICATION - WATER DAMAGE, FLOOD, SEWER BACKUP, INFORMATION:

* Confirmed by Ron Galway
* Years knowledge of risk - 15

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ADDITIONAL PERILS:

* Lightning protection - No
* Risk is not located within 5 km of an airport
* Risk is not located beneath a flight path
* Yard is not fenced
* Yard/Exterior of building lit
  - Good perimeter lighting

* Risk is not located in high wind/hail area
* No visible malicious damage/vandalism at risk
* No signs of vandalism within surrounding vicinity

* Risk is not subject to vehicular impact
* Vehicle impact exposure consists of No unusual features

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ROYAL CANADIAN LEGION BRANCH #350
57 RD LAKEPORT; ST CATHARINES, ONTARIO

M U L T I R I S K - C O O K I N G

BUSINESS:

* The business operates as a tavern/ banquet hall - legion hall at this location, with private lounge, activity room. The insured has been at this location for 44 years and in this type of business for 15 years.

* Liquor permit - Yes Capacity - 634

KITCHEN:

* Wall Finish - Drywall
* Ceiling Finish - Non-combustible ceiling tiles
* Floor Covering - Vinyl tile on concrete
* Wall finish near appliances - Non-combustible
* Cleanliness - Good
* Pest Control Program - Niagara Pest Control

REFRIGERATION INSTALLATION:

* Refrigerators - 1 - in good repair.

* Freezers - 1 - in good repair.

* Cold rooms - 2 - in good repair.
  - Dimensions - 3m x 5m

APPLIANCES:

* Stove/Range - 1 Fuel - Natural gas
  - Automatic shut-off - Provided
  - Hood construction - Galvanized steel
  - Protection - Fixed systen

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EXHAUST SYSTEM CLEANING:

* Filter(s) - Other : Annually
  - Performed by Owners
  - Filter(s) were clean at the time of the survey.

* Hoods - Other : Annually
  - Performed by Owners
  - Hoods were clean at the time of the survey.

* Ducts - Other : Not Needed, No Grease Used
  - Performed by
  - Ducts were clean at the time of the survey.

EXHAUST DUCTS:

* Installed in 1986
* Arrangement - Discharges directly to the outside; Passes through combustible materials
* Ventilation equipment - adequate

FIXED EXTINGUISHING SYSTEMS:

* Wet Chemical System labelled by UL

  - Manual emergency operation is provided
  - Installation approved
  - Certificate not available
  - Manufacturer - Rangeguard
  - Model - 4GS

MAINTENANCE CONTRACT:

* Maintenance contract is available
* Maintained by Fire Control Niagara
* Telephone - 684-5571
* Date last serviced - 01-Aug-1994
* Stated service frequency - Semi-annual

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ROYAL CANADIAN LEGION BRANCH #350
57 RD LAKEPORT; ST CATHARINES, ONTARIO

OTHER PROTECTION:

* Automatic sprinklers are not provided
* Adequate kitchen extinguishers are provided
* Extinguisher types - Dry Chemical (40-B:C)
* ULC labelled grease extraction system not provided

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ROYAL CANADIAN LEGION BRANCH #350
57 RD LAKEPORT; ST CATHARINES, ONTARIO

M U L T I R I S K
R E M A R K S / R E C O M M E N D A T I O N S

REMARKS:

* Fire, Liability & Basic Crime - Overall, the building appears well maintained throughout and this building has been extensively renovated over the years, including new brick exterior. The insured was very receptive to the survey.

* Expanded Crime - Occasionally up to $2,000.00 cash may be kept in a cashbox overnight. (Recommendation made). Beer, liquor and wine are securely locked up at night.

* Cooking - Only a commercial range is used and no grease is used, thus the exhaust ductwork and filters are not required to be cleaned often, if at all.

* All Risk - No unusual All Risk hazards noted.

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RECOMMENDATIONS:

* 94-1 Expanded Crime - A ULC labelled "TL-15" safe should be used for safeguarding cash and the safe should be securely fastened to the floor.

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ENVIROSCAN Report

COPE Report - 1994 ROYAL CANADIAN LEGION BR 350 57 LAKEPORT RD ST CATHARINES ON L2N 4P6
Reference No: 10626786

Requested by:
Andrew Hunter
Date Completed: September 6, 2016 09:25:07

enviroscan
OPTA INFORMATION INTELLIGENCE

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AIS Ref No.: 10626786

1994

INSURERS' ADVISORY ORGANIZATION 2009-Jun-16
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COPE (Construction, Occupancy, Protection, Exposure) REPORT

Risk: ROYAL CANADIAN LEGION BR 350
57 LAKEPORT RD
ST CATHARINES ON
L2N 4P6

Reference No. 10626786 / Building No. 01 ENTIRE BUILDING

(Surveyed By R GUAY on 94.09.14)

Please note that the information contained in this report was gathered during a physical inspection of the risk by an IAO Loss Control Representative.

If you wish to obtain building or contents rates for this risk, please refer to the Rate Card in the list of products available for this risk. Please call the IAO Help Desk or your local IAO Representative for help in obtaining a rate for this risk, or do it yourself by going to www.iao.ca and using the New X-rate to generate a new rate yourself.

IAO reports, prepared in compliance with commonly accepted risk control standards existing at the time services are rendered, are developed from an inspection of the premises and/or from data supplied by or on behalf of the Purchaser. IAO does not purport to list all hazards. While changes and modifications referred to in the reports are designed to upgrade protection and loss prevention of the premises, IAO assumes no responsibility for management and control of these activities. IAO will not be responsible to the Purchaser for any loss or damages, whether consequential or other, however caused, incurred or suffered, as a result of the service being provided.

------ CODING ------

Industry Code:	794 - Clubs, All Other
Construction Code:	5 - Masonry Veneer
Risk Classification:	NS - Non-Sprinklered
Protection Code:	2 - Non-Sprinklered, Fully Protected, Gr 3
Combustibility	L2

------ BRIEF DESCRIPTION ------

THIS IS A 1 & 2 STY NO BST BRICK VENEER & CONCRETE BLOCK BLDG WITH CONC ON GRADE & WD JST ON TIMBERS FLOORS & WD PLANK ROOF OCCUPIED AS A LEGION . EXP: 1ST WF BLDG 5M SOUTH. MUN PROT STD FOR FUS CLASS 3. PRIV PROT IS STD. HSEKEEPING IS GOOD. CIRCUIT BREAKERS ARE USED.

------ COMMENTS ------

THIS RISK IS GOOD IN CLASS
DESIRABLE IMPROVEMENTS: NONE

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------ CONSTRUCTION ------

WALLS - MASONRY:
25% Concrete Block 200mm Thick C-2 Type: W-1

WALLS - COMBUSTIBLE:
75% Brick Veneer C-1

MASONRY and FIRE RESISTIVE FLOOR and ROOFS:
34% Concrete on Grade - Plan Hours: 3.00 Listed? N Type: D-1

FLOORS & ROOFS - COMBUSTIBLE:
28% Wood Joists - Plancher C-2
37% Wood Joists - Toit C-2

------ SECONDARY CONSTRUCTION ------

HEIGHT:
Number of Storeys: 02
Basements: 0

Combustible Storeys Without Grade Access: 0

VERTICAL OPENINGS:
Stairs 1ST-2ND Comb.: 05 Const.: 2
Type: Non Comb. (V-3) .75Hrs-Walls/ .75Hrs-Doors

AREA:

Building Dimensions (m): 0 X 0 0 X 0 0 X 0

Grade: 781 m2 Total: 1382 m2 Effective: 1382 m2

L1, L2 Area 100%

ROOF SURFACE:
100 % Approved

COMBUSTIBLE CONCEALED SPACES:
15 % Ceiling Space

COMBUSTIBLE INTERIOR FINISH:
Ordinary Damage Material C-1
Prot.: U Flame: Over 75 Smoke: Over 200 30%
Ordinary Damage Material C-1
Prot.: U Flame: Over 75 Smoke: Over 200 30%

BUILDING CONDITION:
Good Type C--

Year Built: 1898 Air Conditioning: Central (100%)

Elevators: Pass.,

COMMON HAZARDS: 7211A2 - Central Heat Warm Air Gas

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------ PROTECTION ------

MUNICIPAL PROTECTION:

Distance from Hydrants:	Standard	Congested Area:	No
Distance to Fire Hall:	< 2.5 km	Accessibility:	Good
FUS Protection Class:	03		
Revised Class:	03		
IAO Protection Class:	03		

INTERNAL PROTECTION:

MANUAL FIRE FIGHTING EQUIPMENT: Standard
None Extmet

------ EXPOSURE ------

NONE NOTED:

------ OCCUPANCY - CANADIAN LEGION BR 350 ------

Industry Code: 7942 - Clubs, All Other

Occupancy: 5482A - LEGION HALL

Location: 57 Area: 1382 m2 100.0% of Total

Combustibility Code: 02 - Limited Combustibility
Susceptibility Code: 02 - Slight Damage

Special Hazard: 7305A1A1 - REG CKNG APPRVD EXT SYSTE

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N W E S

Inspection Report - 2001 Members of the Royal Canadian Legion Branch 350 57 Lakeport Road St. Catharines ON L2N 4P6

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Insurers' Advisory Organization Inc.
A subsidiary of Underwriters Adjustment Bureau Ltd.

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IAO All Risk

(Now available through the IAO Web-site; www.iao.ca)

INSPECTION REPORT

Supplement/s attached: ☐ Yes ☐ No

1.0 BASIC INFORMATION

Insured:		**Policy Number**	
Date of survey (YYYY/MM/DD):	2001/08/03	**IAO Loss Control Specialist:**	D. Schutz, FIIC
Person Contacted: Position	Derek Mills, Vice-President	**Telephone No.**	(905) 934-1261
Mailing Address if Different for risk:	(unit # street # & name)	(City, Town, Village)	**IAO AIS No.: 10626786**
Location Surveyed:	57 Lakeport Road (unit # street # & name)	St. Catharines (City, Town, Village)	Ontario (Province) L2N 4P6 (postal code)
Secondary address (If any)	(unit # street # & name)	(City, Town, Village)	(Province) (postal code)
IICC Territory Code	94	**IICC Building Code: 7942**	**SR/MA File No.**
Underwriter:		**Broker:**	

The ***IAO Risk•Score*** and comments contained in this report are based on conditions and practices observed during our survey and other pertinent data supplied by management personnel at the risk.

Recommendations in this report are made to point out those areas where remedial action could have the beneficial effect of making the above premises safer, and thus more desirable from an underwriting standpoint.

Thank you for choosing IAO to perform this inspection. Please do not hesitate to contact us if we can be of any further assistance.

2.0 *IAO Risk•Score*

	1	2	3	4	5	6	7	8	9
Property	☐	☐	☒	☐	☐	☐	☐	☐	☐
Liability	☐	☐	☒	☐	☐	☐	☐	☐	☐
Crime	☐	☐	☒	☐	☐	☐	☐	☐	☐

(1=Excellent & 9=Poor)

Comments

The property is in good condition and well maintained..

Good walking surfaces, no unusual conditions or hazards exist.

An adequate alarm systems appears to be installed to protect the premises.

RISK ALERT ISSUED : ☐ **Yes** ☒ **No** If yes, describe (*A risk alert is a telephone notification to the Inspection requestor, of a situation which could imminently cause a serious loss. A Critical Recommendation will be issued to address the situation.)*

Committed to Service Excellence

IAO reports, prepared in compliance with commonly accepted risk control standards existing at the time services are rendered, are developed from an inspection of the premises and/or from data supplied by or on behalf of the Purchaser. IAO does not purport to list all hazards. While changes and modifications referred to in the reports are designed to upgrade protection and loss prevention of the premises, IAO assumes no responsibility for management and control of these activities. IAO will not be responsible to the Purchaser for any losses or damages, whether consequential or other, however caused, incurred or suffered, as a result of the services being provided.

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Meaning of the **IAO Risk•Score:** The IAO Score is a grading of the risk inspected versus other risks in this class. Similar to the "Commercial" Fire Protection Grading system in design, there is range of 9 categories, with a grading or "score" of 1 being the most desirable. The IAO Score is based on a number of objective criteria pertaining to the risk at the time of our survey, tempered with the experienced judgement of our Loss Control Specialist. As a general guideline, the scores mean the following criteria:

1-3	Risks in this range are well maintained, with no apparent moral hazards or management problems. Undesirable features are non-existent and recommendations, if any, are minor. Risks in this category are excellent (no deficiencies) to better than average for their class.
4-6	The maintenance of Risks in this range is considered average. Moral hazards are not apparent, but there may be possible management problems (e.g. poor housekeeping). Undesirable features noted are correctable, and recommendations will vary from desirable to important. Risks in this category are considered average for their class.
7-9	Risks in this range tend to be poorly maintained. Moral hazards and management problems (e.g. poor housekeeping and maintenance, poor attitude) are evident. Significant undesirable conditions are present and cannot or will not be corrected. Critical Recommendations may be present. Risks in this category are significantly below average for their class with little or no indication for improvement.

3.0 REMARKS

1. This risk is locarted on the north side of a commercial thoroughfare in the northern sector of the City of St. Catharines. The risk overlooks the south shore of Lake Ontario in an area known as Port Dalhousie. The building was built in several different sections to accommodate the insured's expanding operation. This risk is a not for profit veteran's legion hall with approximately 750 members. The bar stewards and staff are paid personnel and have completed the Smart Serve Training programs.

2. The kitchen cooking facilities are used on special occasions and fund raising events as well as for catering private parties and members functions in the banquet hall. The second floor area has a licensed capacity of 273 in three separate rooms. The first floor is licensed for 185 persons. The insured contact was co-operative and responsive in connection with the completion opf this report

3.

4.0 RECOMMENDATIONS

Please note that these recommendations are classified as either ☐ **Critical,** ☐ **Important, or** ☐ **Desirable Improvement**. **"Critical"** recommendations as those aimed at correcting undesirable feature/s which, if left unattended, could cause a serious loss and should be rectified immediately. This class of recommendation is only used in extreme situations. **"Important"** recommendations are intended to highlight undesirable feature/s which if left unattended, could cause a serious loss and should be rectified as soon as possible. **"Desirable Improvement"** recommendations are those aimed at correcting an undesirable feature which can be improved when feasible, to help reduce the risk of a loss.

☐ Listed below	or	☒ None

00-1	☐ Critical	☐ Important	☐ Desirable Improvement

00-2	☐ Critical	☐ Important	☐ Desirable Improvement

00-3	☐ Critical	☐ Important	☐ Desirable Improvement

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5.0 OCCUPANCY INFORMATION (IICC Occupancy Code 7942)

The Insured is:

☒ Owner Occupant	☐ Non-occupant building owner	☐ Tenant
Name of building owner(if not Insured):		Number of years bldg. Owned: 56
☐ Tenant	Area occupied (sq. m): 1,244	Business hours: 11am - 11pm
Days per week: 7 days	Annual Revenue (optional):	Payroll (optional):
Number of years at this location:	56	
Previous loss history past 3 years ☐ Yes ☒ No ☐ Undetermined	Previous loss history past 6 years ☐ Yes ☒ No ☐ Undetermined	
Explain loss history:		
Insured Values: Property: $ 1,159,000	Contents: $	
Combustibility of Occupancy: M3	Susceptibility of Occupancy: S3-Moderate Damage	

Describe occupancy: This is a licensed Veteran's Legion Hall. The first floor is occupied as a reception area, kitchen and members lounge. Food not prepared in the kitchen takes the form of pre-packaged foods. There is a microwave oven available at the service bar for warming foods. The second floor consists of a banquet hall, games room, office and meeting room. Recreational equipment includes dart boards and a pool table all of which appear to be safely arranged.

	or ☒ refer to Occupancy Specific Supplement:
Special Hazard Code(s): Gp5, SH 6	Description: Commercial cooking equipment protected by a fully approved automatic fire extinguishing system.
Other classes of occupants: (immediate exposures)	None

Name:	Area occupied: sq. m.	IICC Code
Special Hazard Code(s)	Description:	
Name:	Area occupied: sq. m.	IICC Code
Special Hazard Code(s)	Description:	
Areas not surveyed:	☐ For additional tenants see attached list	

6.0 BUILDING CONSTRUCTION (IICC Major Construction Class Class 4)

Building condition:	☐ Above Average	☒ Average	☐ Moderate deficiencies	☐ Major deficiencies	
Year built: (yyyy)	1940's	Area occupied by insured (sq. m): 1,244		Combustibility of Building M3	
Ground floor area (sq. m):	701 sq. m	Total floor area (excl. bsmt.)		1,244 sq. m	
Height (excluding basement):	7.3 m	Number of Stories: 1 & 2 (above grade)			
Basement: ☐ Yes ☒ No		Area of basement: N/A (sq. m)		Total area: 1,244 sq. m	
Additions (year & brief description):	1970's & 1990 Members lounge and main entrance.				
Renovations (year & brief description):					

Wall construction:	Reinforced Concrete % ( )	Masonry: 100 %: (Brick & CB)	Non Combustible: %: ( )	Brick/stone veneer: %: ( )	Wood frame: %: ( )
	Other:		Panels in Walls % Describe:		

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Floor Construction:	Concrete: %	Concrete on metal pan: %	Wood joist: 100 %	Other: %
Roof Type:	☒ Flat	☐ Sloped	☒ Peaked	☐ Other
Roof Construction:	☐ Concrete %	☐ Steel deck %	☒ Wood joist % 100	☐ Other: %
Roof Surface:	☒ Tar & gravel	☐ Metal	☒ Asphalt shingles	☐ Rubber Membrane
	☐ Wood Shakes	☐ Other		

Resurfaced:	☒ Yes	☐ No	Date: 1995		
Interior Finish Walls:	Combustible: %		Non-combustible: 100 %		Open: %
Interior Finish Ceilings:	Combustible: %		Non-combustible: 100 %		Open: %
Vertical Openings:	☐ None	☒ Stairs	☒ Elevator	☐ Deck:	☐ Other
Horizontal Separation:	Major Partition Construction		☒ Not Applicable	☐ Frame	☐ Drywall on Studs
			☐ Concrete Block		☐ Other
	Proper Opening Protection:		☐ Yes	☐ No	☒ Not Applicable

Mezzanines: ☒ No ☐ Yes Mezzanines percentage of floor	Combustible: % %	Non-combustible: %	Open: %
Combustible Concealed Spaces:	☐ No ☒ Yes	If yes, describe Foor and ceiling space and 100 %	
Concealed space properly protected	☒ No ☐ Yes	☐ Not applicable	Comment: Not deemed to be necessary

Building Description:

Shopping Mall ☐ Yes ☒ No	Industrial Mall ☐ Yes ☒ No	Strip Mall: ☐ Yes ☒ No	
Other Describe : Stand alone building			

7.0 EXPOSURES (Within 50m of risk)

	Distance	Height	Construction	Occupancy Hazard	Civic Number (optional)	Opening in Facing Wall Yes	No
Front	*Open* m	_____ sto.	Open	None	*N/A*	☐	☐
Rear	*Open* m	_____ sto.	Open	None	*N/A*	☐	☒
Left	*Open* m	_____ sto.	Open	None	*N/A*	☐	☐
Right	*15* m	*1* sto.	Open	Medium	*61*	☐	☐

(For Malls) Describe partition walls between insured and other tenants.

8.0 COMMON HAZARDS (Heating, electrical, plumbing)

HEATING:

Forced warm air:	☐ Electric %	☒ Gas100%	☐ Oil %	Other *roof top HVAC units and interior forced warm air furnace*
Suspended unit heaters:	☐ Electric %	☐ Gas %	☐ Oil %	Other _____
Portable heaters:	☐ Electric %	☐ Gas %	☐ Oil %	Other _____
Electric baseboard units: ☐ %				
Hot water/steam	☐ Electric %	☐ Gas %	☐ Oil %	Other _____
Other	☐ Electric %	☐ Gas %	☐ Oil %	Other _____

Boiler:	☐ Yes	☒ No	Age (yyyy) _____ and Make: _____	Date of last Boiler Inspection: (yyyymmdd) _____

Appliances enclosed in a non-combustible room:	☐ Yes	☒ No	☐ Not required:
Combustible materials stored in the room:	☐ Yes	☒ No	☒ Not applicable

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Fuel tanks:	☒ None	☐ Inside	☐ Outside	☐ Above ground	☐ Below ground	Age (yyyy)_____ Capacity (L)
Fill and vent piping: Inside			☐ Yes	☐ No	_____ ☒ N/A	
Chimneys:	☐ Masonry	☐ ULC Factory built	☒ Unlabelled pre-fab	☐ Other *None*		
	☐ Standard	☐ Non-standard _____				
Installation defects:	☒ None	☐ Moderate	☐ Major			
Installation replaced:	☒ Yes	☐ No	(yyyy) *2000* *100* %			
Comment: No deficiencies noted						

ELECTRICAL:

Type:	☒ Conduit	☒ BX	☐ Non-metallic	☐ Knob & Tube _____	☐ Other _____
Temporary wiring or extension cords:	☒ No	☐ Yes _____			
Overcurrent protection:	☒ Circuit Breakers	Fuses:	☐ Ordinary	☐ Type P	☐ Type D ☐ Other
Installation defects:	☒ None	☐ Moderate	☐ Major		
Installation (wiring) replaced:	☒ Yes	☐ No	(yyyy)*1990* *100%*		
Partial changes/extensions:	☐ Yes _____	☒ No			
Comments: *Standard equipment in use that appears to be safely arranged.*					

PLUMBING:

Type:	☒ Copper	☐ Galvanized	☒ Plastic	☐ Other _____
Installation Replaced:	☐ Yes	☒ No	(yyyy) _____	_____ %
Condition:	☒ Good	☐ Fair	☐ Poor _____	
Installation appears safe:	☒ Yes	☐ No _____		

SMOKING:

Smoking Restricted:	☐ Yes	☒ No			
"No Smoking" Signs posted:	☐ Yes	☒ No	Enforced:	☐ Yes	☒ No

HOUSEKEEPING:

☒ Good	☐ Average	☐ Poor	☐ Unacceptable
Comments: *No apparent deficiencies noted.*			

9.0 FIRE PROTECTION

PUBLIC:

F.U.S. Protection Class: *3* Responding Fire Department: *St. Catharines* IICC Protection Grade 2

☒ Full time ☐ Part Time/Volunteer ☐ Composite

Distance to Fire Department: *1* km Roads: ☒ Paved ☐ Unpaved Accessible Year-round: ☒ Yes ☐ No

☒ Public Water Supply ☐ Private Water Supply

No. Hydrants: *2* within 155 m, _____ within 156 - 305 m, _____ Over 305 m, ☐ None

PRIVATE:

Are the following adequate?

	Yes	No		Date Last Serviced	Comments
Portable Extinguishers	☒	☐		*July 2001*	*Tested and serviced annually to ensure reliable operation.*
Standpipe/Inside Hoses	☐	☐	N/A ☒	_____	_____
Watchman Service	☐	☐	N/A ☒	_____	_____

Fire Detection System: ☐ None ☒ Full ☐ Partial, Describe: *Supervised smoke and heat*

i) Type of Detectors: Smoke detectors

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ii) Detectors properly located: ☒ ☐ Describe: Throughout the building

iii) Components listed by: ☒ ULC ☐ UL ☐ Other _____

iv) Maintenance contract: ☒ ☐ Company: *Edwards Alarm Service* Telephone #: *1-905-632 6575*

v) Connected to: ☒ ULC Listed Station ☐ Unlisted Service ☐ Fire/Police Department ☐ Local only ☐ Other: _____

Automatic Sprinkler Protection: ☒ None ☐ Full Premises ☐ Partial (describe): _____

☐ Sprinkler Supplement Attached ☐ Yes ☒ No

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10.0 ALL RISK :

Information Confirmed by: Derek Mills

EARTHQUAKE

What is the earthquake zone:	0		
Is there any earthquake history in the area:	☐ Yes	☒ No	☐ Undetermined
If **Yes**, describe history _____			
Any evidence of the following:			
Significant exterior wall or foundation cracks noted? ☐ Yes ☒ No		Describe: _____	
Sagging? ☐ Yes ☒ No		Describe: _____	

FLOOD

Is this establishment located on a flood plain:	☐ Yes	☒ No	
Is it located near a body of water:	☒ Yes	☐ No	Describe: *South shore of Lake Ontario*
Distance to nearest body of water:	*40 m*	☐ None determined	
Is there a history of flooding:	☐ Yes	☒ No	If **yes**, give history: _____
Evidence of water damage:	☐ Yes	☒ No	Describe:
Years knowledge of risk: 25 yrs.			

WATER DAMAGE

Plumbing is: ☒ Copper ☐ Galvanized ☒ Plastic ☐ Other			Describe: Copper pipe under pressure and plastic drains
Is there evidence of corrosion:	☐ Yes	☒ No	Describe: _____
Is the building sprinklered:	☐ Yes	☒ No	Comment:
Is stock susceptible to water damage:	☐ Yes	☒ No	Describe: *N/A*
Are all window/skylight openings adequately sealed:	☒ Yes	☐ No	Describe: _____
Does water main pass under building:	☐ Yes	☒ No	
Is the roof covering adequate:	☒ Yes	☐ No	Most recent roof repair date, if applicable 1995
Inside and/or roof storage tanks/process equipment	☐ Yes	☒ No	Describe: _____
Tanks/equipment satisfactorily controlled:	☐ Yes	☐ No	Describe: _____
Is there use of: ☐ skids ☐ Shelving ☐ Floor Drains ☐ Covers over stock/equipment			Describe: _____
Sewer Backup claim in the last three years:	☐ Yes	☒ No	☐ Describe: _____

COLLAPSE AND/OR SEWER BACKUP

Is there any history of collapse:	☐ Yes	☒ No	Describe: _____
Is there any history of sewer back-up:	☐ Yes	☒ No	Describe: _____
Are sewer back-up protection devices in place:	☐ Yes	☒ No	Describe: _____

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ADDITIONAL PERILS

Is lightning protection in place:		☐ Yes	☒ No	Describe: _____		
Is risk located within 5 km of airport:		☐ Yes	☒ No	Beneath a flight path:	☐ Yes	☒ No
Is the yard fenced:	☐ Yes	☒ No		Are gates locked when the premises are closed:	☐ Yes	☐ No
Is the yard and the exterior of the building lit:			☒ Yes	☐ No		
I s the risk located in a high wind/hail area:		☐ Yes	☒ No	Describe:_____		
Are there visible signs of vandalism at the risk:		☐ Yes	☒ No	Describe:_____:		
In the area:		☐ Yes	☒ No	Describe:_____		
Is the risk protected from	Automobile	☒ Yes	☐ No	Describe:_____		
Impact exposure:	Aircraft	☒ Yes	☐ No	Describe:_____		
	Train	☒ Yes	☐ No	Describe:_____		
	Boat	☒ Yes	☐ No	Describe:_____		

Comments: No unusual conditions noted.

11.0 BASIC PREMISES LIABILITY

The following appeared to be satisfactory:

Stairs, Ramps & Handrails:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Floor Surfaces & Coverings:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Walls & Ceilings:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Interior & Exterior Lighting:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Emergency Lighting	Yes ☒	No ☐	N/A ☐	Comments: _____	
Interior & Exterior Housekeeping:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Washrooms:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Sidewalks, Yards & Parking Lots:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Fire Exits:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Fire Alarm System (s):	Yes ☒	No ☐	N/A ☐	Comments: _____	
Snow & Ice Removal:	Yes ☒	No ☐	N/A ☐	Comments: _____	
Elevating devices in operation	Yes ☒	No ☐	N/A ☐	Comments: *Serviced monthly to ensure safe and reliable operation.*	
TV Satellite Dishes /Exterior Signs	Yes ☐	No ☐	N/A ☒	Comments: _____	
CO detectors where required	Yes ☐	No ☐	N/A ☒	Comments: _____	
Swimming Pool	Yes ☐	No ☒	☐	Supplement attached	
Other	Yes ☐	No ☒	☐	Comments:_____	

12.0 BASIC CRIME

☐ Refer to Expanded Crime Supplement

Crime Experience	☐ Low	☒ Moderate	☐ High		
Type of Neighbourhood:	☒ Commercial	☐ Industrial	☐ Rural	☐ Residential	☐ Isolated
Neighbourhood appears to be:	☒ Stable Changing via:	☐ Expansion/growth		☐ Renovation	☐ Deterioration
Visible malicious damage:	☐ Yes	☒ No			

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BUSINESS

Automatic Teller Machine :	☐ Yes	☒ No		
Safe on Premises:	☐ Yes	☒ No	☐ Unable to Determine	
Guard Service:	☐ Yes	☒ No	☐ Unable to Determine	Describe:
Typical Stock:	N/A			
Smash & Grab exposure:	☒ Yes	☒ No	☐ Unable to Determine	
Comments: None				

GENERAL PROTECTION

The following appeared to be satisfactory:

Exterior Lighting:	☒Yes	☐No	☐N/A	Comments:
Interior Lighting:	☒Yes	☐No	☐N/A	Comments:
Roof Accessibility:	☐Yes	☐No	☒N/A	Comments:
Police Patrols:	☐Yes	☐No	☒N/A	Comments:
Yard Fenced:	☐Yes	☐No	☒N/A	Describe:

SECURITY ALARM SYSTEM

Premises alarm system in use:	☐ N/A	☒ Yes	☐ No	☐ Disconnected	Date Installed: (yyyy)*1985*	
Monitored by:	☒ULC Listed Station	☐ Unlisted Station	☐ Local Alarm	☐ Unknown to Contact	☐ Unable to Determine	

PHYSICAL PROTECTION

Door locks:	☒ Deadbolt	☐ Spring	☐ Panic	☐ Other	
Windows Protected:	☐ Yes	☐ No	☐ N/A	If **yes**, describe _____	
Other Openings:	☒ No	☐ Yes	Protected:	☐ No	☐ Yes

OTHER COMMENTS:

The target stock of liquor and beer is locked after normal business hours.

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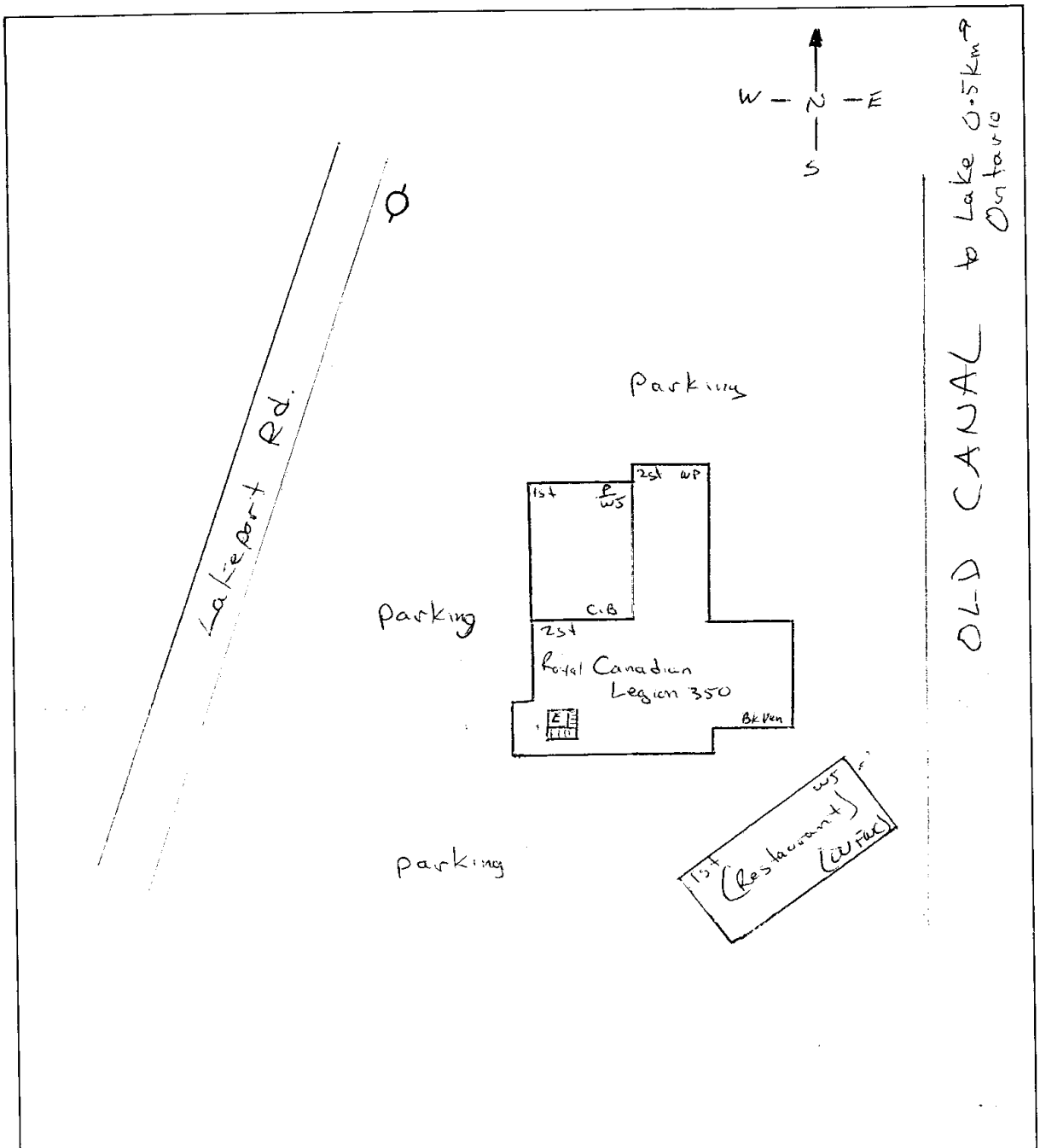
Siteplan Report - 1994 Royal Canadian Legion 57 Lakeport Road Saint Catharines ON a

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1994



INSURED: Royal Canadian Legion 350
LOCATION: 57 Lakeport Rd
St. Catharines, Ont

SCALE: 1cm=6m FILE NO. —

Insurers' Advisory Organization (1989) Inc.

REPRESENTATIVE: R. Gray

DATE: Sept 14/94

LCED.301.0291

Siteplan Report - 1975 Royal Canadian Legion 57 Lakeport Road Saint Catharines ON a

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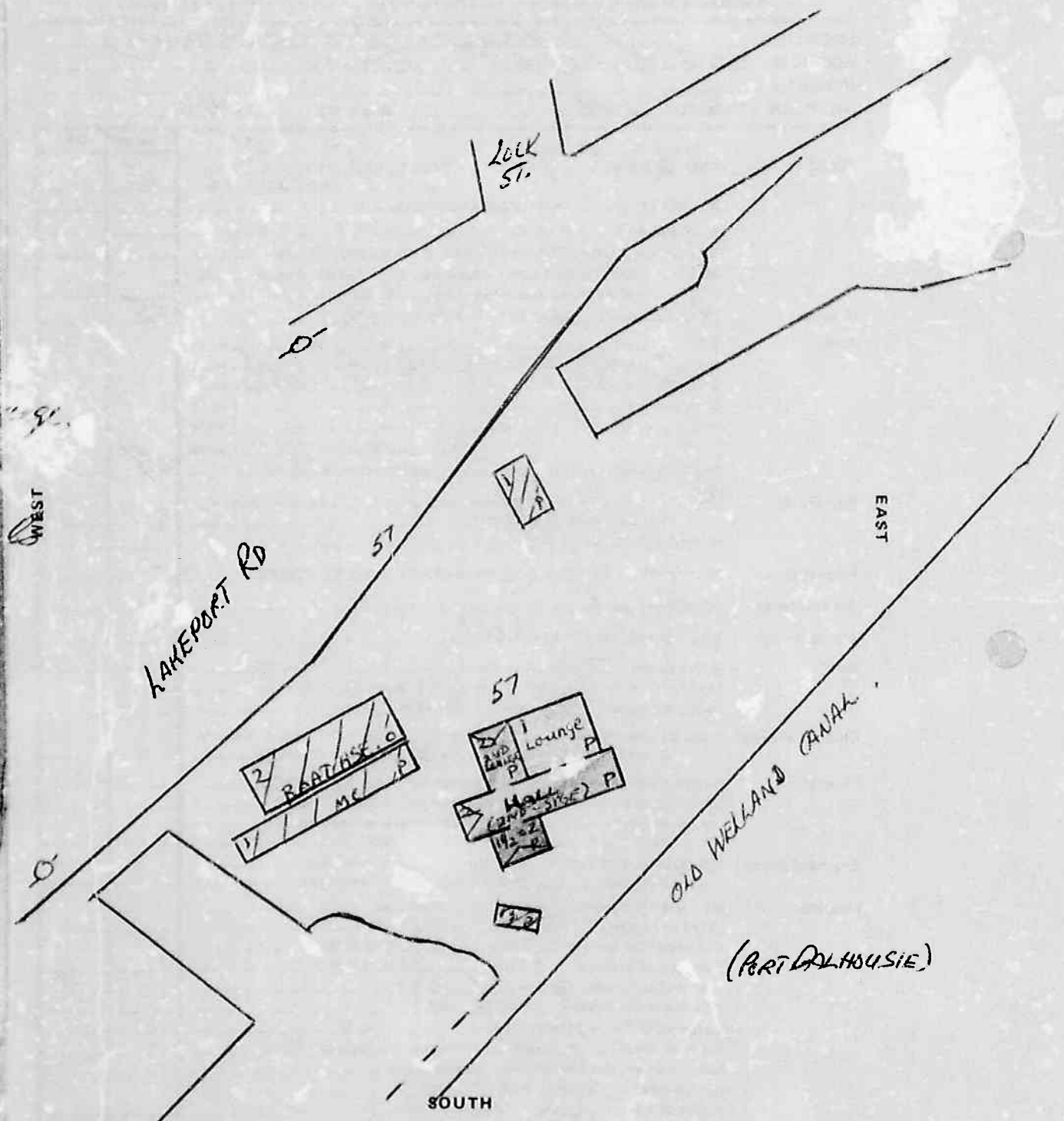


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DIAGRAM

(Scale 1" = 50' or 1" = 100')

NORTH



(PORT DALHOUSIE)

Exposure: Note — These questions must be answered fully.

NORTH ..... ft. to building build of .... stories high, occupied as .....

SOUTH ..... " " ..... " " .....

EAST ..... " " ..... " " .....

WEST ..... " " ..... " " .....

Signature of Inspector: .....

Date Jan 28 ..... 19 .....

Appendix C
Property Chain of Title Documents

Chain Of Title

Re: 57 Lakeport Road
St. Catharines, Ont.
PIN 46195-0362 LT
Part of lot 21 Concession 1
Township of Grantham
Now Port Dalhousie Lot 1
Port Dalhousie Lot 636
Subject to an easement } in Inst
Together with an easement } 755683

#1810 Nathan Pawling
Sept 3, 1844

#2707 Estate of James Drabble
Feb? 1846

To

The Board Of Works

#5063 The King
July 17, 1951

To

Romaine K. Ross,
W. A. Finch, Gerald A. Wing
Trustees of the Canadian Legion No. 350

Continued →

#609387
May 15, 1990

Royal Canadian Legion,
Branch 350

To

Royal Canadian Legion,
Branch 350

#NR271392
June 17, 2011
Land Registrars
Order.

Title of ownership
from
The Royal Canadian Legion
Branch 350

To

The Royal Canadian Legion,
Branch 350
present owners.

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #30

46195-0362 (LT)

PREPARED FOR SB
ON 2016/09/29 AT 13:19:54

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 21 CON 1 (PORT DALHOUSIE LT 1) GRANTHAM; PT LT 21 CON 1 (PORT DALHOUSIE LT 636) GRANTHAM AS IN RO755683; T/W & S/T RO755683; ST. CATHARINES

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
RE-ENTRY FROM 46195-0618

PIN CREATION DATE:
2003/09/22

OWNERS' NAMES
ROYAL CANADIAN LEGION, BRANCH 350

CAPACITY SHARE
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2003/09/19 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2003/09/22 **						
30R3301	1981/07/29	PLAN REFERENCE – See whole print				C
RO573547	1988/10/24	AGREEMENT – site plan			THE CITY OF ST. CATHARINES	C
	REMARKS: SITE PLAN					
RO592386	1989/08/23	AGREEMENT – site plan			THE CITY OF ST. CATHARINES	C
~~RO609389~~	~~1990/05/15~~	~~CHARGE~~		~~*** COMPLETELY DELETED ***~~	~~CIBC MORTGAGE CORPORATION~~	
~~RO609390~~	~~1990/05/15~~	~~ASSIGNMENT GENERAL~~		~~*** COMPLETELY DELETED ***~~		
	~~REMARKS: RO609389~~					
RO632557	1991/07/30	AGREEMENT – site plan			THE CITY OF ST. CATHARINES	C
	REMARKS: AMENDING, RO573547					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
~~RO653181~~	~~1992/08/19~~	~~ASSIGNMENT GENERAL~~		~~*** COMPLETELY DELETED ***~~		
	REMARKS: RO609389					
RO700925	1995/09/20	CHARGE	$500,000		NIAGARA CREDIT UNION LIMITED	C
30R8500	1996/03/27	PLAN REFERENCE – see whiteprint				C
RO725495	1997/04/24	AGREEMENT – site plan			THE CITY OF ST. CATHARINES	C
	REMARKS: RO573547, RO632557					
RO755683	1999/06/22	TRANSFER – see copy		ROYAL CANADIAN LEGION, BRANCH 350	ROYAL CANADIAN LEGION, BRANCH 350	C
NR271392	2011/06/17	LR'S ORDER – see copy.		LAND REGISTRAR, LRO NO. 30		C
	REMARKS: CORRECTS OWNERSHIP					
~~NR272869~~	~~2011/07/06~~	~~DISCH OF CHARGE~~		~~*** COMPLETELY DELETED ***~~ CIBC MORTGAGE CORPORATION		
	REMARKS: RO609389.					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.



ServiceOntario

PRINTED ON 29 SEP, 2016 AT 13:19:11
FOR SB

SCALE

0 30
meters

PROPERTY INDEX MAP

NIAGARA(No. 30)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	——
EASEMENT	- - - -

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

© Queen's Printer for Ontario, 2016

1810

Schedule to be registered pursuant to the Statutes in that case made and provided of a Deed of Bargain and Sale made the Twenty fifth day of December in the year of our Lord one thousand eight hundred and forty one between William Hattin Pawling of the Village of Port-Dalhousie in the King's Royal District and Province of Canada Gentleman of the First Part, and the Board of Works in and for the Province of Canada of the Second Part Whereby it is witnessed that the said William Pawling for and in consideration of the Sum of Five Hundred ——— of Lawful British Money of the Province of Canada to him in hand paid by the Board of Works aforesaid at or before the Ensealing and delivery of said Indenture the receipt whereof he the said William Pawling did thereby acknowledge did Grant Bargain Sell alien Release Transfer Convey and confirm unto the Board of Works aforesaid and their assigns all and singular that certain piece or parcel of land and premises situate lying and being in the Village of Port-Dalhousie being composed of Lot Number Forty Eight, and Forty Nine and part of Lot Number Fifty One on Forty Seven in the said Village of Port-Dalhousie being part of Lot Number Forty one in the first Concession of the Township of Grantham commencing at the distance of two chains and sixteen links from the North East corner of Lot Number Forty Eight running thence South Forty Degrees East Three North Forty three degrees East five chains and forty three links to the Boundary line of the Original Canal Company's Lands thence along the said Boundary line on a course to the Original Survey of the Village Plot by a line South fifty Two and one half degrees East Nine links

Wm. Hamilton Merritt

No. 1810. Enrolled pursuant to the 3rd Act of Geo. 4th Cap. 39. in the Registry Office for the County of Lincoln. 10th. A.D. 1841. Oct. 4th.

2707

A Memorial to be registered pursuant to the Statute in such case made and provided of a Deed of Bargain and Sale made the twelfth day of January in the year of our Lord one thousand eight hundred and forty six between Robert Robinson Brownell of Newfield near Sheffield in the County of York in that part of Great Britain called England Merchant and Samuel Pendlington of Hackney near London England Gentleman Executors and Trustees in Trust of the last Will and Testament of James Crabbe late of Sheffield aforesaid Merchant deceased of the one part and the Board of Works in and for the Province of Canada of the other part Witness as follows.

"Whereas the said James Crabbe now deceased in his life time was the owner of the Land hereinafter described and did by his last Will and Testament dated the fifth day of August in the year of our Lord one thousand Eight hundred and thirty Amongst other things devise to the above named Robert Robinson Brownell, Samuel Pendington and one Charles Brownell, all and every his Freehold and Leasehold Messuages, lands, Tenements, hereditaments and premises whatsoever situate and being, and also all his ready money ~~securities for money~~ Stocks in Trade household furniture and other his personal Estate and Effects— To Hold unto and to the use of the said Robert Robinson Brownell, Charles Brownell and Samuel Pendington their heirs Executors administrators and assigns according to the Nature and Quality of such Estate and property respectively but upon and for the several Trusts Intents and purposes hereinafter declared that is to say, Upon Trust that they the said Trustees or the Survivor or Survivors of them or the heirs Executors administrators or assigns of such Survivor Should permit and suffer his wife Marianne Crabbe to hold and enjoy the same for and during the term of her natural life if she should so long remain his widow she maintaining Educating and Supporting his Children thereout and from and after the decease or second marriage of his said wife whichever Should first happen Upon further Trust that his said Trustees or the Survivor or Survivors of them or the heirs Executors administrators or assigns of such Survivor of them

Registered this 29th day of January A.D. 1847 at the hour of Eleven o'clock A.M.

Samuel Bealey Clerk

2 5063

"F.F.Delante"
DEPUTY GOVERNOR

G R E A T
S E A L

C A N A D A

"F. P. Varcoe"
DEPUTY ATTORNEY GENERAL,
CANADA.

GEORGE THE SIXTH, by the Grace of God, of Great Britain, Ireland and the British Dominions beyond the Seas KING, Defender of the Faith.

TO ALL TO WHOM these Presents shall come,

GREETING:

WHEREAS the lands hereinafter described are vested in Us in the right of Canada.

AND WHEREAS the said lands are not required for public purposes, and under and by virtue of the statutes in that behalf and pursuant to authority duly granted by Our Governor in Council, the said lands or the interest therein that is or may be vested in Us for the uses of Canada have been disposed of to Romaine K. Ross, W.A. Finch and Gerald A. Wing, Trustees of the Canadian Legion No. 350, British Empire Service League, of Port Dalhousie, Ontario, hereinafter called the Grantees, at and for the price or sum of six thousand and nineteen dollars.

NOW KNOW YE that We do by these Presents grant, convey and assure unto the Grantees and their successors, ALL AND SINGULAR that certain parcel or tract of Third Welland Canal reserve land and premises, (herein referred to as "the said land"), situate, lying and being on the westerly side of Port Dalhousie Harbour on an island between the Second and Third Welland Canals, being part of Lot No. 21, in the First Concession of the Township of Grantham, now in the Town of Port Dalhousie, in the County of Lincoln and Province of Ontario and which may be more particularly described as follows:

BEGINNING at a point marking the intersection of the northerly

limit of Lock Street, which has a bearing considered to be North forty degrees, zero minutes West (N.40°00'W.), with the westerly limit of Front Street;

THENCE South twenty-eight degrees, seven minutes East (S.28°07'E.) across Front Street and Lock No. 1 of the Second Welland Canal and Canal lands two hundred and forty-four and two-tenths (244.2) feet to a square iron bar planted at the POINT OF COMMENCEMENT of the parcel herein to be described;

THENCE South fifty-seven degrees, thirty-four minutes East (S.57°34'E) seventy-eight and six-tenths (78.6) feet to a point marked by a square iron bar;

THENCE South twenty-one degrees, twenty-four minutes West (S.21°24'W.) twenty and one-tenth (20.1) feet to a point marked by a square iron bar;

THENCE South fifty-seven degrees, ten minutes East (S.57°10'E.) eighty-seven and thirty-five hundredths (87.35) feet to a point marked by a square iron bar;

THENCE South thirty-six degrees, twenty-four minutes West (S.36°24'W.), in the line of, and in and along, the face of the south-easterly wall of a two-storey brick building at one time known as the Third Welland Canal "Carpentry Shop", eighty and three-tenths (80.3) feet to the intersection with the face of the north-easterly wall of a one-storey brick building at one time known as the Third Welland Canal "Boiler Shop";

THENCE South fifty-three degrees, twenty-six minutes East (S.53°26'E.) in and along the face of the north-easterly wall of the former "Boiler Shop", so-called, twenty-five and eight-tenths (25.8) feet to the north-east corner thereof;

THENCE South thirty-six degrees, twenty-nine minutes West (S.36°29'W.) in and along the face of the south-easterly wall of the former "Boiler Shop", so-called, and in the line of the south-westerly production thereof forty-seven and seventy-five hundredths (47.75) feet to a point in the line of the south-easterly production of the face of the south-westerly wall of the former "Carpentry Shop", so-called;

THENCE North fifty-three degrees, twenty-six minutes West (N. 53°26'W.) in the line of and in and along the face of the south-westerly wall of the former "Carpentry Shop", so-called, fifty-three and five-hundredths (53.05) feet to the southwest corner thereof;

THENCE North forty-two degrees, twelve minutes West (N.42°12'W.) thirty-four and three-tenths (34.3) feet to a point marked by a square iron bar;

THENCE North sixty-one degrees, twenty-eight minutes West (N.61°28'W.) sixty (60.0) feet to a point marked by a square iron bar planted in the easterly limit of a travelled roadway located on the easterly side of Lock No. 1 of the Second Welland Canal and which said point is the extreme westerly angle of the said land and is also the extreme northerly angle of a parcel of land, an Easement over which, in common with others, for right-of-way purposes, is granted to the Grantee by these presents as hereinafter described:

THENCE North four degrees, fourteen minutes East (N.4°14' E.) sixty-seven and seventy-five hundredths (67.75) feet to a square iron bar in the easterly limits of the said roadway located on the easterly side of Lock No. 1 of the Second Welland Canal;

THENCE North twenty-five degrees, fifty-three minutes East (N.25°53'E.) eighty-two (82.0) feet to the POINT OF COMMENCEMENT;

CONTAINING by admeasurement four hundred and ninety-two thousandths (0.492) acres, be the same more or less, the location of the said land being indicated margined red on Plan W.C.L. 50-14 hereto annexed;

TOGETHER with an easement in perpetuity, in common with others, covering a right-of-way, not less than sixteen (16.0) feet wide along and adjacent to the south-westerly limits of the said land as hereinafter described.

COMMENCING at a square iron bar planted at the extreme

westerly angle of the said land as hereinabove described;

THENCE South sixty-one degrees, twenty-eight minutes East (S.61°28'E.) sixty (60.0) feet to a square iron bar;

THENCE South forty-two degrees, twelve minutes East (S.42°12'E.) thirty-four and three-tenths (34.3) feet to the south-west corner of the former "Carpentry Shop", so-called;

THENCE South fifty-three degrees, twenty-six minutes East (S.53°26'E.) fifty-three and five-hundredths (53.05) feet to the extreme southerly angle of the said land;

THENCE South thirty-six degrees, twenty-nine minutes West (S.36°29'W.) sixteen (16.0) feet;

THENCE North fifty-three degrees, twenty-six minutes West (N.53°26'W.) fifty-three and five hundredths (53.05) feet;

THENCE North forty-eight degrees, twenty-nine minutes West (N.48 29'W.) fifty (50.0) feet to a square iron bar planted in the southerly production of the line of the face of the north-easterly wall of a two-storey wooden-frame building, sheeted with galvanized iron, owned by the Grantor and formerly known as the Third Welland Canal "Timber Shed";

THENCE North sixty-one degrees, twenty-eight minutes West (N.61 28'W) forty-one (41.0) feet to the extreme northerly corner of the said "Timber Shed";

THENCE North twenty-eight degrees, thirty-two minutes East (N.28 32'E.) sixteen (16.0) feet to the POINT OF COMMENCEMENT; the location of the said right-of-way being indicated coloured yellow on the said Plan W.C.L. 50-14 hereto annexed.

TO HAVE AND TO HOLD the said lands unto the Grantees and their successors, forever; saving, excepting and reserving unto Us, Our Heirs and Successors, the free use, passage and enjoyment of, in, over and upon all navigable waters that now are or may be hereafter

found on or under or flowing through or upon any part of the said lands.

GIVEN under the Great Seal of Canada.

WITNESS; JOSEPH FRANCOIS DELAUTE, Esquire, Deputy of Our Right Trusty and Well-beloved Cousin, Harold Rupert Leofric George, Viscount Alexander of Tunis, Knight of Our Most Noble Order of the Garter, Knight Grand Cross of Our Most Honourable Order of the Bath, Knight Grand Cross of Our Most Distinguished Order of Saint Michael and Saint George, Companion of Our Most Exalted Order of the Star of India, Companion of Our Distinguished Service Order, upon whom has been conferred the Decoration of the Military Cross, Field Marshal in Our Army, Governor General and Commander-in-Chief of Canada.

AT OTTAWA, this Twenty-ninth day of December in the year of Our Lord One thousand nine hundred and fifty and in the Fifteenth year of Our Reign.

BY COMMAND,

"C. Stein"
UNDER SECRETARY OF STATE

"J. C. Lenard"
DEPUTY MINISTER OF TRANSPORT

No. 5063

Abstract Index Book Eastern
Folio No. 1

CERTIFY that the within instrument is duly entered and Registered in the Registry Office or Registry Division of the County of Lincoln in Book 10 for the Town of Pt. Dalhousie.
10 O'clock A M. of the 17 day of July A.D. 1951
Number 5063
Registrar

5019.00
1.38

G R A N T

by

HIS MAJESTY THE KING

to

Romaine K. Ross, W.A. Finch and Gerald A. Wing, Trustees of the Canadian Legion No. 350, B.E.S.L., of Port Dalhousie.

Of a certain parcel or tract of Third Welland Canal reserve land and premises situate in the Town of Port Dalhousie, County of Lincoln, Province of Ontario.

DATED . . . . . 29th December, 1950.

RECORDED. . . . . 24th January, 1951.

Lib. 471 Fol. 331

"H. W. Doyle"
FOR DEPUTY REGISTRAR GENERAL OF CANADA
Ref. No. 133613

TOWN OF PORT DALHOUSIE

LOT 21 CON I
TWP. OF GRANTHAM
COUNTY OF LINCOLN

℄ Canal

LOCK ST.

Limits

FRONT STREET

244'-2"

S 28°07'E

REGISTERED
SECOND WELLAND
CANAL

Earth Fill for future
Roadway Diversion

LOCK N° 1

N

℄ Sidewalk

N 25°53'E

Concrete Pavement

N 28°32' E 16'-0"

St Catharines Rowing Club.
Former Timber Shed.

Area = 0.492 Acres±

Apron

Weir

I.B.

S 21°24' W.

National Sand and
Materials Ltd.

Jones-Lockhart Ltd.

"Former
Carpentry Shop"

Former
Boiler
Shop

S 36°24' W

S 33°10½' E

HARBOUR.

BY-PASS

℄ LOCK N°1
THIRD WELLAND CANAL

Dept'l File N° 4606-73-54

DEPARTMENT OF TRANSPORT
WELLAND CANALS
THIRD WELLAND CANAL

Plan showing marginal red land in the Town of Port Dalhousie to be conveyed by Letters Patent to Messrs. Romaine K. Ross, W.A. Finch and Gerald A. Wing, Trustees of Canadian Legion, N°350, B.E.S.L., of Port Dalhousie, County of Lincoln.

Scale 1" = 50'
St. Catharines, Ont.
July 6th 1950

J.H. Rowland
Supt'g Engineer
W.C.L.

Province of Ontario

Transfer/Deed of Land

Form 1 — Land Registration Reform Act, 1984

A

FOR OFFICE USE ONLY

NUMBER 609387
CERTIFICATE OF REGISTRATION
'90 MAY 15 14:30
NIAGARA NORTH NO. 30
ST. CATHARINES
LAND REGISTRAR

New Property Identifiers — Additional: See Schedule ☐

Executions — Additional: See Schedule ☐

(1) Registry ☒ Land Titles ☐ (2) Page 1 of 9 pages

(3) Property Identifier(s) Block Property — Additional: See Schedule ☐

(4) Consideration
ONE xx/100 Dollars $ 1.00

(5) Description This is a: Property Division ☐ Property Consolidation ☐

Part of Lot 21, Concession 1, in the City of St. Catharines, in the Regional Municipality of Niagara, in the former Township of Grantham and former Town of Port Dalhousie, in the County of Lincoln, more particularly described in attached Schedule. Lands as previously described in Instrument No. 573547.

(6) This Document Contains: (a) Redescription ☐ New Easement ☐ Plan/Sketch ☐ (b) Schedule for: Description ☒ Additional Parties ☒ Other ☒

(7) Interest/Estate Transferred: Fee Simple

(8) Transferor(s) The transferor hereby transfers the land to the transferee and certifies that the transferor is at least eighteen years old and that

Name(s) ROSS, Romaine K.
Sole Surviving Trustee of the
ROYAL CANADIAN LEGION, BRANCH 350

Signature(s) — Date of Signature Y M D: 1990 05 14

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction
Name(s) — Signature(s) — Date of Signature Y M D

(10) Transferor(s) Address for Service 18 South Drive, St. Catharines, Ontario L2R 4T8

(11) Transferee(s)

ROYAL CANADIAN LEGION, BRANCH 350

Date of Birth Y M D

(12) Transferee(s) Address for Service P. O. Box 2366, Station "B", St. Catharines, Ontario L2M 7M7

Planning Act — OPTIONAL

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 49 of the Planning Act, 1983.

Date of Signature Y M D — Signature

Date of Signature Y M D — Signature

Solicitor for Transferor(s) I have explained the effect of section 49 of the Planning Act, 1983 to the transferor and I have made inquiries of the transferor to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor — Date of Signature Y M D — Signature

Affix Statement by Solicitor for Transferee(s) here if necessary

(14) Solicitor for Transferee(s) I have investigated the title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 49 (21a) (c) (ii) of the Planning Act, 1983 and that to the best of my knowledge and belief this transfer does not contravene section 49 of the Planning Act 1983. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

Name and Address of Solicitor — Date of Signature Y M D — Signature

(15) Assessment Roll Number of Property: Cty. 26 Mun. 29 Map 060 Sub. 039 Par. 08100

(16) Municipal Address of Property

57 Lakeport Road
St. Catharines, Ontario
L2N 4P6

(17) Document Prepared by:

REID, McNAUGHTON
Barristers & Solicitors
63 Ontario Street, Box 276
ST. CATHARINES, Ontario
L2R 6T8 JJZ:mc

FOR OFFICE USE ONLY

Fees and Tax	
Registration Fee	22 -
Land Transfer Tax	
Total	

Newsome and Gilbert, Limited
Form LF1327 (1/85)

April, 1985

Province of Ontario

Schedule

Form 5 — Land Registration Reform Act, 1984

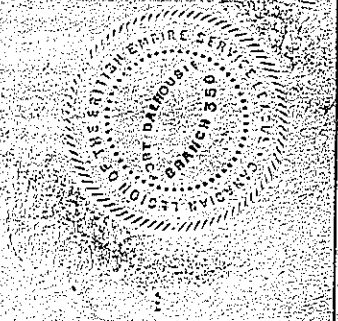
S

Additional Property Identifier(s) and/or Other Information

Signature(s)	Date of Signature Y M D
BRISBOIS, Kenneth	1990 05 14
President of Royal Canadian Legion, 350	
BLACKMORE, Barbara	1990-05-14
Secretary of Royal Canadian Legion, 350,	

(PARTIES OF THE THIRD PART)

Address for Service P. O. Box 2366, Station "B"
St. Catharines, Ontario
L2M 7M7



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Province of Ontario

Schedule

Form 5 — Land Registration Reform Act, 1984

S

Additional Property Identifier(s) and/or Other Information

WHEREAS the Transferor is the Sole Surviving Trustee of the Royal Canadian Legion, Branch 350;

AND WHEREAS upon motion duly made, seconded and carried, on May 13th, 1990, it was resolved that the title to the lands and premises of the said branch be held in the name of the Branch.

AND WHEREAS in pursuance of the 1965 Statutes of Ontario, Chapter 167, the parties of the third part are the President and Secretary, respectively, of the Transferee;

THE PARTIES of the third part, as President and Secretary, respectively, of the Transferee, do hereby certify that the Transferee is a duly constituted Branch of The Royal Canadian Legion and is in good standing entitled to all the rights, powers and privileges conferred upon such branches of The Royal Canadian Legion.

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Newsome and Gilbert, Limited
Form LF1335-(1/85)

April, 1985

FIRSTLY:

ALL AND SINGULAR that certain parcel or tract of Third Welland Canal reserve land and premises (hereinafter referred to as the "said land"), situate, lying and being on the westerly side of Port Dalhousie Harbour on an island between the Second and Third Welland Canals, being part of Lot No. 21, in the First Concession of the former Township of Grantham and former Town of Port Dalhousie, in the County of Lincoln, now in the City of St. Catharines, in the Regional Municipality of Niagara, and Province of Ontario and which may be more particularly described as follows:

BEGINNING at a point marking the intersection of the northerly limit of Lock Street, which has a bearing considered to be North, 40 degrees, 0 minutes west, with the westerly limit of Front Street;

THENCE south 28 degrees, 7 minutes east across Front Street and Lock No. 1 of the Second Welland Canal and Canal lands two hundred and forty-four and two-tenths (244.2) feet to a square iron bar planted at the POINT OF COMMENCEMENT of the parcel herein to be described;

THENCE south 57 degrees, 34 minutes east, seventy-eight and six-tenths (78.6) feet to a point marked by a square iron bar;

THENCE south 21 degrees, 24 minutes west, twenty and one-tenth (20.1) feet to a point marked by a square iron bar;

THENCE south 57 degrees, 10 minutes east, eighty-seven and thirty-five hundredths (87.35) feet to a point marked by a square iron bar;

THENCE south 36 degrees, 24 minutes west in the line of, and in and along, the face of the south-easterly wall of a two-storey brick building at one time known as the Third Welland Canal "Carpentry Shop", eighty and three-tenths (80.3) feet to the intersection with the face of the north-easterly wall of a one-storey brick building at one time known as the Third Welland Canal "Boiler Shop";

THENCE south 53 degrees, 26 minutes east in and along the face of the north-easterly wall of the former "Boiler Shop", so-called, twenty-five and eight-tenths (25.8) feet to the north-east corner thereof;

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Additional Property Identifier(s) and/or Other Information

THENCE south 36 degrees, 29 minutes west in and along the face of the south-easterly wall of the former "Boiler Shop", so-called, and in the line of the south-westerly production thereof forty-seven and seventy-five hundredths (47.75) feet to a point in the line of the south-easterly production of the face of the south-westerly wall of the former "Carpentry Shop", so-called;

THENCE north 53 degrees, 26 minutes west in the line of and in and along the face of the south-westerly wall of the former "Carpentry Shop", so-called, fifty-three and five-hundredths (53.05) feet to the southwest corner thereof;

THENCE north 42 degrees, 12 minutes west thirty-four and three-tenths (34.3) feet to a point marked by a square iron bar;

THENCE north 61 degrees, 28 minutes west, sixty (60) feet to a point marked by a square iron bar planted in the easterly limit of a travelled roadway located on the easterly side of Lock No. 1 of the Second Welland Canal and which said point is the extreme westerly angle of the said land and is also the extreme northerly angle of a parcel of land, an Easement over which, in common with others, for right-of-way purposes, is granted to the Grantee by these presents as hereinafter described:

THENCE north 4 degrees, 14 minutes east, sixty-seven and seventy-five hundredths (67.75) feet to a square iron bar in the easterly limits of the said roadway located on the easterly side of Lock No. 1 of the Second Welland Canal;

THENCE north 25 degrees, 53 minutes east, eighty-two (82) feet to the POINT OF COMMENCEMENT.

CONTAINING by admeasurement four hundred and ninety-two thousandths (0.492) acres, be the same more or less, the location of the said land being indicated margined red on Plan W.C.L. 50-14 annexed to instrument number 5063.

TOGETHER with an easement in perpetuity, in common with others, covering a right-of-way, not less than sixteen (16) feet wide along and adjacent to the south-westerly limits of the said land as hereinafter described.

COMMENCING at a square iron bar planted at the extreme westerly angle of the said land as hereinabove described;

THENCE south 61 degrees, 28 minutes east, sixty (60) feet to a square iron bar;

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Additional Property Identifier(s) and/or Other Information

THENCE south 42 degrees, 12 minutes east, thirty-four and three-tenths (34.3) feet to the southwest corner of the former "Carpentry Shop", so-called;

THENCE south 53 degrees, 26 minutes east, fifty-three and five-hundredths (53.05) feet to the extreme southerly angle of the said land;

THENCE south 36 degrees, 29 minutes west, sixteen (16) feet;

THENCE north 53 degrees, 26 minutes west, fifty-three and five-hundredths (53.05) feet;

THENCE north, 48 degrees, 29 minutes west, fifty (50) feet to a square iron bar planted in the southerly production of the line of the face of the north-easterly wall of a two-storey wooden frame building, sheeted with galvanized iron, owned by the Grantor in instrument number 5063, and formerly known as the Third Welland Canal "Timber Shed";

THENCE north 61 degrees, 28 minutes west, forty-one (41) feet to the extreme northerly corner of the said "Timber Shed";

THENCE north 28 degrees, 32 minutes east, sixteen (16) feet to the POINT OF COMMENCEMENT; the location of the said right-of-way being indicated coloured yellow on the said Plan W.C.L. 50-14 annexed to instrument number 5063.

SECONDLY:

ALL AND SINGULAR that certain parcel or tract of Third Welland Canal reserve land and premises (hereinafter referred to as the "said land"), situate, lying and being on the westerly side of Port Dalhousie Harbour on an island between the Second and Third Welland Canals, being part of Lot No. 21, in the First Concession of the former Township of Grantham and former Town of Port Dalhousie, in the County of Lincoln, now in the City of St. Catharines, in the Regional Municipality of Niagara, and Province of Ontario and which may be more particularly described as follows:

COMMENCING at a point marking the intersection of the northerly limit of Lock Street, which has a bearing considered to be north 40 degrees 0 minutes west with the westerly limit of Front Street;

THENCE south 28 degrees, 7 minutes east, two hundred and forty-four and two tenths (244.2) feet to an iron bar planted at the most northerly limit of a parcel of land granted to the grantees by Letters Patent dated 29th December,

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Additional Property Identifier(s) and/or Other Information

1950 and bearing the number 46549 in the records of the Department of Transport which Letters Patent is hereinafter referred to as the said "Letters Patent No. 46549";

THENCE south 57 degrees 34 minutes east, seventy-eight and six-tenths (78.6) feet, to an iron bar;

THENCE south 21 degrees, 24 minutes west, twenty and one-tenth (20.1) feet to an iron bar;

THENCE south 57 degrees, 10 minutes east, eighty-seven and thirty-five hundredths (87.35) feet to an iron bar marking the most easterly angle of a parcel of land conveyed by the said Letters Patent No. 46549, which is the PLACE OF BEGINNING of the parcel being described;

THENCE south 57 degrees, 10 minutes east, eight and forty-five hundredths (8.45) feet to an iron bar planted;

THENCE south 10 degrees, 0 minutes west, thirty-nine and two-tenths (39.2) feet to an iron bar planted;

THENCE south 36 degrees, 29 minutes west, forty-five and eight-tenths (45.8) feet, more or less, to an angle in the parcel of land conveyed by the said Letters Patent No. 46549;

THENCE north 53 degrees and 26 minutes west following the north-easterly boundary of the parcel of land conveyed by the said Letters Patent No. 46549, twenty five and eight-tenths (25.8) feet;

THENCE north 36 degrees, 24 minutes east, following the south-easterly boundary of the parcel of land conveyed by the said Letters Patent No. 46549, eighty and three-tenths (80.3) feet, more or less, to the PLACE OF BEGINNING.

CONTAINING by admeasurement one thousand, seven hundred and eight-two square feet, be the same more less, the location of the said land being indicated coloured red on Plan W.C.L. 51-8.

TOGETHER WITH A LEASE over all and singular that certain parcel or tract of Third Welland Canal reserve land (hereinafter referred to as the "said land") situate and lying in the City of St. Catharines, in the Regional Municipality of Niagara, formerly in the County of Lincoln, all in the Province of Ontario, and being on the westerly side of Port Dalhousie Harbour on an island between the

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Additional Property Identifier(s) and/or Other Information

Second and Third Welland Canals, being part of Lot 21, in the First Concession of the former Township of Grantham, and which may be more particularly described as follows:

COMMENCING at the most southerly angle of a parcel of land granted and conveyed to Romaine K. Ross, W.A. Finch and Gerald A. Wing, Trustees of the Canadian Legion No. 350 B.E.S.L. of Port Dalhousie by Letters Patent dated December 29th 1950 and bearing the number 46549 in the records of the Department of Transport;

THENCE north 36 degrees, 29 minutes east, ninety-three and fifty-five one-hundredths (93.55) feet;

THENCE north 10 degrees, 0 minutes east, thirty-nine and two-tenths (39.2) feet;

THENCE south 57 degrees, 10 minutes east, seventeen and thirty-five one-hundredths (17.35);

THENCE south 10 degrees, 0 minutes west, thirty-six and four-tenths (36.4) feet;

THENCE south 36 degrees, 29 minutes west, one hundred and four (104.0) feet;

THENCE south 71 degrees, 29 minutes west, eleven and fifteen one-hundredths (11.15) feet;

THENCE north 53 degrees, 26 minutes west, nine and seven-tenths (9.7) feet;

THENCE north 36 degrees, 29 minutes east, sixteen (16) feet, more or less, to the point of commencement;

CONTAINING by admeasurement two thousand, three hundred and sixty-six (2,366.0) square feet, be the same more or less, the location of the said land being indicated margined in yellow on Plan WC. 71-31.

FOR OFFICE USE ONLY

Province of Ontario

Document General

Form 4 — Land Registration Reform Act, 1984

D

FOR OFFICE USE ONLY

NUMBER 592386
CERTIFICATE OF REGISTRATION
'89 AUG 23 13:40
NIAGARA NORTH NO. 30
ST. CATHARINES
LAND REGISTRAR

(1) Registry [X] Land Titles [ ] (2) Page 1 of 8 pages

(3) Property Identifier(s) Block Property Additional: See Schedule [ ]

(4) Nature of Document

WINDOW OPENING AGREEMENT

(5) Consideration

N/A Dollars $ n/a

(6) Description

Part Lot 21, Concession 1, in the City of St. Catharines, in the Regional Municipality of Niagara, formerly in the Town of Port Dalhousie, Township of Grantham, County of Lincoln, more particularly described in Schedule "A" attached hereto. Lands as previously described in Instrument No. 573547.

New Property Identifiers Additional: See Schedule [ ]

Executions Additional: See Schedule [ ]

(7) This Document Contains: (a) Redescription New Easement Plan/Sketch [ ] (b) Schedule for: Description [X] Additional Parties [ ] Other [X]

(8) This Document provides as follows:

See Schedule Attached

Approved for Execution by SOLICITOR

Continued on Schedule [X]

(9) This Document relates to instrument number(s) 573547 (SITE PLAN AGREEMENT)

(10) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y	M	D
ROYAL CANADIAN LEGION, BRANCH 350 (OWNER)	KENNETH BRISBOIS (PRESIDENT)	1989	08	17
	RONALD E. GALWAY (BLDG. CHAIRMAN)	1989	08	17
	TED CULP (VICE PRES.)			
We are authorized to bind the Corporation.		1989	08	22

(11) Address for Service P. O. Box 2366, Station "B", St. Catharines, Ontario L2M 7M7

(12) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y	M	D
THE CORPORATION OF THE CITY OF ST. CATHARINES (CITY)	Joseph McCaffery - Mayor	1989	08	23
	Thomas Derreck - City Clerk	1989	08	23
We are authorized to bind the Corporation.				

(13) Address for Service P. O. Box 3012, 50 Church Street, St. Catharines, Ontario L2R 7C2

(14) Municipal Address of Property

57 Lakeport Road
St. Catharines, Ontario
L2N 4P6

(15) Document Prepared by:

City Solicitor
City Hall, 50 Church Street
P. O. Box 3012
St. Catharines, Ontario L2R 7C2

DS:dt

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Fees and Tax	
Registration Fee	20-
Total	20-

April, 1

Province of Ontario

Document General

Form 4 — Land Registration Reform Act, 1984

T919281

D

FOR OFFICE USE ONLY

NUMBER 632557
CERTIFICATE OF REGISTRATION
'91 JY 30 15:28
NIAGARA NORTH NO. 30
ST. CATHARINES
Mary F. Sweeny
ACTING LAND REGISTRAR

(1) Registry ☒ Land Titles ☐ (2) Page 1 of 10 pages

(3) Property Identifier(s) Block Property Additional: See Schedule ☐

(4) Nature of Document
SITE PLAN AMENDMENT AGREEMENT

(5) Consideration
N/A Dollars $ n/a

(6) Description
Part of Lot 21, Concession 1, in the City of St. Catharines, in the Regional Municipality of Niagara, formerly in the Township of Grantham, and former Town of Port Dalhousie, more particularly described in Schedule "A" attached hereto, as previously described in Instrument No. 573547.

New Property Identifiers Additional: See Schedule ☐

Executions Additional: See Schedule ☐

(7) This Document Contains: (a) Redescription New Easement Plan/Sketch ☐ (b) Schedule for: Description ☒ Additional Parties ☒ Other ☒

(8) This Document provides as follows:

See Attached Schedule

Approved for Execution by SOLICITOR CLERK

Deputy

Continued on Schedule ☐

(9) This Document relates to instrument number(s)
573547 (Site Plan Agreement)

(10) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y	M	D
ROYAL CANADIAN LEGION, BRANCH 350 (OWNER)	- Kenneth R. Brisbois, President	1991	07	29
	- E. A. Culp, First Vice-President	1991	07	29
	- Ronald Galway, Building Manager			
We are authorized to bind the Corporation.				

(11) Address for Service P. O. Box 2366, Station B, St. Catharines, Ontario, L2M 7N7

(12) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y	M	D
THE CORPORATION OF THE CITY OF ST. CATHARINES (CITY)	Joseph McCaffery, Mayor	1991	07	29
	James Powell, Deputy Clerk	1991	07	29
We are authorized to bind the Corporation.				

(13) Address for Service City Hall, 50 Church Street, P. O. Box 3012, St. Catharines, Ontario L2R 7C2

(14) Municipal Address of Property
57 Lakeport Road
St. Catharines, Ontario

(15) Document Prepared by:
ANNETTE LEMELIN, City Solicitor
City Hall, 50 Church Street
P. O. Box 3012
St. Catharines, Ontario
L2R 7C2

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Fees and Tax	
Registration Fee	25—
Total	

April, 1985

Province of Ontario

Document General

Form 4 — Land Registration Reform Act, 1984

D

FOR OFFICE USE ONLY

0725495

CERTIFICATE OF REGISTRATION NIAGARA N.(30) ST. CATHARINES

'97 APR 24 AM 11 43

LAND REGISTRAR

New Property Identifiers — Additional: See Schedule ☐

Executions — Additional: See Schedule ☐

(1) Registry ☒ Land Titles ☐ (2) Page 1 of 10 pages

(3) Property Identifier(s) Block Property — Additional: See Schedule ☐

(4) Nature of Document

SITE PLAN AMENDMENT AGREEMENT

(5) Consideration

N/A Dollars $ N/A

(6) Description

City of St. Catharines, Regional Municipality of Niagara former Township of Grantham, former Town of Port Dalhousie, FIRSTLY: Part Lot 21, Conc. 1, now known as New Lot 636, as previously described in Instrument No. 5063 (1951). SECONDLY: Part Lot 21, Conc. 1, now known as Part New Lot 1, as previously described in Instrument No. 609388. THIRDLY: Part Lot 21, Conc. 1, designated as Part 2 on Reference Plan 30R-8500 now known as Lands more particularly described in Schedule "A" attached hereto.

New lot 1

(7) This Document Contains: (a) Redescription New Easement Plan/Sketch ☐ (b) Schedule for: Description ☒ Additional Parties ☒ Other ☒

(8) This Document provides as follows:

See Schedule Attached

Continued on Schedule ☐

(9) This Document relates to instrument number(s)

573547 (Site Plan Agreement) and 632557 (Site Plan Amendment Agreement)

(10) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y M D
ROYAL CANADIAN LEGION BRANCH 350		
(OWNER)	Lynda C. McCormack - Secretary	
	Barbara Blackmore	1997 04 10
We are authorized to bind the Corporation.	Barbara Blackmore - President	

(11) Address for Service P. O. Box 27012, Lakeport Postal Station, St. Catharines, Ontario L2N 7P8

(12) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y M D
THE CORPORATION OF THE CITY OF ST. CATHARINES		1997 04 21
(CITY)	APPROVED SOLICITOR CLERK — Alan Unwin - Mayor	
		1997 04 21
We are authorized to bind the Corporation.	Ken Todd - City Clerk	

(13) Address for Service City Hall, 50 Church Street, P. O. Box 3012, St. Catharines, Ontario L2R 7C2

(14) Municipal Address of Property

57 Lakeport Road
St. Catharines, Ontario
L2N 4P6

(15) Document Prepared by:

ANNETTE POULIN, City Solicitor
City Hall, 50 Church Street
P.O. Box 3012
St Catharines, Ontario L2R 7C2

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Fees and Tax	
Registration Fee	50
Total	

Province of Ontario

Transfer/Deed of Land

Form 1 — Land Registration Reform Act

DYE & DURHAM CO. INC.—Form No. 870 Amended NOV. 1992

A

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New Property Identifiers

07097 65

CERTIFICATE OF REGISTRATION NIAGARA N.(30) ST. CATHARINES LAND REGISTRAR

'96 MAY 10 PM 4 17

Additional: See Schedule ☐

Executions

Additional: See Schedule ☐

(1) Registry ☒ Land Titles ☐ (2) Page 1 of 3 pages

(3) Property Identifier(s) Block Property Additional: See Schedule ☐

(4) Consideration

TWO THOUSAND, FIVE HUNDRED AND EIGHTY-EIGHT & 50/100 Dollars $ 2,588.50

(5) Description This is a: Property Division ☐ Property Consolidation ☐

Part of lot 21, Concession 1, geographic Township of Grantham, now in the City of St. Catharines, in the Regional Municipality of Niagara, designated as Part 2 on Reference Plan 30R-8500. TOGETHER WITH a Right-of-Way over Part of Lot 21, Concession 1 designated as Parts 1 and 3 on Reference Plan 30R-8500 as set out in Schedule "A" attached. SUBJECT TO Restrictive Covenants as set out in Schedule "B" attached. NEW LOT 1

(6) This Document Contains (a) Redescription New Easement Plan/Sketch ☐ (b) Schedule for: Description ☐ Additional Parties ☐ Other ☒

(7) Interest/Estate Transferred Fee Simple Together with Right-of-way Subject to Restrictive Covenants

(8) Transferor(s) The transferor hereby transfers the land to the transferee and certifies that the transferor is at least eighteen years old and that

Name(s)	Signature(s)	Date of Signature Y	M	D
THE REGIONAL MUNICIPALITY OF NIAGARA	(Brian R. Harrett, Regional Chair)	1996	05	10
APPROVED AS TO FORM	(Thomas R. Hollick, Regional Clerk)	1996	05	10
ASST. REGIONAL SOLICITOR				

We are authorized to bind the Corporation.

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction

Name(s)	Signature(s)	Date of Signature Y	M	D

(10) Transferor(s) Address for Service 2201 St. David's Road, Box 1042, Thorold, Ontario L2V 4T7

(11) Transferee(s)

		Y	M	D
ROYAL CANADIAN LEGION, BRANCH 350	(WILFRED H. ROGERS PRESIDENT)	1996	05	09
	(BARBARA BLACKMORE SECRETARY)	1996	05	09

We are authorized to bind the Corporation.

(12) Transferee(s) Address for Service ~~57 Lakeport Road, St. Catharines, Ontario~~ P.O. Box 27012, Lakeport P.O., 600 Ontario St., St. Catharines, Ontario L2N 7P8

Planning Act — OPTIONAL

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 50 of the Planning Act.

Date of Signature Y M D

Signature

Date of Signature Y M D

Signature

Solicitor for Transferor(s) I have explained the effect of section 50 of the Planning Act to the transferor and I have made inquiries of the transferor to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor

Date of Signature Y M D

Signature

Affix Statement by Solicitor for Transferee(s) here if necessary

(14) Solicitor for Transferee(s) I have investigated the title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 50 (22) (c) (ii) of the Planning Act and that to the best of my knowledge and belief this transfer does not contravene section 50 of the Planning Act. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

Name and Address of Solicitor

Date of Signature Y M D

Signature

(15) Assessment Roll Number of Property	Cty.	Mun.	Map	Sub.	Par.	not assigned

(16) Municipal Address of Property: not assigned

(17) Document Prepared by: Office of the Regional Solicitor, Box 1042, Thorold, Ontario. L2V 4T7 (PR-31-377)

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Fees and Tax	
Registration Fee	50
Land Transfer Tax	12.94
Total	62.94

Additional Property Identifier(s) and/or Other Information

This Transfer of land is TOGETHER WITH the transfer of the following Right-of-way to the Transferee:

Legal Description for Right-of-Way

Part of Lot 21, Concession 1, geographic Township of Grantham, now in the City of St. Catharines, in the Regional Municipality of Niagara, designated as Parts 1 and 3 on Reference Plan 30R-8500.

Right-of-Way

WHEREAS this Right-of-Way was authorized by By-law No. 8315-96 of The Regional Municipality of Niagara.

1. The Transferor grants to the Transferee the free, uninterrupted and unobstructed right-of-way for ingress and egress in perpetuity for persons, animals and vehicles.

2. The Right-of-Way granted herein is declared to be through along and over the lands described hereinabove and to be appurtenant to and for the benefit of the lands of the Transferee described as

   Part of Lot 21, Concession 1
   Geographic Township of Grantham
   now in the City of St. Catharines
   Regional Municipality of Niagara,
   designated as Part 2 on Reference Plan 30R-8500

3. This Right-of-way is in common with such other parties as to whom the Transferor may grant a simlar right.

4. The Transferee covenants to save harmless and keep indemnified the Transferor from all claims, costs and damages which may be incurred by reason of any entry made upon the said lands, subject to the terms of this agreement.

5. This Right-of-Way and everything herein contained shall extend to and enure to the parties hereto and their respective successors and assigns.

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Additional Property Identifier(s) and/or Other Information

SCHEDULE "B"

RESTRICTIVE COVENANTS

1. The Transferee for itself and for its successors and assigns covenants with the Transferor, to the intent that the burden of this covenant shall be annexed to and run with each and every part of the lands described in Box 5 and the benefit of it shall be annexed to and run with each and every part of the lands of the Transferor described as Regional Road No. 87 (Lakeport Road), more particularly described below, that the Transferee will not use the lands or any part thereof for any purpose other than parking and landscaping.

2. The Transferee for itself and for its successors and assigns further covenants with the Transferor that the Transferee will at any time in the event of a sale, mortgage, lease, licence, franchise or other parting with possession or title of all or any part of the lands described in Box 5 exact from any person, firm or corporation so purchasing, mortgaging, leasing, licensing, franchising or otherwise occupying any part of the lands described in Box 5 identical covenants to those contained in this transfer.

3. The lands of the Transferor for the benefit of and to which the covenants are annexed include the following:

   Part of Regional Road No. 87 (Lakeport Road) in the City of St. Catharines, formerly the Town of Port Dalhousie, Regional Municipality of Niagara, being part of Lot 21, Concession 1, geographic Township of Grantham, designated as Parts 1, 2, 5 and 6 on Plan 30R-3301.

(#AT2839RC.APS)

FOR OFFICE USE ONLY

CERTIFICATE OF COMPLIANCE

FORM FOR USE WITH SECTION 193 OF THE MUNICIPAL ACT

Certificate of Compliance with section 193 of the Municipal Act in the sale or disposition of real property described as:

Part of Regional Road No. 87 (Lakeport Road), closed by by-law 8314-96 being Part of Lot 21, Concession 1, Geographic Township of Grantham, City of St. Catharines designated as Part 2 on Plan 30R-8500.
(Description may be attached)

I hereby certify that:

1. The municipality passed By-law 7927-95 (# if applicable) on March 2, 1995 (date).

   It is a procedural by-law for the purposes of the sale or other disposition of real property and was in force on the date of the sale or disposition of the property described above.

Delete if not applicable

2. The property was declared surplus by Resolution passed on December 2, 1993. (date)

Delete if not applicable

3. The property sale or disposition is exempt from the requirement to obtain an appraisal of its fair market value under the following exemption:

   Subsection 1 (2) of Ontario Regulation 815/94.

Delete if not applicable

4. Public notice of intent to sell or dispose of the property was given by the following method(s)

   Public Notice advertisement in the St. Catharines Standard.
   (describe method(s)

   on the following date(s) January 15, 22, 29 and February 5, 1996.

Thomas Hall
(Signature of clerk or administrative head)

96 05 07
(date)

FORM APPROVED DECEMBER 20, 1994
(Fch3883RC.com)

Province of Ontario

Transfer/Deed of Land

Form 1 — Land Registration Reform Act

Do Process Software Ltd. • (416) 322-6111

File 990087

A

FOR OFFICE USE ONLY

0755683

CERTIFICATE OF REGISTRATION NIAGARA R. (30) ST. CATHARINES

'99 JUN 22 PM 2 39

LAND REGISTRAR

(1) Registry [X] Land Titles [ ] (2) Page 1 of 7 pages WJ.

(3) Property Identifier(s) Block 46195-0362 (R) Property Additional: See Schedule [ ]

(4) Consideration
Transfer to self for purpose of having root deed within 40 year period.
Dollars $ NIL

(5) Description This is a: Property Division [ ] Property Consolidation [X] CL

Firstly: Part Lot 21, Concession 1, Now known as New Lot 636 & Part of New Lot 1 together with a right of way over Part 3 on Plan 30R-8016.
Secondly: Part Lot 21, Concession 1, Now known as New Lot 1
Both Firstly and Secondly as previously described in Instrument Number 609387.
Thirdly: Part of Lot 21, Concession 1, Now known as New Lot 1, Being Part 2 on Plan 30R-8500, together with a right of way over Parts 1 and 3 on Plan 30R-8500.
As previously described in Instrument Number 709765.
City of St. Catharines, Regional Municipality of Niagara,
in the former Township of Grantham and former Town of Port Dalhousie.
More particularly described in attached schedule.

New Property Identifiers Additional: See Schedule [ ]

Executions Additional: See Schedule [ ]

(6) This Document Contains (a) Redescription New Easement Plan/Sketch [ ] (b) Schedule for: Description [X] Additional Parties [ ] Other [ ]

(7) Interest/Estate Transferred
Fee Simple
Together with a rights of way

(8) Transferor(s) The transferor hereby transfers the land to the transferee ~~and certifies that the transferor has good right, full power and authority~~

Name(s)	Signature(s)	Date of Signature Y	M	D
ROYAL CANADIAN LEGION, BRANCH 350	Bertha Jones, President	1999	06	17
	Joan Garvie, Treasurer	1999	06	10
	Lynda McCorkell, Secretary	1999	06	10

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction

Name(s)	Signature(s)	Date of Signature Y	M	D

(10) Transferor(s) Address for Service 57 Lakeport Road, P.O. Box 27012, Lakeport P.O., St. Catharines, Ontario L2N 7P8

(11) Transferee(s)

	Date of Birth Y	M	D
ROYAL CANADIAN LEGION, BRANCH 350			

(12) Transferee(s) Address for Service 57 Lakeport Road, P.O. Box 27012, Lakeport P.O., St. Catharines, Ontario L2N 4P6

Planning Act - OPTIONAL

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 50 of the Planning Act.

Signature ..... Date of Signature Y M D

Signature ..... Date of Signature Y M D

Solicitor for Transferor(s) I have explained the effect of section 50 of the Planning Act to the transferor and I have made inquiries of the transferor to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor

Signature ..... Date of Signature Y M D

Any Statement by Solicitor for Transferee(s) here if necessary

(14) Solicitor for Transferee(s) I have investigated the title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 50 (22) (c) (ii) of the Planning Act and that to the best of my knowledge and belief this transfer does not contravene section 50 of the Planning Act. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

Name and Address of Solicitor

Signature ..... Date of Signature Y M D

(15) Assessment Roll Number of Property

City	Mun	Map	Sub	Par
26	29	060	039	08100

(16) Municipal Address of Property
57 Lakeport Road
St. Catharines, Ontario
L2N 4P6

(17) Document Prepared by:
Rick Hesp
Barrister & Solicitor
Five Race Street
St. Catharines, Ontario
L2R 3M1

FOR OFFICE USE ONLY

Fees and Tax	
Registration Fee	50.
Land Transfer Tax	—
	Cheque
Total	

Document prepared using The Conveyancer

SCHEDULE

Box (5) Description ...continued

Legal description of the lands owned by the Royal Canadian Legion, Branch 350:

Firstly:

Part of Lot 21,
Concession 1
now known as New Lot 636
together with a right-of-way over Part 3 on Plan 30R-8016
former Town of Port Dalhousie, former Township of Grantham
City of St. Catharines,
Regional Municipality of Niagara

AS DESCRIBED in a Grant dated December 29, 1950 and bearing the number 46549 in the records of the Department of Transport, which Grant was registered in the Land Registry Office for the Land Registry Division of Niagara North (No. 30) at St. Catharines on July 17, 1951 as instrument No. 5063 (referred to as "Grant Instrument No. 5063")

AND MORE particularly described as follows:

BEGINNING at a point marking the intersection of the northerly limit of Lock Street, which has a bearing considered to be North, 40 degrees, 0 minutes west, with the westerly limit of Front Street;

THENCE south 28 degrees, 7 minutes east across Front Street and Lock No. 1 of the Second Welland Canal and Canal lands 244.2 feet to a square iron bar planted at the POINT OF COMMENCEMENT of the parcel herein to be described;

THENCE south 57 degrees, 34 minutes east, 78.6 feet to a point marked by a square iron bar;

THENCE south 21 degrees, 24 minutes west, 20.1 feet to a point marked by a square iron bar;

THENCE south 57 degrees, 10 minutes east, 87.35 feet to a point marked by a square iron bar;

THENCE south 36 degrees, 24 minutes west, in the line of, and in and along, the face of the south-easterly wall of a two-storey brick building at one time known as the Third Welland Canal "Carpentry Shop", 80.3 feet to the intersection with the face of the north-easterly wall of a one-storey brick building at one time known as the Third Welland Canal "Boiler Shop";

THENCE south 53 degrees, 26 minutes east in and along the face of the north-easterly wall of the former "Boiler Shop", so-called, 25.8 feet to the north-east corner thereof;

THENCE south 36 degrees, 29 minutes west in and along the face of the south-easterly wall of the former "Boiler Shop", so-called, and in the line of the south-westerly production thereof 47.75 feet to a point in the line of the south-easterly production of the face of the south-westerly wall of the former "Carpentry Shop", so-called;

THENCE north 53 degrees, 26 minutes west in the line of and in and along the face of the south-westerly wall of the former "Carpentry Shop", so-called, 53.05 feet to the southwest corner thereof;

THENCE north 42 degrees, 12 minutes west 34.3 feet to a point marked by a square iron bar;

THENCE north 61 degrees, 28 minutes west, 60.0 feet to a point marked by a square iron bar planted in the easterly limit of a travelled roadway located on the easterly side of Lock No. 1 of the Second Welland Canal and which said point is the extreme westerly angle of the said land and is also the extreme northerly angle of a parcel of land, an Easement in Perpetuity over which, in common with others, for right-of-way purposes, was granted to the Mortgagor and which is more particularly described below;

THENCE north 4 degrees, 14 minutes east, 67.75 feet to a square iron bar in the easterly limits of the said roadway located on the easterly side Lock No. 1 of the Second Welland Canal;

THENCE north 25 degrees, 53 minutes east, 82 feet to the POINT OF COMMENCEMENT.

CONTAINING by admeasurement 0.492 acres, be the same more or less, the location of the said land being indicated margined red on Plan W.C.L. 50-14 annexed to "Grant Instrument No. 5063".

SAVE AND EXCEPT, a reservation in favour of Her Majesty the Queen, her heirs and successors, for the free use, passage and enjoyment of, in, over and upon all navigable waters that now are or may be found on or under as flowing through or upon any part of the said land as set out in the "Grant Instrument No. 5063".

TOGETHER with an Easement in Perpetuity, in common with others, covering a right-of-way, not less than 16.0 feet wide along and adjacent to the south-westerly limits of the lands described above and more particularly described as Part 3 on Reference Plan 30R-8016.

Secondly:

Part Lot 21,
Concession 1
now known as Part of New Lot 1
former Town of Port Dalhousie, former Township of Grantham
City of St. Catharines,
Regional Municipality of Niagara

AND DESCRIBED in Letters Patent dated October 24, 1951 and authorized by an Order in Council on September 21, 1951 (P.C. 5040) and bearing the number 47692 in the records of the Department of Transport, a copy of which was deposited in the Land Registry Office for the Land Registry Division of Niagara North (No. 30) at St. Catharines on May 15, 1990 as instrument No. 609388 (referred to as "Letters Patent No. 609388")

AND MORE particularly described as follows:

COMMENCING at a point marking the intersection of the northerly limit of Lock Street, which has a bearing considered to be north 40 degrees 0 minutes west with the westerly limit of Front Street;

THENCE south 28 degrees, 7 minutes east, 244.2 feet to an iron bar planted at the most northerly limit of a parcel of land granted to the Grantee by "Grant Instrument No. 5063".

THENCE south 57 degrees 34 minutes east, 78.6 feet, to an iron bar;

THENCE south 21 degrees, 24 minutes west, 20.1 feet to an iron bar;

THENCE south 57 degrees, 10 minutes east, 87.35 feet to an iron bar marking the most easterly angle of a parcel of land conveyed by "Grant Instrument No. 5063", which is the PLACE OF BEGINNING of the parcel being described;

THENCE south 57 degrees, 10 minutes east, 8.45 feet to an iron bar planted;

THENCE south 10 degrees, 0 minutes west, 39.2 feet to an iron bar planted;

THENCE south 36 degrees, 29 minutes west, 45.8 feet, more or less, to an angle in the parcel of land conveyed by "Grant Instrument No. 5063";

THENCE north 53 degrees and 26 minutes west following the north-easterly boundary of the parcel of land conveyed by "Grant Instrument No. 5063", 25.8 feet;

THENCE north 36 degrees, 24 minutes east, following the south-easterly boundary of the parcel of land conveyed by "Grant Instrument No. 5063", 80.3 feet, more or less, to the PLACE OF BEGINNING.

CONTAINING by admeasurement 1,782.0 square feet, be the same more or less, the location of the said land being indicated coloured red on Plan W.C.L. 51-8 (which is attached to "Letters Patent No. 609388".

SAVE AND EXCEPT a reservation in favour of Her Majesty the Queen, her heirs and successors, for the free use, passage and enjoyment of, in, over and upon all navigable waters that now are or may be found on or under or flowing through or upon any part of the said lands as set out in "Letters Patent No. 609388".

BOTH Firstly and Secondly parcels as previously described in Instrument Number 609387 registered on May 15, 1990.

Thirdly

Part of Lot 21,
Concession 1,
now known as Part of New Lot 1
Former Township of Grantham,
Former Town of Port Dalhousie,
now in the City of St. Catharines,
Regional Municipality of Niagara,
designated as Part 2 on Reference Plan 30R-8500.

TOGETHER WITH a right-of-way over Part of Lot 21, Concession 1, former Township of Grantham, now in the City of St. Catharines, Regional Municipality of Niagara, designated as Parts 1 and 3 on Reference Plan 30R-8500 as previously set out in instrument no. 709765, registered on May 10, 1996.

Thirdly parcel subject to Restrictive Covenants as follows:

The Transferee for itself and for its successors and assigns covenants with the Transferor, to the intent that the burden of this covenant shall be annexed to and run with each and every part of the lands described as the "Thirdly" parcel above and the

benefit of it shall be annexed to and run with each and every part of the lands of the Transferor described as Regional Road No. 87 (Lakeport Road), more particularly described below, that the Transferee will not use the lands described as the "Thirdly" parcel or any part thereof for any purpose other than parking and landscaping.

The Transferee for itself and for its successors and assigns further covenants with the Transferor that the Transferee will at any time in the event of a sale, mortgage, lease, licence, franchise or other parting with possession or title of all or any part of the lands described as the "Thirdly" parcel above exact from any person, firm or corporation so purchasing, mortgaging, leasing, licensing, franchising or otherwise occupying any part of the lands described as the "Thirdly" parcel above, identical covenants to those contained in this transfer.

The lands of the Transferor for the benefit of and to which the covenants are annexed include the following:

> Part of Regional Road No. 87 (Lakeport Road) in the City of St. Catharines, formerly the Town of Port Dalhousie, Regional Municipality of Niagara, being part of Lot 21, Concession 1, geographic Township of Grantham, designated as Parts 1, 2, 5, and 6 on Plan 30R-3301.

AS PREVIOUSLY DESCRIBED in instrument no. 709765, registered on May 10, 1996.

Properties

PIN 46195 – 0362 LT

Description PT LT 21 CON 1 (PORT DALHOUSIE LT 1) GRANTHAM; PT LT 21 CON 1 (PORT DALHOUSIE LT 636) GRANTHAM AS IN RO755683; T/W & S/T RO755683; ST. CATHARINES

Address 57 LAKEPORT ROAD
ST. CATHARINES

Land Registrar(s)

Name LAND REGISTRAR, LRO NO. 30

Address for Service 59 Church St
St. Catharines, ON L2R 3C3

Statements

Schedule: In the matter to the title of the selected PIN, the Land Registrar orders pursuant to Subsection 158(2) of the Land Titles Act that the ownership field be amended from The Royal Canadian Legion Branch 350" to "The Royal Canadian Legion, Branch 350" as in Transfer RO755683.

Signed By

Marilyn Mozgiel	59 Church St St. Catharines, ON L2R 3C3	acting for Applicant(s)	First Signed	2011 06 17
Tel 905-684-6351 Fax 905-684-5874				
Marilyn Mozgiel	59 Church St St. Catharines, ON L2R 3C3	acting for Applicant(s)	Last Signed	2011 06 17
Tel 905-684-6351 Fax 905-684-5874				

I have the authority to sign and register the document on behalf of the Applicant(s).

Submitted By

Marilyn Mozgiel	59 Church St St. Catharines, ON L2R 3C3	2011 06 17
Tel 905-684-6351 Fax 905-684-5874		

Fees/Taxes/Payment

Statutory Registration Fee	$0.00
Total Paid	$0.00

ARGMENT
o Scale

PART 3

SSIB (WIT)

Br. Cor. 0.155
Fdn. 0.127
Brick
Br. Cor. 0.176
Fdn. 0.115

BRICK BUILDING
"ROYAL
CANADIAN LEGION"
Fdn. Wall Noted

Fdn. 0.084
Fdn. 0.157
Br. Cor. 0.132
SSIB WIT
1.87
1.63
Frame
0.36 Clear
Br. Cor. 0.029
Fdn. 0.085
Fdn. 0.08
Fdn. 0.04
Brick

PART 2

AME ADDITION
"ALBERTS"

PART 9
PLAN 30R--3301

PART 7
PLAN 30R--3301

PART 5
PLAN 30R--3301

(REGIONAL ROAD 87)
INST. No. 473624
Highway By By - Law No. 3552 Inst. No. 477154

ROAD

LAKEPORT

Dedcated As Public Highway By By - Law No. 3552 Inst. No. 477154

PART 15
PLAN 30R--3301

PART 13
PLAN 30R--330

Registered Owner - City
St. Catharines, Inst. 8002

PART 16
PLAN 30R--3301

PART 12
PLAN 30R--3301

PART 3
PLAN 30R--3301

PART 4
PLAN 30R--3301

INST. 455070

PART 8
PLAN 30R--3301

PART 11
PLAN 30R--3301

PART 10
PLAN 30R--3301
INST. 80026
(PARCEL 1)
Reputed owner and occupant - Regional Municipality of Niagara By-Law 1176+1122-75, Order in Council - 2525 - 75 Registered Owner - City of St. Catharines, Inst. 80026(1962)

PART 3
PLAN 30R--2585

PART 2
PLAN 30R--2171

INST. 609387
(1stly)

INST. 609387
(2ndly)

PART 1, PLAN 30R--2585

BRICK BUILDING
"ROYAL
CANADIAN LEGION"

FRAME
ADDITION
"ALBERTS"

Face of Concrete Wall

Subject To Right of Way as set out in Inst. 609387

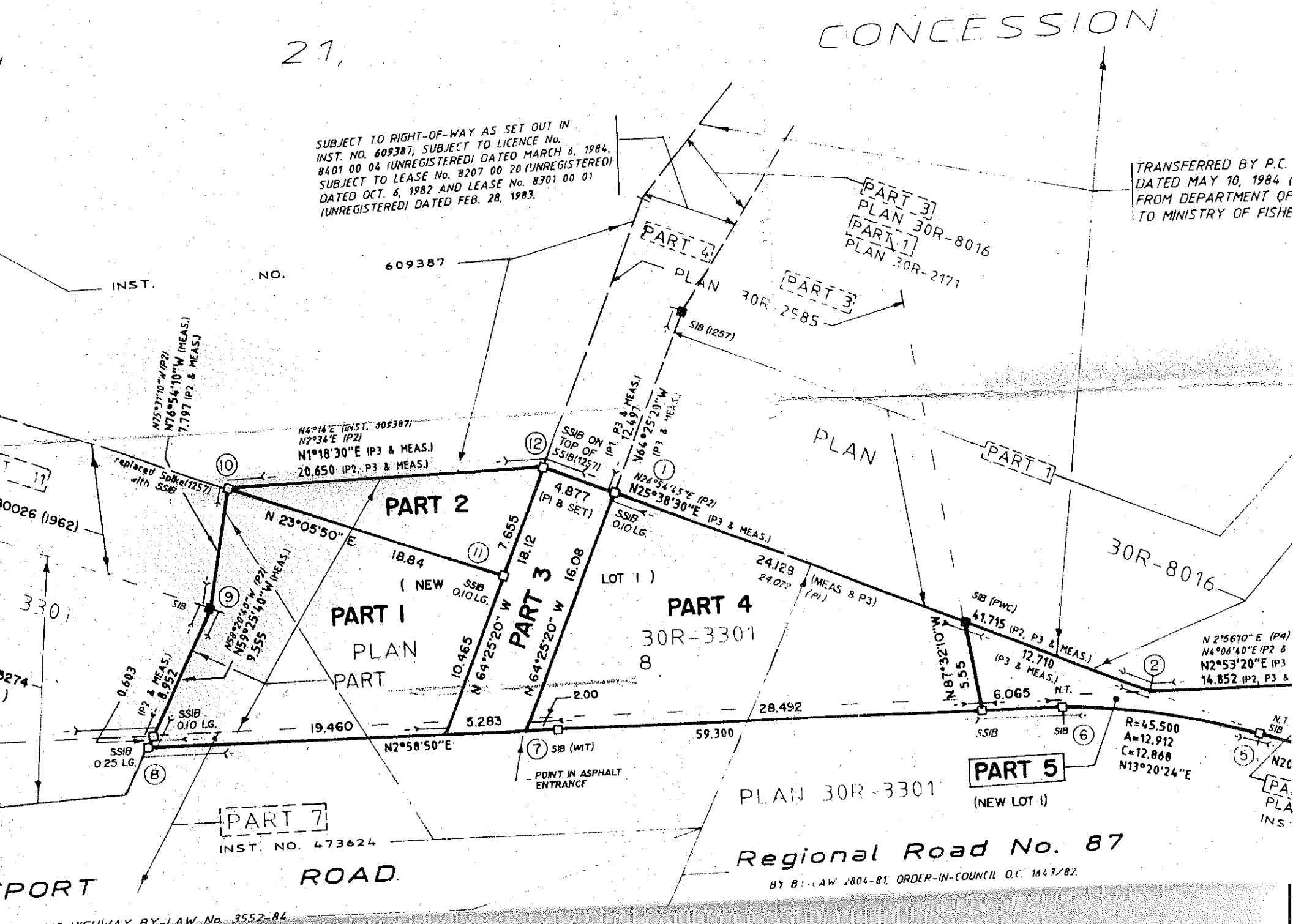
Subject To

N 2° 53' 20" E meas. (N4°06'40"E P10)

N 23° 05' 50" E meas. 57.912
(N24°15'20"E P10 57.912)
(N24°17'20"E P3 & P11)

N 18°39'50" E
6.066 notes PWC 1979 & Set
(N21°24'E Inst. A 6.126)

N7°08'10"E meas. notes PWC 1979 & Set


21,
CONCESSION
SUBJECT TO RIGHT-OF-WAY AS SET OUT IN INST. NO. 609387; SUBJECT TO LICENCE No. 8401 00 04 (UNREGISTERED) DATED MARCH 6, 1984, SUBJECT TO LEASE No. 8207 00 20 (UNREGISTERED) DATED OCT. 6, 1982 AND LEASE No. 8301 00 01 (UNREGISTERED) DATED FEB. 28, 1983.
TRANSFERRED BY P.C.
DATED MAY 10, 1984
FROM DEPARTMENT OF
TO MINISTRY OF FISHE
INST. NO. 609387
PART 4
PLAN 30R 2585
PART 3
PLAN 30R-8016
PART 1
PLAN 30R-2171
PART 3
SIB (1257)
PLAN
PART 1
30R-8016
N75°31'10"W (P2)
N76°54'10"W (MEAS.)
7.797 (P2 & MEAS.)
N4°14'E (INST. 609387)
N2°34'E (P2)
N1°18'30"E (P3 & MEAS.)
20.650 (P2, P3 & MEAS.)
replaced Spike(1257) with SSIB
10
12
SSIB ON TOP OF SSIB(1257)
N64°25'20"W (P1, P3 & MEAS.)
12.497 (P3 & MEAS.)
1
N26°54'45"E (P2)
N25°38'30"E (P3 & MEAS.)
PART 2
4.877 (P) & SET)
N 23°05'50" E
18.84
11
7.655
18.12
16.08
SSIB 0.10 LG.
(NEW SSIB 0.10 LG.
LOT 1)
PART 3
PART 1
PLAN
PART
PART 4
30R-3301
8
24.129
24.079
(MEAS & P3)
(P)
SIB (PWC)
41.715 (P2, P3 & MEAS.)
12.710 (P3 & MEAS.)
N87°32'10"W
5.55
N 2°56'10" E (P4)
N4°06'40"E (P2 &
N2°53'20"E (P3
14.852 (P2, P3 &
2
6.065
N.T.
SSIB
SIB
6
R=45.500
A=12.912
C=12.868
N13°20'24"E
N.T.
SIB
5
N20
PA
PLA
INS
9
SIB
N58°20'40"W (P2)
N59°25'40"W (MEAS.)
9.555
0.603
8.952
(P2 & MEAS.)
SSIB 0.10 LG.
19.460
5.283
10.465
N 64°25'20" W
PART 3
N 64°25'20" W
2.00
28.492
59.300
N2°58'50"E
SSIB 0.25 LG.
8
7
SIB (WIT)
POINT IN ASPHALT ENTRANCE
PART 5
(NEW LOT 1)
PLAN 30R-3301
PART 7
INST. NO. 473624
ROAD
Regional Road No. 87
BY BY-LAW 2804-81, ORDER-IN-COUNCIL O.C. 1643/82.
PORT
S PUBLIC HIGHWAY BY-LAW No. 3552-84.

PART 5

PART 9

PART 7

PART 4

PART 10

PART 8

PART 15

PART 16

PART 11

PART 12

PART 13

PART 14

PART 3
PLAN 30R-2585

PART 2
PLAN 30R-2171

PART 1 PLAN 30R-2171

PART 4 PLAN 30R-2585

PART 1
PLAN 30R-2739

INST. 5063(1951)

RIGHT-OF-WAY APPURTENANT TO INST. 5063(1951)

INST. 60026 (1962) PARCEL 1

INST. 356598

INST. 33411 7

INST. 329427

INST. 339047

LOT 50

LOT 1

LAKEPORT ROAD
(REGIONAL ROAD 87)

LOCK STREET
(REGIONAL ROAD 87)

LAKEPORT (FORMERLY FRONT STREET)

CUT CROSS (P.W.C.) (WIT)

C.P. (WIT.)

C.M.

S.I.B.

I.B. (P.W.C.)

I.B.Ø

RESET BENT

PUBLIC WORKS CANADA P. C. 1974-2160

Re: 57 Lakeport Rd
St Catharines, Ont
PIN 46195-0391 LT

All whitepprints
First pages of all deeds
Chain of Title (ownerships)



ServiceOntario

PRINTED ON 04 NOV, 2016 AT 13:37:56
FOR SB

SCALE

0 30
meters

PROPERTY INDEX MAP

NIAGARA(No. 30)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

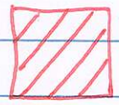
Ontario

© Queen's Printer for Ontario, 2016

(B)

Chain Of Title

PIN 46195-0391 LT
pt of lot 21 Con 1 - now lot 1 Pl Dal.
Plan 637

Lands in red stripes
Pt 1 on 30R-8500 

\# 4243
June 4, 1888 — Harriett E. Kennedy

↓ To

\# 80026
June 11, 1962 — The Queen

↓ To

The Corporation Of The City Of St. Catharines

present owner.

Note  
Parts 8 & 12 & 13 on 30R-3301
also follow this chain of title

#4243

This Indenture made in duplicate the ~~Fifth~~ Fourth day of January one thousand eight hundred and eighty ~~seven~~ eight in pursuance of the Act to facilitate the conveyance of Real property" intituled "An Act respecting short forms of Conveyance."

Between Harriet E Kennedy of the Township of Grantham in the County of Lincoln and Province of Ontario. wife of Charles R Kennedy. of the First part

and

Her Majesty the Queen of the second part

Whereas understood by virtue of chapter thirty nine of "the Revised Statutes of Canada" intituled "The Expropriation Act" the Honorable the Minister of Railways and Canals of Canada, being the head of the Department charged with the construction and maintenance of the Welland Canal, a public work of the Dominion of Canada, is empowered to enter upon and take possession of any land the expropriation of which is in his judgment necessary for the use construction maintenance or repair of a public work and to contract and agree with all persons for the purchase of any land or other property necessary for the construction maintenance and use of the public work at such price as are agreed upon and also contract and agree with all such persons as to the amount of compensation to be paid for any damages sustained by them by reason of anything done under and by the authority of the said Act.

And whereas the lands hereinafter

#80026

ST. CATHARINES

80026

ENTERED & REGISTERED JUN 11 1962 3:15 P.M.

G R A N T

by

HER MAJESTY THE QUEEN

to

The Corporation of the City of St. Catharines

Of three certain parcels or tracts of former Second and Third Welland Canal reserve lands situate in the City of St. Catharines, Township of Grantham, County of Lincoln, Province of Ontario.

DATED..... 26th March, 1962

RECORDED..... 18th April, 1962

Film 119 Document 170

R Laflamme

FOR DEPUTY REGISTRAR GENERAL OF CANADA

Refer. No. 168178

TO ALL TO WHOM these Presents shall come, ST. CATHARINES

GREETING:

80026

WHEREAS the lands hereinafter described are vested in Us in right of Canada.

AND WHEREAS the said lands are not required for public purposes, and under and by virtue of the statutes in that behalf and pursuant to authority duly granted by Our Governor in Council, the said lands or the interest therein that is or may be vested in Us for the uses of Canada have been disposed of to The Corporation of the City of St. Catharines, in the Province of Ontario, hereinafter called the grantee, at and for the price or sum of one dollar.

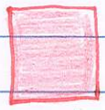
NOW KNOW YE that We do by these Presents grant, convey and assure unto the grantee and its successors ALL AND SINGULAR those three (3) certain parcels or tracts of former Second and Third Welland Canal reserve lands (herein referred to as "the said land"), situate, lying, and being in the City of St. Catharines (formerly in the Town of Port Dalhousie), formerly being part of Lots 20 and 21, Concession 1 of the Township of Grantham, part of the original side road allowance between Lots 20 and 21, Concession 1, and part of the road allowance between Concessions 1 and 2 of the Township of Grantham, in the County of Lincoln, and Province of Ontario, and which may be more particularly described as follows:

PARCEL NO. 1

Formerly in the Town of Port Dalhousie (formerly

(A)

Chain Of Title

PIN 46195-0391 LT
pt of lot 21 Con 1 - now Lot 637 Pl Dal
Lands in solid red 
Pts 11, 16 on 30R-3301

#378 (no copy) Stephen D. Andrews
March 8, 1877

↓ To

#30285 ✓ The Queen
July 3, 1958

↓ To

#51681 ✓ Douglas J. Carr
Feb 22, 1960

↓ To

#308916 ✓ Supertest Petroleum Corporation Limited
March 10, 1975

Now B P Canada Limited

↓ To

#356598 ✓ Nick Zitaro
June 3, 1977

↓ To

#523274 John S. Miller
Aug 14, 1986

↓ To

The Corporation Of The City Of St Catharines
present owner

DYE & DURHAM CO. LIMITED
Form No. 970

Province of Ontario

Transfer/Deed of Land # 523274 A

Form 1 — Land Registration Reform Act, 1984

FOR OFFICE USE ONLY

NUMBER 523274
CERTIFICATE OF REGISTRATION
'86 AUG 14 15:08
NIAGARA NORTH NO. 30
ST. CATHARINES
John Grannum
LAND REGISTRAR

New Property Identifiers — Additional: See Schedule ☐

Executions — Additional: See Schedule ☐

(1) Registry ☒ Land Titles ☐ (2) Page 1 of 3 pages

(3) Property Identifier(s) Block Property — Additional: See Schedule ☐

(4) Consideration — Dollars $

(5) Description — This is a: Property Division ☐ Property Consolidation ☐

Part lot 21, Concession 1 Grantham
City of St.Cathafines,
Regional Municipality of Niagara
designated as Parts 15 and 16 on Plan
30R-3301.

(6) This Document Contains: (a) Redescription New Easement Plan/Sketch ☐ (b) Schedule for: Description ☒ Additional Parties ☐ Other ☐

(7) Interest/Estate Transferred: Fee Simple

(8) Transferor(s) The transferor hereby transfers the land to the transferee and certifies that the transferor is at least eighteen years old and that the property transferred is not ordinarily occupied by me and my spouse, who is not separated from me, as our family residence.

Name(s)	Signature(s)	Date of Signature Y M D
MILLER, John Stuart	J. Miller	1986 07 11

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction

Name(s)	Signature(s)	Date of Signature Y M D

(10) Transferor(s) Address for Service: 2 Church Street, St.Catharines,Ontario

(11) Transferee(s)

	Date of Birth Y M D
THE CORPORATION OF THE CITY OF ST. CATHARINES	

(12) Transferee(s) Address for Service: P. O. Box 3012, St.Catharines, Ontario L2R 7C2

Planning Act — OPTIONAL

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 49 of the Planning Act, 1983.

Date of Signature Y M D — Signature

Date of Signature Y M D — Signature

Solicitor for Transferor(s) I have explained the effect of section 49 of the Planning Act, 1983 to the transferor and I have made inquiries of the transferor, to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor — Signature — Date of Signature Y M D

Affix Statement by Solicitor for Transferee(s) here if necessary

(14) Solicitor for Transferee(s) I have investigated the title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 49 (21a) (c) (ii) of the Planning Act, 1983 and that to the best of my knowledge and belief this transfer does not contravene section 49 of the Planning Act 1983. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

Name and Address of Solicitor — Signature — Date of Signature Y M D

(15) Assessment Roll Number of Property

Cty.	Mun.	Map	Sub.	Par.
26	29	060	039	08400

(16) Municipal Address of Property: 45 Lakeport Road, St.Catharines,Ontario

(17) Document Prepared by: Pedwell & Pedwell, 2 Church Street, St.Catharines,Ontario

FOR OFFICE USE ONLY

Fees and Tax	
Registration Fee	16-
Land Transfer Tax	925-
Total	941-

10173 (12/84)

59858

PORT DALHOUSIE

30285

30285

ENTERED & REGISTERED JUL 3 1958 AT 3 M.

Registrar

GRANT

by

HER MAJESTY THE QUEEN

to

DOUGLAS JOSEPH CARR

That certain parcel or tract of former Second Welland Canal reserve land, situate, lying and being in Lot 21, Concession 1, Township of Grantham, Town of Port Dalhousie, County of Lincoln, Province of Ontario.

DATED..... April 11, 1958.

RECORDED..... April 14, 1958

Film 70 Document 42

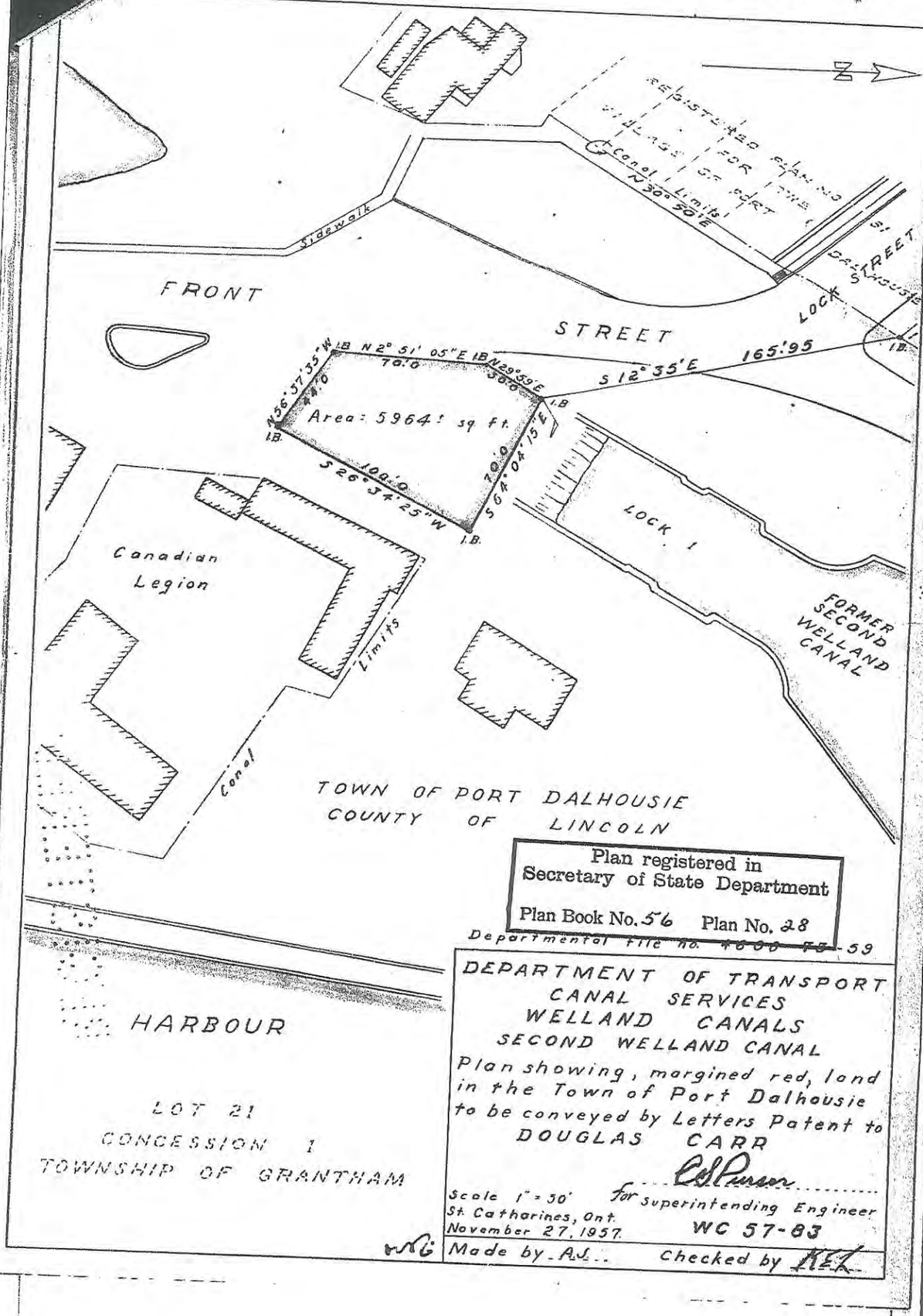
FOR REGISTRAR GENERAL OF CANADA.

Refer. No. 154989

251-9-4-Transport

30285

30285
PORT DALHOUSIE



Plan registered in
Secretary of State Department

Plan Book No. 56 Plan No. 28

Departmental file no. 4000-F3-59

DEPARTMENT OF TRANSPORT
CANAL SERVICES
WELLAND CANALS
SECOND WELLAND CANAL

Plan showing, margined red, land in the Town of Port Dalhousie to be conveyed by Letters Patent to
DOUGLAS CARR

C.S. Purser
for Superintending Engineer

Scale 1" = 50'
St. Catharines, Ont.
November 27, 1957.

WC 57-83

Made by A.J. Checked by A.E.Z.

302285

I Certify that the within instrument is duly
entered and registered in the Registry Office
for the Registry Division of the County of Lincoln
in Book ... for the Town of Pt. Dalhousie
this 3 day of
A.D. 19 78 at 3:25 O'clock

Registrar

Folio

3028?

576

24 Aug

41000

51681

Deed with Dower
Form 118
Newsome & Gilbert Limited, Toronto

51681

PORT DALHOUSIE

This Indenture

made in duplicate the 25th day of January
in the year of our Lord one thousand nine hundred and sixty.
In Pursuance of the Short Forms of Conveyances Act:
Between

DOUGLAS J. CARR of the Town of Port Dalhousie,
in the County of Lincoln,

hereinafter called the Grantor of the FIRST PART

- and - SUPERTEST PETROLEUM CORPORATION LIMITED,
a Corporation incorporated under the laws
of the Province of Ontario, having its
Head Office in the City of London, in the
County of Middlesex,

hereinafter called the Grantee of the SECOND PART

- and - DOREEN CARR of the Town of Port Dalhousie,
in the County of Lincoln,

Wife of the Grantor of the THIRD PART

ENTERED & REGISTERED FEB 22 1960 AT 4:20 P.M.
Registrar

Witnesseth that in consideration of other valuable consideration and the

sum of One ($1.00) - dollar of lawful money of Canada now paid by the said grantee to the said grantor (the receipt whereof is hereby by him acknowledged) he the said grantor DO TH GRANT unto the said grantee in fee simple of former Second Welland Canal Reserve Land ALL and Singular that certain parcel or tract of land/and premises, situate, lying and being (herein referred to as "the said land") in Lot 21, Concession 1 of the Township of Grantham, now in the Town of Port Dalhousie, in the County of Lincoln and which may be more particularly described as follows :

COMMENCING at an iron bar planted at the intersection of the Northerly limit of Lock Street with the Westerly limit of Front Street, said intersection being also the South-east corner of Lot 1 of registered Plan Number 31 for the Village of Port Dalhousie; THENCE South 12 degrees 35 minutes East 165.95 feet to an iron bar being the point of commencement of the parcel herein to be described; THENCE South 64 degrees 04 minutes East 70 feet to an iron bar; THENCE South 26 degrees 34 minutes 25 seconds West 100 feet to an iron bar; THENCE North 56 degrees 37 minutes and 35

$2.75 Tax Statement
Granted
$ 10.00

51681

PROVINCE OF ONTARIO)
COUNTY OF LINCOLN)
TO WIT:)

IN THE MATTER OF THE TITLE TO PART OF LOT 21, CONCESSION 1, OF THE TOWNSHIP OF GRANTHAM, IN THE TOWN OF PORT DALHOUSIE and being the lands more particularly described in Instrument No. 30285 registered on the 3rd day of July, 1958 for the Town of Port Dalhousie.

I, DOUGLAS J. CARR, of the Town of Port Dalhousie, in the County of Lincoln, make oath and say as follows:

1. That I have resided in the Town of Port Dalhousie for the past forty years.

2. That the lands herein were originally a Lock in the old Welland Canal system and that during the last forty years had never been used for canal purposes although there was water in the Lock and the approaches to the Lock and the most northerly end of the Lock did have for many years an old gate lifter anchored there.

3. During the late 1950s the roadway in front of the lands herein described was created by wrecking a bridge over the old canal and filling the canal for the roadway.

4. That during the year 1948 I caused to be filled in the portion of the canal now occupied by the lands herein and in 1949 erected on these lands a service station. From the time of filling in the said lands until the 3rd day of July, 1958, I rented the lands from Her Majesty the Queen in the right of Canada represented by the Department of Transport on a year-to-year basis. That during the term or terms of lease or leases from the year 1948 to the year 1958 I had exclusive, open and undisturbed possession of the said lands subject only to the right of the Department of Transport as the Lessor under the terms of the Lease and I was not aware of any claims made against the property during such time.

5. That the said lands were purchased by me from Her Majesty the Queen on the 3rd day of July, 1958 and I have been in open, exclusive and undisturbed possession of the said lands from that time until the present, subject only to a Mortgage and Lease to Supertest Petroleum Company Limited.

6. That there are no fences surrounding the lands herein.

7. I have been advised and verily believe that the lands herein were obtained by the Queen in the right of Canada sometime around the year 1850. The purchase then being made by the Board of Works and were used for many years as canal lands and remained classified as canal lands up until the time previously dealt with in this my affidavit.

SWORN before me at the City of)
of St. Catharines, in the County)
of Lincoln this 12 day of February,)
1960.)

Douglas J. Carr

A COMMISSIONER, ETC.

RO308916

FORM NO. 272—DEED TO USES—PAGE 1

308916

UNITED STATIONERY CO. LIMITED, LEGAL FORM DEPT.
30 PRODUCTION DRIVE, SCARBOROUGH

This Indenture

made the 17th day of January

one thousand nine hundred and seventy-five.

In Pursuance of the Short Forms of Conveyances Act.

Between

BP CANADA LIMITED (formerly Supertest Petroleum Corporation, Limited) a Corporation incorporated under the laws of the Province of Ontario, hereinafter called the "Grantor" OF THE FIRST PART,

- and - NICK ZITANO, of the City of Niagara Falls, in the Regional Municipality of Niagara, Esq., hereinafter called the "Grantee" OF THE SECOND PART,

- and - BP OIL LIMITED, a company incorporated under the laws of Canada, OF THE THIRD PART;

WHEREAS by Articles of Amendment effective 23 December, 1971 the name of Supertest Petroleum Corporation, Limited was changed to BP Canada Limited and a Certificate of Amendment of Articles was issued under The Business Corporations Act of Ontario,

AND WHEREAS by a Certificate of Amalgamation dated 18 October, 1972 issued under The Business Corporations Act of Ontario, BP Canada Limited and BP Oil and Gas Limited were amalgamated and continued as one corporation under the name of BP Canada Limited,

AND WHEREAS a notarial copy of a certificate as to the matters recited above is registered in the Registry Office for the Registry Division of Niagara North as Instrument Number 264199 G.R., and in the Registry Office for the Registry Division of Niagara South as Instrument Number 183751 G.R.,

NOW

Witnesseth that in consideration of other valuable consideration and the sum of One - ($1.00) - DOLLARS now paid by the said Grantee to the said Grantor (the receipt whereof is hereby acknowledged), IT the said Grantor DO TH Grant unto the said Grantee unto, upon and for the uses hereinafter declared

All and Singular those certain parcels or tracts of land and premises situate lying and being FIRSTLY: in the City of St. Catharines and SECONDLY: in the City of Niagara Falls; both in the Regional Municipality of Niagara as more particularly described in Schedule "A" attached hereto.

308916

FORM NO. 272 [illegible]

The said Grantor Covenant s with the said Grantee That he has the right to convey the said lands to the said Grantee notwithstanding any act of the said Grantor.

And that the said Grantee shall have quiet possession of the said lands, free from all encumbrances. except as set out hereinafter.

And the said Grantor Covenant s with the said Grantee that he will execute such further assurances of the said lands as may be requisite.

And the said Grantor Covenant s with the said Grantee that he has done no act to encumber the said lands. except as set out hereinafter.

And the said Grantor Release s to the said Grantee All its claims upon the said lands. except as set out hereinafter.

AND IN CONSIDERATION of the premises and of the sum of One Dollar ($1.00) of lawful money of Canada paid by BP Oil Limited ("BP Oil") to the Grantee, the receipt of which is hereby acknowledged, the Grantee, for himself, his heirs, executors, administrators and assigns, as the case may be, covenants and agrees with the Grantor and BP Oil, their successors and assigns, as follows:

1. That BP Oil, its successors and assigns, shall have and the Grantee hereby grants to BP Oil, its successors and assigns, the irrevocable option to repurchase the hereinbefore described lands for a period of Five (5) years from the date hereof (hereinafter referred to as the "Period") at the same price paid by the Grantee to the Grantor therefor provided that BP Oil, its successors and assigns, shall not be entitled to exercise the foregoing option so long as no part of the said lands is used for the manufacture, storage, distribution or retail sale of petroleum products.

2. That during the Period (as defined in the preceding paragraph numbered 1) the hereinbefore described lands or any part thereof shall not be used for the manufacture, storage, distribution or retail sale of petroleum products and in the event of a sale, conveyance, transfer or other disposition of the said lands or any part thereof written notice prior to the completion thereof shall be forthwith given to BP Oil and the Grantee will obtain a similar covenant for the remainder of the Period from the purchaser or any other person to whom the said lands or any part thereof are conveyed, transferred or otherwise disposed of and will forthwith assign the benefit of such covenant to BP Oil, its successors and assigns.

3. That the words "manufacture, storage, distribution or retail sale of petroleum products" where used herein shall mean "manufacture, storage, distribution or retail sale of petroleum products for motor vehicles or for fuel for domestic or industrial heating purposes other than such products of BP Oil Limited or such other company or companies as BP Oil Limited may from time to time designate in writing to the Grantee, his heirs, executors, administrators, and assigns, as the case may be."

4. That BP Oil, its successors and assigns, shall have and the Grantee hereby grants to BP Oil, its successors and assigns, the further irrevocable option to repurchase the hereinbefore described lands during the Period at the same price paid by the Grantee to the Grantor therefor in the event that the occupant from time to time of the said lands and BP Oil Limited have not entered into an agreement which is in effect and has not been terminated otherwise than by mutual agreement for the sale and purchase of BP products

In Witness Whereof the said parties hereto have hereunto set their hands and seals.

Signed, Sealed and Delivered
In the presence of

Reg'd June 3, 1977

356598

Newsome and Gilbert, Limited, Toronto
Form No. 144
Deed to Uses

This Indenture

made the 26th day of May

one thousand nine hundred and seventy -seven

In Pursuance of the Short Forms of Conveyances Act:

Between NICK ZITANO , of the City of Niagara Falls, in the Regional Municipality of Niagara, to Uses

Hereinafter called the Grantor of the FIRST PART

-and-

JOHN STUART MILLER, of the City of St. Catharines, in the Regional Municipality of Niagara, to Uses

Hereinafter called the Grantee of the SECOND PART

WHEREAS the lands hereinafter mentioned are vested in the Grantor in fee simple to such uses as he may from time to time by deed , will or other writing appoint.

AND WHEREAS these presents are intended to be made an exercise of such power of appointment.

Witnesseth that in consideration of ------One or More----------

----------($1.00 or more)---------- Dollars

now paid by the said Grantee to the said Grantor the receipt whereof is hereby by him acknowledged. he the said Grantor DOTH GRANT AND APPOINT unto the said Grantee unto, upon and for the uses hereinafter declared.

All and Singular the certain parcel or tract of land and premises situate, lying and being more particularly described in Schedule "A" attached hereto;

30285

356598

"SCHEDULE A "

ALL AND SINGULAR that certain parcel or tract of land and premises (former Second Welland Canal Reserve) situate, lying and being in the City of St. Catharines, (formerly in the Town of Port Dalhousie and Township of Grantham) in the Regional Municipality of Niagara(formerly in the County of Lincoln),and being in Lot 21, Concession 1 of the said Township of Grantham, and which may be more particularly described as follows;

COMMENCING at an iron bar planted at the intersection of the Northerly limit of Lock Street with the Westerly Limit of Front Street, said intersection being also the Southeast corner of Lot 1 of registered Plan Number 31 for the Village of Port Dalhousie;

THENCE South 12 degrees 35 minutes East 165.95 feet to an iron bar being the point of commencement of the parcel herein to be described;

THENCE South 64 degrees 04 minutes East 70 feet to an iron bar;

THENCE South 26 degrees 34 minutes 25 seconds West 100 feet to an iron bar;

THENCE North 56 degrees 37 minutes and 35 seconds West 44 feet to an iron bar;

THENCE North 2 degrees 51 minutes 05 seconds East 70 feet to an iron bar;

THENCE North 29 degrees 59 minutes East 30 feet to the place of beginning;

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #30

46195-0391 (LT)

PREPARED FOR SB
ON 2016/11/04 AT 13:38:42

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 21 CON 1 (PORT DALHOUSIE LT 1) GRANTHAM; PT LT 21 CON 1 (PORT DALHOUSIE LT 637) GRANTHAM PT 11, 12, 13, 16 30R3301, PT 1 30R8500; S/T RO729719; ST. CATHARINES

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
RE-ENTRY FROM 46195-0632

PIN CREATION DATE:
2003/09/22

OWNERS' NAMES
THE CORPORATION OF THE CITY OF ST. CATHARINES

CAPACITY SHARE
BENO

Solid red

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2003/09/19 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2003/09/22 **						
RO80026	1962/06/11	TRANSFER ✓		HER MAJESTY THE QUEEN	THE CORPORATION OF THE CITY OF ST. CATHARINES	C
RO308918	1975/03/10	NOTICE OF LEASE – Copied			BP OIL LIMITED	C
RO360538	1977/08/02	NOTICE OF LEASE – Copied			BP OIL LIMITED	C
30R3301	1981/07/29	PLAN REFERENCE ✓				C
RO523274	1986/08/14	TRANSFER REMARKS: PARTS 15 AND 16 30R-3301		MILLER, JOHN STUART	THE CORPORATION OF THE CITY OF ST. CATHARINES	C
30R8500	1996/03/27	PLAN REFERENCE ✓				C
RO729719	1997/07/22	TRANSFER ✓		THE REGIONAL MUNICIPALITY OF NIAGARA	THE CORPORATION OF THE CITY OF ST. CATHARINES	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
RO777311	2001/02/07	NOTICE ✓ Copied		THE CORPORATION OF THE CITY OF ST. CATHARINES		C
	REMARKS: RE: RO80026					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

308918

THE REGISTRY ACT

NOTICE OF LEASE OR INTEREST UNDER LEASE

Notice is hereby given, pursuant to subsection 7 of section 22 of The Registry Act of an unregistered lease dated the 17th day of January 1975, made

B E T W E E N:

NICK ZITANO, of the City of Niagara Falls, in the Regional Municipality of Niagara, Esq., as Lessor,

- and - BP OIL LIMITED, a company incorporated under the laws of Canada, as Lessee,

affecting the lands described as follows:

FIRSTLY-

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of St. Catharines, in the Regional Municipality of Niagara,

AND SECONDLY-

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Niagara Falls, in the Regional Municipality of Niagara,

as more particularly described in Schedule "A" attached hereto,

under which the said lands were leased by the Lessor to the Lessee for a term of Five (5) years computed from the First day of January 1975 and with the Lessee having the right to renew for one (1) further term of Five (5) years on giving at least sixty (60) days prior notice to the Lessor, at the end of the initial term, and with the Lessee having the right of first refusal to purchase the said lands should the Lessor receive a bona fide offer in writing from the prospective purchaser.

The address of the Lessor is 4871 Bridge Street, Niagara Falls, Ontario.

The address of the Lessee is 240 Duncan Mills Road, Don Mills, Ontario M3B 3H2.

DATED at Toronto, Ontario, this 17th day of January, 1975.

SIGNED, SEALED and DELIVERED in the presence of

Nick Zitano

BP OIL LIMITED

E W Bramlich
Ontario Real Estate Manager

SCHEDULE "A"

FIRSTLY:

ALL AND SINGULAR that certain parcel or tract of land and premises (of former Second Welland Canal Reserve) situate, lying and being in the City of St. Catharines (formerly in the Town of Port Dalhousie and Township of Grantham) in the Regional Municipality of Niagara (formerly in the County of Lincoln), and being in Lot 21, Concession 1 of the said Township of Grantham, and which may be more particularly described as follows:

COMMENCING at an iron bar planted at the intersection of the Northerly limit of Lock Street with the Westerly limit of Front Street, said intersection being also the Southeast corner of Lot 1 of registered Plan Number 31 for the Village of Port Dalhousie;

THENCE South 12 degrees 35 minutes East 165.95 feet to an iron bar being the point of commencement of the parcel herein to be described;

THENCE South 64 degrees 04 minutes East 70 feet to an iron bar;

THENCE South 26 degrees 34 minutes 25 seconds West 100 feet to an iron bar;

THENCE North 56 degrees 37 minutes and 35 seconds West 44 feet to an iron bar;

THENCE North 2 degrees 51 minutes 05 seconds East 70 feet to an iron bar;

THENCE North 29 degrees 59 minutes East 30 feet to the place of beginning,

AND SECONDLY:

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Niagara Falls, in the Regional Municipality of Niagara (formerly in the County of Welland) being composed of the most southerly One Hundred feet (100') of Lot Number One (1), and the whole of Lot Number Two (2) in Range Two (2), North Chestnut (now Bridge Street) according to Andrew Menzie's Registered Plan 632 NOW KNOWN AS PLAN No. 284

AFFIDAVIT OF SUBSCRIBING WITNESS

AMENDED MARCH 1972

I, Aletha Clarke, Secretary

of the City of Toronto,

in the Municipality of Metropolitan Toronto make oath and say:

I am a subscribing witness to the attached instrument and I was present and saw it executed

at Toronto by NICK ZITANO.

See footnote

See footnote

I verily believe that each person whose signature I witnessed is the party of the same name referred to in the instrument.

SWORN before me at the City
Toronto in the Municipality
of Metropolitan Toronto
this 11th day of February 19 75

Aletha Clarke

A COMMISSIONER FOR TAKING AFFIDAVITS, ETC.

* *Where a party is unable to read the instrument or where a party signs by making his mark or in foreign characters add "after the instrument had been read to him and he appeared fully to understand it". Where executed under a power of attorney insert "(name of attorney) as attorney for (name of party)"; and for next clause substitute "I verily believe that the person whose signature I witnessed was authorized to execute the instrument as attorney for (name)".*

AFFIDAVIT AS TO AGE AND MARITAL STATUS

I/~~We~~ NICK ZITANO

of the City of Niagara Falls,

in the Regional Municipality of Niagara,

* If attorney see footnote

make oath and say: When I executed the attached instrument,

I/~~We~~ was at least eighteen years old.

Strike out inapplicable clauses.

~~I was married / divorced / widower.~~

[redacted]

I hold the land to Uses.

[redacted] property.

President of ... etc.

(~~We~~ SWORN before me at the City
Toronto in the Municipality of
Metropolitan Toronto
this 11th day of February 19 75

Nick Zitano
Nick Zitano

A COMMISSIONER FOR TAKING AFFIDAVITS, ETC.

* *Where affidavit made by attorney substitute: "When I executed the attached instrument as attorney for (name), he/she was (marital status, and if married, name of spouse), and when he/she executed the power of attorney, he/she had attained the age of majority".*

AFFIDAVIT, THE REGISTRY ACT

IN THE MATTER OF THE MORTMAIN AND CHARITABLE USES ACT

PROVINCE OF ONTARIO)
)
COUNTY OF MIDDLESEX)
)
TO WIT:)

I, EDWARD A. REID, of the City of London, in the County of Middlesex, make oath and say:

1. That I am a/~~solicitor~~ staff of BP Oil Limited, the Lessee named in the annexed instrument, and as such have knowledge of the matters herein deposed to.

2. That the lands described in the annexed instrument are not assured to BP Oil Limited, contrary to the provisions of Section 2 of The Mortmain and Charitable Uses Act of Ontario.

SWORN before me at the City of)
London, in the County of Middlesex,)
this 18th day of February 1975.)

Edward A. Reid

Hildred G. Pinfold

HILDRED G. PINFOLD, a Commissioner, etc., Middlesex County, for B.P. Oil Limited and ~~A Commissioner, etc.~~ affiliated Companies. Expires 6 June 1976.

(3) 215

DATED 17 January 1975

308918

No.
Registry Division of Niagara North (No. 30)
I CERTIFY that this instrument is registered as of
215 P .M.
MAR 10 1975 in the
Registry Office
at St. Catharines,
Ontario.

LAND REGISTRAR

NICK ZITANO

and

AP OIL LIMITED
PO Box 5397
London

NOTICE OF LEASE

Abstract Index Book Pl. Dal. (LP)

Folio No. New parcel 637 (B)
H.

PROPERTY OF THE REGISTRY OFFICE

T80010 A 001003

10 2

E. H. Kent
Box 5397
LONDON

360538

THE REGISTRY ACT

Notice is hereby given, pursuant to subsection 7 of section 22 of The Registry Act of an unregistered lease dated the 17th day of May 1977, made

B E T W E E N:

JOHN MILLER, of the City of St. Catharines, in the Regional Municipality of Niagara,

as Lessor,

- and -

BP OIL LIMITED, a company incorporated under the laws of Canada,

as Lessee,

affecting the land described as follows:

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of St. Catharines, in the Regional Municipality of Niagara and being in Lot 21, Concession 1 of the Township of Grantham, formerly in the County of Lincoln, as described in Schedule "A" attached hereto,

under which the said lands were leased by the Lessor to the Lessee for a term of 31 months and four days computed from the 27th day of May 1977 and expiring on the 31st day of December 1979. The lease contains the following special provisions:

(i) In clause 8 the Lessee is granted a right to renew for one further term of five years upon giving notice to the Lessor of the exercise of such right at least sixty (60) days prior to the end of the then current term.

(ii) In clause 11 the Lessee is granted a continuing right of first refusal to purchase the leased premises at the same price as that contained in any bona fide offer received by the Lessor which the Lessor is ready and willing to accept.

(iii) In clause 17 it is provided that the lease of which notice is hereby given shall, as to the lands described in Schedule "A" only, replace a previous lease of which notice was registered as Number 308918.

The address of the Lessor is 45 Lakeport Road, St. Catharines, Ontario, L2N 4P6.

The address of the Lessee is 1245 Sherbrooke St. W., Montreal, Que. H3G 1G7.

DATED at London, Ontario, this 26th day of July, 1977.

SIGNED in the presence of)

)

)

)

)

)

E.A. Reid, Marketing Solicitor
with BP Oil Limited

SCHEDULE "A"

ALL AND SINGULAR that certain parcel or tract of land and premises (of former Second Welland Canal Reserve) situate, lying and being in the City of St. Catharines (formerly in the Town of Port Dalhousie and Township of Grantham) in the Regional Municipality of Niagara (formerly in the County of Lincoln), and being PART Lot 21, Concession 1 of the said Township of Grantham, and which may be more particularly described as follows:

COMMENCING at an iron bar planted at the intersection of the Northerly limit of Lock Street with the Westerly limit of Front Street, said intersection being also the Southeast corner of Lot 1 of registered Plan Number 31 for the Village of Port Dalhousie;

THENCE South 12 degrees 35 minutes East 165,95 feet to an iron bar being the point of commencement of the parcel herein to be described;

THENCE South 64 degrees 04 minutes East 70 feet to an iron bar;

THENCE South 26 degrees 34 minutes 25 seconds West 100 feet to an iron bar;

THENCE North 56 degrees 37 minutes and 35 seconds West 44 feet to an iron bar;

THENCE North 2 degrees 51 minutes 05 seconds East 70 feet to an iron bar;

THENCE North 29 degrees 59 minutes East 30 feet to the place of beginning.

AFFIDAVIT, THE REGISTRY ACT

IN THE MATTER OF THE MORTMAIN AND CHARITABLE USES ACT

PROVINCE OF ONTARIO)
) I, EDWARD A. REID,
COUNTY OF MIDDLESEX)
) of the City of London, in the County of Middlesex,
TO WIT:)
) make oath and say:

1. That I am Marketing Solicitor with BP Oil Limited, named in the annexed instrument, and as such have knowledge of the matters herein deposed to.

2. That the lands described in the annexed instrument are not assured to BP Oil Limited, contrary to the provisions of Section 2 of the Mortmain and Charitable Uses Act of Ontario.

SWORN before me at the City of London,)
in the County of Middlesex, this)
26th day of July, 1977.)

Hildred G. Pinfold

HILDRED G. PINFOLD, a Commissioner, etc., Middlesex County, for B.P. Oil Limited and its subsidiary associated and affiliated Companies. Expires 6 June 1978.

A Commissioner, etc.

AFFIDAVIT OF SUBSCRIBING WITNESS

I, IRENE B. THAYER, of the City of London, in the County of Middlesex, Clerk-Typist with BP Oil Limited, make oath and say:

I am a subscribing witness to the attached instrument and I was present and saw it executed at London by EDWARD A. REID, Marketing Solicitor with BP Oil Limited.

I verily believe that each person whose signature I witnessed is the party of the same name referred to in the instrument.

SWORN before me at the City of London,)
in the County of Middlesex, this 26th)
day of July 1977.)

Irene B Thayer

Hildred G. Pinfold

HILDRED G. PINFOLD, a Commissioner, etc., Middlesex County, for B.P. Oil Limited and its subsidiary associated and affiliated Companies. Expires 6 June 1978.

A Commissioner, etc.

930

360538

DATED 26 July 1977

No.
Registry Division of Niagara North (No. 30)
I CERTIFY that this instrument is registered as of
930 ft. .M.
AUG 02 1977 in the
Registry Office
at St. Catharines,
Ontario.

LAND REGISTRAR

JOHN MILLER

and

Abstract Index Book

Folio No.

BP OIL LIMITED

Address: 1245 Sherbrooke St. West,
Montreal, Que. H3G 1G7

NOTICE OF LEASE

PATENT OFFICE

E.A. Reid, Esq.,
Solicitor,
P.O. Box 5397
London, Ontario
N6A 4P5

1950

Province of Ontario

Transfer/Deed of Land

Form 1 — Land Registration Reform Act

A

FOR OFFICE USE ONLY

0729719

CERTIFICATE OF REGISTRY OFFICE NIAGARA (59) ST. CATHARINES

97 JUL 22 AM 11 44

New Property Identifiers — Additional See Schedule ☐

Executions — Additional See Schedule ☐

(1) Registry [X] Land Titles [ ] (2) Page 1 of 3 pages

(3) Property Identifier(s) — Block: 46195 — Property: 0125(R) — Additional See Schedule ☐

(4) Consideration: TRANSFER TO A MUNICIPALITY AND ------ONE------ Dollars $ 1.00

(5) Description — This is a Property Division ☐ Property Consolidation ☐

Part of Lakeport Road being Part of Lot 21, Concession 1, in the City of St. Catharines, in the Geographic Township of Grantham, in the Regional Municipality of Niagara, designated as Part 1 on Reference Plan 30R-8500 (New lot 1). Stopped up by By-law No. 8322-96 Registered on June 18, 1997 a s Instrument No. 0728223. Subject to rights-of-way to Royal Canadian Legion, Branch 350 and Her Majesty the Queen in Right of Canada as set out in instruments no. 0709765 and 0711853, respectively

(6) This Document Contains: (a) Redescription ☐ New Easement ☐ Plan/Sketch ☐ (b) Schedule for: Description ☐ Additional Parties ☐ Other ☐

(7) Interest/Estate Transferred: Fee Simple

(8) Transferor(s) The transferor hereby transfers the land to the transferee ~~and certifies that the transferor is at least eighteen years old~~ and that

THE REGIONAL MUNICIPALITY OF NIAGARA

Name(s) — Signature(s) — Date of Signature Y M D

APPROVED AS TO FORM
BWR
~~REGIONAL~~ SOLICITOR

(Brian E. Merrett, Regional Chair) 1997 07 15

(Thomas R. Hollick, Regional Clerk) 1997 07 15

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction — Name(s) — Signature(s) — Date of Signature Y M D

(10) Transferor(s) Address for Service: 2201 St. David's Road, Box 1042, Thorold L2V 4T7

(11) Transferee(s) — Date of Birth Y M D

THE CORPORATION OF THE CITY OF ST. CATHARINES

(12) Transferee(s) Address for Service: P.O. Box 3012, St. Catharines, Ontario L2R 7C2

Planning Act — OPTIONAL

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 50 of the Planning Act.

Date of Signature Y M D — Signature

Date of Signature Y M D — Signature

Solicitor for Transferor(s) I have explained the effect of section 50 of the Planning Act to the transferor and I have made inquiries of the transferor to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor — Date of Signature Y M D — Signature

Affix Statement by Solicitor for Transferee(s) here if necessary

(14) Solicitor for Transferee(s) I have investigated the title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 50 (22) (c) (ii) of the Planning Act and that to the best of my knowledge and belief this transfer does not contravene section 50 of the Planning Act. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

Name and Address of Solicitor — Date of Signature Y M D — Signature

(15) Assessment Roll Number of Property: City | Mun | Map | Sub | Par | not assigned

(16) Municipal Address of Property: not assigned

(17) Document Prepared by:

LEGAL SERVICES
The Regional Municipality of Niagara, Box 1042
Thorold, Ontario
L2V 4T7 (PR-31-378)

FOR OFFICE USE ONLY

Fees and Tax	
Registration Fee	50
Land Transfer Tax	—
	cash
Total	

Newsome and Gilbert

CERTIFICATE OF COMPLIANCE

FORM FOR USE WITH SECTION 193 OF THE MUNICIPAL ACT

Certificate of Compliance with section 193 of the Municipal Act in the sale or disposition of real property described as:

Part of Regional Road No. 87 (Lakeport Road) closed by By-law 8322-96 being Part of Lot 21, Concession 1, Geographic Township of Grantham, now in the City of St. Catharines designated as Part 1 on Plan 30R-8500.
(Description may be attached)

I hereby certify that:

1. The municipality passed By-law 7927-95 (# if applicable) on March 2, 1995 (date).

   It is a procedural by-law for the purposes of the sale or other disposition of real property and was in force on the date of the sale or disposition of the property described above.

2. The property was declared surplus by resolution passed on December 2, 1993. (date)

Delete if not applicable

3. The property sale or disposition is exempt from the requirement to obtain an appraisal of its fair market value under the following exemption:

   Subsection 2 (1) of Ontario Regulation 815/94.

Delete if not applicable

4. Public notice of intent to sell or dispose of the property was given by the following method(s)

   Public Notice advertisement in the St. Catharines Standard. (describe method(s)

   on the following date(s) January 12, 22, 29 and February 5, 1996

Gary D. Staples
Deputy Regional Clerk
(Signature of clerk or administrative head)

97/05/12.
(date)

Province of Ontario

Document General

Form 4 — Land Registration Reform Act, 1984

D

FOR OFFICE USE ONLY

ct 0777311

CERTIFICATE OF REGISTRATION NIAGARA N. (30) ST. CATHARINES

'01 FEB 7 AM 11 21

Jy. Mogriel

ACTING LAND REGISTRAR

New Property Identifiers — Additional See Schedule ☐

Executions — Additional See Schedule ☐

(1) Registry ☑ Land Titles ☐ (2) Page 1 of 2 pages

(3) Property Identifier(s) Block Property: 46195-0391 (R) Part — Additional See Schedule ☐

(4) Nature of Document: NOTICE OF CLAIM, Section 113, Registry Act

(5) Consideration: Dollars $

(6) Description: Part Lot 21, Concession 1 (Grantham), City of St. Catharines, Regional Municipality of Niagara., designated as Parts 11, 12 and 13, Plan 30R-3301.

(7) This Document Contains: (a) Redescription New Easement Plan/Sketch ☐ (b) Schedule for: Description ☐ Additional Parties ☐ Other ☒

(8) This Document provides as follows:

Notice is hereby given by The Corporation of the City of St. Catharines under subsection 113(2) of the Registry Act of a claim under Instrument No. R080026 dated the 26th day of March, 1962, and registered on the 11th day of June, 1962, on the lands described herein.

The particulars of the claim are as follows:

Grant by Letters Patent to The Corporation of the City of St. Catharines.

The address for service of the Claimant is City Hall, 50 Church Street, P. O. Box 3012, St. Catharines, Ontario L2R 7C2

Continued on Schedule ☐

(9) This Document relates to instrument number(s): Instrument No. R080026 (1962) Firstly

(10) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y M D
THE CORPORATION OF THE CITY OF ST. CATHARINES	Annette Poulin	2001 02 06
by its solicitor	ANNETTE POULIN	
(Claimant)		

(11) Address for Service: City Hall, 50 Church Street, P. O. Box 3012, St. Catharines, Ontario L2R 7C2

(12) Party(ies) (Set out Status or Interest)

Name(s)	Signature(s)	Date of Signature Y M D

(13) Address for Service:

(14) Municipal Address of Property: Not Assigned

(15) Document Prepared by:
ANNETTE POULIN, City Solicitor
City Hall, 50 Church Street
P.O. Box 3012
St. Catharines, Ontario L2R 7C2

FOR OFFICE USE ONLY

Fees and Tax	
Registration Fee	60
CASH	
Total	60

April, 1985

Province of Ontario

Schedule

Form 5 — Land Registration Reform Act, 1984

S

Additional Property Identifier(s) and/or Other Information

Box (8) Continued:

AFFIDAVIT IN SUPPORT OF NOTICE OF CLAIM

Under subsection 113(2) of the Act

I, ANNETTE POULIN, of the City of St. Catharines, in the Regional Municipality of Niagara, MAKE OATH AND SAY:

1. I am the solicitor for the Claimant whose claim is more particularly described in the attached Notice of Claim.

2. The particulars of the claim as set out in the attached Notice of Claim are true and subsisting and the time for registering a notice of claim under subsections 113(2) and (3) of the Registry Act have not expired.

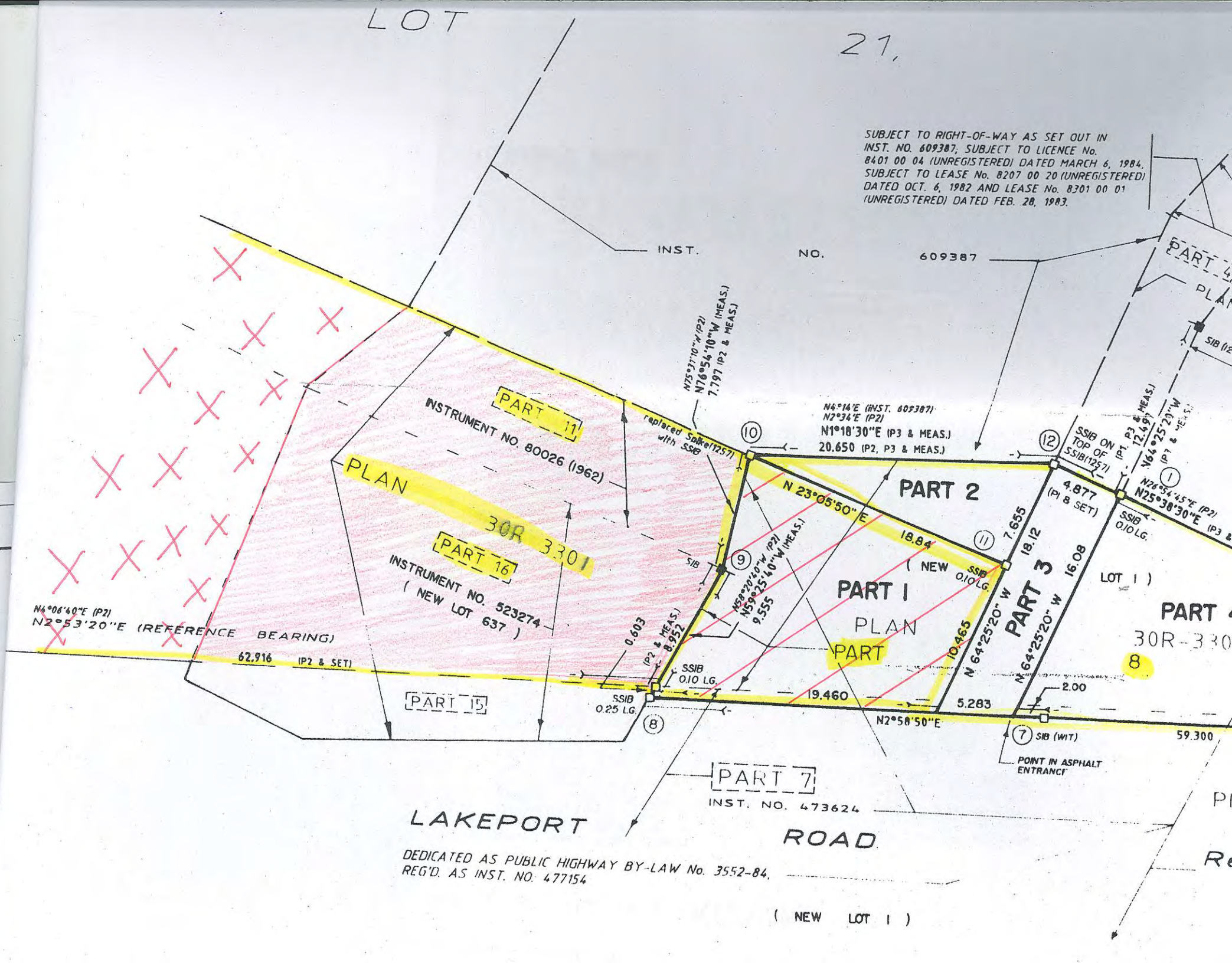
SWORN BEFORE ME at the City of St. Catharines, in the Regional Municipality of Niagara, this 6th day of February, 2001.

A Commissioner, etc.

Annette Poulin

Annette Poulin

FOR OFFICE USE ONLY


LOT 21,
SUBJECT TO RIGHT-OF-WAY AS SET OUT IN INST. NO. 609387; SUBJECT TO LICENCE No. 8401 00 04 (UNREGISTERED) DATED MARCH 6, 1984. SUBJECT TO LEASE No. 8207 00 20 (UNREGISTERED) DATED OCT. 6, 1982 AND LEASE No. 8301 00 01 (UNREGISTERED) DATED FEB. 28, 1983.
INST. NO. 609387
PART 11
INSTRUMENT NO. 80026 (1962)
PLAN 30R 3301
PART 16
INSTRUMENT NO. 523274
(NEW LOT 637)
PART 15
PART 2
PART 1
PLAN
PART
PART 3
LOT 1)
PART 7
INST. NO. 473624
LAKEPORT ROAD
DEDICATED AS PUBLIC HIGHWAY BY-LAW No. 3552-84, REG'D. AS INST. NO. 477154
(NEW LOT 1)
N4°06'40"E (P2)
N2°53'20"E (REFERENCE BEARING)
62.916 (P2 & SET)
N75°31'10"W (P2)
N76°54'10"W (MEAS.)
7.797 (P2 & MEAS.)
replaced Spike(1257) with SSIB
N4°14'E (INST. 609387)
N2°34'E (P2)
N1°18'30"E (P3 & MEAS.)
20.650 (P2, P3 & MEAS.)
SSIB ON TOP OF SSIB(1257)
(P1, P3 & MEAS.)
12.49
N64°25'20"W
(P3 & MEAS.)
N24°54'45"E (P2)
N25°38'30"E (P3 &
N 23°05'50" E
18.84
4.877 (P1 & SET)
7.655
18.12
16.08
N 64°25'20" W
10.465
N 64°25'20" W
SSIB 0.10 LG.
(NEW
SSIB 0.10 LG.
SSIB
N58°20'40"W (P2)
N59°25'40"W (MEAS.)
9.555
0.603
(P2 & MEAS.)
8.952
SSIB 0.10 LG.
SSIB 0.25 LG.
19.460
5.283
2.00
N2°58'50"E
59.300
SIB (WIT)
POINT IN ASPHALT ENTRANCE
SIB (12
PART 4
PLA
30R-330
8

PART 3 PLAN 30R-2041

PART 2 PLAN 30R-2041

PART 1

B.C.

3' 50" E S.I.B.(WIT.)

1.524

38.879

121.839

S.I.B.(Nº1257)

N 2°30'40"W(PLAN 8 SET) 30.224
N 2°32' 10" W (PLAN 30R-2041)

S.I.B.

S.I.B.

23.244

S. I. B.

N 17°47'40"E (PLAN 8 SET) 53.620
N 17°46'10" E (PLAN 30R-2041)

N 4° 06' 40" E 51.071

PART 5

N 13°33'00"W(MEAS.) 22.144
N 13° 34' 37" W(PLAN 30R-2041)22.211

S.S.I.B.

1.948

S.I.B. (Nº1257)

4.679

S. I. B.

N 63°07'20" W (MEAS.) 6.626
N 63° 05' 41" W (PLAN 30R-2041)

S.I.B. (Nº1257) N12°56'20"E(PLAN 30R-2041)
N12°53'20"E(SET) 16.444

6.859/(L35)N 69°18'40"W
N 69° 18' 10"W (PLAN 30R-2041)

S.I.B.

N 20°45'20"E (MEAS.)12.459
N 22°13'00" E(INST. 80026)12.436

S.I.B.(WIT.)

S.I.B.

N 30° 50' 00" E

N 29°12'00" E (MEAS.) 37.436 (INST. 80026)
N 59°10'00" W (INST. 80026) 2.140

N 30°49'20" W(MEAS.)11.256
N 31°39'00" W(INST. 80026)11.232

S.I.B.

N 4° 06' 40" E 90.806

PART 9

RESET BENT
S.I.B.

N 16°59'55"(PLAN 30R-2585)
N 16°57'20" E (MEAS.)
10.525

S.I.B.

N 73°20'00"E 19.394

5.752

N 17°36'35" E (PLAN 30R-2585)
17° 34' 20" E (MEAS.) 31.236

21.336

26.212

I.B. (P.W.C.)

PART 3

N 14°23'50"E 16.630

S.I.B.

4.148

11.726

4.852

N 4°06'40"E 4.390

S.I.B.

N 4° 06' 40" E

I.B.

LAKEPORT

(REGIONAL ROAD 87)

PART 4

PART 7

INST. 80026 (1962) PARCEL 1

ROAD

N4°06'40"E

12.759

N 26°57'30" E (PLAN 30R-2585) 54.45" E (MEAS.) 53.441
28.956

S.I.B. (P.W.C.)

64.642

PART 8

N 58°20'40"W

I.B.Ø N 2° 51' 05" E (DEED) 21.336
N 1°12'00"E(MEAS.) 21.306

I.B.Ø

N 29°22'50"E(MEAS.)9.144

N 29° 59' 00"E(DEED)

4.487

PART 15

1.396

I.B.Ø

N 14°14'30"W (MEAS) 50.582
N 12°35'W (DEED) 50.582

26.212

N 41° 39' 30" W 24.055

S.I.B.

N 4°06'40" E 31.705

S.I.B.

N 41°23'20"E 25.152

C.P.

N 65° 42' 30" W (PLAN 30R-2171) (MEAS.) 30.981

LAKEPOR

PART 10

CUT CROSS (P.W.C) (WIT)

9.940

3.749

C.P.(WIT.)

N 4°11'50"E(MEAS.)20.757
N 4°14'25" E (PLAN 30R-2585)

N 85°45'35" W (MEAS.) 43.469 (SET)

N 85°45'35" W (MEAS.) 38.533 (SET)

29.274

N 85° 48' 10" W (MEAS.) 43.469
N 85° 45' 35" W (PLAN 30R-2585)

26.212

PART 3
PLAN 30R-2585

PART 2
PLAN 30R-2171

INST. 5063(1951)

PART 1 PLAN 30R-2171

RIGHT-OF-WAY APPURTENANT
TO INST. 5063(1951)

PART 4 PLAN

S.I.B. (Nº735)

N 2°34'00"E(MEAS.)20.650
N 4°14'00" E (INST. 80026)

N 24°15'20" E (MEAS.)24.994
N 25° 53' 00" E (INST. 80026)

S.I.B.(Nº735)

8.455

N 36° 16' W

PART 11

N 26°34'25" E (DEED)
N 26° 34' 25" E (MEAS.) 30.480

7.797

N 75°30'40"W

8.952

I.B. N 4° 06' 40" E 31.211

INST. 356598

PART 16

N 24°51'50"E (MEAS.) 9.940

N 65°04'20"W(MEAS.)21.337

S.I.B.

PART 13

PART 12

N 32° 04' 10" E

N 24°15'20" E (MEAS.) 57.912
N 25° 53' 00" E (INST. 80026)

54.268

S.I.B.

N 29°01'50"E(MEAS.)21.306

S.I.B.

56.741

N 29° 01' 50" E

REGISTERED PLAN 7

CANAL STREET

LOT 54

INST. 302988

INST. 307(1928)

N 3°25'20" W (SET) 4.862
N 1° 35' 00" W (INST. 80026)

LOT 53

INST. 575799

INST. 303900

L.P. 47818

L.P. 55918

INST. 334117

LOT 50

INST. 329427

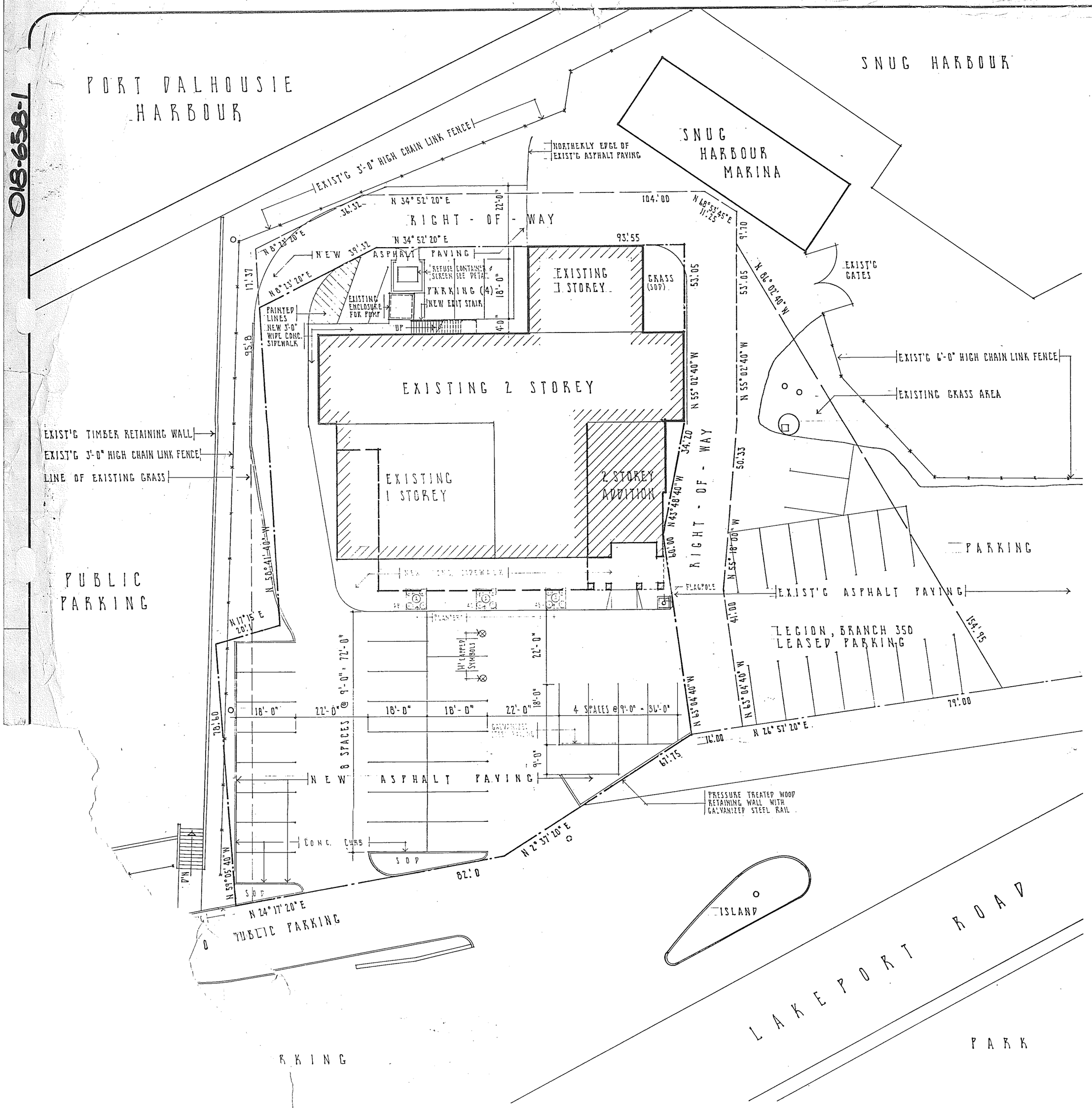
24.049

N. 41° 39' 30" W

N

Appendix D
Property Survey

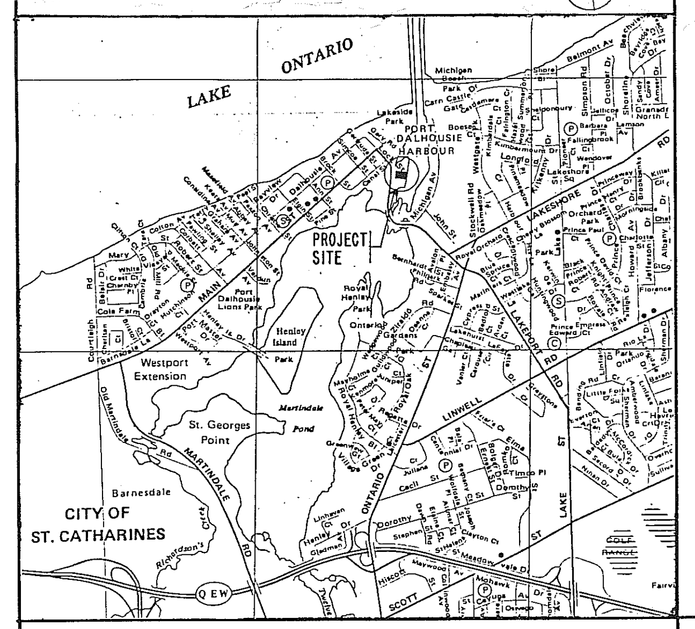
018-658-1



SITE PLAN

SCALE : 1/16" = 1'-0"

KEY PLAN



COVERAGE TABLE

LOT AREA	22 986.18 SQ.FT.		
RIGHT - OF - WAY	4 773.02 SQ.FT.		
TOTAL LOT AREA BY-LAW 86-188 SCHEDULE 'A'	27 759.20 SQ.FT.	0.637 ACRES	
BUILDING COVERAGE			
EXISTING	6 963.33 SQ.FT.		
ADDITION	1 200.00 SQ.FT.		
TOTAL	8 163.33 SQ.FT.	29.4 %	
PARKING & DRIVEWAYS COVERAGE	16 867.34 SQ.FT.	60.8 %	
LANDSCAPE COVERAGE	2 720.40 SQ.FT.	9.8	
Nº OF PARKING SPACES	32		
BUILDING HEIGHT	26 FT.		

SITE DESCRIPTION

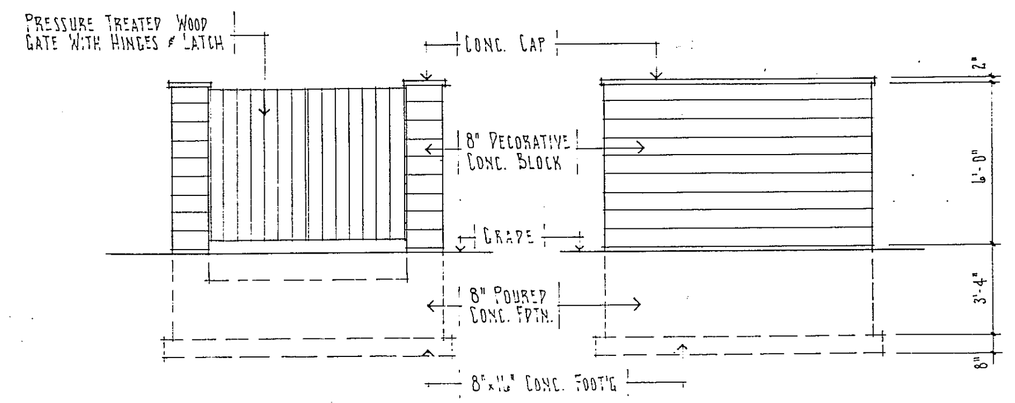
THIS INFORMATION TAKEN FROM A PLAN OF SURVEY BY PETER PAVLIN, O.L.S., FEBRUARY 13, 1979.
PART OF LOT 21, CONCESSION 1, TOWNSHIP OF GRANTHAM AND TOWN OF PORT DALHOUSIE NOW IN THE CITY OF ST.CATHARINES, REGIONAL MUNICIPALITY OF NIAGARA.

LANDSCAPE SCHEDULE

INDEX	COMMON NAME / BOTANICAL NAME	SIZE	ROOT	SPACING	QUANTITY	REMARKS
A	WEEPING PEASHRUB / CARAGANA ARBORESCENS 'PENDULA'	100 cm	FIBRE POT		3	
B	SARCOXIE EUONYMUS / EUONYMUS FORTUNEI 'SARCOXIE'	25 cm	FIBRE POT		8	
C	GREEN GEM BOX / BUXUS 'GREEN GEM'	25 cm	FIBRE POT		4	

NOTE : ALL LANDSCAPED AREAS TO BE SODDED. ALL PARKING AREAS TO BE ASPHALT.

REFUSE CONTAINER SCREEN



THE CITY OF ST. CATHARINES

DEPT.

DATE

NOTE THE DIMENSIONS, AREAS AND LOCATIONS OF THIS PLAN ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FINAL DESIGN PROVIDING THE INTENT AND PURPOSE OF THE ORIGINAL PLAN IS MAINTAINED AND ALL RELEVANT ZONING REGULATIONS COMPLIED WITH. FURTHER, AND NOTWITHSTANDING ANYTHING SHOWN ON THIS PLAN TO THE CONTRARY, ALL SITE SERVICING, GRADING AND DRAINAGE SHALL BE IN ACCORDANCE WITH PLANS FILED IN THE CITY ENGINEER'S OFFICE AND APPROVED BY THE ENGINEER

GENERAL NOTES:

TRUE NORTH

PROJECT NORTH

REVISIONS:

1	SITE PLAN AGREEMENT, CITY OF ST. CATHARINES, DATED AUGUST 30, 1988 — SEPT. 9, 1988
2	
3	
4	
5	
6	
7	
8	
9	
10	

JOB TITLE:

ADDITION & ALTERATIONS TO ROYAL CANADIAN LEGION BRANCH Nº 350

57 LAKEPORT ROAD ST.CATHARINES

DRAWING TITLE:

SITE PLAN AGREEMENT

SCALE: AS SHOWN

DRAWN BY: C.R.S.

CHECKED BY:

DATE: JULY , 1988

architects

WILLIAMS WOODRUFF and ELMES

St. Catharines, Ontario

ONTARIO ASSOCIATION OF ARCHITECTS

DRWG. No. 1

PROJECT Nº 88-120

Appendix E
City Directory Search

ENVIRONMENTAL RISK INFORMATION SERVICE

Head Office: 80 Valleybrook Dr, Toronto, ON M3B 2S9
Physical Address: 38 Lesmill Rd, Toronto, ON M3B 2T5
Phone: 416-510-5204 • Fax: 416-510-5133
info@erisinfo.com • www.erisinfo.com

City Directory Information Source
Vernon's St Catharines, ON City Directory

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 2012	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Lakeside Park Carousel
26 Lakeport Road	-Res (1 tenant)
28 Lakeport Road	-Red Hots Patio Bar
38 Lakeport Road	-Murphy's Rest. & Tavern
48 Lakeport Road	-Seaside Ice Cream

50 Lakeport Road	-Regatta Sport -Alderson & Co.
61 Lakeport Road	-Treadwell Farm
1 Lock Street	-Portview Rest.
70 Henley Island Drive	-St Cath Rowing Club

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 2007	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Res (1 tenant) -Windsand Clothier
28 Lakeport Road	-Red Hots Patio Bar
38 Lakeport Road	-Murphy's Rest. & Tavern

48 Lakeport Road	-Seaside Ice Cream
50 Lakeport Road	-Regatta Sport -Leather Bazaar
61 Lakeport Road	-Treadwell Farm
1 Lock Street	-Portview Rest.
70 Henley Island Drive	-St Cath Rowing Club

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 2002	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Windsand Clothier
28 Lakeport Road	-Old Port Candy

38 Lakeport Road	-Murphy's Rest. & Tavern
48 Lakeport Road	-Dairy Bar
50 Lakeport Road	-Regatta Sport -Leather Bazaar
61 Lakeport Road	-Albert's
1 Lock Street	-Marie's
70 Henley Island Drive	-St Cath Rowing Club

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1997	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Windsand Clothier
28 Lakeport Road	-Old Port Candy

38 Lakeport Road	-Murphy's Rest. & Tavern
48 Lakeport Road	-Dairy Bar
50 Lakeport Road	-Regatta Sport -Leather Bazaar
61 Lakeport Road	-Albert's
1 Lock Street	-Marie's
70 Henley Island Drive	-St Cath Rowing Club

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1992	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Windsand Clothier

28 Lakeport Road	-Kettle Creek
38 Lakeport Road	-Murphy's Rest. & Tavern
48 Lakeport Road	-Dive Shop
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Albert's
1 Lock Street	-Marie's
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1987	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Enchanting Antiques

28 Lakeport Road	-Advertising Works
38 Lakeport Road	-Murphy's Rest. & Tavern -Brass Rubbing Place -Port Gallery
48 Lakeport Road	-Dive Shop
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Snug Harbour Marina
1 Lock Street	-Marie's
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1982	
Site Listing:	-Cdn. Legion
Adjacent Properties:	
1 Lakeport Road	-Address Not Listed

26 Lakeport Road	-Enchanting Antiques
28 Lakeport Road	-Advertising Works
38 Lakeport Road	-Murphy's Rest. & Tavern -Brass Rubbing Place -Port Gallery
48 Lakeport Road	-Dive Shop
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Snug Harbour Marina
1 Lock Street	-Marie's
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1977	
Site Listing:	-Cdn. Legion
Adjacent Properties:	

1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Enchanting Antiques
28 Lakeport Road	-Advertising Works
38 Lakeport Road	-Murphy's Rest. & Tavern -Brass Rubbing Place -Port Gallery
48 Lakeport Road	-Dive Shop
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Snug Harbour Marina
1 Lock Street	-Marie's
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1977	
Site Listing:	-Cdn. Legion

Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Enchanting Antiques
28 Lakeport Road	-Advertising Works
38 Lakeport Road	-Address Not Listed
48 Lakeport Road	-Dive Shop
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Snug Harbour Marina
1 Lock Street	-Marie's
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1967	
Site Listing:	-Cdn. Legion

Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Harbour View Coffee Shop
28 Lakeport Road	-Hungarian Rest.
38 Lakeport Road	-Marine Grocers
48 Lakeport Road	-Address Not Listed
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Address Not Listed
1 Lock Street	-Address Not Listed
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1962	
Site Listing:	-Cdn. Legion

Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Harbour View Coffee Shop
28 Lakeport Road	-Hungarian Rest.
38 Lakeport Road	-Marine Grocers
48 Lakeport Road	-Address Not Listed
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Address Not Listed
1 Lock Street	-Address Not Listed
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1957	
Site Listing:	-Cdn. Legion

Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Harbour View Coffee Shop
28 Lakeport Road	-Res (1 tenant)
38 Lakeport Road	-Marine Grocers
48 Lakeport Road	-Address Not Listed
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Address Not Listed
1 Lock Street	-Address Not Listed
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1952	
Site Listing:	-Address Not Listed

Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Address Not Listed
28 Lakeport Road	-Address Not Listed
38 Lakeport Road	-Address Not Listed
48 Lakeport Road	-Address Not Listed
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Address Not Listed
1 Lock Street	-Address Not Listed
70 Henley Island Drive	-Address Not Listed

PROJECT NUMBER: 20160816071	
Site Address:	57 Lakeport Road, St. Catharines, Ontario
Year: 1947	
Site Listing:	-Address Not Listed

Adjacent Properties:	
1 Lakeport Road	-Address Not Listed
26 Lakeport Road	-Address Not Listed
28 Lakeport Road	-Address Not Listed
38 Lakeport Road	-Address Not Listed
48 Lakeport Road	-Address Not Listed
50 Lakeport Road	-Address Not Listed
61 Lakeport Road	-Address Not Listed
1 Lock Street	-Address Not Listed
70 Henley Island Drive	-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

Appendix F
Regulatory Agency Documents

Project No. 11131634
09/21/16
AH

Ministry of the Environment and Climate Change

Freedom of Information and Protection of Privacy Office

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

Ministère de l'Environnement et de l'Action en matière de changement climatique

Bureau de l'accès à l'information et de la protection de la vie privée

12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075
Téléc.: (416) 314-4285

Ontario

September 14, 2016

Andrew Hunter
GHD Limited (GHD)
3 - 261 Martindale Rd
St Catharines, ON L2W 1A2

Dear Andrew Hunter:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2016-05231, Your Reference 11131634

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 57 Lakeport Rd, St, Catharines.

After a thorough search through the files of the Ministry's Niagara District Office, West Central Regional Office, Investigations and Enforcement Branch, Environmental Approvals Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, no records were located responsive to your request. To provide you with this response and in accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the fee owed is $30.00 for 1 hour of search time @ $30.00 per hour. **We have applied the $30.00 for this request from your initial payment. This file is now closed.**

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Meagan Caschera at meagan.caschera@ontario.ca.

Yours truly,

Tracey Goodwin
FOI Manager (A)

From:	Ruchi Chohan on behalf of Public Information Services
To:	Hunter, Andrew
Subject:	RE: Legion Property - Port Dalhousie
Date:	Wednesday, August 17, 2016 10:26:20 AM
Attachments:	image001.png image002.png image003.png image004.png

Hello Andrew,
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.
Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.
Thank you and have a good day!

Ruchi

Ruchi Chohan | Public Information Agent
Facilities and Business Services
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1-416-734-3417 | Fax: +1-416-231-4903 | E-Mail: rchohan@tssa.org
www.tssa.org

From: Hunter, Andrew [mailto:Andrew.Hunter@ghd.com]
Sent: Tuesday, August 16, 2016 2:13 PM
To: Public Information Services <publicinformationservices@tssa.org>
Subject: Legion Property - Port Dalhousie

Hello,

This email has been prepared to identify if any records exist at the following location:

57 Lakeport Road, St. Catharines, Ontario

Thanks,
Andrew

Andrew Hunter, P. Eng.

GHD
T: +1 905 682 0510 | F: +1 905 682 6818| E: andrew.hunter@ghd.com
3-261 Martindale Road St. Catharines Ontario L2W 1A2 Canada | www.ghd.com

WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

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_____

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From:	Taya Devlin
To:	Hunter, Andrew
Subject:	Property Inquiry: 57 Lakeport Road, St. Catharines
Date:	Friday, September 02, 2016 1:08:59 PM
Attachments:	57 Lakeport Road Map.pdf

Good Afternoon Andrew,

The property is impacted by the Lake Ontario Regulatory Flood Level, which is 76.15 metres for this location. In accordance with Policy 3.26.4.2 (O.REG 155/06) no openings shall be permitted below this elevation.

In addition to the above NPCA policies, the NPCA comments on the Region of Niagara's Environmental Policies on their behalf for any proposal requiring approvals under the Planning Act. The following is offered in that context.

Regional mapping identifies an Environmental Conservation Area (ECA) for Valley Shoreline, on portions of the property. In accordance with Regional Policy 7.B.1.11, development may be permitted within or adjacent to (within 50 metres) an ECA if it has been demonstrated that there will be no negative impact on the Core Natural Heritage system or adjacent lands. This can be accomplished through the completion of an Environmental Impact Study (EIS). An EIS may be required if any new development is proposed on this property.

Due to the regulated features identified on site, the NPCA will need to be circulated any proposal for development on site, and should any works be proposed within a Regulated Feature or its buffer (within the regulated shoreline), a work permit from this office, and possible further studies (i.e. EIS) may be required.

Please contact me if you have any questions.
Thank you,

Taya Devlin
Watershed Planner
Niagara Peninsula Conservation Authority
250 Thorold Road West, 3rd Floor
Welland, Ontario L3C 3W2
Phone: 905 788 3135 (ext. 262)
Fax: 905 788 1121
Email: tdevlin@npca.ca

This e-mail has been scanned for viruses

NIAGARA PENINSULA CONSERVATION AUTHORITY

57 Lakeport Road, St. Catharines





Legend

- Campsites
- Contours 2010 (1m)
- Shoreline Flood/Erosion Invent
  - Regulatory Flood Hazard Limit
  - Great Lakes Regulatory Flood Leve
  - Toe of Bluff
  - Stable Slope Allowance
  - Regulatory Erosion Hazard Limit
  - Regulatory Dynamic Beach Reache
- ECA: Valley Shoreline Buffer
- Ontario Road Network
  - Major Highways
  - Arterial Roads
  - Local Roads
- Assessment Parcels
- AIRPORTS
- SWOOP_2015
  - Red: Band_1
  - Green: Band_2
  - Blue: Band_3

Notes

50.8 0 25.40 50.8 Meters

NAD_1983_UTM_Zone_17N

© NPCA, Niagara Region, LIO, MPAC & Teranet

This map is for illustrative purposes only. Information contained hereon is not intended to constitute advice, is not a substitute for professional review or a site survey, and is subject to change without notice. The NPCA takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user. THIS IS NOT A PLAN OF SURVEY

Appendix G
Environmental Database Search Report

ENVIRONMENTAL RISK INFORMATION SERVICE

DATABASE REPORT

Project Property:	*Legion Property* *57 Lakeport Rd* *St. Catharines ON L2N4P6*
Project No:	
Report Type:	*Standard Report*
Order No:	*20160816071*
Requested by:	*GHD Limited*
Date Completed:	*August 22, 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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Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

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:		*Legion Property* *57 Lakeport Rd St. Catharines ON L2N4P6*
Project No:		
Coordinates:		
	Latitude:	*43.200998*
	Longitude:	*-79.265114*
	UTM Northing:	*4,784,596.69*
	UTM Easting:	*640,947.28*
	UTM Zone:	*UTM Zone 17T*
Elevation:		*249 FT* *76.04 M*

Order Information:

Order No:	*20160816071*
Date Requested:	*August 16, 2016*
Requested by:	*GHD Limited*
Report Type:	*Standard Report*

Additional Products:

Aerial Photographs	*National Collection - Digital (PDF)*
City Directory Search	*Subject Site plus 10 Adjacent Properties*
Topographic Map	*ANSI Map & Ontario Base Map (OBM)*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Within 0.25 km	Total
AAGR	***Abandoned Aggregate Inventory***	*Y*	*0*	*0*	*0*
AGR	***Aggregate Inventory***	*Y*	*0*	*0*	*0*
AMIS	***Abandoned Mine Information System***	*Y*	*0*	*0*	*0*
ANDR	***Anderson's Waste Disposal Sites***	*Y*	*0*	*1*	*1*
AUWR	***Automobile Wrecking & Supplies***	*Y*	*0*	*0*	*0*
BORE	***Borehole***	*Y*	*0*	*2*	*2*
CA	***Certificates of Approval***	*Y*	*0*	*10*	*10*
CFOT	***Commercial Fuel Oil Tanks***	*Y*	*0*	*0*	*0*
CHEM	***Chemical Register***	*Y*	*0*	*0*	*0*
COAL	***Inventory of Coal Gasification Plants and Coal Tar Sites***	*Y*	*0*	*0*	*0*
CONV	***Compliance and Convictions***	*Y*	*0*	*0*	*0*
CPU	***Certificates of Property Use***	*Y*	*0*	*0*	*0*
DRL	***Drill Hole Database***	*Y*	*0*	*0*	*0*
EASR	***Environmental Activity and Sector Registry***	*Y*	*0*	*0*	*0*
EBR	***Environmental Registry***	*Y*	*0*	*0*	*0*
ECA	***Environmental Compliance Approval***	*Y*	*0*	*0*	*0*
EEM	***Environmental Effects Monitoring***	*Y*	*0*	*0*	*0*
EHS	***ERIS Historical Searches***	*Y*	*1*	*1*	*2*
EIIS	***Environmental Issues Inventory System***	*Y*	*0*	*0*	*0*
EMHE	***Emergency Management Historical Event***	*Y*	*0*	*0*	*0*
EXP	***List of TSSA Expired Facilities***	*Y*	*0*	*0*	*0*
FCON	***Federal Convictions***	*Y*	*0*	*0*	*0*
FCS	***Contaminated Sites on Federal Land***	*Y*	*0*	*0*	*0*
FOFT	***Fisheries & Oceans Fuel Tanks***	*Y*	*0*	*0*	*0*
FST	***Fuel Storage Tank***	*Y*	*0*	*0*	*0*
FSTH	***Fuel Storage Tank - Historic***	*Y*	*0*	*0*	*0*
GEN	***Ontario Regulation 347 Waste Generators Summary***	*Y*	*0*	*25*	*25*
GHG	***Greehouse Gas Emissions from Large Facilities***	*Y*	*0*	*0*	*0*
HINC	***TSSA Historic Incidents***	*Y*	*0*	*1*	*1*
IAFT	***Indian & Northern Affairs Fuel Tanks***	*Y*	*0*	*0*	*0*
INC	***TSSA Incidents***	*Y*	*0*	*0*	*0*
LIMO	***Landfill Inventory Management Ontario***	*Y*	*0*	*0*	*0*
MINE	***Canadian Mine Locations***	*Y*	*0*	*0*	*0*
MNR	***Mineral Occurrences***	*Y*	*0*	*0*	*0*
NATE	***National Analysis of Trends in Emergencies System (NATES)***	*Y*	*0*	*0*	*0*
NCPL	***Non-Compliance Reports***	*Y*	*0*	*0*	*0*

Database	Name	Searched	Project Property	Within 0.25 km	Total
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBW	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGW	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PINC	TSSA Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	3	3
SPL	Ontario Spills	Y	0	4	4
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	1	1
WWIS	Water Well Information System	Y	0	1	1
	Total:		1	49	50

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	EHS		57 Lakeport Rd St Catharines ON L2N	-/0.0	0.00	17

Executive Summary: Site Report Summary - Surrounding *Properties*

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
2	SPL		On the west side, behind Twelve Restaurant, 61 Lakeport Road St. Catharines ON L2N 4P6	SSW/60.5	-1.04	17
3	CA	R.M. OF NIAGARA	LAKEPORT RD./LOCK ST./PT.LOT 1 ST. CATHARINES CITY ON	NNW/104.4	5.14	17
3	CA	ST. CATHARINES CITY	LAKEPORT RD./LOCK ST. ST. CATHARINES CITY ON	NNW/104.4	5.14	18
3	CA	R.M. OF NIAGARA	LAKEPORT RD/OLD LAKESHORE RD. ST CATHARINES ON	NNW/104.4	5.14	18
3	CA	R.M. OF NIAGARA	LAKEPORT RD/OLD LAKESHORE RD. ST CATHARINES ON	NNW/104.4	5.14	18
3	CA	R.M. OF NIAGARA	LAKEPORT RD./LOCK ST./PT.LOT 1 ST. CATHARINES CITY ON	NNW/104.4	5.14	19
3	SPL	The Regional Municipality of Niagara	Lakeport St. & Lock St. St. Catharines ON	NNW/104.4	5.14	19
4	GEN	LINCOLN FABRICS LTD.	63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	SSW/125.6	0.05	19
4	GEN	LINCOLN FABRICS LTD. 24-613	63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	SSW/125.6	0.05	20
4	GEN	LINCOLN FABRICS LIMITED	63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	SSW/125.6	0.05	20
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW/125.6	0.05	20
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW/125.6	0.05	21
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW/125.6	0.05	21
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW/125.6	0.05	21
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW/125.6	0.05	21
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW/125.6	0.05	22
4	GEN	Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON	SSW/125.6	0.05	22
4	SCT	LINCOLN FABRICS LIMITED	63 LAKEPORT RD ST CATHARINES ON L2N 4P6	SSW/125.6	0.05	23
4	SCT	LINCOLN FABRICS LTD.	63 Lakeport Rd St. Catharines ON L2N 4P6	SSW/125.6	0.05	23
4	SCT	Lincoln Fabrics Ltd.	63 Lakeport Rd St Catharines ON L2N 4P6	SSW/125.6	0.05	23
5	EHS		38 Lakeport Road St. Catharines ON L2N 4P5	NNW/131.6	4.65	23

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
6	SPL	PUC	26 LAKEPORT RD. MOTOR VEHICLE (OPERATING FLUID) ST. CATHARINES CITY ON L2N 4P5	NNW/141.9	3.48	23
7	ANDR	Lakeport Rd Dump	St Catharines ON L2N 4S	WSW/142.3	2.33	24
8	WDSH		Lakeport Rd. ST. CATHARINES ON	WSW/161.5	3.64	24
9	CA	1049569 ONTARIO INC., SAMMY'S DOUBLE SCO	16 LOCK STREET (REAR) ST. CATHARINES CITY ON L2N 5B5	NNW/175.9	4.77	2
10	BORE		ON	N/176.1	-0.78	25
11	CA	R.M. OF NIAGARA	LAKESIDE PARK/LAKEPORT ROAD ST. CATHARINES CITY ON	N/184.3	0.56	26
12	CA	ST. CATHARINES CITY	LOCK ST./LAKEPORT RD./MAIN ST. ST. CATHARINES CITY ON	NW/187.1	5.75	26
13	CA	BLUE ONION DELHI LTD.	17-19 LOCK ST. ST. CATHARINES CITY ON L2N 5B6	NW/199.5	6.67	27
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON L2N 4P9	S/211.5	-1.03	27
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON L2N 4P9	S/211.5	-1.03	27
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S/211.5	-1.03	27
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S/211.5	-1.03	28
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S/211.5	-1.03	28
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON L2N 4P9	S/211.5	-1.03	28
14	GEN	St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S/211.5	-1.03	28
15	GEN	Seymour Hall Inc	15 Main St. St. Catharines ON	WNW/221.3	8.96	29
16	BORE		ON	ENE/227.4	-0.04	29
17	SPL	PRIVATE BUSINESS	CORNER OF LOCKE AND MAIN ST RESTAURANT ST. CATHARINES CITY ON	NW/228.3	7.01	30
18	CA	R.M. OF NIAGARA	9 MAIN ST.-LAKESIDE PARK P.S. ST. CATHARINES CITY ON	NNW/229.5	2.67	30
19	GEN	BELL CANADA	19 MAIN STREET TORONTO ON L2N 4T5	WNW/230.8	8.54	30
19	GEN	CSI	19 MAIN STREET ST. CATHARINES ON L2N 4T5	WNW/230.8	8.54	31
19	GEN	Compressure Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	WNW/230.8	8.54	31
19	GEN	Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	WNW/230.8	8.54	31
19	GEN	Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON	WNW/230.8	8.54	31

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
19	GEN	Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON	WNW/230.8	8.54	31
19	GEN	Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	WNW/230.8	8.54	32
20	WWIS		PORT DALHOUSIE ON	NNW/230.9	2.18	32
21	HINC		12 MAIN STREET ST. CATHARINES ON L2N 4T3	NW/245.3	8.96	33

Executive Summary: Summary By Data Source

ANDR - Anderson's Waste Disposal Sites

A search of the ANDR database, dated 1860s-Present has found that there are 1 ANDR site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
Lakeport Rd Dump	St Catharines ON L2N 4S	WSW	142.26	7

Lower Elevation	Address	Direction	Distance (m)	Map Key

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2014 has found that there are 2 BORE site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key

Lower Elevation	Address	Direction	Distance (m)	Map Key
	ON	N	176.09	10
	ON	ENE	227.37	16

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 10 CA site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
R.M. OF NIAGARA	LAKEPORT RD./LOCK ST./PT.LOT 1 ST. CATHARINES CITY ON	NNW	104.45	3
R.M. OF NIAGARA	LAKEPORT RD./LOCK ST./PT.LOT 1 ST. CATHARINES CITY ON	NNW	104.45	3
R.M. OF NIAGARA	LAKEPORT RD/OLD LAKESHORE RD. ST CATHARINES ON	NNW	104.45	3
ST. CATHARINES CITY	LAKEPORT RD./LOCK ST. ST. CATHARINES CITY ON	NNW	104.45	3
R.M. OF NIAGARA	LAKEPORT RD/OLD LAKESHORE RD. ST CATHARINES ON	NNW	104.45	3

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
1049569 ONTARIO INC., SAMMY'S DOUBLE SCO	16 LOCK STREET (REAR) ST. CATHARINES CITY ON L2N 5B5	NNW	175.93	9
R.M. OF NIAGARA	LAKESIDE PARK/LAKEPORT ROAD ST. CATHARINES CITY ON	N	184.31	11
ST. CATHARINES CITY	LOCK ST./LAKEPORT RD./MAIN ST. ST. CATHARINES CITY ON	NW	187.12	12
BLUE ONION DELHI LTD.	17-19 LOCK ST. ST. CATHARINES CITY ON L2N 5B6	NW	199.52	13
R.M. OF NIAGARA	9 MAIN ST.-LAKESIDE PARK P.S. ST. CATHARINES CITY ON	NNW	229.54	18

Lower Elevation	Address	Direction	Distance (m)	Map Key

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Aug 2014 has found that there are 2 EHS site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
	57 Lakeport Rd St Catharines ON L2N	-	0.00	1
	38 Lakeport Road St. Catharines ON L2N 4P5	NNW	131.61	5

Lower Elevation	Address	Direction	Distance (m)	Map Key

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-May 2015 has found that there are 25 GEN site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON	SSW	125.58	4
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW	125.58	4
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW	125.58	4
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW	125.58	4
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW	125.58	4
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW	125.58	4

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
Lincoln Fabrics Ltd.	63 Lakeport Rd. St. Catharines ON L2N 4P6	SSW	125.58	4
LINCOLN FABRICS LTD. 24-613	63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	SSW	125.58	4
LINCOLN FABRICS LIMITED	63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	SSW	125.58	4
LINCOLN FABRICS LTD.	63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	SSW	125.58	4
Seymour Hall Inc	15 Main St. St. Catharines ON	WNW	221.26	15
BELL CANADA	19 MAIN STREET TORONTO ON L2N 4T5	WNW	230.83	19
CSI	19 MAIN STREET ST. CATHARINES ON L2N 4T5	WNW	230.83	19
Compressure Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	WNW	230.83	19
Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	WNW	230.83	19
Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	WNW	230.83	19
Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON	WNW	230.83	19
Compressor Systems International Inc.	19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON	WNW	230.83	19

Lower Elevation	Address	Direction	Distance (m)	Map Key
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S	211.52	14
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON L2N 4P9	S	211.52	14
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S	211.52	14
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S	211.52	14
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON	S	211.52	14
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON L2N 4P9	S	211.52	14
St.Catharines Hydro Generation Inc	69A Lakeport Road St.Catharines ON L2N 4P9	S	211.52	14

HINC - TSSA Historic Incidents

A search of the HINC database, dated 2006-June 2009* has found that there are 1 HINC site(s) within

approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
	12 MAIN STREET ST. CATHARINES ON L2N 4T3	NW	245.26	21

Lower Elevation	Address	Direction	Distance (m)	Map Key

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 3 SCT site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
LINCOLN FABRICS LTD.	63 Lakeport Rd St. Catharines ON L2N 4P6	SSW	125.58	4
LINCOLN FABRICS LIMITED	63 LAKEPORT RD ST CATHARINES ON L2N 4P6	SSW	125.58	4
Lincoln Fabrics Ltd.	63 Lakeport Rd St Catharines ON L2N 4P6	SSW	125.58	4

Lower Elevation	Address	Direction	Distance (m)	Map Key

SPL - Ontario Spills

A search of the SPL database, dated 1988-Jun 2015 has found that there are 4 SPL site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
The Regional Municipality of Niagara	Lakeport St. & Lock St. St. Catharines ON	NNW	104.45	3
PUC	26 LAKEPORT RD. MOTOR VEHICLE (OPERATING FLUID) ST. CATHARINES CITY ON L2N 4P5	NNW	141.87	6
PRIVATE BUSINESS	CORNER OF LOCKE AND MAIN ST RESTAURANT ST. CATHARINES CITY ON	NW	228.30	17

Lower Elevation	Address	Direction	Distance (m)	Map Key
	On the west side, behind Twelve Restaurant, 61 Lakeport Road St. Catharines ON L2N 4P6	SSW	60.46	2

WDSH - Waste Disposal Sites - MOE 1991 Historical Approval Inventory

A search of the WDSH database, dated Up to Oct 1990* has found that there are 1 WDSH site(s) within

approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
	Lakeport Rd. ST. CATHARINES ON	WSW	161.50	8

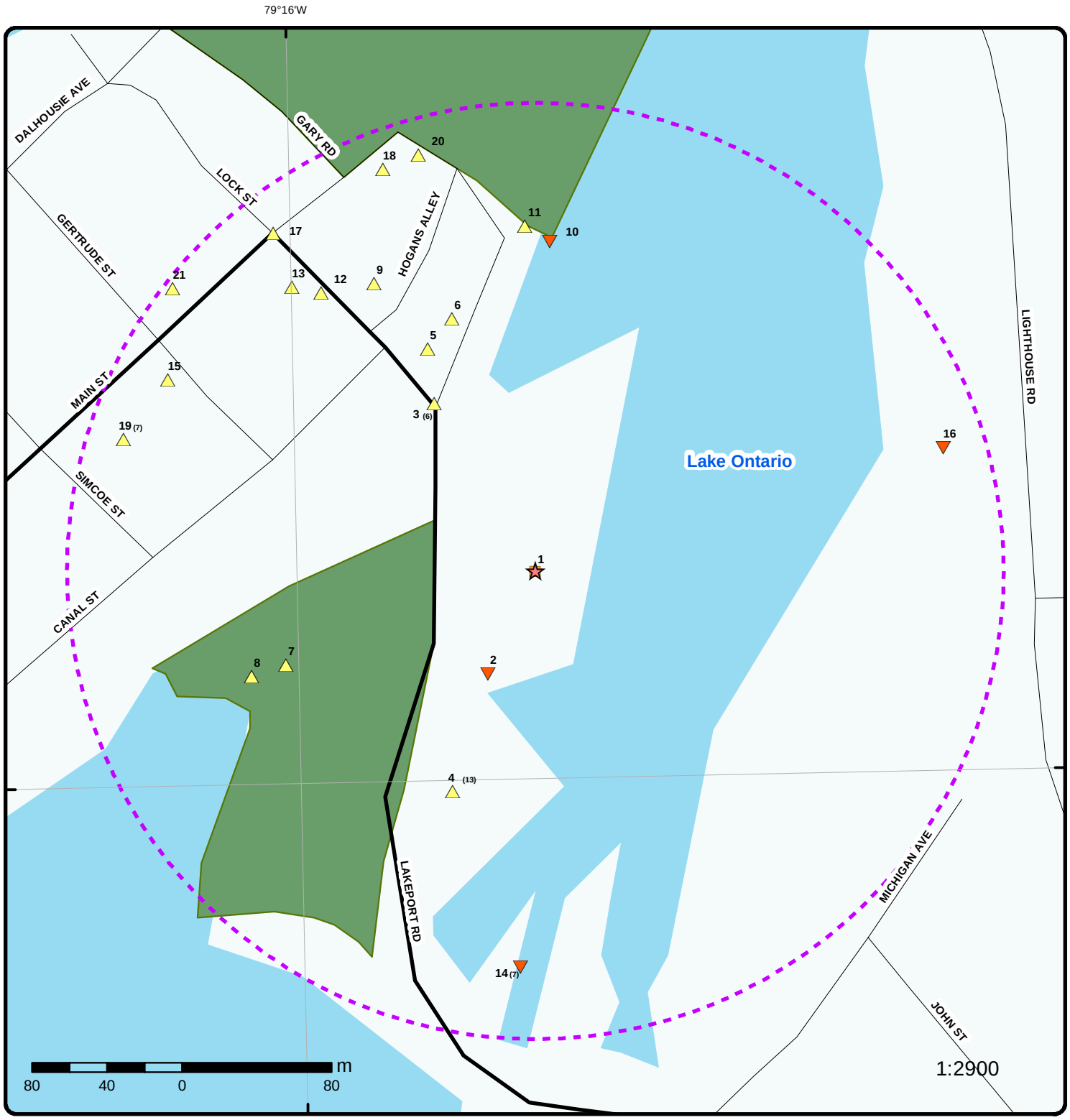
Lower Elevation	Address	Direction	Distance (m)	Map Key

WWIS - Water Well Information System

A search of the WWIS database, dated 1955-Mar 2014 has found that there are 1 WWIS site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance (m)	Map Key
	PORT DALHOUSIE ON	NNW	230.93	20

Lower Elevation	Address	Direction	Distance (m)	Map Key



Map

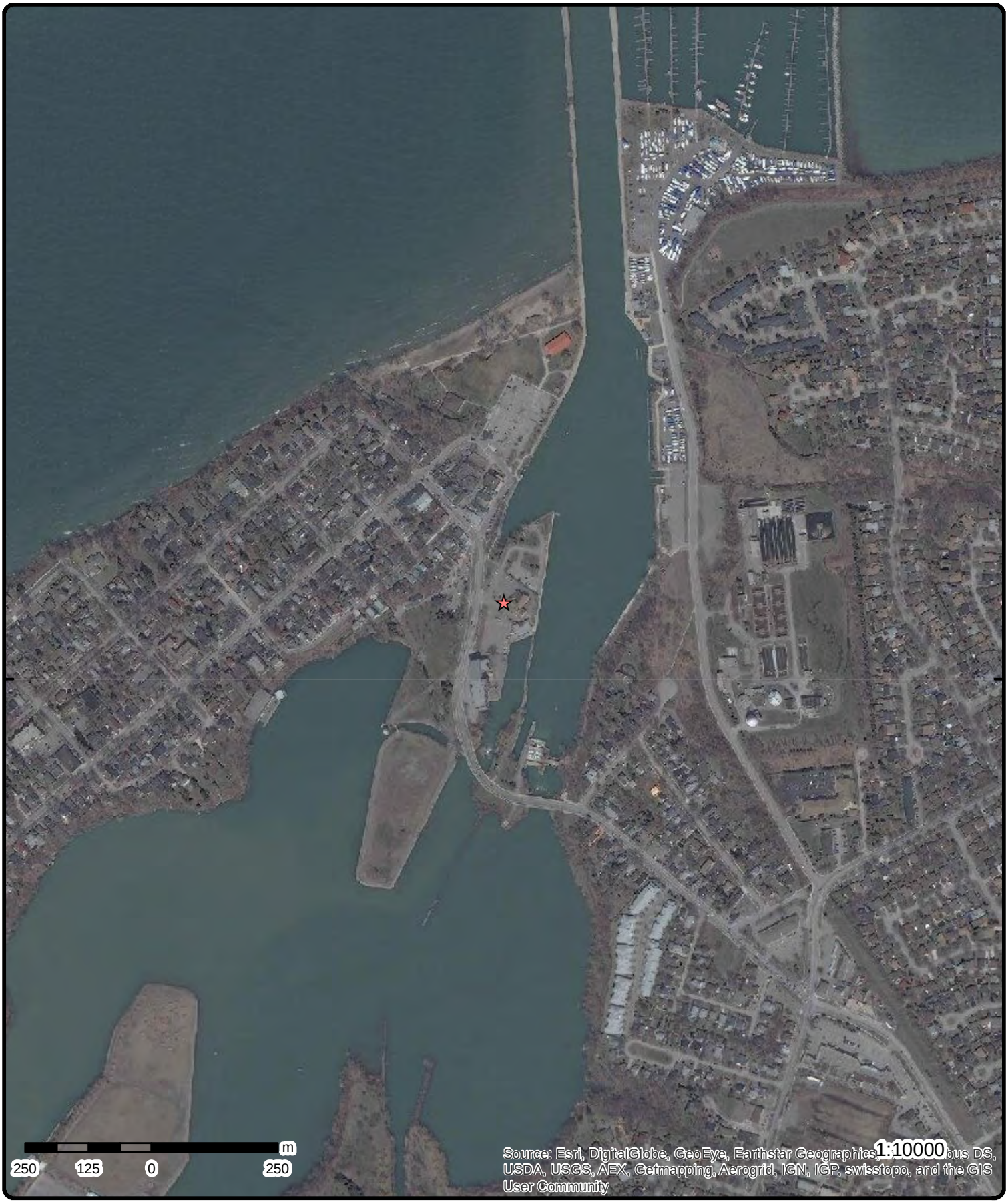
Order No: 20160816071

Address: 57 Lakeport Rd, St. Catharines, ON, L2N4P6

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- Pipelines and Transmission
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

Source: © 2015 DMTI Spatial Inc.

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Aerial

Order No: 20160816071

Address: 57 Lakeport Rd, St. Catharines, ON, L2N4P6

Source: ESRI World Imagery

© Ecolog ERIS Ltd

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
1	1 of 1	-/0.0	76.0	57 Lakeport Rd St Catharines ON L2N	EHS

Addit. Info Ordered: Fire Insur. Maps and/or Site Plans
Order No.: 20130618033
Report Date: 27-JUN-13
Report Type: Standard Report
Search Radius (km): .25

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
2	1 of 1	SSW/60.5	75.0	On the west side, behind Twelve Restaurant, 61 Lakeport Road St. Catharines ON L2N 4P6	SPL

Ref NO: 1274-62U5QY
Contaminant Code: 13
Contaminant Name: DIESEL FUEL
Contaminant Quantity: 1820 L
Incident Cause: Unknown
Incident Dt: 7/12/2004
Incident Reason: Unknown - Reason not determined
Incident Summary: Dalhousie Harbour: 300-400 gal to L. Ontario
MOE Reported Dt: 7/12/2004
Environmental Impact: Possible
Nature of Impact: Surface Water Pollution
Receiving Medium: Water
SAC Action Class:
Sector Source Type:
Site Municipality: St. Catharines

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
3	1 of 6	NNW/104.4	81.2	R.M. OF NIAGARA LAKEPORT RD./LOCK ST./PT.LOT 1 ST. CATHARINES CITY ON	CA

Certificate #: 3-0957-93-
Application Year: 93
Issue Date: 11/23/1993
Approval Type: Municipal sewage
Status: Cancelled
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
3	2 of 6	NNW/104.4	81.2	ST. CATHARINES CITY LAKEPORT RD./LOCK ST. ST. CATHARINES CITY ON	CA

Certificate #: 7-1014-93-
Application Year: 93
Issue Date: 11/17/1993
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
3	3 of 6	NNW/104.4	81.2	R.M. OF NIAGARA LAKEPORT RD/OLD LAKESHORE RD. ST CATHARINES ON	CA

Certificate #: 3-0018-98-
Application Year: 98
Issue Date: 1/19/1998
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
3	4 of 6	NNW/104.4	81.2	R.M. OF NIAGARA LAKEPORT RD/OLD LAKESHORE RD. ST CATHARINES ON	CA

Certificate #: 7-0007-98-
Application Year: 98
Issue Date: 1/19/1998
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Emission Control:					

3	5 of 6	NNW/104.4	81.2	R.M. OF NIAGARA LAKEPORT RD./LOCK ST./PT.LOT 1 ST. CATHARINES CITY ON	CA

Certificate #: 3-0957-93-006
Application Year: 93
Issue Date: 10/5/93
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

3	6 of 6	NNW/104.4	81.2	The Regional Municipality of Niagara Lakeport St. & Lock St. St. Catharines ON	SPL

Ref NO: 4438-8T23EP
Contaminant Code: 44
Contaminant Name: SEWAGE,RAW UNCHLORINATED
Contaminant Quantity:
Incident Cause: Pipe Or Hose Leak
Incident Dt: 03-APR-12
Incident Reason:
Incident Summary: St. Catharines: Forcemain break, sewage to Lake Ontario
MOE Reported Dt: 03-APR-12
Environmental Impact: Not Anticipated
Nature of Impact: Surface Water Pollution
Receiving Medium: Sewage - Municipal/Private and Commercial
SAC Action Class: Watercourse Spills
Sector Source Type: Sewer
Site Municipality: St. Catharines

4	1 of 13	SSW/125.6	76.1	LINCOLN FABRICS LTD. 63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	GEN

Generator #: ON1156400
Approval Yrs: 89
SIC Code: 1829
SIC Description: OTHER SPUN YARN IND.

--- Details ---
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site		DB
Waste Description:		WASTE OILS & LUBRICANTS				
4	2 of 13	SSW/125.6	76.1	LINCOLN FABRICS LTD. 63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6	24-613	GEN

Generator #: ON1156400
Approval Yrs: 92,93,94,95,96,97,98
SIC Code: 1829
SIC Description: OTHER SPUN YARN IND.

--- Details ---
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site		DB
4	3 of 13	SSW/125.6	76.1	LINCOLN FABRICS LIMITED 63 LAKEPORT ROAD ST. CATHARINES ON L2N 4P6		GEN

Generator #: ON1156400
Approval Yrs: 99,00,01,02,03,04
SIC Code: 1829
SIC Description: OTHER SPUN YARN IND.

--- Details ---
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site		DB
4	4 of 13	SSW/125.6	76.1	Lincoln Fabrics Ltd. 63 Lakeport Rd. St. Catharines ON L2N 4P6		GEN

Generator #: ON9544115
Approval Yrs: 04,05,06,07,08
SIC Code: 339990
SIC Description: All Other Miscellaneous Manufacturing

--- Details ---
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS
+
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS
+
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	5 of 13	SSW/125.6	76.1	Lincoln Fabrics Ltd. 63 Lakeport Rd. St. Catharines ON L2N 4P6	GEN

Generator #: ON9544115
Approval Yrs: As of May 2015
SIC Code:
SIC Description:

--- Details ---
Waste Code: 252
Waste Description: Waste crankcase oils and lubricants
+
Waste Code: 213
Waste Description: Petroleum distillates

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	6 of 13	SSW/125.6	76.1	Lincoln Fabrics Ltd. 63 Lakeport Rd. St. Catharines ON L2N 4P6	GEN

Generator #: ON9544115
Approval Yrs: 2009
SIC Code: 339990
SIC Description: All Other Miscellaneous Manufacturing

--- Details ---
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS
+
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	7 of 13	SSW/125.6	76.1	Lincoln Fabrics Ltd. 63 Lakeport Rd. St. Catharines ON L2N 4P6	GEN

Generator #: ON9544115
Approval Yrs: 2010
SIC Code: 339990
SIC Description: All Other Miscellaneous Manufacturing

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS
+
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	8 of 13	SSW/125.6	76.1	Lincoln Fabrics Ltd. 63 Lakeport Rd.	GEN

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
				St. Catharines ON L2N 4P6	

Generator #: ON9544115
Approval Yrs: 2011
SIC Code: 339990
SIC Description: All Other Miscellaneous Manufacturing

--- Details ---
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	***9 of 13***	***SSW/125.6***	***76.1***	***Lincoln Fabrics Ltd.*** ***63 Lakeport Rd.*** ***St. Catharines ON L2N 4P6***	***GEN***

Generator #: ON9544115
Approval Yrs: 2012
SIC Code: 339990
SIC Description: All Other Miscellaneous Manufacturing

--- Details ---
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS
+
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	***10 of 13***	***SSW/125.6***	***76.1***	***Lincoln Fabrics Ltd.*** ***63 Lakeport Rd.*** ***St. Catharines ON***	***GEN***

Generator #: ON9544115
Approval Yrs: 2013
SIC Code: 339990
SIC Description: ALL OTHER MISCELLANEOUS MANUFACTURING

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 146
Waste Description: OTHER SPECIFIED INORGANICS
+
Waste Code: 213
Waste Description: PETROLEUM DISTILLATES

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	11 of 13	SSW/125.6	76.1	LINCOLN FABRICS LIMITED 63 LAKEPORT RD ST CATHARINES ON L2N 4P6	SCT

Established: 1955
Plant Size (ft²): 40000
Employment: 40

--- Details ---
Description: BROADWOVEN FABRIC MILLS, MANMADE FIBER AND SILK
SIC/NAICS Code: 2221

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	12 of 13	SSW/125.6	76.1	LINCOLN FABRICS LTD. 63 Lakeport Rd St. Catharines ON L2N 4P6	SCT

Established: 1955
Plant Size (ft²): 40000
Employment: 40

--- Details ---
Description: Broad-Woven Fabric Mills
SIC/NAICS Code: 313210

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
4	13 of 13	SSW/125.6	76.1	Lincoln Fabrics Ltd. 63 Lakeport Rd St Catharines ON L2N 4P6	SCT

Established: 01-SEP-55
Plant Size (ft²): 40000
Employment:

--- Details ---
Description: Broad-Woven Fabric Mills
SIC/NAICS Code: 313210

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
5	1 of 1	NNW/131.6	80.7	38 Lakeport Road St. Catharines ON L2N 4P5	EHS

Addit. Info Ordered:
Order No.: 20120618038
Report Date: 21-JUN-12
Report Type: Standard Report
Search Radius (km): .25

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
6	1 of 1	NNW/141.9	79.5	PUC 26 LAKEPORT RD. MOTOR VEHICLE (OPERATING FLUID) ST. CATHARINES CITY ON L2N 4P5	SPL

Ref NO: 133210
Contaminant Code:
Contaminant Name:
Contaminant Quantity:
Incident Cause: PIPE/HOSE LEAK

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB

Incident Dt:	10/18/1996
Incident Reason:	EQUIPMENT FAILURE
Incident Summary:	ST. CATHARINES HYDRO - 115 L OF HYDRAULIC OIL TO PAVEMENT FROM TRUCK.
MOE Reported Dt:	10/18/1996
Environmental Impact:	NOT ANTICIPATED
Nature of Impact:	
Receiving Medium:	LAND
SAC Action Class:	
Sector Source Type:	
Site Municipality:	18103

---

7 **1 of 1** **WSW/142.3** **78.4** **Lakeport Rd Dump** **ANDR**

St Catharines ON L2N 4S

Legal Description:	Grantham Con 1 Lot 20 pt
Location Description:	Lakeport Rd; On Lakeport Rd [Regional Rd 44] & Canal St, Port Dalhousie, on site M Rennie Park, adj. Twelve Mile Ck, Martindale Pond.
Municipality:	St Catharines City
Current Municipality:	St Catharines City
RM:	Niagara Region
Facility:	Dump
Date Active:	1960s-70s
Date Begun:	
Date Complete:	1970
Area (Ha):	
Landfill Type:	open dump
Group Name:	Twelve Mile Creek
Operated By:	St Catharines C/St Lawrence Seaway Authority
Serial:	MOEE 0046
NTS:	30M03
Diameter (m):	
Waste Type:	MSW
UTM X Nad 27:	640800
UTM Y Nad 27:	4784325
UTM Zone:	17

---

8 **1 of 1** **WSW/161.5** **79.7** **Lakeport Rd.**
ST. CATHARINES ON **WDSH**

Site No.:	X0046
Region:	WESTCENTRAL
County:	NIAGARA
Concession:	
Lot:	Lakeport Rd.
Easting:	640800
Northing:	4784325
Zone:	17
Date Closed:	1970
Status:	CLOSED
Classification:	NO POTENTIAL FOR IMPACT ON HUMANS OR THE ENVIRONMENT
%CommericialWste:	n/a
%DomesticWste Rec:	n/a
%LiquidWste Rec:	n/a
%HazardousWste Rec:	n/a

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB

%Non-haz.Wste Rec: n/a
%Sewage/Sludge Rec: n/a
%Other Wste Rec: n/a

---

9 **1 of 1** **NNW/175.9** **80.8** **1049569 ONTARIO INC., SAMMY'S DOUBLE SCO**
16 LOCK STREET (REAR)
ST. CATHARINES CITY ON L2N 5B5 **CA**

Certificate #: 8-2340-95-
Application Year: 95
Issue Date: 9/20/1995
Approval Type: Industrial air
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: EXHAUST FOR POTATO CHIP WAGON
Contaminants: Odour/Fumes
Emission Control: No Controls

---

10 **1 of 1** **N/176.1** **75.3** **ON** **BORE**

Borehole ID: 604725
Use: Observation/Monitoring
Drill Method: Test Pit
Easting: 640955
Location Accuracy:
Elev. Reliability Note:
Total Depth m: -999
Township:
Lot:
Completion Date: OCT-1970
Primary Water Use: Not Used
Type: Borehole
Status:
UTM Zone: 17
Northing: 4784773
Orig. Ground Elev m: 76.8
DEM Ground Elev m: 74.6
Primary Name:
Concession:
Municipality:
Static Water Level: .2
Sec. Water Use:

--- Details ---

Stratum ID: 218365627
Bottom Depth(m): 0.1
Top Depth(m): 0.0
Stratum Desc: FILL,SAND,GRAVEL.

+

Stratum ID: 218365628
Bottom Depth(m): 3.1
Top Depth(m): 0.1
Stratum Desc: FILL,SAND,SILT,WOOD.

+

Stratum ID: 218365629
Bottom Depth(m): 4.5
Top Depth(m): 3.1
Stratum Desc: TILL,SILT. GREY,DENSE, WATER STABLE AT 251.3 FEET.

+

Stratum ID: 218365630
Bottom Depth(m): 4.9
Top Depth(m): 4.5
Stratum Desc: SILT(60),SAND(40). BROWN,VERY

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB

DENSE.

+

Stratum ID: 218365631 ***Top Depth(m):*** 4.9
Bottom Depth(m): 5.2 ***Stratum Desc:*** TILL,SILT. BROWN.

+

Stratum ID: 218365632 ***Top Depth(m):*** 5.2
Bottom Depth(m): 5.8 ***Stratum Desc:*** SAND(50),GRAVEL(50).VARI-COLOURED,DENSE.

+

Stratum ID: 218365633 ***Top Depth(m):*** 5.8
Bottom Depth(m): 6.2 ***Stratum Desc:*** SILT. GREY,VERY DENSE.

+

Stratum ID: 218365634 ***Top Depth(m):*** 6.2
Bottom Depth(m): 6.9 ***Stratum Desc:*** TILL,SILT(35), SAND(60). RED,VERY DENSE.

+

Stratum ID: 218365635 ***Top Depth(m):*** 6.9
Bottom Depth(m): ***Stratum Desc:*** BEDROCK,SHALE. RED,WEATHERED. 025 014 025 018 021

---

11 ***1 of 1*** ***N/184.3*** ***76.6*** ***R.M. OF NIAGARA***
LAKESIDE PARK/LAKEPORT ROAD
ST. CATHARINES CITY ON ***CA***

Certificate #: 3-1362-93-
Application Year: 93
Issue Date: 1/11/1994
Approval Type: Municipal sewage
Status: Underwent 1st revision in 1994
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

---

12 ***1 of 1*** ***NW/187.1*** ***81.8*** ***ST. CATHARINES CITY***
LOCK ST./LAKEPORT RD./MAIN ST.
ST. CATHARINES CITY ON ***CA***

Certificate #: 7-0346-94-
Application Year: 94
Issue Date: 5/11/1994
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Project Description:					
Contaminants:					
Emission Control:					

13	1 of 1	NW/199.5	82.7	**BLUE ONION DELHI LTD.** **17-19 LOCK ST.** **ST. CATHARINES CITY ON L2N 5B6**	CA

Certificate #:	8-2175-88-
Application Year:	88
Issue Date:	11/18/1988
Approval Type:	Industrial air
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	KITCHEN EXHAUST
Contaminants:	Odour/Fumes
Emission Control:	

14	1 of 7	S/211.5	75.0	**St.Catharines Hydro Generation Inc** **69A Lakeport Road** **St.Catharines ON L2N 4P9**	GEN

Generator #:	ON8191526
Approval Yrs:	05,06,07,08
SIC Code:	221111
SIC Description:	Hydro-Electric Power Generation
--- Details ---	
Waste Code:	252
Waste Description:	WASTE OILS & LUBRICANTS

14	2 of 7	S/211.5	75.0	**St.Catharines Hydro Generation Inc** **69A Lakeport Road** **St.Catharines ON L2N 4P9**	GEN

Generator #:	ON8191526
Approval Yrs:	As of May 2015
SIC Code:	
SIC Description:	
--- Details ---	
Waste Code:	252
Waste Description:	Waste crankcase oils and lubricants

14	3 of 7	S/211.5	75.0	**St.Catharines Hydro Generation Inc** **69A Lakeport Road** **St.Catharines ON**	GEN

Generator #:	ON8191526
Approval Yrs:	2009

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB

SIC Code: 221111, 221112
SIC Description: Hydro-Electric Power Generation, Fossil-Fuel Electric Power Generation

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

14	4 of 7	S/211.5	75.0	St.Catharines Hydro Generation Inc 69A Lakeport Road St.Catharines ON	GEN

Generator #: ON8191526
Approval Yrs: 2010
SIC Code: 221111, 221112
SIC Description: Hydro-Electric Power Generation, Fossil-Fuel Electric Power Generation

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

14	5 of 7	S/211.5	75.0	St.Catharines Hydro Generation Inc 69A Lakeport Road St.Catharines ON	GEN

Generator #: ON8191526
Approval Yrs: 2011
SIC Code: 221111, 221112
SIC Description: Hydro-Electric Power Generation, Fossil-Fuel Electric Power Generation

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

14	6 of 7	S/211.5	75.0	St.Catharines Hydro Generation Inc 69A Lakeport Road St.Catharines ON L2N 4P9	GEN

Generator #: ON8191526
Approval Yrs: 2012
SIC Code: 221111, 221112
SIC Description: Hydro-Electric Power Generation, Fossil-Fuel Electric Power Generation

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

14	7 of 7	S/211.5	75.0	St.Catharines Hydro Generation Inc 69A Lakeport Road St.Catharines ON	GEN

Generator #: ON8191526
Approval Yrs: 2013
SIC Code: 221111, 221112
SIC Description: HYDRO-ELECTRIC POWER GENERATION

--- Details ---

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Waste Code:	252				
Waste Description:	WASTE OILS & LUBRICANTS				

15	1 of 1	WNW/221.3	85.0	**Seymour Hall Inc** **15 Main St.** **St. Catharines ON**	GEN

Generator #:	ON4058089
Approval Yrs:	03,04
SIC Code:	
SIC Description:	

16	1 of 1	ENE/227.4	76.0	**ON**	BORE

Borehole ID:	604886	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Power auger	**UTM Zone:**	17
Easting:	641165	**Northing:**	4784663
Location Accuracy:		**Orig. Ground Elev m:**	76.1
Elev. Reliability Note:		**DEM Ground Elev m:**	76
Total Depth m:	12.2	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JAN-1964	**Static Water Level:**	.6
Primary Water Use:	Not Used	**Sec. Water Use:**	

--- Details ---

Stratum ID:	218366382	**Top Depth(m):**	0.0
Bottom Depth(m):	0.8	**Stratum Desc:**	FILL,SAND,CLAY.
+			
Stratum ID:	218366383	**Top Depth(m):**	0.8
Bottom Depth(m):	3.7	**Stratum Desc:**	CLAY,SILT,SAND. GREY,SOFT,LAYERED, WATER STABLE AT 247.8 FEET.
+			
Stratum ID:	218366384	**Top Depth(m):**	3.7
Bottom Depth(m):	7.6	**Stratum Desc:**	SILT,CLAY,ORGANIC. GREY,VERY SOFT.
+			
Stratum ID:	218366385	**Top Depth(m):**	7.6
Bottom Depth(m):	8.0	**Stratum Desc:**	SILT,CLAY,ORGANIC. BROWN,VERY SOFT.
+			
Stratum ID:	218366386	**Top Depth(m):**	8.0
Bottom Depth(m):	9.3	**Stratum Desc:**	CLAY,ORGANIC,SAND. GREY,FIRM.
+			
Stratum ID:	218366387	**Top Depth(m):**	9.3
Bottom Depth(m):	12.2	**Stratum Desc:**	SHALE. BROWN,WEATHERED,HARD.

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site				DB
					020 011	052	032	036

17 | ***1 of 1*** | ***NW/228.3*** | ***83.1*** | ***PRIVATE BUSINESS*** ***CORNER OF LOCKE AND MAIN ST*** ***RESTAURANT*** ***ST. CATHARINES CITY ON*** | ***SPL***

Ref NO:	207236
Contaminant Code:	
Contaminant Name:	
Contaminant Quantity:	
Incident Cause:	CONTAINER OVERFLOW
Incident Dt:	7/29/2001
Incident Reason:	UNKNOWN
Incident Summary:	KILT 'N CLOVER: GREASE BIN OVERFLOWING TO LOT & NEARBY CATCHBASIN.CLEAN'G
MOE Reported Dt:	7/29/2001
Environmental Impact:	Possible
Nature of Impact:	Water course or lake
Receiving Medium:	Land, Water
SAC Action Class:	
Sector Source Type:	
Site Municipality:	18103

18 | ***1 of 1*** | ***NNW/229.5*** | ***78.7*** | ***R.M. OF NIAGARA*** ***9 MAIN ST.-LAKESIDE PARK P.S.*** ***ST. CATHARINES CITY ON*** | ***CA***

Certificate #:	8-2292-93-
Application Year:	93
Issue Date:	2/7/1994
Approval Type:	Industrial air
Status:	Approved in 1994
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	STANDBY DEISEL GENERATOR
Contaminants:	Nitrogen Oxides
Emission Control:	No Controls

19 | ***1 of 7*** | ***WNW/230.8*** | ***84.6*** | ***BELL CANADA*** ***19 MAIN STREET*** ***TORONTO ON L2N 4T5*** | ***GEN***

Generator #:	ON0033939
Approval Yrs:	95,96,97,98,99,00,01
SIC Code:	4821
SIC Description:	TELECOMMUN. CARRRIERS
--- Details ---	
Waste Code:	243
Waste Description:	PCB'S

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
19	2 of 7	WNW/230.8	84.6	CSI 19 MAIN STREET ST. CATHARINES ON L2N 4T5	GEN

Generator #: ON2515400
Approval Yrs: 99,00,01
SIC Code: 3191
SIC Description: COMPRESSOR, ETC. IND.

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
19	3 of 7	WNW/230.8	84.6	Compressure Systems International Inc. 19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	GEN

Generator #: ON2515400
Approval Yrs: 03,04
SIC Code: 333910
SIC Description: Pump & Compressor Mfg.

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
19	4 of 7	WNW/230.8	84.6	Compressor Systems International Inc. 19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON L2N 4T5	GEN

Generator #: ON2515400
Approval Yrs: 07,08
SIC Code: 333910
SIC Description: Pump and Compressor Manufacturing

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
19	5 of 7	WNW/230.8	84.6	Compressor Systems International Inc. 19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON	GEN

Generator #: ON2515400
Approval Yrs: 2009
SIC Code: 333910
SIC Description: Pump and Compressor Manufacturing

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
19	6 of 7	WNW/230.8	84.6	Compressor Systems International Inc. 19 MAIN STREET ST. CATHARINES (Port Dalhousie) ON	GEN

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB

Generator #: ON2515400
Approval Yrs: 2011
SIC Code: 333910
SIC Description:

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

---

19 **7 of 7** **WNW/230.8** **84.6** **Compressor Systems International Inc.** **GEN**
19 MAIN STREET
ST. CATHARINES (Port Dalhousie) ON L2N 4T5

Generator #: ON2515400
Approval Yrs: 2012
SIC Code: 333910
SIC Description: Pump and Compressor Manufacturing

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

---

20 **1 of 1** **NNW/230.9** **78.2** **WWIS**
PORT DALHOUSIE ON

Well ID:	7141396	**Lot:**	
Concession:		**Concession Name:**	
County:	NIAGARA (LINCOLN)	**Municipality:**	ST.CATHERINES CITY (GRANTHAM)
Easting Nad83:	640885	**Northing Nad83:**	4784819
Zone:	17	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	01-FEB-10
Sec. Water Use:		**Well Depth:**	9.1 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Observation Wells
Construction Method:	Boring	**Flowing (y/n):**	
Elevation (m):	78.5	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated

--- Details ---

Thickness:	2 m	**Original Depth:**	2 m
Material Colour:	BROWN	**Material:**	CLAY, , SOFT
+			
Thickness:	5 m	**Original Depth:**	7 m
Material Colour:	GREY	**Material:**	CLAY, , DENSE
+			
Thickness:	2.1 m	**Original Depth:**	9.1 m
Material Colour:	RED	**Material:**	ROCK, , DENSE

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
21	1 of 1	NW/245.3	85.0	12 MAIN STREET ST. CATHARINES ON L2N 4T3	HINC

External File Num:	FS INC 0905-02415
Date of Occurrence:	5/4/2009
Fuel Occurrence Type:	Vapour Release
Fuel Type Involved:	Natural Gas
Status Desc:	Completed - Causal Analysis(End)
Job Type Desc:	Incident/Near-Miss Occurrence (FS)
Oper. Type Involved:	Construction Site (pipeline strike)
Service Interruptions:	Yes
Property Damage:	No
Fuel Life Cycle Stage:	Transmission, Distribution and Transportation
Root Cause:	Root Cause: Equipment/Material/Component:No Procedures:Yes Maintenance:No Design:No Training:Yes Management:No Human Factors:Yes
Reported Details:	
Fuel Category:	Gaseous Fuel
Occurrence Type:	Incident
Affiliation:	Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)
County Name:	Niagara
Approx. Quant. Rel:	
Nearby body of water:	
Enter Drainage Syst.:	
Approx. Quant. Unit:	
Environmental Impact:	

Unplottable Summary

Total: 16 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	R.M. OF NIAGARA	LAKEPORT RD. SAN. FORCEMAIN	ST. CATHARINES CITY ON	
CA	ST. CATHARINES CITY	MAIN ST. (NIAGARA RD. 87)	ST. CATHARINES CITY ON	
CA	ST. CATHARINES CITY	MICHIGAN AVE.	ST. CATHARINES CITY ON	
CA	ST. CATHARINES CITY	MICHIGAN AVE.	ST. CATHARINES CITY ON	
CA	ST. CATHARINES CITY	MICHIGAN AVE.	ST. CATHARINES CITY ON	
CA	ST. CATHARINES CITY	MICHIGAN AVE.	ST. CATHARINES CITY ON	
CA	PARKSIDE HOMES LTD.- PT. LOT 20/CONC. 1	STORMWATER MANAGEMENT FACILITY	ST. CATHARINES CITY ON	
CA	The Corporation of the City of St. Catharines	Lakeport Road	St. Catharines ON	
CA	Jaycee Park	Lot 21/22, Con. 1 & 2	St. Catharines ON	
CA	Jaycee Park	Lot 21/22, Con. 1 & 2	St. Catharines ON	
ECA	The Regional Municipality of Niagara	Regional Road No. 87 (Lakeshore Road)	St. Catharines ON	
GEN	Bell Canada	VARIOUS BELL CANADA MANHOLES AND ACCESS CHAMBERS WITHIN THE MOE W.C. REGION	(SEE SCHEDULE "B") ON	
GEN	Bell Canada	VARIOUS BELL CANADA MANHOLES AND ACCESS CHAMBERS WITHIN THE MOE W.C. REGION	(SEE SCHEDULE "B") ON	K1P 6L9
PTTW	St. Catharines Hydro Generation Inc.	Lot 21, Concession 1	St. Catharines ON	
SPL	NIAGARA, REGIONAL MUNICIPALITY	OLD WELLAND CANAL. FORCEMAIN AT END OF LAKEPORT RD/LAKESIDE PARK ACCESS RD. SANITARY SEWER	ST. CATHARINES CITY ON	

SYSTEM/PUMPING STATION

WWIS	lot 22	ON

Unplottable Report

Site: ***R.M. OF NIAGARA***
LAKEPORT RD. SAN. FORCEMAIN ST. CATHARINES CITY ON

Database: ***CA***

Certificate #:	3-1072-93-
Application Year:	93
Issue Date:	9/23/1993
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***ST. CATHARINES CITY***
MAIN ST. (NIAGARA RD. 87) ST. CATHARINES CITY ON

Database: ***CA***

Certificate #:	3-2026-87-
Application Year:	87
Issue Date:	11/20/1987
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***ST. CATHARINES CITY***
MICHIGAN AVE. ST. CATHARINES CITY ON

Database: ***CA***

Certificate #:	7-0333-88-
Application Year:	88
Issue Date:	3/25/1988
Approval Type:	Municipal water
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	

Emission Control:

Site: ***ST. CATHARINES CITY*** ***Database:*** ***CA***
MICHIGAN AVE. ST. CATHARINES CITY ON

Certificate #: 8-2118-89-
Application Year: 89
Issue Date: 6/6/1989
Approval Type: Industrial air
Status: Cancelled
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: SEE NO 8-2117-89
Contaminants:
Emission Control:

Site: ***ST. CATHARINES CITY*** ***Database:*** ***CA***
MICHIGAN AVE. ST. CATHARINES CITY ON

Certificate #: 3-1678-89-
Application Year: 89
Issue Date: 9/22/1989
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***ST. CATHARINES CITY*** ***Database:*** ***CA***
MICHIGAN AVE. ST. CATHARINES CITY ON

Certificate #: 8-2117-89-
Application Year: 89
Issue Date: 1/10/1990
Approval Type: Industrial air
Status: Approved in 1990
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: STANDBY DIESEL GENERATOR SET
Contaminants: Nitrogen Oxides
Emission Control: No Controls

Site: ***PARKSIDE HOMES LTD.-PT. LOT 20/CONC. 1*** ***Database:*** ***CA***

STORMWATER MANAGEMENT FACILITY ST. CATHARINES CITY ON

Certificate #:	3-0266-91-
Application Year:	91
Issue Date:	5/2/1991
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***The Corporation of the City of St. Catharines***
Lakeport Road St. Catharines ON

Database: ***CA***

Certificate #:	2208-73XN97
Application Year:	2007
Issue Date:	6/10/2007
Approval Type:	Municipal and Private Sewage Works
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***Jaycee Park***
Lot 21/22, Con. 1 & 2 St. Catharines ON

Database: ***CA***

Certificate #:	5623-4PAMPY
Application Year:	01
Issue Date:	8/20/01
Approval Type:	Industrial air
Status:	Revoked and/or Replaced
Application Type:	New Certificate of Approval
Client Name:	Corporation of the City of St. Catharines
Client Address:	50 Church Street, PO Box 3012
Client City:	St. Catharines
Client Postal Code:	L2R 7C2
Project Description:	The City of St. Catharines proposes to install a landfill gas venting trench at Jaycee Park in St. Catharines to protect public health and safety by preventing subsurface migration of combustible landfill gas towards the neighbouring houses on Royal Oak Drive and Royal Henley Boulevard. The Trench will consist of a combination of gravel and geosynthetic barriers and vertical vent pipes to assist in venting of the landfill gas. The emission of landfill gas from the trench should not be a hazard or perceptible nuisance to the nearby residents, based on modeling the quality and quantity of landfill gas currently at the site.
Contaminants:	
Emission Control:	

Site: ***Jaycee Park*** ***Database:*** ***CA***
Lot 21/22, Con. 1 & 2 St. Catharines ON

Certificate #:	9805-4ZGS9Y
Application Year:	01
Issue Date:	8/20/01
Approval Type:	Industrial air
Status:	Approved
Application Type:	Amended CofA
Client Name:	Corporation of the City of St. Catharines
Client Address:	50 Church Street, PO Box 3012
Client City:	St. Catharines
Client Postal Code:	L2R 7C2
Project Description:	A 420m long passive gas venting trench was approved for operation at the Jaycee Park in St. Catharines under Certificate of Approval (Air) No. 5623-4PAMPY, dated Sept 19, 2000. The purpose of the passive gas venting trench is to protect public health and safety by preventing subsurface migration of combustible landfill gas toward the houses on Royal Oak Dr, and Royal Henley Blvd. The approved gas venting trench consists of a combination of gravel and geosynthetic barriers and 18 vertical vent pipes to assist in venting the landfill gas. Recent investigations have prompted the City of St. Catharines to propose an expansion of this system by extending the approved gas venting trench by an additional 134m to the east and adding six additional vent pipes. The emission of landfill gas from the trench should not be a hazard of perceptible nuisance to the nearby residents, based on modelling the quality and quantity of landfill gas currently at the site.
Contaminants:	
Emission Control:	

Site: ***The Regional Municipality of Niagara*** ***Database:*** ***ECA***
Regional Road No. 87 (Lakeshore Road) St. Catharines ON

Record Type:	
PDF URL:	
CofA Number:	2525-9S3LPF
Date:	1/26/15
Status:	Approved
Project Type:	Municipal and Private Sewage

Site: ***Bell Canada*** ***Database:*** ***GEN***
VARIOUS BELL CANADA MANHOLES AND ACCESS CHAMBERS WITHIN THE MOE W.C. REGION (SEE SCHEDULE "B") ON

Generator #:	ONR000302
Approval Yrs:	2013
SIC Code:	517110, 517210, 517510
SIC Description:	WIRED TELECOMMUNICATIONS CARRIERS, WIRELESS TELECOMMUNICATIONS CARRIERS (EXCEPT SATELLITE)

--- Details ---

Waste Code:	221
Waste Description:	LIGHT FUELS
+	
Waste Code:	253
Waste Description:	EMULSIFIED OILS
+	
Waste Code:	312
Waste Description:	PATHOLOGICAL WASTES
+	
Waste Code:	252

Waste Description:	WASTE OILS & LUBRICANTS
+	
Waste Code:	150
Waste Description:	INERT INORGANIC WASTES
+	
Waste Code:	251
Waste Description:	OIL SKIMMINGS & SLUDGES

Site: ***Bell Canada*** ***Database:*** ***GEN***
VARIOUS BELL CANADA MANHOLES AND ACCESS CHAMBERS WITHIN THE MOE W.C. REGION (SEE SCHEDULE "B") ON K1P 6L9

Generator #:	ONR000302
Approval Yrs:	As of May 2015
SIC Code:	
SIC Description:	

--- Details ---

Waste Code:	251
Waste Description:	Waste oils/sludges (petroleum based)
+	
Waste Code:	253
Waste Description:	Emulsified oils
+	
Waste Code:	150
Waste Description:	Inert organic wastes
+	
Waste Code:	252
Waste Description:	Waste crankcase oils and lubricants
+	
Waste Code:	221
Waste Description:	Light fuels

Site: ***St. Catharines Hydro Generation Inc.*** ***Database:*** ***PTTW***
Lot 21, Concession 1 St. Catharines ON

Year:	2015
EBR Registry No.:	012-4237
Ministry Ref. No.:	3808-9WXJ54
Type:	Instrument Proposal
Instrument Type:	(OWRA s. 34) - Permit to take water
Proposal Date:	May 28, 2015
Location:	Lot 21, Concession 1 City of St. Catharines, Regional Municipality of Niagara CITY OF ST. CATHARINES
Proponent Address:	340 Vansickle Road , Unit 1, St. Catharines Ontario, Canada L2S 0C9

Site: ***NIAGARA, REGIONAL MUNICIPALITY*** ***Database:*** ***SPL***
OLD WELLAND CANAL. FORCEMAIN AT END OF LAKEPORT RD/LAKESIDE PARK ACCESS RD. SANITARY SEWER SYSTEM/PUMPING STATION ST. CATHARINES CITY ON

Ref NO:	98921
Contaminant Code:	
Contaminant Name:	
Contaminant Quantity:	
Incident Cause:	VALVE/FITTING LEAK OR FAILURE
Incident Dt:	4/21/1994
Incident Reason:	GASKET/JOINT
Incident Summary:	NIAGARA R.M. -450L SEWAGETO ROADWAY DUE TO FORCE- MAIN BREAK,CONTAINED

MOE Reported Dt:	4/21/1994
Environmental Impact:	NOT ANTICIPATED
Nature of Impact:	
Receiving Medium:	LAND
SAC Action Class:	
Sector Source Type:	
Site Municipality:	18103

Site:

lot 22 ON

Database:
WWIS

Well ID:	3803410	***Lot:***	022
Concession:		***Concession Name:***	
County:	NIAGARA (LINCOLN)	***Municipality:***	ST CATHARINES CITY
Easting Nad83:		***Northing Nad83:***	
Zone:	17	***Utm Reliability:***	unknown UTM
Primary Water Use:	Livestock	***Construction Date:***	14-JUN-90
Sec. Water Use:		***Well Depth:***	60 ft
Pump Rate:	1 GPM	***Static Water Level:***	22 ft
Flow Rate:		***Clear/Cloudy:***	CLOUDY
Specific Capacity:		***Final Well Status:***	Water Supply
Construction Method:	Rotary (Air)	***Flowing (y/n):***	N
Elevation (m):		***Elevation Reliability:***	
Depth to Bedrock:	32	***Overburden/Bedrock:***	Bedrock
Water Type:	FRESH	***Casing Material:***	FRESH

--- Details ---

Thickness:	2 ft	***Original Depth:***	2 ft
Material Colour:	BROWN	***Material:***	CLAY
+			
Thickness:	12 ft	***Original Depth:***	14 ft
Material Colour:	RED	***Material:***	CLAY
+			
Thickness:	18 ft	***Original Depth:***	32 ft
Material Colour:	RED	***Material:***	CLAY, GRAVEL
+			
Thickness:	28 ft	***Original Depth:***	60 ft
Material Colour:	RED	***Material:***	SHALE

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 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 EIIS

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 EIIS 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

Greehouse 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: Dec 31, 2014

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: Nov 30, 2015

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.

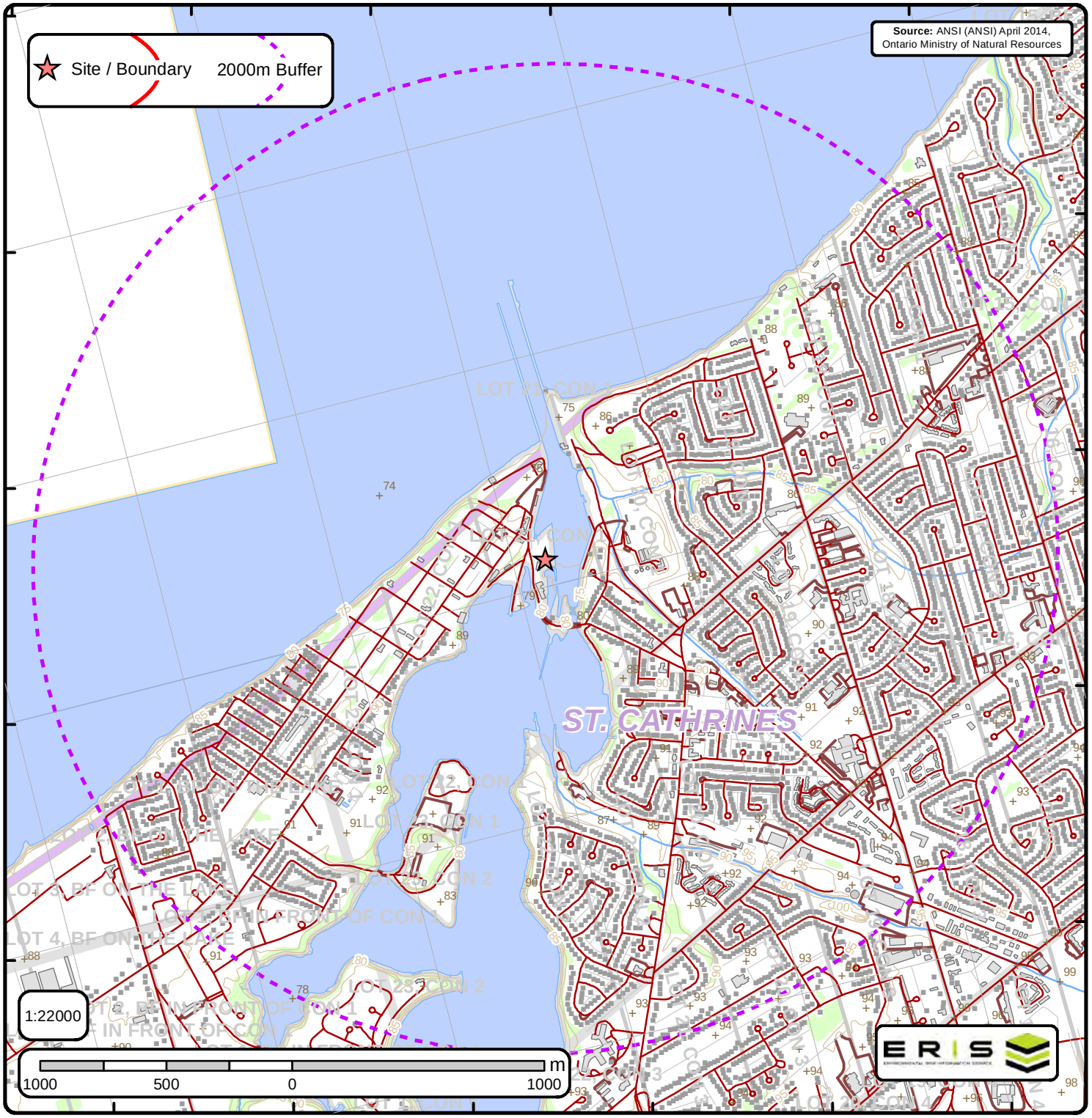
'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'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.



Area of Natural & Scientific Interest (ANSI) Order No. 20160816071

Spot Height	Transportation Structure	Contour Line	Wooded Area
Building Point	Utility Line	Pit or Quarry	Conservation Authority
Towers	Water Structure	Waterbody	Conservation Area
Utility Site Point	Drainage Line Feature	Wetlands	Municipal Park
Misc. Line	River or Stream	Concession	Provincial Park
Railroads	Airports	Lots	National Park
Roads	Tanks	Municipalitiy	Nature Reserve
Trail	Building to Scale	Land Ownership	ANSI Area

ANSI Report

ANSI Units Found within 2000 m of

57 Lakeport Rd, St. Catharines, ON, L2N4P6

Order ID:
20160816071



No ANSI units found within search area.

Appendix H
Aerial Photographs











Appendix I
Topographic Maps



Ontario Base Mapping (OBM) Data

Order No. 20160816071

Spot Height (metre)	Transportation Structure	Contour Line	Wooded Area
Building Point	Utility Line	Pit or Quarry	Conservation Authority
Towers	Water Structure	Waterbody	Conservation Area
Utility Site Point	Drainage Line Feature	Wetlands	Municipal Park
Misc. Line	River or Stream	Concession	Provincial Park
Railroads	Airports	Lots	National Park
Roads	Tanks	Municipalitiy	Nature Reserve
Trail	Building to Scale	Land Ownership	

Appendix J
Photographs of the Buildings and Property



Legion Property as Viewed Looking East



Western Exterior of Property as Viewed looking South



Western Exterior of Property as Viewed Looking North



Western Exterior of Legion Building as Viewed Looking South



Eastern Exterior of Property as Viewed looking North



Eastern Exterior of Property with Grease and Solid Waste Bins



Northern Portion of Legion Building



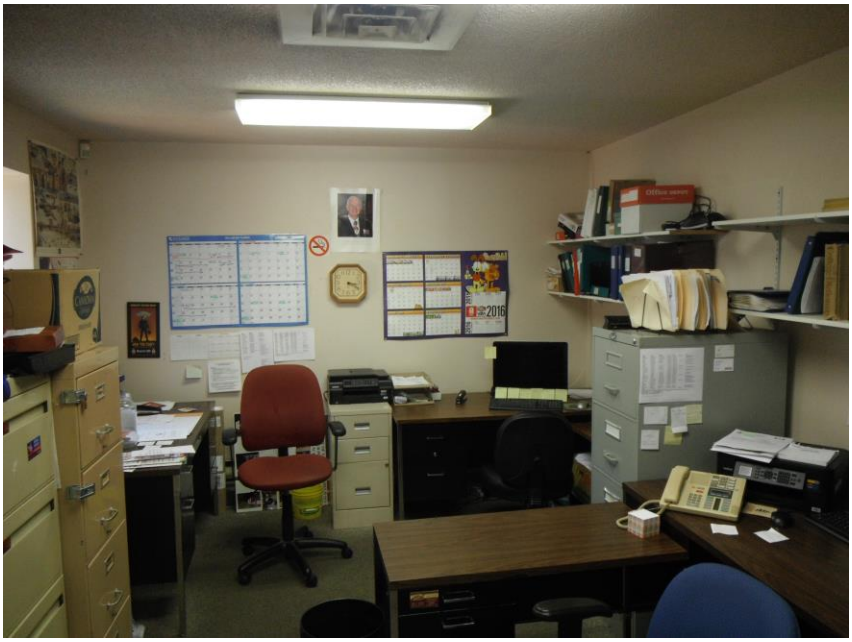
Lincoln Fabric Building to the South of the Site



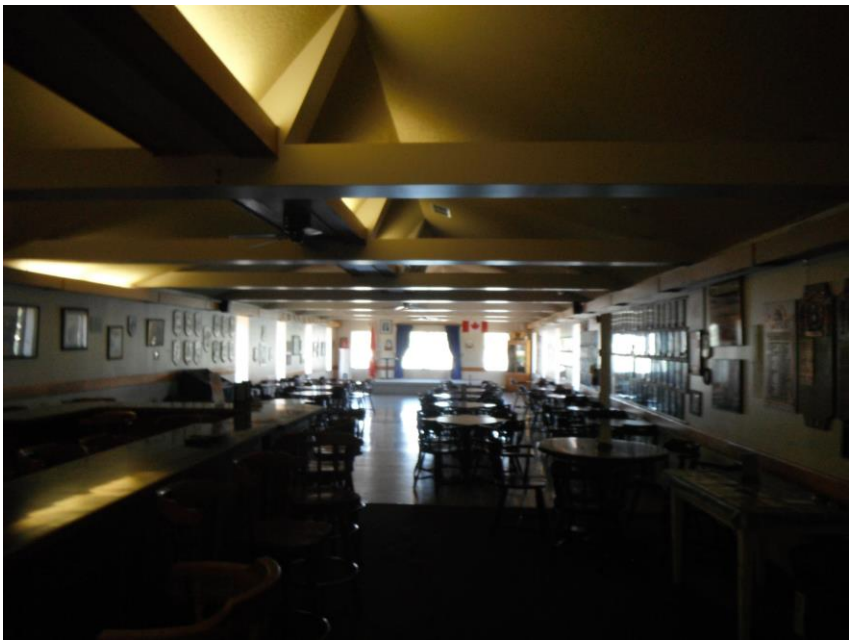
Pier 21 Restaurant to the Southwest of the Site



Lakeport Road and Neighbouring Commercial Buildings to the West



Administration Office



Second Floor Pub



Second Floor Walk-In Refrigerator



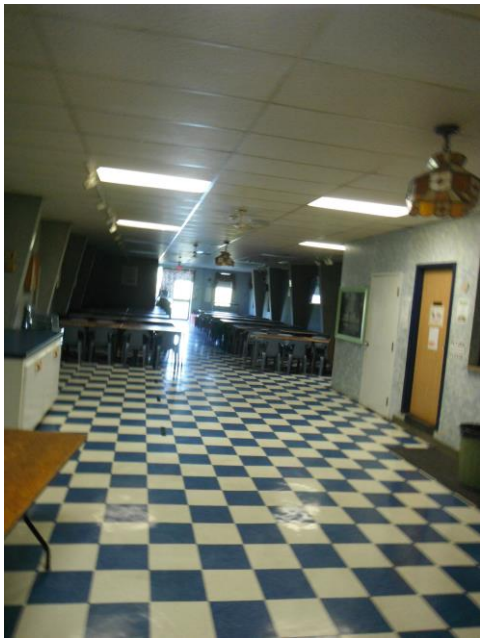
Western Exterior of Site as Viewed from Second Floor of Legion Hall



Second Floor Banquet Hall



Second Floor Conference Room



Ground Floor Banquet Hall



Main Floor Electrical Room



Main Floor Sump



Main Floor Kitchen



Second Ground Floor Banquet Hall

Appendix C
Sampling and Analysis Plan

March 7, 2017 Reference No. 11131634

Jim Frank, P. Eng.
Rankin Construction Inc.
222 Martindale Road, Box 1116
St. Catharines, Ontario
L2R 7A3

Dear Mr. Frank:

Re: Scope of Work and Cost Estimate – Phase Two Environmental Site Assessment
Rankin Construction Inc.
57 Lakeport Road, St. Catharines, Ontario

1. Introduction

GHD Limited (GHD) is pleased to provide this proposed Scope of Work and Cost Estimate to Rankin Construction Inc. (Rankin) to conduct a Phase Two Environmental Site Assessment (ESA) at 57 Lakeport Road in St. Catharines, Ontario (Property or Site). The proposed Scope of Work has been developed to investigate the Areas of Potential Environmental Concern (APECs) identified in the December 2016 Phase One ESA of the Site. An assessment of all APECs including influences from off-Site APECs is required in order to file a Record of Site Condition under Ontario Regulation 153/04, as amended, and facilitate redevelopment of the Property for mixed community and residential use.

2. Proposed Scope of Work

2.1 Health and Safety Plan

Prior to commencing the Phase Two ESA, GHD will prepare a Site-specific Health and Safety Plan (HASP) to ensure the safety and health of GHD and its subcontractors on-Site

2.2 Utility Clearance and Site Reconnaissance

In advance of any intrusive investigative activities, GHD will retain the services of, and accompany a private utility locator to clear any underground utilities on-Site. GHD will also obtain public utility clearances from the Ontario One-Call service. GHD will complete additional Site reconnaissance of the Property to assess ground cover, access and overhead clearance.

2.3 Soil Quality Investigation

GHD proposes to retain the services of a licensed drilling contractor on behalf of Rankin and provide oversight for the advancement of up to six boreholes to a maximum depth of 6 metres below ground surface (m bgs) at the approximate locations identified as MW1, MW2, MW3, MW4, MW5 and MW6 on Figure 1. The stratigraphy encountered at each location will be logged in the field and the soils

encountered will be qualitatively and quantitatively screened for the presence of environmental impairment. Qualitative screening will be based on visual and olfactory observations. Quantitative screening will be based on field measurements of undifferentiated volatile organic compounds (VOCs) as measured in the head space of soil samples using a calibrated photoionization detector (PID). The results of the qualitative and quantitative screening will be noted in the field logs.

Based on field screening, GHD will select up to two soil samples from boreholes MW2, MW3, MW4, MW5 and MW6 for laboratory analyses plus a duplicate soil sample and VOC trip blank for quality assurance/quality control (QA/QC). Selected soil samples from each location will be placed in pre-cleaned sample jars provided by the laboratory, packed on ice in a cooler and submitted to an accredited laboratory for petroleum hydrocarbons fractions F1 through F4 (PHC F1-F4), VOCs, polycyclic aromatic hydrocarbons (PAHs), metals, pH, conductivity, soil adsorption ratio (SAR) and grain size analyses.

This soil sampling and analyses plan has been developed to evaluate the soil conditions above the water table at the areas of the Site deemed to have the greatest potential for impact based on the APEC information provided in the December 2016 Phase One ESA.

2.4 Groundwater Quality Investigation

The boreholes identified as MW1 through MW6 on Figure 1 will be instrumented as monitoring wells to facilitate the collection of groundwater samples for analysis and to monitor groundwater elevations and flow direction across the Site. Each monitoring well will be instrumented with 50 millimetre (mm) schedule-40 polyvinyl chloride (PVC) riser pipe and a 3.05 m long number 10-slotted PVC well screen installed to straddle the water table. Each monitoring well will be completed with an aluminum flushmount casing at the ground surface. Seven samples (one from each monitoring well plus a blind duplicate sample and VOC trip blank for QA/QC purposes) will be collected and analyzed for PHC F1-F4, VOCs, PAHs and dissolved metals to assess groundwater quality at the Site. Groundwater samples collected for dissolved metals analyses will be field filtered using an in-line 0.45 micron (µm) filter before being deposited into pre-cleaned laboratory supplied sample jars with requisite preservative.

Upon installation, the groundwater monitoring wells will be surveyed with respect to an assumed common datum and monitored for groundwater recovery and the presence or absence of light non-aqueous phase liquid (LNAPL) such as oil or fuel. Upon recovery of groundwater, each well will be developed using low-flow techniques. Once approximately three to five well volumes are removed or the groundwater quality has stabilized (based on field measurements of pH, conductivity, temperature, turbidity, dissolved oxygen and oxidation-reduction potential), representative samples will be collected from each well using low-flow sampling techniques. All non-dedicated measurement and sampling equipment will be cleaned with an Alconox™ solution and rinsed with deionized water between each sampling location.

It is anticipated that sufficient post-installation groundwater recharge will take several days, after which the required groundwater monitoring well development and subsequent groundwater sample collection can be completed.

This groundwater sampling and analyses plan has been developed to evaluate the groundwater conditions at the areas of the Site deemed to have the greatest potential for impact based on the APEC information provided in the December 2016 Phase One ESA.

2.5 Sampling and Analysis Plan

ID	Location	Media	APEC	Contaminants of Concern
MW1	South west Property boundary	Groundwater	APEC #C: Historical Land Use – Dry Dock Operations to the West of the Site	VOCs, PHCs, Dissolved Metals
MW2	North east Property boundary	Soil, Groundwater	APEC #D Former UST – Associated with Former Auto Service Facility	PHCs
MW3	North east Property boundary	Soil, Groundwater	APEC # E Historical Land Use – Former Auto Service Garage	PHCs
MW4	Centre of Property North of Building	Soil, Groundwater	APEC #A Historical Land Use – Lock Maintenance and Repair Operations	VOCs, PAHs, PHCs, Total Metals (soil), Dissolved Metals (groundwater)
MW5	South east Property boundary	Soil, Groundwater	APEC #F Former Fuel Oil UST – Associated with Lincoln Fabrics Facility to the South of the Site APEC #A Historical Land Use – Lock Maintenance and Repair Operations	VOCs, PAHs, PHCs, Total Metals (soil), Dissolved Metals (groundwater)
MW6	North east Property boundary	Soil, Groundwater	APEC #B Historical Land Use – Lock Operations to the North of the Site APEC #A Historical Land Use – Lock Maintenance and Repair Operations	VOCs, PAHs, PHCs, Total Metals (soil), Dissolved Metals (groundwater)

2.6 Reporting

Upon its receipt from the laboratory, GHD will assess the analytical data for QA/QC. Once validated, the analytical results will be assessed with respect to the Ontario Ministry of Environment and Climate Change (MOECC) "Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act". Assessment standards for residential land use in a non-potable groundwater setting within 30 m of a water body (Table 9) will be used.

Once the data is assessed, GHD will prepare a draft Phase Two ESA report for review by Rankin. The draft report will include a summary of the investigations completed, including all field and laboratory analytical data generated and will meet the stringent reporting requirements of Ontario Regulation 153/04. This will include the development of a conceptual site model necessary to facilitate the filing of a Record of Site Condition. GHD will advise Rankin of potential implications associated with the presence of contaminants at concentrations above applicable standards and remedial options available.

2.7 Proposed Schedule

GHD is prepared to commence the proposed Scope of Work upon receipt of authorization to proceed, subject to drilling subcontractor availability. Subject to groundwater recovery in the proposed monitoring well installations, GHD anticipates that the Phase Two ESA activities can be completed within two weeks of initiating field work. A draft Phase Two ESA Report can be completed within two weeks of receipt of all laboratory analytical data.

We appreciate the opportunity to provide you with this proposed Scope of Work and cost estimate. Should you have any questions regarding the scope of services, schedule or estimated cost, please do not hesitate to contact the undersigned.

Sincerely,

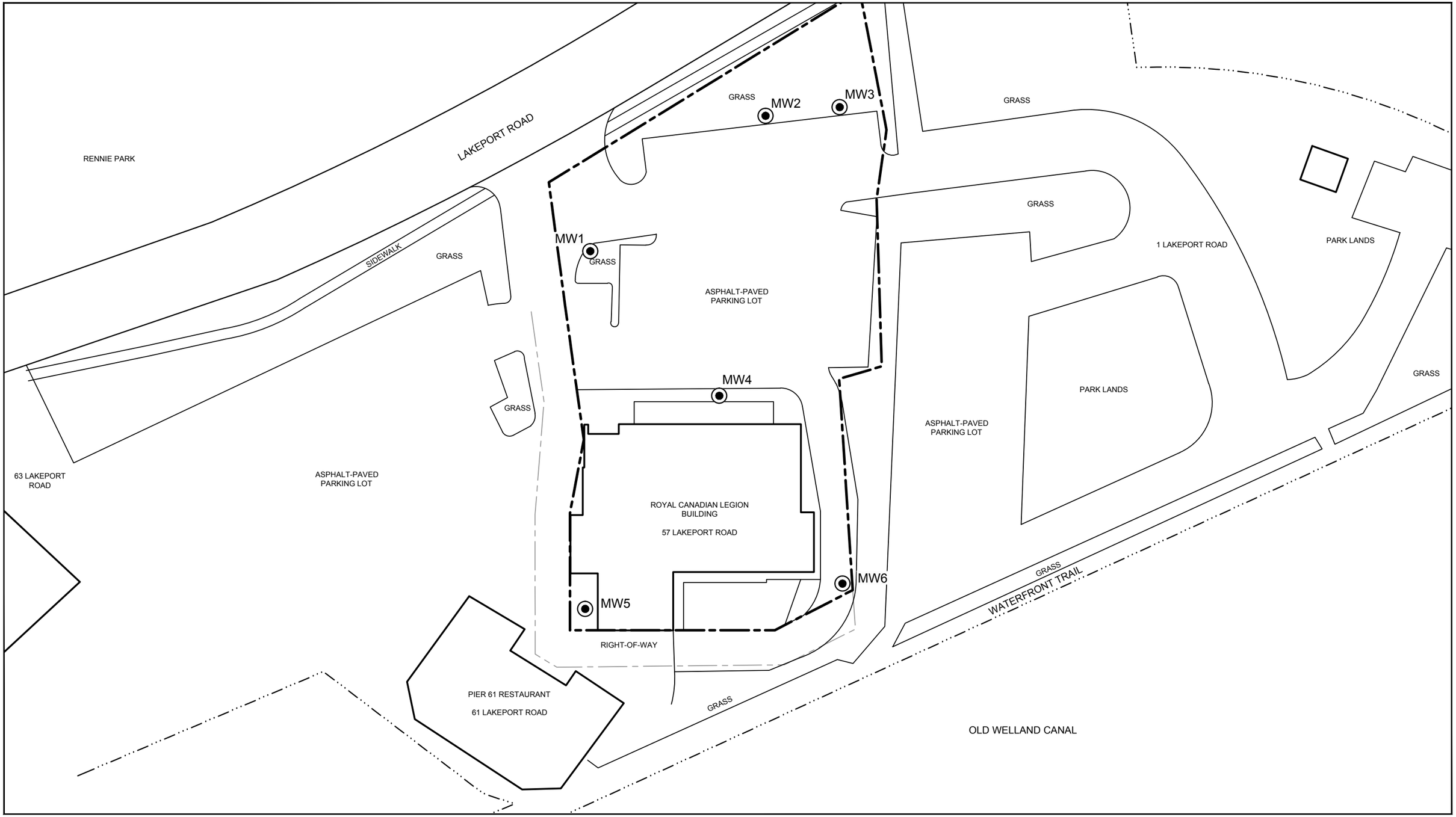
GHD Limited

Marc Gaudet, P. Eng.

MH/mma/1

Encl.

cc: Matthew Harbin (GHD)
Andrew Hunter (GHD)



0 5 10 15m

LEGEND

APPROXIMATE PROPERTY BOUNDARY
SHORELINE
PROPOSED MONITORING WELL

RANKIN CONSTRUCTION INC.
57 LAKEPORT ROAD, ST. CATHARINES, ONTARIO
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED INVESTIGATIVE LOCATIONS

11131634-98
Mar 6, 2017

FIGURE 1

CAD File: P:\drawings\11131000s\11131634\11131634-CORR\11131634-98(RANK001)\11131634-98(RANK001)GN\11131634-98(RANK001)GN-WA001.dwg

Appendix D
Borehole Stratigraphic and Monitoring Well Instrumentation Logs

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW1-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	99.48						
0.5	TOPSOIL		CONCRETE; 51mm PVC WELL CASING; BENTONITE CHIPS	1SS		20	4	34
1.0	SM-SILTY SAND (FILL), very loose, fine grained, poorly graded, brown, moist	98.41	203mm BOREHOLE	2SS		100	3	6.9
1.5	- with clay, moist to wet at 1.52m BGS							
2.0			51mm PVC WELL SCREEN	3SS		60	2	0.3
2.5	ML-CLAYEY SILT (FILL), very soft, medium plasticity, brown, wet	97.19	SAND PACK					
	- trace sand at 2.59m BGS			4SS		100	0	6.9
3.0								
3.5				5SS		100	0	5.7
	- sandy at 3.81m BGS							
4.0				6SS		100	00	5.3
4.5	- trace sand at 4.57m BGS							
				7SS		100	1	5.3
5.0								
	- greyish brown at 5.33m BGS							
5.5				8SS		100	0	6.1
6.0	- vegetative matter, dark grey at 6.10m BGS							
				9SS		100	1	5.5
6.5			BENTONITE CHIPS					

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

OVERBURDEN LOG 11131634-WI.GPJ CRA_CORP.GDT 4/25/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW1-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
7.5	- soft at 7.62m BGS			10SS		100	2	5.2
8.0				11SS		100	4	4.7
8.5	ML-SANDY SILT (FILL), loose, fine grained, poorly graded, greenish grey, wet - brown at 8.76m BGS	91.10		12SS		60	6	0.5
9.0								
9.5	ML-SILT (TILL), dense, fine grained, poorly graded, red, wet	90.13	WELL DETAILS Screened interval: 98.26 to 95.21m m asd 1.22 to 4.27m BGS Length: 3.05m Diameter: 51mm Slot Size: 0.010 Material: PVC Seal: 99.33 to 98.87m m asd 0.15 to 0.61m BGS Material: BENTONITE CHIPS Sand Pack: 98.87 to 94.91m m asd 0.61 to 4.57m BGS Material: SAND	13SS		80	46	1.1
10.0	END OF BOREHOLE @ 9.75m BGS	89.73						
10.5								
11.0								
11.5								
12.0								
12.5								
13.0								
13.5								

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW3-17
DATE COMPLETED: March 20, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	98.81						
0	ASPHALT	98.73	CONCRETE					
	SP/GP-SAND/GRAVEL (FILL), compact, medum sand, fine gravel, poorly graded, light brown, dry	98.51		1SS		80	10	5.2
0.5	SM-SILTY SAND (FILL), compact, fine grained, poorly graded, brown, moist		51mm PVC WELL CASING					
1.0	- very loose at 0.76m BGS		BENTONITE CHIPS	0.72-1.37m -012 2SS		60	4	5.8
1.5	ML-CLAYEY SILT (FILL), with sand, soft, medium plasticity, brown, moist	97.29						
2.0			203mm BOREHOLE	3SS		60	3	6.2
2.5	- grey, moist to wet at 2.29m BGS			4SS 2.29-2.90m -013		80	4	6.3
3.0	ML-SANDY SILT (FILL), some sand, trace clay and gravel, firm, low plasticity, grey, moist to wet	95.76		5SS		100	5	6.8
3.5	- soft, medium plasticity at 3.81m BGS		51mm PVC WELL SCREEN					
4.0			SAND PACK	6SS		100	3	6.7
4.5	- greyish brown at 4.57m BGS							
5.0	- grey, wet at 4.88m BGS			7SS		90	3	6.3
5.5	- very soft at 5.33m BGS							
6.0	ML-CLAYEY SILT (FILL), with vegetative matter, medium plasticity, dark grey, moist	93.32		8SS		100	0	5.5
6.5			BENTONITE	9SS		100	0	5.6
	END OF BOREHOLE @ 6.71m BGS	92.10						

WELL DETAILS
Screened interval:

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

CHEMICAL ANALYSIS

OVERBURDEN LOG 11131634-WI.GPJ CRA_CORP.GDT 4/25/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW3-17
DATE COMPLETED: March 20, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
7.5			95.76 to 92.71m m asd 3.05 to 6.10m BGS Length: 3.05m Diameter: 51mm Slot Size: 0.010 Material: PVC Seal: 98.66 to 96.07m m asd 0.15 to 2.74m BGS Material: BENTONITE CHIPS Sand Pack: 96.07 to 92.71m m asd 2.74 to 6.10m BGS Material: SAND					
8.0								
8.5								
9.0								
9.5								
10.0								
10.5								
11.0								
11.5								
12.0								
12.5								
13.0								
13.5								

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

CHEMICAL ANALYSIS (Y)

OVERBURDEN LOG 11131634-WI.GPJ CRA_CORP.GDT 4/25/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW4-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	98.26						
0	ASPHALT	98.18	CONCRETE					
	SP/GP-SAND/GRAVEL (FILL), compact, coarse sand, fine gravel, poorly graded, grey, dry	97.85	51mm PVC WELL CASING	1SS 0-0.61m -007		70	15	4.0
0.5	ML-CLAYEY SILT (FILL), stiff, low plasticity, reddish brown, moist		BENTONITE CHIPS					
1.0				2SS		10	9	4.6
			203mm BOREHOLE					
1.5	- soft, grey, moist to wet at 1.52m BGS							
	- medium plasticity, wet at 1.83m BGS		51mm PVC WELL SCREEN	3SS 1.52-2.13m -008/ 009		50	3	5.7
2.0								
			SAND PACK					
2.5				4SS		60	3	6.1
3.0								
				5SS		40	3	5.4
3.5								
	- vegetative matter, dark brown at 3.81m BGS							
4.0				6SS		40	3	4.9
4.5								
				7SS		100	3	5.1
5.0								
5.5	SP-SAND (FILL), very loose, coarse grained, poorly graded, dark grey, wet	92.77						
	ML-SANDY SILT (FILL), soft, medium plasticity, grey, wet	92.62		8SS		100	3	4.7
6.0								
	- wood fragments at 6.40m BGS			9SS		100	3	5.6
6.5								
	CH-SILTY CLAY, very soft, high plasticity, grey, wet	91.55						

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

CHEMICAL ANALYSIS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW4-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
7.5				10SS		100	0	6.1
8.0				11SS		100	0	6.2
8.5				12SS		100	0	6.1
9.0			BENTONITE CHIPS					
9.5				13SS		100	0	5.9
10.0				14SS		100	0	6.1
10.5								
11.0				15SS		100	0	5.5
11.5				16SS		100	0	2.5
12.0								
12.5				17SS		100	0	--
13.0				18SS		100	0	--
13.5			WELL DETAILS Screened interval:					

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

CHEMICAL ANALYSIS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW4-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
14.5	- trace sand and gravel, red at 14.02m BGS	83.93	97.04 to 93.99m m asd 1.22 to 4.27m BGS Length: 3.05m Diameter: 51mm Slot Size: 0.010 Material: PVC Seal: 98.11 to 97.65m m asd 0.15 to 0.61m BGS Material: BENTONITE CHIPS Sand Pack: 97.65 to 93.69m m asd 0.61 to 4.57m BGS Material: SAND	19SS	X	100	3	-
	END OF BOREHOLE @ 14.33m BGS							
15.0								
15.5								
16.0								
16.5								
17.0								
17.5								
18.0								
18.5								
19.0								
19.5								
20.0								
20.5								

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

CHEMICAL ANALYSIS

OVERBURDEN LOG 11131634-WI.GPJ CRA_CORP.GDT 4/25/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW5-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	GROUND SURFACE	97.74						
0.5	SP/GP-SAND/GRAVEL (FILL), compact, medium sand, fine gravel, poorly graded, grey, moist	97.44	CONCRETE 51mm PVC WELL CASING	1SS 0-0.61m -010		70	17	9.5
1.0	ML-CLAYEY SILT (FILL), trace gravel, very stiff, low plasticity, brown, moist - no gravel, firm, grey, mottling at 0.76m BGS		BENTONITE CHIPS	2SS 0.76-1.68m -011		80	7	10.5
1.5	- soft, grey, with light brown, moist to wet at 1.52m BGS		203mm BOREHOLE					
2.0				3SS		70	4	8.9
2.5	ML-SANDY SILT (FILL), soft, low plasticity, grey, wet	95.45	51mm PVC WELL SCREEN	4SS		60	4	9.3
3.0	- with clay at 3.05m BGS		SAND PACK					
3.5				5SS		30	3	8.2
4.0	- vegetative matter (shells, roots, plant fragments), dark grey at 4.04m BGS			6SS		80	4	6.2
4.5								
5.0			BENTONITE CHIPS	7SS		100	2	3.9
5.5				8SS		100	0	
6.0	END OF BOREHOLE @ 5.94m BGS	91.80						
6.5								

WELL DETAILS
Screened interval:
96.52 to 93.47m m asd
1.22 to 4.27m BGS
Length: 3.05m
Diameter: 51mm
Slot Size: 0.010
Material: PVC
Seal:
97.59 to 96.83m m asd
0.15 to 0.91m BGS
Material: BENTONITE CHIPS
Sand Pack:
96.83 to 93.32m m asd
0.91 to 4.42m BGS

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

CHEMICAL ANALYSIS

OVERBURDEN LOG 11131634-WI.GPJ CRA_CORP.GDT 4/25/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW5-17
DATE COMPLETED: March 21, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
7.5			Material: SAND					
8.0								
8.5								
9.0								
9.5								
10.0								
10.5								
11.0								
11.5								
12.0								
12.5								
13.0								
13.5								

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

CHEMICAL ANALYSIS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW6-17
DATE COMPLETED: March 20, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd
	GROUND SURFACE	96.88
0.5	ASPHALT	96.80
	SP/GP-SAND/GRAVEL (FILL), loose, medium sand, fine gravel, poorly graded, light brown, moist	96.58
	ML-CLAYEY SILT (FILL), firm, low plasticity, greyish brown, moist	
1.0	- trace sand and asphalt, soft, black at 0.61m BGS	95.97
	ML-SANDY SILT (FILL), very soft, low plasticity, brown, moist to wet	
1.5	- trace gravel, reddish brown, wet at 1.52m BGS	
2.0		
2.5		
3.0	- trace vegetative matter, intermixed red and grey at 3.05m BGS	
3.5		
4.0		
4.5	ML-CLAYEY SILT (FILL), trace gravel, soft, medium plasticity, grey, wet	92.31
5.0		
5.5	CH-SILTY CLAY, trace sand, medium plasticity, dark grey	91.55
6.0	END OF BOREHOLE @ 6.10m BGS	90.78
6.5		

MONITORING WELL: CONCRETE; 51mm PVC WELL CASING; BENTONITE CHIPS; 203mm BOREHOLE; 51mm PVC WELL SCREEN; SAND PACK; BENTONITE CHIPS

WELL DETAILS
Screened interval:
95.36 to 92.31m m asd
1.52 to 4.57m BGS
Length: 3.05m
Diameter: 51mm
Slot Size: 0.010

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1SS		50	7	1.9
2SS 0.46-0.91m -001		50	3	2.7
3SS 0.91-1.52m -002		80	2	3.2
4SS		50	2	3.0
5SS		50	2	28
6SS		70	2	2.4
7SS		100	3	2.1
8SS		100	4	1.6
9SS		100	0	1.2
10SS		100	3	1.2

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

CHEMICAL ANALYSIS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PHASE TWO ESA
PROJECT NUMBER: 11131634-20
CLIENT: RANKIN CONSTRUCTION INC
LOCATION: 57 LAKEPORT ROAD, ST CATHARINES, ONTARIO

HOLE DESIGNATION: MW6-17
DATE COMPLETED: March 20, 2017
DRILLING METHOD: HSA/SS
FIELD PERSONNEL: T. BRINDLE

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. m m asd	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
7.5			Material: PVC Seal: 96.73 to 95.66m m asd 0.15 to 1.22m BGS Material: BENTONITE CHIPS Sand Pack: 95.66 to 92.16m m asd 1.22 to 4.72m BGS Material: SAND					
8.0								
8.5								
9.0								
9.5								
10.0								
10.5								
11.0								
11.5								
12.0								
12.5								
13.0								
13.5								

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

CHEMICAL ANALYSIS

OVERBURDEN LOG 11131634-WI.GPJ CRA_CORP.GDT 4/25/17

Appendix E
Laboratory Analytical Reports

GHD Limited (Waterloo)
ATTN: PREETI GURURAJAN
651 COLBY DRIVE
WATERLOO ON N2V 1C2

Date Received: 25-MAR-17
Report Date: 03-APR-17 08:07 (MT)
Version: FINAL

Client Phone: 519-884-0510

Certificate of Analysis

Lab Work Order #: L1905311

Project P.O. #: PENDING
Job Reference: 11131634-20
C of C Numbers: 15-555094
Legal Site Desc:

Laura Ermeta
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-1 GW-11131634-032417-TB-001 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:35 Matrix: WATER							
Physical Tests							
Conductivity	1.14		0.0030	mS/cm		27-MAR-17	R3686126
pH	7.85		0.10	pH units		27-MAR-17	R3686126
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					25-MAR-17	R3685641
Dissolved Metals Filtration Location	FIELD					27-MAR-17	R3685559
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Arsenic (As)-Dissolved	6.00		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Barium (Ba)-Dissolved	903		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Boron (B)-Dissolved	140		10	ug/L	27-MAR-17	28-MAR-17	R3685833
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Cobalt (Co)-Dissolved	0.18		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Copper (Cu)-Dissolved	0.38		0.20	ug/L	27-MAR-17	28-MAR-17	R3685833
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	25-MAR-17	27-MAR-17	R3685764
Molybdenum (Mo)-Dissolved	4.68		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Nickel (Ni)-Dissolved	0.56		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Selenium (Se)-Dissolved	0.102		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Sodium (Na)-Dissolved	69900		500	ug/L	27-MAR-17	28-MAR-17	R3685833
Thallium (Tl)-Dissolved	0.020		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Uranium (U)-Dissolved	1.24		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Vanadium (V)-Dissolved	0.64		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Zinc (Zn)-Dissolved	2.6		1.0	ug/L	27-MAR-17	28-MAR-17	R3685833
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		27-MAR-17	R3686190
Volatile Organic Compounds							
Acetone	<30		30	ug/L		28-MAR-17	R3686227
Benzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Bromodichloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Bromoform	<5.0		5.0	ug/L		28-MAR-17	R3686227
Bromomethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Carbon tetrachloride	<0.20		0.20	ug/L		28-MAR-17	R3686227
Chlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dibromochloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Chloroform	<1.0		1.0	ug/L		28-MAR-17	R3686227
1,2-Dibromoethane	<0.20		0.20	ug/L		28-MAR-17	R3686227
1,2-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,3-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,4-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dichlorodifluoromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-1 GW-11131634-032417-TB-001 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:35 Matrix: WATER							
Volatile Organic Compounds							
1,1-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,2-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methylene Chloride	<5.0		5.0	ug/L		28-MAR-17	R3686227
1,2-Dichloropropane	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		28-MAR-17	
Ethylbenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
n-Hexane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methyl Ethyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
Methyl Isobutyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
MTBE	<2.0		2.0	ug/L		28-MAR-17	R3686227
Styrene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Tetrachloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Toluene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichlorofluoromethane	<5.0		5.0	ug/L		28-MAR-17	R3686227
Vinyl chloride	<0.50		0.50	ug/L		28-MAR-17	R3686227
o-Xylene	<0.30		0.30	ug/L		28-MAR-17	R3686227
m+p-Xylenes	<0.40		0.40	ug/L		28-MAR-17	R3686227
Xylenes (Total)	<0.50		0.50	ug/L		28-MAR-17	
Surrogate: 4-Bromofluorobenzene	105.0		70-130	%		28-MAR-17	R3686227
Surrogate: 1,4-Difluorobenzene	104.5		70-130	%		28-MAR-17	R3686227
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F1-BTEX	<25		25	ug/L		03-APR-17	
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F2-Naphth	<100		100	ug/L		03-APR-17	
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F3-PAH	<250		250	ug/L		03-APR-17	
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		03-APR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	98.2		60-140	%	30-MAR-17	30-MAR-17	R3688617

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-1 GW-11131634-032417-TB-001 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:35 Matrix: WATER							
Hydrocarbons							
Surrogate: 3,4-Dichlorotoluene	90.4		60-140	%		29-MAR-17	R3686745
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Acenaphthylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)pyrene	<0.010		0.010	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(b)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(k)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Chrysene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Fluorene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		03-APR-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
2-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Naphthalene	<0.050		0.050	ug/L	28-MAR-17	03-APR-17	R3688166
Phenanthrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Acenaphthene	112.7		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d12-Chrysene	114.5		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d8-Naphthalene	104.9		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Phenanthrene	112.2		60-140	%	28-MAR-17	03-APR-17	R3688166
L1905311-2 GW-11131634-032417-TB-002 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:40 Matrix: WATER							
Physical Tests							
Conductivity	1.15		0.0030	mS/cm		27-MAR-17	R3686126
pH	7.87		0.10	pH units		27-MAR-17	R3686126
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					25-MAR-17	R3685641
Dissolved Metals Filtration Location	FIELD					27-MAR-17	R3685559
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Arsenic (As)-Dissolved	6.30		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Barium (Ba)-Dissolved	938		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Boron (B)-Dissolved	142		10	ug/L	27-MAR-17	28-MAR-17	R3685833
Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Cobalt (Co)-Dissolved	0.17		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-2 GW-11131634-032417-TB-002 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:40 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	0.34		0.20	ug/L	27-MAR-17	28-MAR-17	R3685833
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	25-MAR-17	27-MAR-17	R3685764
Molybdenum (Mo)-Dissolved	4.73		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Nickel (Ni)-Dissolved	0.57		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Selenium (Se)-Dissolved	0.108		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Sodium (Na)-Dissolved	69200		500	ug/L	27-MAR-17	28-MAR-17	R3685833
Thallium (Tl)-Dissolved	0.019		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Uranium (U)-Dissolved	1.20		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Vanadium (V)-Dissolved	0.63		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Zinc (Zn)-Dissolved	1.6		1.0	ug/L	27-MAR-17	28-MAR-17	R3685833
Speciated Metals							
Chromium, Hexavalent	1.0		1.0	ug/L		27-MAR-17	R3686190
Volatile Organic Compounds							
Acetone	<30		30	ug/L		28-MAR-17	R3686227
Benzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Bromodichloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Bromoform	<5.0		5.0	ug/L		28-MAR-17	R3686227
Bromomethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Carbon tetrachloride	<0.20		0.20	ug/L		28-MAR-17	R3686227
Chlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dibromochloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Chloroform	<1.0		1.0	ug/L		28-MAR-17	R3686227
1,2-Dibromoethane	<0.20		0.20	ug/L		28-MAR-17	R3686227
1,2-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,3-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,4-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dichlorodifluoromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
1,1-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,2-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methylene Chloride	<5.0		5.0	ug/L		28-MAR-17	R3686227
1,2-Dichloropropane	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		28-MAR-17	
Ethylbenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
n-Hexane	<0.50		0.50	ug/L		28-MAR-17	R3686227

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-2 GW-11131634-032417-TB-002 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:40 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
Methyl Isobutyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
MTBE	<2.0		2.0	ug/L		28-MAR-17	R3686227
Styrene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Tetrachloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Toluene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichlorofluoromethane	<5.0		5.0	ug/L		28-MAR-17	R3686227
Vinyl chloride	<0.50		0.50	ug/L		28-MAR-17	R3686227
o-Xylene	<0.30		0.30	ug/L		28-MAR-17	R3686227
m+p-Xylenes	<0.40		0.40	ug/L		28-MAR-17	R3686227
Xylenes (Total)	<0.50		0.50	ug/L		28-MAR-17	
Surrogate: 4-Bromofluorobenzene	104.4		70-130	%		28-MAR-17	R3686227
Surrogate: 1,4-Difluorobenzene	104.6		70-130	%		28-MAR-17	R3686227
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F1-BTEX	<25		25	ug/L		03-APR-17	
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F2-Naphth	<100		100	ug/L		03-APR-17	
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F3-PAH	<250		250	ug/L		03-APR-17	
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		03-APR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	103.0		60-140	%	30-MAR-17	30-MAR-17	R3688617
Surrogate: 3,4-Dichlorotoluene	80.9		60-140	%		29-MAR-17	R3686745
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Acenaphthylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)pyrene	<0.010		0.010	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(b)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(k)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Chrysene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-2 GW-11131634-032417-TB-002 Sampled By: T. BRINDLE on 24-MAR-17 @ 10:40 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Fluorene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		03-APR-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
2-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Naphthalene	<0.050		0.050	ug/L	28-MAR-17	03-APR-17	R3688166
Phenanthrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Acenaphthene	101.1		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d12-Chrysene	108.8		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d8-Naphthalene	95.0		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Phenanthrene	102.3		60-140	%	28-MAR-17	03-APR-17	R3688166
L1905311-3 GW-11131634-032417-TB-003 Sampled By: T. BRINDLE on 24-MAR-17 @ 11:40 Matrix: WATER							
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		31-MAR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	101.4		60-140	%	30-MAR-17	30-MAR-17	R3688617
Surrogate: 3,4-Dichlorotoluene	78.2		60-140	%		29-MAR-17	R3686745
L1905311-4 GW-11131634-032417-TB-004 Sampled By: T. BRINDLE on 24-MAR-17 @ 12:25 Matrix: WATER							
Physical Tests							
Conductivity	4.09		0.0030	mS/cm		27-MAR-17	R3686126
pH	7.68		0.10	pH units		27-MAR-17	R3686126
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					25-MAR-17	R3685641
Dissolved Metals Filtration Location	FIELD					27-MAR-17	R3685559
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Arsenic (As)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Barium (Ba)-Dissolved	108	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Boron (B)-Dissolved	<100	DLHC	100	ug/L	27-MAR-17	27-MAR-17	R3685833
Cadmium (Cd)-Dissolved	<0.10	DLHC	0.10	ug/L	27-MAR-17	27-MAR-17	R3685833
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-4 GW-11131634-032417-TB-004 Sampled By: T. BRINDLE on 24-MAR-17 @ 12:25 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	25-MAR-17	27-MAR-17	R3685764
Molybdenum (Mo)-Dissolved	0.60	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Sodium (Na)-Dissolved	382000	DLHC	5000	ug/L	27-MAR-17	27-MAR-17	R3685833
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	27-MAR-17	27-MAR-17	R3685833
Uranium (U)-Dissolved	1.01	DLHC	0.10	ug/L	27-MAR-17	27-MAR-17	R3685833
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Zinc (Zn)-Dissolved	<10	DLHC	10	ug/L	27-MAR-17	27-MAR-17	R3685833
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		27-MAR-17	R3686190
Volatile Organic Compounds							
Acetone	<30		30	ug/L		28-MAR-17	R3686227
Benzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Bromodichloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Bromoform	<5.0		5.0	ug/L		28-MAR-17	R3686227
Bromomethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Carbon tetrachloride	<0.20		0.20	ug/L		28-MAR-17	R3686227
Chlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dibromochloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Chloroform	<1.0		1.0	ug/L		28-MAR-17	R3686227
1,2-Dibromoethane	<0.20		0.20	ug/L		28-MAR-17	R3686227
1,2-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,3-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,4-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dichlorodifluoromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
1,1-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,2-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methylene Chloride	<5.0		5.0	ug/L		28-MAR-17	R3686227
1,2-Dichloropropane	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		28-MAR-17	
Ethylbenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
n-Hexane	<0.50		0.50	ug/L		28-MAR-17	R3686227

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-4 GW-11131634-032417-TB-004 Sampled By: T. BRINDLE on 24-MAR-17 @ 12:25 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
Methyl Isobutyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
MTBE	<2.0		2.0	ug/L		28-MAR-17	R3686227
Styrene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Tetrachloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Toluene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichlorofluoromethane	<5.0		5.0	ug/L		28-MAR-17	R3686227
Vinyl chloride	<0.50		0.50	ug/L		28-MAR-17	R3686227
o-Xylene	<0.30		0.30	ug/L		28-MAR-17	R3686227
m+p-Xylenes	<0.40		0.40	ug/L		28-MAR-17	R3686227
Xylenes (Total)	<0.50		0.50	ug/L		28-MAR-17	
Surrogate: 4-Bromofluorobenzene	102.6		70-130	%		28-MAR-17	R3686227
Surrogate: 1,4-Difluorobenzene	105.9		70-130	%		28-MAR-17	R3686227
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F1-BTEX	<25		25	ug/L		03-APR-17	
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F2-Naphth	<100		100	ug/L		03-APR-17	
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F3-PAH	<250		250	ug/L		03-APR-17	
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		03-APR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	98.4		60-140	%	30-MAR-17	30-MAR-17	R3688617
Surrogate: 3,4-Dichlorotoluene	63.7		60-140	%		29-MAR-17	R3686745
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Acenaphthylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)pyrene	<0.010		0.010	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(b)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(k)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Chrysene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-4 GW-11131634-032417-TB-004 Sampled By: T. BRINDLE on 24-MAR-17 @ 12:25 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Fluorene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		03-APR-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
2-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Naphthalene	<0.050		0.050	ug/L	28-MAR-17	03-APR-17	R3688166
Phenanthrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Acenaphthene	108.8		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d12-Chrysene	114.9		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d8-Naphthalene	102.8		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Phenanthrene	110.4		60-140	%	28-MAR-17	03-APR-17	R3688166
L1905311-5 GW-11131634-032417-TB-005 Sampled By: T. BRINDLE on 24-MAR-17 @ 13:20 Matrix: WATER							
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		31-MAR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	105.4		60-140	%	30-MAR-17	30-MAR-17	R3688617
Surrogate: 3,4-Dichlorotoluene	107.4		60-140	%		29-MAR-17	R3686745
L1905311-6 GW-11131634-032417-TB-006 Sampled By: T. BRINDLE on 24-MAR-17 @ 14:20 Matrix: WATER							
Physical Tests							
Conductivity	3.58		0.0030	mS/cm		27-MAR-17	R3686126
pH	7.56		0.10	pH units		27-MAR-17	R3686126
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					25-MAR-17	R3685641
Dissolved Metals Filtration Location	FIELD					27-MAR-17	R3685559
Antimony (Sb)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Arsenic (As)-Dissolved	8.2	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Barium (Ba)-Dissolved	85.5	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Beryllium (Be)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Boron (B)-Dissolved	<100	DLHC	100	ug/L	27-MAR-17	27-MAR-17	R3685833
Cadmium (Cd)-Dissolved	<0.10	DLHC	0.10	ug/L	27-MAR-17	27-MAR-17	R3685833
Chromium (Cr)-Dissolved	<5.0	DLHC	5.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Cobalt (Co)-Dissolved	<1.0	DLHC	1.0	ug/L	27-MAR-17	27-MAR-17	R3685833

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-6 GW-11131634-032417-TB-006 Sampled By: T. BRINDLE on 24-MAR-17 @ 14:20 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	<2.0	DLHC	2.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Lead (Pb)-Dissolved	<0.50	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	25-MAR-17	27-MAR-17	R3685764
Molybdenum (Mo)-Dissolved	2.89	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Nickel (Ni)-Dissolved	<5.0	DLHC	5.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Selenium (Se)-Dissolved	<0.50	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Silver (Ag)-Dissolved	<0.50	DLHC	0.50	ug/L	27-MAR-17	27-MAR-17	R3685833
Sodium (Na)-Dissolved	308000	DLHC	5000	ug/L	27-MAR-17	27-MAR-17	R3685833
Thallium (Tl)-Dissolved	<0.10	DLHC	0.10	ug/L	27-MAR-17	27-MAR-17	R3685833
Uranium (U)-Dissolved	2.88	DLHC	0.10	ug/L	27-MAR-17	27-MAR-17	R3685833
Vanadium (V)-Dissolved	<5.0	DLHC	5.0	ug/L	27-MAR-17	27-MAR-17	R3685833
Zinc (Zn)-Dissolved	<10	DLHC	10	ug/L	27-MAR-17	27-MAR-17	R3685833
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		27-MAR-17	R3686190
Volatile Organic Compounds							
Acetone	<30		30	ug/L		28-MAR-17	R3686227
Benzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Bromodichloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Bromoform	<5.0		5.0	ug/L		28-MAR-17	R3686227
Bromomethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Carbon tetrachloride	<0.20		0.20	ug/L		28-MAR-17	R3686227
Chlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dibromochloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Chloroform	<1.0		1.0	ug/L		28-MAR-17	R3686227
1,2-Dibromoethane	<0.20		0.20	ug/L		28-MAR-17	R3686227
1,2-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,3-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,4-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dichlorodifluoromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
1,1-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,2-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methylene Chloride	<5.0		5.0	ug/L		28-MAR-17	R3686227
1,2-Dichloropropane	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		28-MAR-17	
Ethylbenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
n-Hexane	<0.50		0.50	ug/L		28-MAR-17	R3686227

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-6 GW-11131634-032417-TB-006 Sampled By: T. BRINDLE on 24-MAR-17 @ 14:20 Matrix: WATER							
Volatile Organic Compounds							
Methyl Ethyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
Methyl Isobutyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
MTBE	<2.0		2.0	ug/L		28-MAR-17	R3686227
Styrene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Tetrachloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Toluene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichlorofluoromethane	<5.0		5.0	ug/L		28-MAR-17	R3686227
Vinyl chloride	<0.50		0.50	ug/L		28-MAR-17	R3686227
o-Xylene	<0.30		0.30	ug/L		28-MAR-17	R3686227
m+p-Xylenes	<0.40		0.40	ug/L		28-MAR-17	R3686227
Xylenes (Total)	<0.50		0.50	ug/L		28-MAR-17	
Surrogate: 4-Bromofluorobenzene	104.8		70-130	%		28-MAR-17	R3686227
Surrogate: 1,4-Difluorobenzene	104.8		70-130	%		28-MAR-17	R3686227
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F1-BTEX	<25		25	ug/L		03-APR-17	
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F2-Naphth	<100		100	ug/L		03-APR-17	
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F3-PAH	<250		250	ug/L		03-APR-17	
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		03-APR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	101.6		60-140	%	30-MAR-17	30-MAR-17	R3688617
Surrogate: 3,4-Dichlorotoluene	88.1		60-140	%		29-MAR-17	R3686745
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Acenaphthylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(a)pyrene	<0.010		0.010	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(b)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Benzo(k)fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Chrysene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Dibenzo(ah)anthracene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-6 GW-11131634-032417-TB-006 Sampled By: T. BRINDLE on 24-MAR-17 @ 14:20 Matrix: WATER							
Polycyclic Aromatic Hydrocarbons							
Fluoranthene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Fluorene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
1+2-Methylnaphthalenes	<0.028		0.028	ug/L		03-APR-17	
1-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
2-Methylnaphthalene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Naphthalene	<0.050		0.050	ug/L	28-MAR-17	03-APR-17	R3688166
Phenanthrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Pyrene	<0.020		0.020	ug/L	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Acenaphthene	107.0		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d12-Chrysene	112.5		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d8-Naphthalene	99.5		60-140	%	28-MAR-17	03-APR-17	R3688166
Surrogate: d10-Phenanthrene	108.3		60-140	%	28-MAR-17	03-APR-17	R3688166
L1905311-7 GW-11131634-032417-TB-007 Sampled By: T. BRINDLE on 24-MAR-17 @ 15:00 Matrix: WATER							
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					25-MAR-17	R3685641
Dissolved Metals Filtration Location	FIELD					27-MAR-17	R3685559
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Arsenic (As)-Dissolved	4.87		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Barium (Ba)-Dissolved	79.1		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Boron (B)-Dissolved	86		10	ug/L	27-MAR-17	28-MAR-17	R3685833
Cadmium (Cd)-Dissolved	0.027		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Cobalt (Co)-Dissolved	0.94		0.10	ug/L	27-MAR-17	28-MAR-17	R3685833
Copper (Cu)-Dissolved	0.83		0.20	ug/L	27-MAR-17	28-MAR-17	R3685833
Lead (Pb)-Dissolved	0.096		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	25-MAR-17	27-MAR-17	R3685764
Molybdenum (Mo)-Dissolved	1.82		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Nickel (Ni)-Dissolved	1.98		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Selenium (Se)-Dissolved	0.359		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Silver (Ag)-Dissolved	<0.050		0.050	ug/L	27-MAR-17	28-MAR-17	R3685833
Sodium (Na)-Dissolved	223000	DLHC	5000	ug/L	27-MAR-17	27-MAR-17	R3685833
Thallium (Tl)-Dissolved	0.036		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Uranium (U)-Dissolved	4.17		0.010	ug/L	27-MAR-17	28-MAR-17	R3685833
Vanadium (V)-Dissolved	1.21		0.50	ug/L	27-MAR-17	28-MAR-17	R3685833
Zinc (Zn)-Dissolved	2.3		1.0	ug/L	27-MAR-17	28-MAR-17	R3685833
Speciated Metals							
Chromium, Hexavalent	<1.0		1.0	ug/L		27-MAR-17	R3686190
Volatile Organic Compounds							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-7 GW-11131634-032417-TB-007 Sampled By: T. BRINDLE on 24-MAR-17 @ 15:00 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		28-MAR-17	R3686227
Benzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Bromodichloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Bromoform	<5.0		5.0	ug/L		28-MAR-17	R3686227
Bromomethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Carbon tetrachloride	<0.20		0.20	ug/L		28-MAR-17	R3686227
Chlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dibromochloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Chloroform	<1.0		1.0	ug/L		28-MAR-17	R3686227
1,2-Dibromoethane	<0.20		0.20	ug/L		28-MAR-17	R3686227
1,2-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,3-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,4-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dichlorodifluoromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
1,1-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,2-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methylene Chloride	<5.0		5.0	ug/L		28-MAR-17	R3686227
1,2-Dichloropropane	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		28-MAR-17	
Ethylbenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
n-Hexane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methyl Ethyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
Methyl Isobutyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
MTBE	<2.0		2.0	ug/L		28-MAR-17	R3686227
Styrene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Tetrachloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Toluene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichlorofluoromethane	<5.0		5.0	ug/L		28-MAR-17	R3686227
Vinyl chloride	<0.50		0.50	ug/L		28-MAR-17	R3686227
o-Xylene	<0.30		0.30	ug/L		28-MAR-17	R3686227
m+p-Xylenes	<0.40		0.40	ug/L		28-MAR-17	R3686227

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-7 GW-11131634-032417-TB-007 Sampled By: T. BRINDLE on 24-MAR-17 @ 15:00 Matrix: WATER							
Volatile Organic Compounds							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAR-17	
Surrogate: 4-Bromofluorobenzene	104.1		70-130	%		28-MAR-17	R3686227
Surrogate: 1,4-Difluorobenzene	102.9		70-130	%		28-MAR-17	R3686227
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F1-BTEX	<25		25	ug/L		31-MAR-17	
F2 (C10-C16)	<100		100	ug/L	30-MAR-17	30-MAR-17	R3688617
F3 (C16-C34)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
F4 (C34-C50)	<250		250	ug/L	30-MAR-17	30-MAR-17	R3688617
Total Hydrocarbons (C6-C50)	<370		370	ug/L		31-MAR-17	
Chrom. to baseline at nC50	YES				30-MAR-17	30-MAR-17	R3688617
Surrogate: 2-Bromobenzotrifluoride	104.9		60-140	%	30-MAR-17	30-MAR-17	R3688617
Surrogate: 3,4-Dichlorotoluene	101.9		60-140	%		29-MAR-17	R3686745
L1905311-9 TRIP BLANK Sampled By: T. BRINDLE on 24-MAR-17 @ 16:00 Matrix: WATER							
Volatile Organic Compounds							
Acetone	<30		30	ug/L		28-MAR-17	R3686227
Benzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Bromodichloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Bromoform	<5.0		5.0	ug/L		28-MAR-17	R3686227
Bromomethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Carbon tetrachloride	<0.20		0.20	ug/L		28-MAR-17	R3686227
Chlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dibromochloromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
Chloroform	<1.0		1.0	ug/L		28-MAR-17	R3686227
1,2-Dibromoethane	<0.20		0.20	ug/L		28-MAR-17	R3686227
1,2-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,3-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,4-Dichlorobenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Dichlorodifluoromethane	<2.0		2.0	ug/L		28-MAR-17	R3686227
1,1-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,2-Dichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methylene Chloride	<5.0		5.0	ug/L		28-MAR-17	R3686227
1,2-Dichloropropane	<0.50		0.50	ug/L		28-MAR-17	R3686227
cis-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
trans-1,3-Dichloropropene	<0.30		0.30	ug/L		28-MAR-17	R3686227
1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L		28-MAR-17	
Ethylbenzene	<0.50		0.50	ug/L		28-MAR-17	R3686227

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1905311-9 TRIP BLANK Sampled By: T. BRINDLE on 24-MAR-17 @ 16:00 Matrix: WATER							
Volatile Organic Compounds							
n-Hexane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Methyl Ethyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
Methyl Isobutyl Ketone	<20		20	ug/L		28-MAR-17	R3686227
MTBE	<2.0		2.0	ug/L		28-MAR-17	R3686227
Styrene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Tetrachloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Toluene	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,1-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
1,1,2-Trichloroethane	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichloroethylene	<0.50		0.50	ug/L		28-MAR-17	R3686227
Trichlorofluoromethane	<5.0		5.0	ug/L		28-MAR-17	R3686227
Vinyl chloride	<0.50		0.50	ug/L		28-MAR-17	R3686227
o-Xylene	<0.30		0.30	ug/L		28-MAR-17	R3686227
m+p-Xylenes	<0.40		0.40	ug/L		28-MAR-17	R3686227
Xylenes (Total)	<0.50		0.50	ug/L		28-MAR-17	
Surrogate: 4-Bromofluorobenzene	104.8		70-130	%		28-MAR-17	R3686227
Surrogate: 1,4-Difluorobenzene	105.2		70-130	%		28-MAR-17	R3686227
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		29-MAR-17	R3686745
F1-BTEX	<25		25	ug/L		29-MAR-17	
Surrogate: 3,4-Dichlorotoluene	111.3		60-140	%		29-MAR-17	R3686745

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1905311-1, -2, -4, -6, -7
Matrix Spike	Boron (B)-Dissolved	MS-B	L1905311-1, -2, -4, -6, -7
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1905311-1, -2, -4, -6, -7
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1905311-1, -2, -4, -6, -7

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 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. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

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-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

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).

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

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

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	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by 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	Water	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

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).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed 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).

Reference Information

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

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	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using 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	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH 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). Holdtime for samples under this regulation is 28 days

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

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	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

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

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

Chain of Custody Numbers:

15-555094

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 weight of sample
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.

Quality Control Report

Workorder: L1905311 Report Date: 03-APR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT	**Water**							
Batch R3686190								
WG2501128-9 DUP		**WG2501128-8**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	27-MAR-17
WG2501128-7 LCS								
Chromium, Hexavalent			101.9		%		80-120	27-MAR-17
WG2501128-6 MB								
Chromium, Hexavalent			<1.0		ug/L		1	27-MAR-17
WG2501128-10 MS		**WG2501128-8**						
Chromium, Hexavalent			100.4		%		70-130	27-MAR-17
EC-R511-WT	**Water**							
Batch R3686126								
WG2500598-16 DUP		**WG2500598-15**						
Conductivity		1.15	1.15		mS/cm	0.2	10	27-MAR-17
WG2500598-13 LCS								
Conductivity			101.0		%		90-110	27-MAR-17
WG2500598-14 MB								
Conductivity			<0.0030		mS/cm		0.003	27-MAR-17
F1-HS-511-WT	**Water**							
Batch R3686745								
WG2500499-4 DUP		**WG2500499-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	29-MAR-17
WG2500932-1 LCS								
F1 (C6-C10)			96.5		%		80-120	29-MAR-17
WG2500932-2 MB								
F1 (C6-C10)			<25		ug/L		25	29-MAR-17
Surrogate: 3,4-Dichlorotoluene			80.3		%		60-140	29-MAR-17
WG2500499-5 MS		**WG2500499-3**						
F1 (C6-C10)			90.5		%		60-140	29-MAR-17
F2-F4-511-WT	**Water**							
Batch R3688617								
WG2502588-2 LCS								
F2 (C10-C16)			111.8		%		70-130	30-MAR-17
F3 (C16-C34)			111.8		%		70-130	30-MAR-17
F4 (C34-C50)			104.8		%		70-130	30-MAR-17
WG2502588-3 LCSD		**WG2502588-2**						
F2 (C10-C16)		111.8	113.8		%	1.8	50	30-MAR-17
F3 (C16-C34)		111.8	111.4		%	0.4	50	30-MAR-17
F4 (C34-C50)		104.8	105.8		%	1.0	50	30-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Water**							
Batch R3688617								
WG2502588-1 MB								
F2 (C10-C16)			<100		ug/L		100	30-MAR-17
F3 (C16-C34)			<250		ug/L		250	30-MAR-17
F4 (C34-C50)			<250		ug/L		250	30-MAR-17
Surrogate: 2-Bromobenzotrifluoride			102.5		%		60-140	30-MAR-17
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3685764								
WG2500599-3 DUP		**L1905006-1**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	27-MAR-17
WG2500599-2 LCS								
Mercury (Hg)-Dissolved			99.2		%		80-120	27-MAR-17
WG2500599-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	27-MAR-17
WG2500599-4 MS		**L1905006-2**						
Mercury (Hg)-Dissolved			89.8		%		70-130	27-MAR-17
MET-D-UG/L-MS-WT	**Water**							
Batch R3685833								
WG2500485-4 DUP		**WG2500485-3**						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Arsenic (As)-Dissolved		5.5	5.5		ug/L	1.4	20	27-MAR-17
Barium (Ba)-Dissolved		922	906		ug/L	1.8	20	27-MAR-17
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Boron (B)-Dissolved		130	130		ug/L	1.8	20	27-MAR-17
Cadmium (Cd)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	27-MAR-17
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	27-MAR-17
Molybdenum (Mo)-Dissolved		4.83	4.92		ug/L	1.8	20	27-MAR-17
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Selenium (Se)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	27-MAR-17
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	27-MAR-17
Sodium (Na)-Dissolved		68400	68800		ug/L	0.7	20	27-MAR-17
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	27-MAR-17
Uranium (U)-Dissolved		1.32	1.28		ug/L	3.5	20	27-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3685833								
WG2500485-4 DUP		**WG2500485-3**						
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	27-MAR-17
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	27-MAR-17
WG2500485-2 LCS								
Antimony (Sb)-Dissolved			98.8		%		80-120	27-MAR-17
Arsenic (As)-Dissolved			95.8		%		80-120	27-MAR-17
Barium (Ba)-Dissolved			94.7		%		80-120	27-MAR-17
Beryllium (Be)-Dissolved			90.6		%		80-120	27-MAR-17
Boron (B)-Dissolved			91.7		%		80-120	27-MAR-17
Cadmium (Cd)-Dissolved			94.3		%		80-120	27-MAR-17
Chromium (Cr)-Dissolved			93.4		%		80-120	27-MAR-17
Cobalt (Co)-Dissolved			94.9		%		80-120	27-MAR-17
Copper (Cu)-Dissolved			94.8		%		80-120	27-MAR-17
Lead (Pb)-Dissolved			99.9		%		80-120	27-MAR-17
Molybdenum (Mo)-Dissolved			96.9		%		80-120	27-MAR-17
Nickel (Ni)-Dissolved			93.8		%		80-120	27-MAR-17
Selenium (Se)-Dissolved			98.1		%		80-120	27-MAR-17
Silver (Ag)-Dissolved			98.5		%		80-120	27-MAR-17
Sodium (Na)-Dissolved			95.8		%		80-120	27-MAR-17
Thallium (Tl)-Dissolved			97.5		%		80-120	27-MAR-17
Uranium (U)-Dissolved			104.1		%		80-120	27-MAR-17
Vanadium (V)-Dissolved			96.8		%		80-120	27-MAR-17
Zinc (Zn)-Dissolved			94.0		%		80-120	27-MAR-17
WG2500485-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	27-MAR-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	27-MAR-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	27-MAR-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	27-MAR-17
Boron (B)-Dissolved			<10		ug/L		10	27-MAR-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	27-MAR-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	27-MAR-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	27-MAR-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	27-MAR-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	27-MAR-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	27-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3685833								
WG2500485-1 MB								
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	27-MAR-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	27-MAR-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	27-MAR-17
Sodium (Na)-Dissolved			<500		ug/L		500	27-MAR-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	27-MAR-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	27-MAR-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	27-MAR-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	27-MAR-17
WG2500485-5 MS		**WG2500485-3**						
Antimony (Sb)-Dissolved			94.9		%		70-130	27-MAR-17
Arsenic (As)-Dissolved			84.2		%		70-130	27-MAR-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	27-MAR-17
Beryllium (Be)-Dissolved			89.0		%		70-130	27-MAR-17
Boron (B)-Dissolved			N/A	MS-B	%		-	27-MAR-17
Cadmium (Cd)-Dissolved			90.6		%		70-130	27-MAR-17
Chromium (Cr)-Dissolved			90.9		%		70-130	27-MAR-17
Cobalt (Co)-Dissolved			90.2		%		70-130	27-MAR-17
Copper (Cu)-Dissolved			76.2		%		70-130	27-MAR-17
Lead (Pb)-Dissolved			94.4		%		70-130	27-MAR-17
Nickel (Ni)-Dissolved			86.0		%		70-130	27-MAR-17
Selenium (Se)-Dissolved			97.1		%		70-130	27-MAR-17
Silver (Ag)-Dissolved			91.4		%		70-130	27-MAR-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	27-MAR-17
Thallium (Tl)-Dissolved			92.8		%		70-130	27-MAR-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	27-MAR-17
Vanadium (V)-Dissolved			90.4		%		70-130	27-MAR-17
Zinc (Zn)-Dissolved			79.2		%		70-130	27-MAR-17
PAH-511-WT	**Water**							
Batch R3688166								
WG2501143-2 LCS								
1-Methylnaphthalene			75.8		%		50-140	31-MAR-17
2-Methylnaphthalene			78.4		%		50-140	31-MAR-17
Acenaphthene			76.2		%		50-140	31-MAR-17
Acenaphthylene			78.0		%		50-140	31-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3688166								
WG2501143-2 LCS								
Anthracene			80.4		%		50-140	31-MAR-17
Benzo(a)anthracene			84.5		%		50-140	31-MAR-17
Benzo(a)pyrene			83.6		%		50-140	31-MAR-17
Benzo(b)fluoranthene			80.3		%		50-140	31-MAR-17
Benzo(g,h,i)perylene			80.5		%		50-140	31-MAR-17
Benzo(k)fluoranthene			77.5		%		50-140	31-MAR-17
Chrysene			83.8		%		50-140	31-MAR-17
Dibenzo(ah)anthracene			79.9		%		50-140	31-MAR-17
Fluoranthene			81.9		%		50-140	31-MAR-17
Fluorene			77.3		%		50-140	31-MAR-17
Indeno(1,2,3-cd)pyrene			78.0		%		50-140	31-MAR-17
Naphthalene			74.4		%		50-140	31-MAR-17
Phenanthrene			77.8		%		50-140	31-MAR-17
Pyrene			86.3		%		50-140	31-MAR-17
WG2501143-3 LCSD		**WG2501143-2**						
1-Methylnaphthalene		75.8	91.7		%	19	50	31-MAR-17
2-Methylnaphthalene		78.4	94.1		%	18	50	31-MAR-17
Acenaphthene		76.2	93.6		%	21	50	31-MAR-17
Acenaphthylene		78.0	95.9		%	21	50	31-MAR-17
Anthracene		80.4	98.0		%	20	50	31-MAR-17
Benzo(a)anthracene		84.5	97.9		%	15	50	31-MAR-17
Benzo(a)pyrene		83.6	98.4		%	16	50	31-MAR-17
Benzo(b)fluoranthene		80.3	93.7		%	15	50	31-MAR-17
Benzo(g,h,i)perylene		80.5	97.1		%	19	50	31-MAR-17
Benzo(k)fluoranthene		77.5	91.7		%	17	50	31-MAR-17
Chrysene		83.8	97.6		%	15	50	31-MAR-17
Dibenzo(ah)anthracene		79.9	96.4		%	19	50	31-MAR-17
Fluoranthene		81.9	96.9		%	17	50	31-MAR-17
Fluorene		77.3	94.2		%	20	50	31-MAR-17
Indeno(1,2,3-cd)pyrene		78.0	93.1		%	18	50	31-MAR-17
Naphthalene		74.4	90.8		%	20	50	31-MAR-17
Phenanthrene		77.8	95.0		%	20	50	31-MAR-17
Pyrene		86.3	102.0		%	17	50	31-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3688166								
WG2501143-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	31-MAR-17
2-Methylnaphthalene			<0.020		ug/L		0.02	31-MAR-17
Acenaphthene			<0.020		ug/L		0.02	31-MAR-17
Acenaphthylene			<0.020		ug/L		0.02	31-MAR-17
Anthracene			<0.020		ug/L		0.02	31-MAR-17
Benzo(a)anthracene			<0.020		ug/L		0.02	31-MAR-17
Benzo(a)pyrene			<0.010		ug/L		0.01	31-MAR-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	31-MAR-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	31-MAR-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	31-MAR-17
Chrysene			<0.020		ug/L		0.02	31-MAR-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	31-MAR-17
Fluoranthene			<0.020		ug/L		0.02	31-MAR-17
Fluorene			<0.020		ug/L		0.02	31-MAR-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	31-MAR-17
Naphthalene			<0.050		ug/L		0.05	31-MAR-17
Phenanthrene			<0.020		ug/L		0.02	31-MAR-17
Pyrene			<0.020		ug/L		0.02	31-MAR-17
Surrogate: d8-Naphthalene			109.8		%		60-140	31-MAR-17
Surrogate: d10-Phenanthrene			116.0		%		60-140	31-MAR-17
Surrogate: d12-Chrysene			115.3		%		60-140	31-MAR-17
Surrogate: d10-Acenaphthene			115.2		%		60-140	31-MAR-17
PH-WT	**Water**							
Batch R3686126								
WG2500598-16 DUP		**WG2500598-15**						
pH		7.89	7.86	J	pH units	0.03	0.2	27-MAR-17
WG2500598-13 LCS								
pH			7.00		pH units		6.9-7.1	27-MAR-17
VOC-511-HS-WT	**Water**							
Batch R3686227								
WG2500499-4 DUP		**WG2500499-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3686227								
WG2500499-4 DUP		**WG2500499-3**						
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-MAR-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-MAR-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-MAR-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-MAR-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-MAR-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-MAR-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-MAR-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-MAR-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-MAR-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
trans-1,2-Dichloroethylene		<0.50	<0.50		ug/L			28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3686227								
WG2500499-4 DUP		**WG2500499-3**						
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-MAR-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-17
WG2500499-1 LCS								
1,1,1,2-Tetrachloroethane			93.8		%		70-130	28-MAR-17
1,1,2,2-Tetrachloroethane			81.8		%		70-130	28-MAR-17
1,1,1-Trichloroethane			101.1		%		70-130	28-MAR-17
1,1,2-Trichloroethane			89.3		%		70-130	28-MAR-17
1,1-Dichloroethane			96.7		%		70-130	28-MAR-17
1,1-Dichloroethylene			99.8		%		70-130	28-MAR-17
1,2-Dibromoethane			84.8		%		70-130	28-MAR-17
1,2-Dichlorobenzene			104.1		%		70-130	28-MAR-17
1,2-Dichloroethane			90.7		%		70-130	28-MAR-17
1,2-Dichloropropane			95.2		%		70-130	28-MAR-17
1,3-Dichlorobenzene			105.6		%		70-130	28-MAR-17
1,4-Dichlorobenzene			109.3		%		70-130	28-MAR-17
Acetone			91.0		%		60-140	28-MAR-17
Benzene			102.3		%		70-130	28-MAR-17
Bromodichloromethane			92.4		%		70-130	28-MAR-17
Bromoform			83.6		%		70-130	28-MAR-17
Bromomethane			109.1		%		60-140	28-MAR-17
Carbon tetrachloride			100.2		%		70-130	28-MAR-17
Chlorobenzene			102.6		%		70-130	28-MAR-17
Chloroform			99.3		%		70-130	28-MAR-17
cis-1,2-Dichloroethylene			92.1		%		70-130	28-MAR-17
cis-1,3-Dichloropropene			96.3		%		70-130	28-MAR-17
Dibromochloromethane			92.9		%		70-130	28-MAR-17
Dichlorodifluoromethane			111.4		%		50-140	28-MAR-17
Ethylbenzene			100.6		%		70-130	28-MAR-17
n-Hexane			117.2		%		70-130	28-MAR-17
m+p-Xylenes			104.3		%		70-130	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3686227								
WG2500499-1 LCS								
Methyl Ethyl Ketone			82.0		%		60-140	28-MAR-17
Methyl Isobutyl Ketone			74.8		%		60-140	28-MAR-17
Methylene Chloride			100.2		%		70-130	28-MAR-17
MTBE			101.9		%		70-130	28-MAR-17
o-Xylene			100.0		%		70-130	28-MAR-17
Styrene			97.4		%		70-130	28-MAR-17
Tetrachloroethylene			106.2		%		70-130	28-MAR-17
Toluene			101.1		%		70-130	28-MAR-17
trans-1,2-Dichloroethylene			103.9		%		70-130	28-MAR-17
trans-1,3-Dichloropropene			92.1		%		70-130	28-MAR-17
Trichloroethylene			103.9		%		70-130	28-MAR-17
Trichlorofluoromethane			115.2		%		60-140	28-MAR-17
Vinyl chloride			105.3		%		60-140	28-MAR-17
WG2500499-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-MAR-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	28-MAR-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-MAR-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-MAR-17
1,1-Dichloroethane			<0.50		ug/L		0.5	28-MAR-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-MAR-17
1,2-Dibromoethane			<0.20		ug/L		0.2	28-MAR-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-MAR-17
1,2-Dichloroethane			<0.50		ug/L		0.5	28-MAR-17
1,2-Dichloropropane			<0.50		ug/L		0.5	28-MAR-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-MAR-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-MAR-17
Acetone			<30		ug/L		30	28-MAR-17
Benzene			<0.50		ug/L		0.5	28-MAR-17
Bromodichloromethane			<2.0		ug/L		2	28-MAR-17
Bromoform			<5.0		ug/L		5	28-MAR-17
Bromomethane			<0.50		ug/L		0.5	28-MAR-17
Carbon tetrachloride			<0.20		ug/L		0.2	28-MAR-17
Chlorobenzene			<0.50		ug/L		0.5	28-MAR-17
Chloroform			<1.0		ug/L		1	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3686227								
WG2500499-2 MB								
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-MAR-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-MAR-17
Dibromochloromethane			<2.0		ug/L		2	28-MAR-17
Dichlorodifluoromethane			<2.0		ug/L		2	28-MAR-17
Ethylbenzene			<0.50		ug/L		0.5	28-MAR-17
n-Hexane			<0.50		ug/L		0.5	28-MAR-17
m+p-Xylenes			<0.40		ug/L		0.4	28-MAR-17
Methyl Ethyl Ketone			<20		ug/L		20	28-MAR-17
Methyl Isobutyl Ketone			<20		ug/L		20	28-MAR-17
Methylene Chloride			<5.0		ug/L		5	28-MAR-17
MTBE			<2.0		ug/L		2	28-MAR-17
o-Xylene			<0.30		ug/L		0.3	28-MAR-17
Styrene			<0.50		ug/L		0.5	28-MAR-17
Tetrachloroethylene			<0.50		ug/L		0.5	28-MAR-17
Toluene			<0.50		ug/L		0.5	28-MAR-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-MAR-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-MAR-17
Trichloroethylene			<0.50		ug/L		0.5	28-MAR-17
Trichlorofluoromethane			<5.0		ug/L		5	28-MAR-17
Vinyl chloride			<0.50		ug/L		0.5	28-MAR-17
Surrogate: 1,4-Difluorobenzene			106.1		%		70-130	28-MAR-17
Surrogate: 4-Bromofluorobenzene			104.2		%		70-130	28-MAR-17
WG2500499-5 MS		**WG2500499-3**						
1,1,1,2-Tetrachloroethane			94.1		%		50-140	28-MAR-17
1,1,2,2-Tetrachloroethane			88.3		%		50-140	28-MAR-17
1,1,1-Trichloroethane			100.3		%		50-140	28-MAR-17
1,1,2-Trichloroethane			91.4		%		50-140	28-MAR-17
1,1-Dichloroethane			96.8		%		50-140	28-MAR-17
1,1-Dichloroethylene			97.1		%		50-140	28-MAR-17
1,2-Dibromoethane			87.2		%		50-140	28-MAR-17
1,2-Dichlorobenzene			104.7		%		50-140	28-MAR-17
1,2-Dichloroethane			94.0		%		50-140	28-MAR-17
1,2-Dichloropropane			97.8		%		50-140	28-MAR-17
1,3-Dichlorobenzene			104.0		%		50-140	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3686227								
WG2500499-5 MS		**WG2500499-3**						
1,4-Dichlorobenzene			107.2		%		50-140	28-MAR-17
Acetone			93.7		%		50-140	28-MAR-17
Benzene			102.9		%		50-140	28-MAR-17
Bromodichloromethane			95.3		%		50-140	28-MAR-17
Bromoform			86.0		%		50-140	28-MAR-17
Bromomethane			104.5		%		50-140	28-MAR-17
Carbon tetrachloride			98.3		%		50-140	28-MAR-17
Chlorobenzene			102.2		%		50-140	28-MAR-17
Chloroform			100.7		%		50-140	28-MAR-17
cis-1,2-Dichloroethylene			93.7		%		50-140	28-MAR-17
cis-1,3-Dichloropropene			96.9		%		50-140	28-MAR-17
Dibromochloromethane			93.6		%		50-140	28-MAR-17
Dichlorodifluoromethane			98.5		%		50-140	28-MAR-17
Ethylbenzene			98.2		%		50-140	28-MAR-17
n-Hexane			112.2		%		50-140	28-MAR-17
m+p-Xylenes			101.4		%		50-140	28-MAR-17
Methyl Ethyl Ketone			88.8		%		50-140	28-MAR-17
Methyl Isobutyl Ketone			83.6		%		50-140	28-MAR-17
Methylene Chloride			100.6		%		50-140	28-MAR-17
MTBE			102.4		%		50-140	28-MAR-17
o-Xylene			98.7		%		50-140	28-MAR-17
Styrene			97.4		%		50-140	28-MAR-17
Tetrachloroethylene			101.9		%		50-140	28-MAR-17
Toluene			99.1		%		50-140	28-MAR-17
trans-1,2-Dichloroethylene			102.4		%		50-140	28-MAR-17
trans-1,3-Dichloropropene			91.5		%		50-140	28-MAR-17
Trichloroethylene			103.2		%		50-140	28-MAR-17
Trichlorofluoromethane			110.0		%		50-140	28-MAR-17
Vinyl chloride			99.1		%		50-140	28-MAR-17

Quality Control Report

Workorder: L1905311 Report Date: 03-APR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

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
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
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.

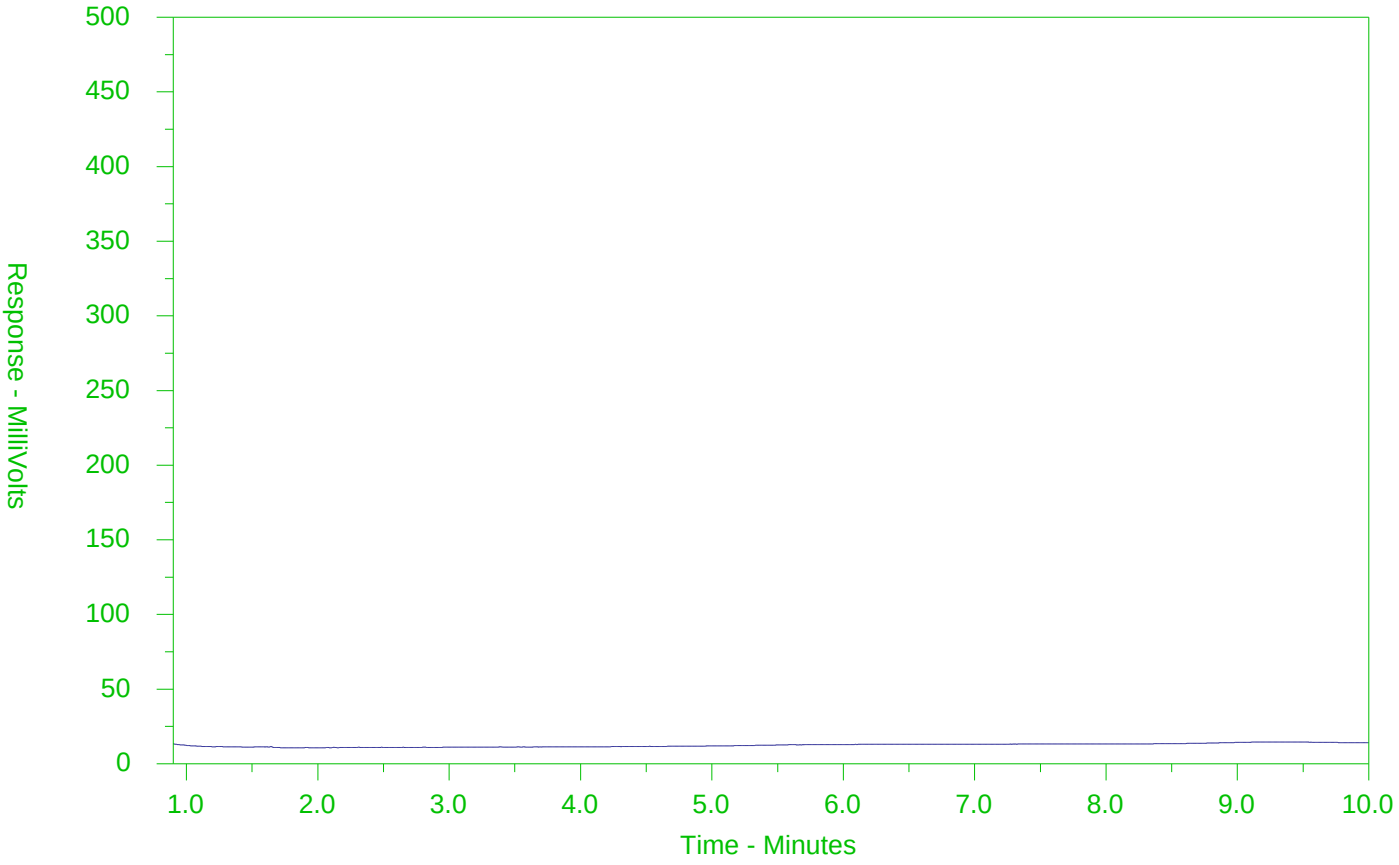
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where 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: L1905311-1
Client Sample ID: GW-11131634-032417-TB-001



←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.

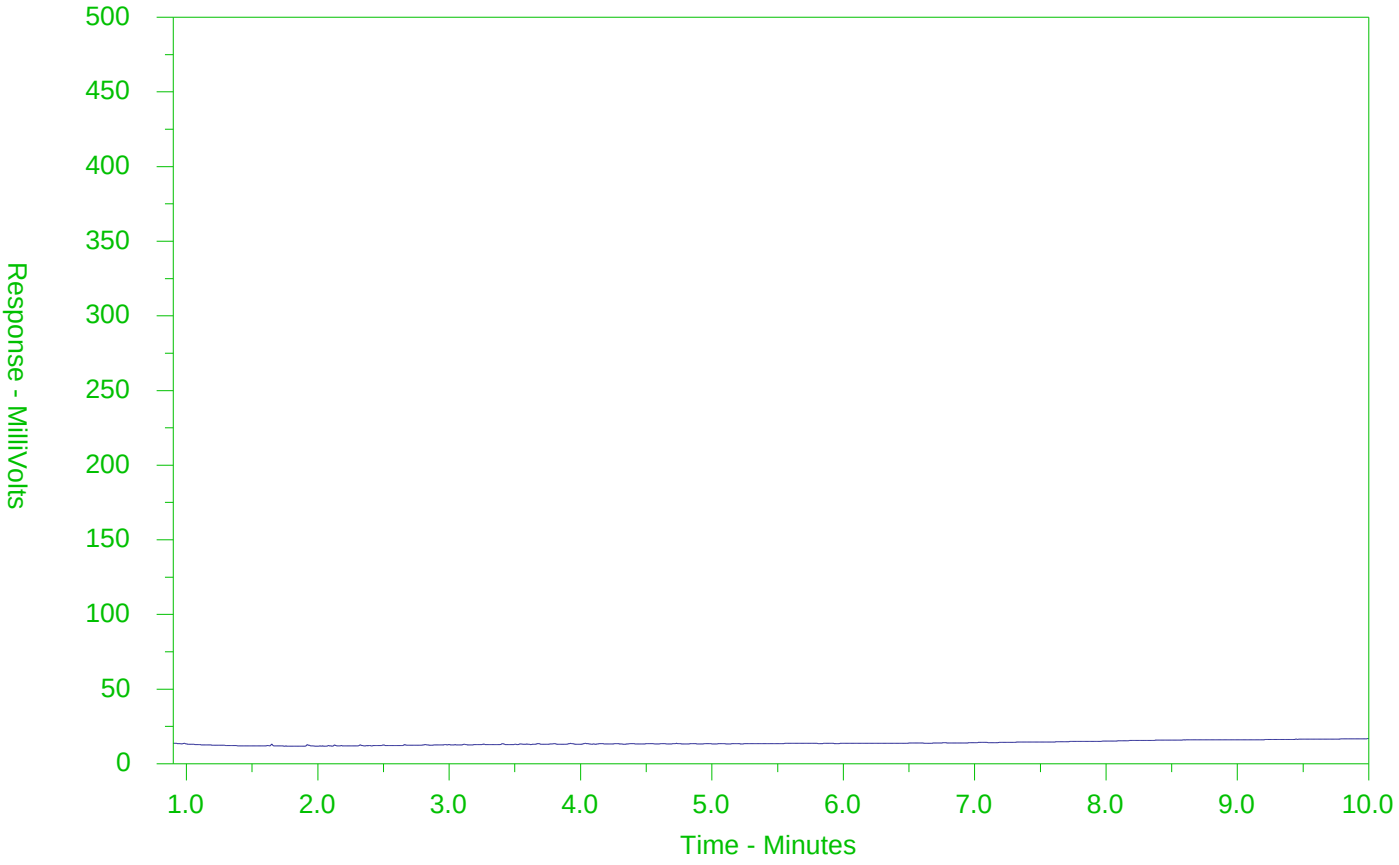
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1905311-2
Client Sample ID: GW-11131634-032417-TB-002



←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.

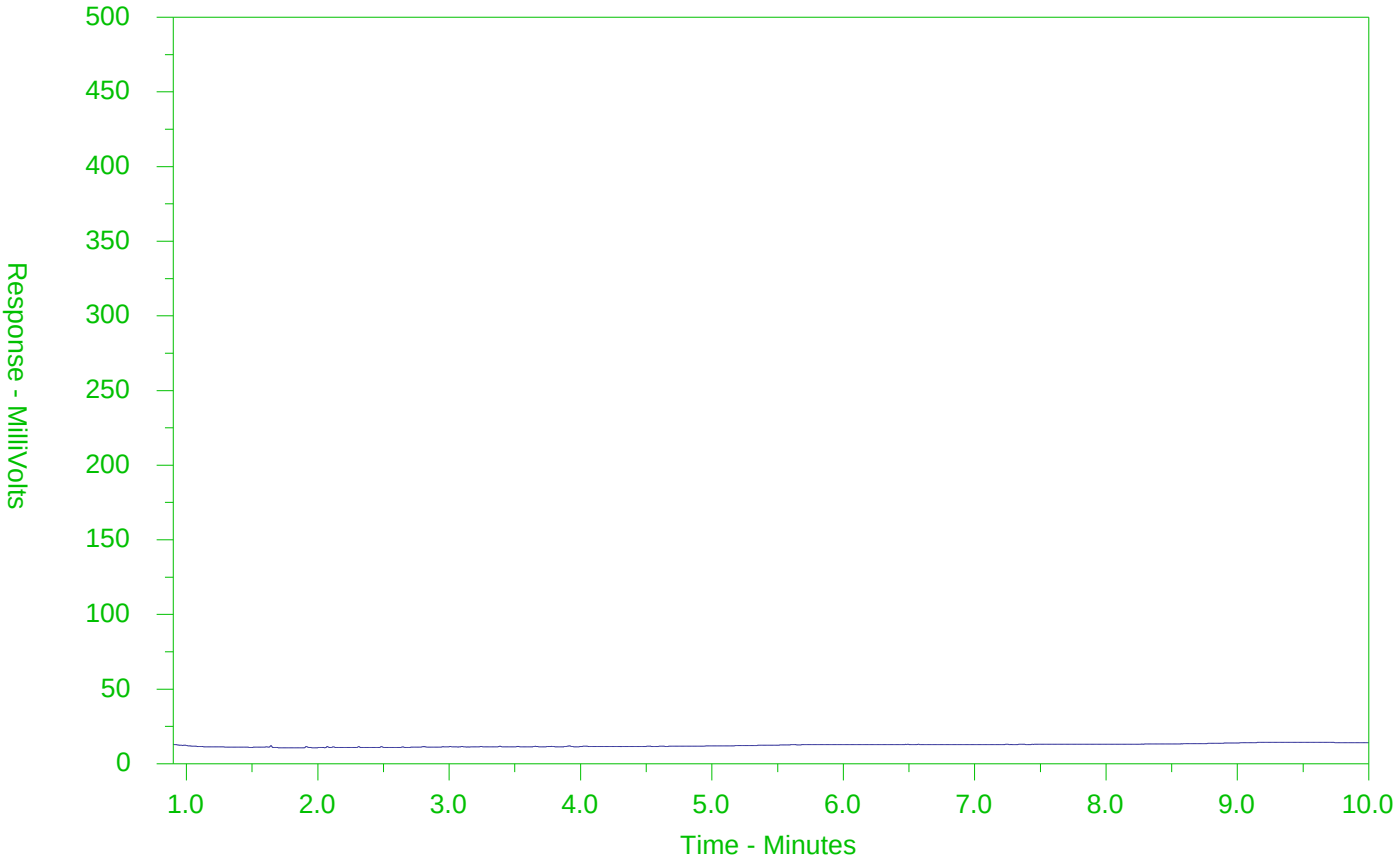
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1905311-3
Client Sample ID: GW-11131634-032417-TB-003



←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.

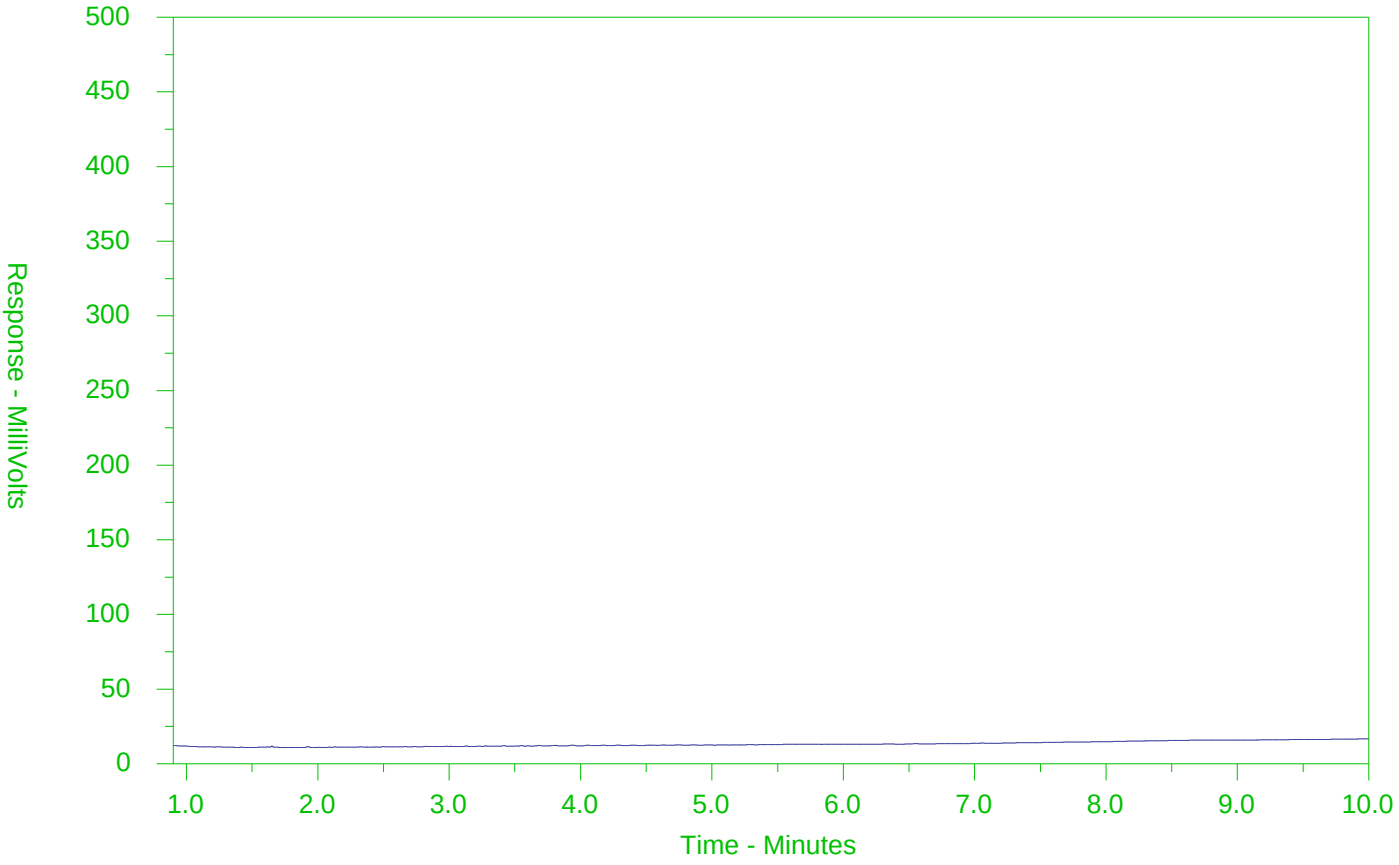
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1905311-4
Client Sample ID: GW-11131634-032417-TB-004



←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.

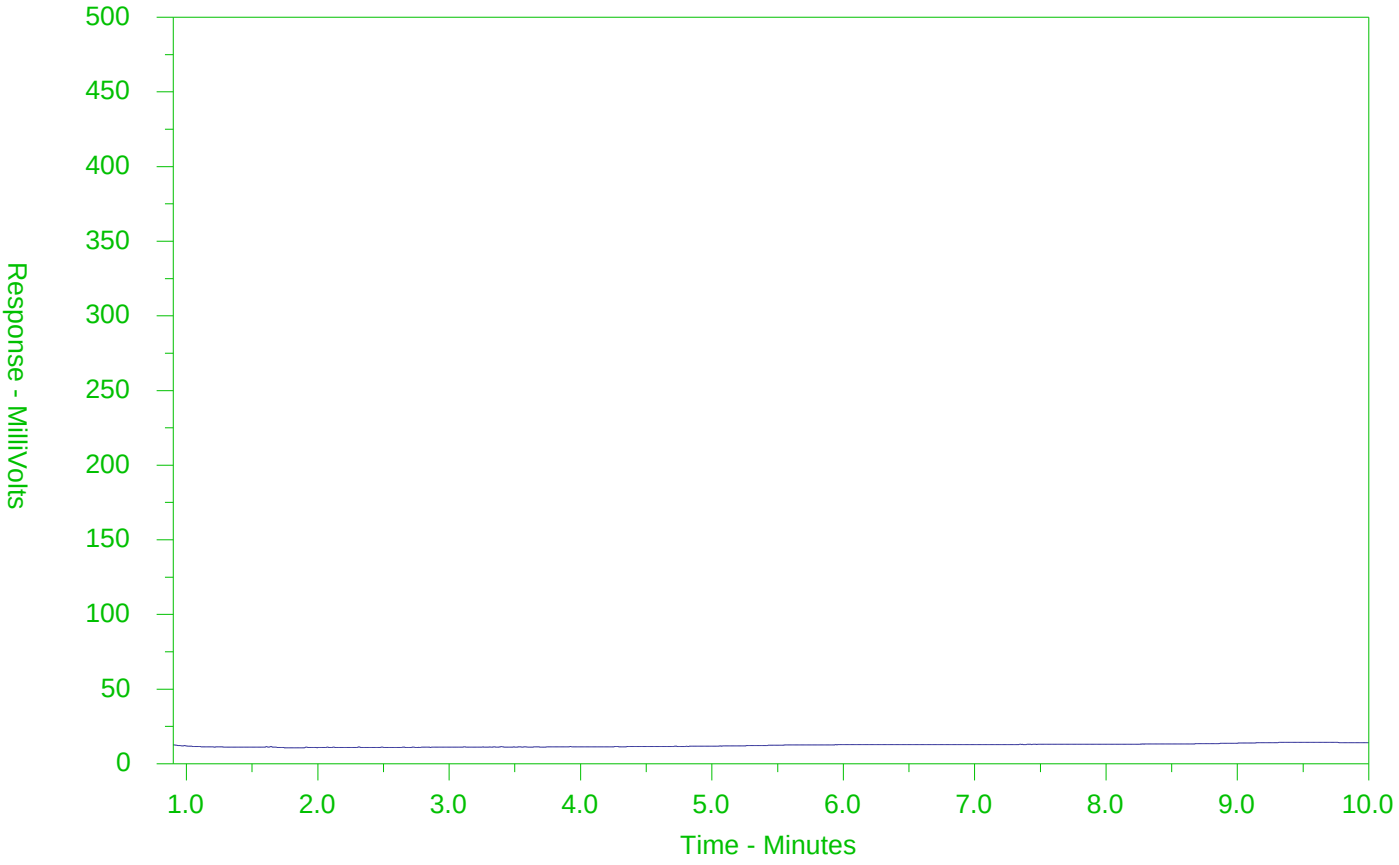
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1905311-5
Client Sample ID: GW-11131634-032417-TB-005



←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.

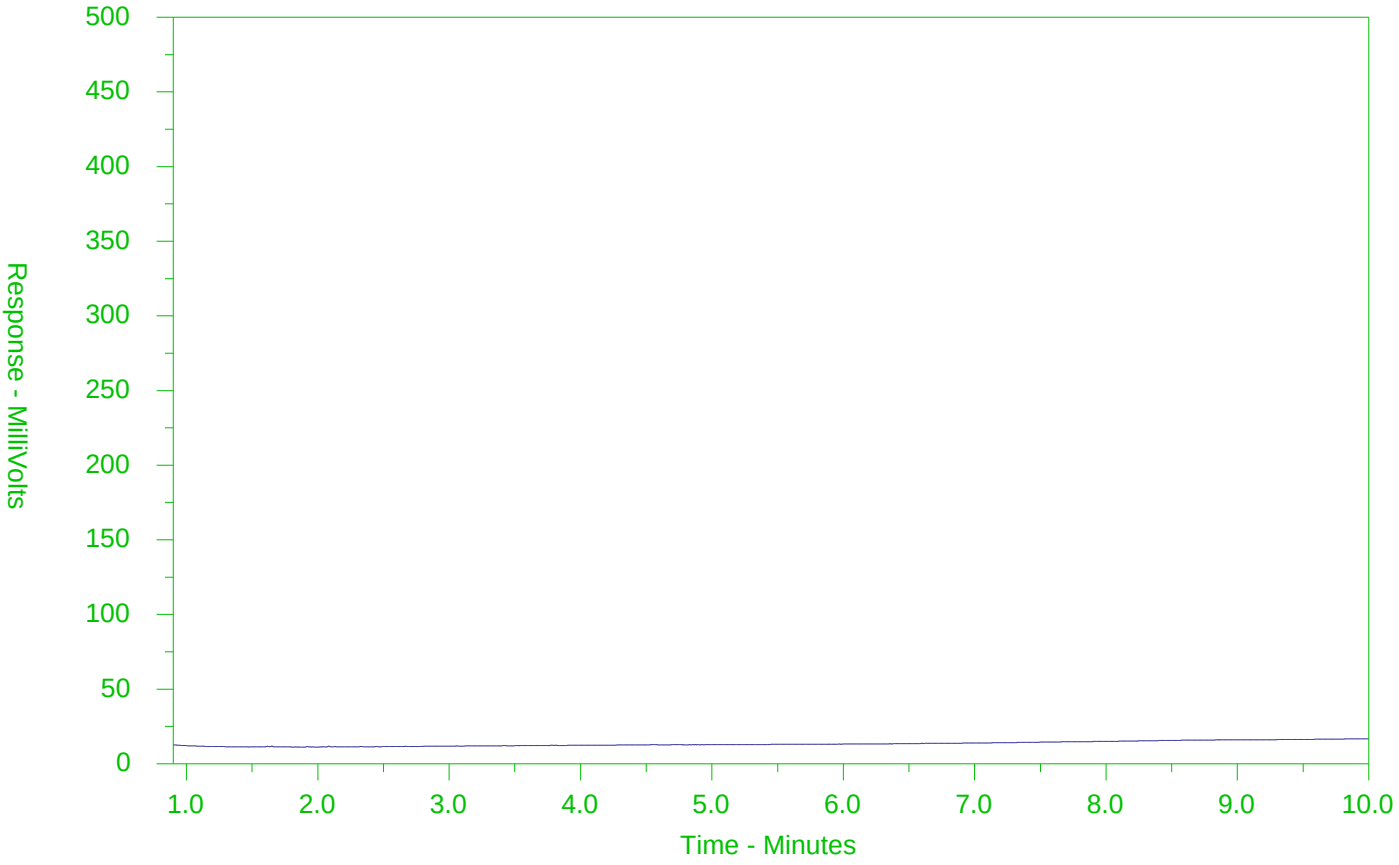
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1905311-6
Client Sample ID: GW-11131634-032417-TB-006



←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.

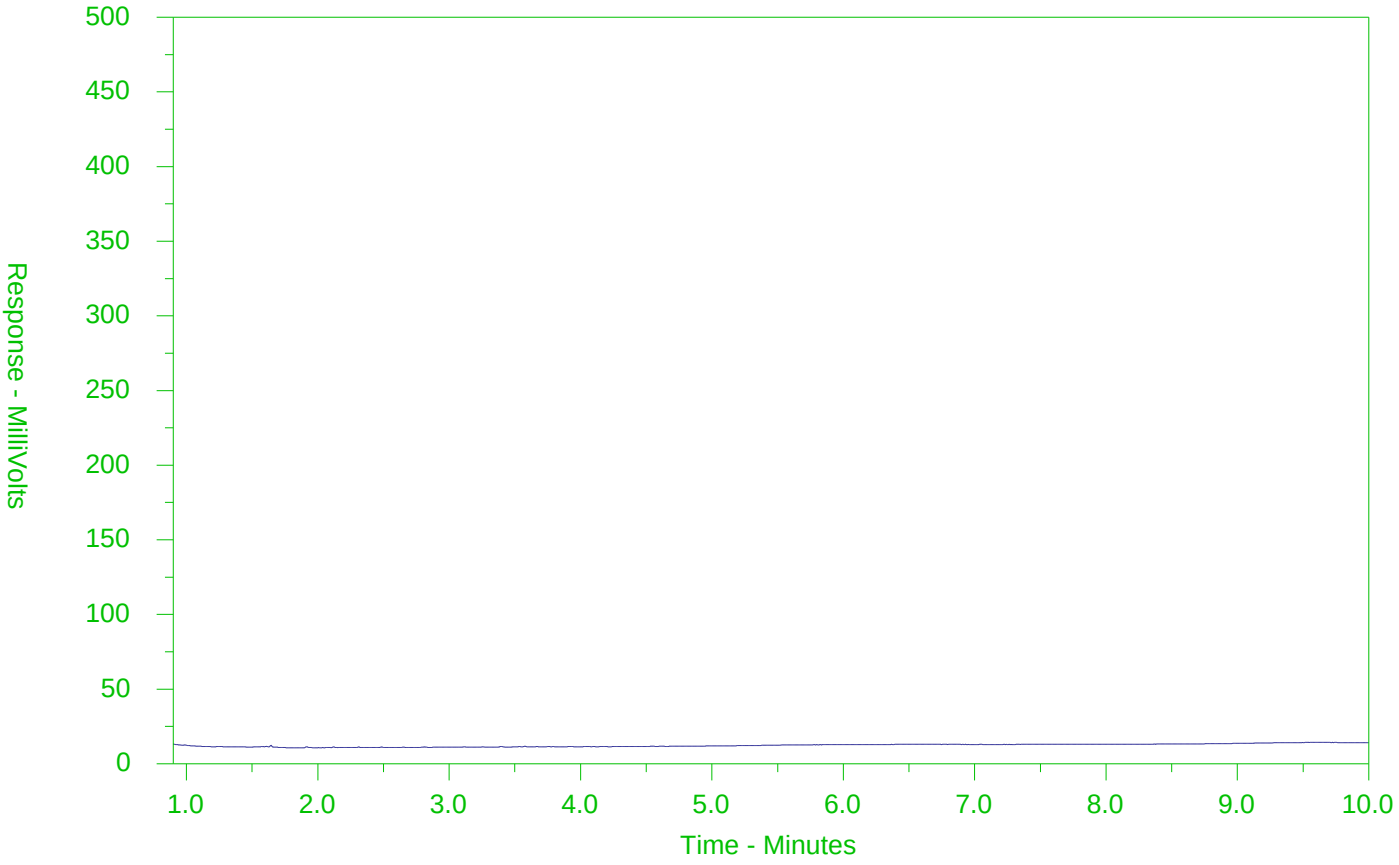
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1905311-7
Client Sample ID: GW-11131634-032417-TB-007



←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

L1905311-COFC

COC Number: 15 - 555094

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	GHD Limited
Contact:	Preeti Gunrajan
Phone:	519-884-0510
	Company address below will appear on the final report
Street:	651 Colby Drive
City/Province:	Waterloo, ON
Postal Code:	
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #:
Job #: 1113163 4 - 20
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L1905311 COC Mar 25/17
ALS Contact: Laura Ermeta
Sampler: T. Brindle

If E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐
EMERGENCY: 1 Business day [E1] ☐ Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	VOC, FP	F2-F4 PAH	Dissolved 153 Metals	Dissolved 153 Hg	Dissolved 153 CrVI	EC, pH						HOLD	Number of Containers
1	GW-1113163 4-032417-TB-001	24-Mar-17	10:35	GW	X	X	X	X	X	X	X							11
2	GW-1113163 4-032417-TB-002		10:40		X	X	X	X	X	X	X							11
3	GW-1113163 4-032417-TB-003		11:40		X	X	X	X	X	X	X							11
4	GW-1113163 4-032417-TB-004		12:25		X	X	X	X	X	X	X							11
5	GW-1113163 4-032417-TB-005		13:20		X	X	X	X	X	X	X							11
6	GW-1113163 4-032417-TB-006		14:20		X	X	X	X	X	X	X							11
7	GW-1113163 4-032417-TB-007		15:00		X	X	X	X	X	X	X							11
8	GW-1113163 4-032417-TB-008		16:00		X	X	X				X						X	8
9	TB TRIP BLANK		16:00		X													3 2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please see PO for details of analysis for RSC. Please hold TB-008.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
						7.7

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: TARUN BRINDLE	Date: 03/25/17	Time: 11:58	Received by:	Date:	Time:	Received by:	Date: 25-MAR-17	Time: 11:58

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

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.

VOC-343

GHD Limited (Waterloo)
ATTN: PREETI GURURAJAN
651 COLBY DRIVE
WATERLOO ON N2V 1C2

Date Received: 22-MAR-17
Report Date: 29-MAR-17 14:29 (MT)
Version: FINAL

Client Phone: 519-884-0510

Certificate of Analysis

Lab Work Order #: L1904044

Project P.O. #: PENDING
Job Reference: 11131634-20
C of C Numbers: 15-555091
Legal Site Desc:

LAURA ERMETA
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-1 S-11131634-032017-TB-001 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:30 Matrix: SOIL							
Physical Tests							
Conductivity	0.428		0.0040	mS/cm		28-MAR-17	R3686336
% Moisture	18.5		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.09		0.10	pH units		23-MAR-17	R3682549
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0571		0.0010		26-MAR-17	26-MAR-17	R3685815
Fraction Organic Carbon	0.0575		0.0010		26-MAR-17	26-MAR-17	R3685815
Fraction Organic Carbon	0.0575		0.0010		26-MAR-17	26-MAR-17	R3685815
Average Fraction Organic Carbon	0.0574		0.0010		26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	5.71		0.10	%	26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	5.75		0.10	%	26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	5.75		0.10	%	26-MAR-17	26-MAR-17	R3685815
Saturated Paste Extractables							
SAR	1.44		0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	35.0		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	2.8		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	32.9		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	1.4		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	13.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	184		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	0.51		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	10.7		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	1.15		0.10	ug/g	28-MAR-17	28-MAR-17	R3686474
Cadmium (Cd)	0.85		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Chromium (Cr)	15.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	7.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	45.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	1070		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.212		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	20.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Silver (Ag)	0.31		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	22.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	299		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-1 S-11131634-032017-TB-001 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:30 Matrix: SOIL							
Volatile Organic Compounds							
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		28-MAR-17	
Ethylbenzene	0.020		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	0.087	RRR	0.080	ug/g	27-MAR-17	28-MAR-17	R3686199
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	0.057		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	0.054		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	0.111		0.050	ug/g		28-MAR-17	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-1 S-11131634-032017-TB-001 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:30 Matrix: SOIL							
Volatile Organic Compounds							
Surrogate: 4-Bromofluorobenzene	81.8		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	93.0		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		28-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685672
F2-Naphth	<10		10	ug/g		28-MAR-17	
F3 (C16-C34)	156		50	ug/g	22-MAR-17	24-MAR-17	R3685672
F3-PAH	154		50	ug/g		28-MAR-17	
F4 (C34-C50)	64		50	ug/g	22-MAR-17	24-MAR-17	R3685672
Total Hydrocarbons (C6-C50)	220		72	ug/g		28-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685672
Surrogate: 2-Bromobenzotrifluoride	82.9		60-140	%	22-MAR-17	24-MAR-17	R3685672
Surrogate: 3,4-Dichlorotoluene	85.0		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Acenaphthylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)anthracene	0.131		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)pyrene	0.124		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(b)fluoranthene	0.194		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(g,h,i)perylene	0.095		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(k)fluoranthene	0.063		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Chrysene	0.175		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluoranthene	0.282		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluorene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Indeno(1,2,3-cd)pyrene	0.086		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
1+2-Methylnaphthalenes	0.162		0.042	ug/g		24-MAR-17	
1-Methylnaphthalene	0.089		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
2-Methylnaphthalene	0.073		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
Naphthalene	0.053		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Phenanthrene	0.296		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Pyrene	0.238		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Surrogate: 2-Fluorobiphenyl	101.2		50-140	%	22-MAR-17	24-MAR-17	R3684406
Surrogate: p-Terphenyl d14	94.8		50-140	%	22-MAR-17	24-MAR-17	R3684406
Report Remarks : RRR-Similar Toluene level seen in trip blank but results were less than reporting limit.							
L1904044-2 S-11131634-032017-TB-002 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:35 Matrix: SOIL							
Physical Tests							
Conductivity	0.214		0.0040	mS/cm		28-MAR-17	R3686336

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-2 S-11131634-032017-TB-002 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:35 Matrix: SOIL							
Physical Tests							
% Moisture	16.3		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.34		0.10	pH units		23-MAR-17	R3682549
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Saturated Paste Extractables							
SAR	1.30		0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	12.0		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	2.2		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	18.6		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	3.7		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	53.5		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	6.3		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	0.25		0.10	ug/g	28-MAR-17	28-MAR-17	R3686474
Cadmium (Cd)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Chromium (Cr)	13.8		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	7.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	20.4		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	14.3		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.0148		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	14.9		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Silver (Ag)	<0.20		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	24.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	40.1		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	0.90		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-2 S-11131634-032017-TB-002 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:35 Matrix: SOIL							
Volatile Organic Compounds							
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	84.0		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	93.1		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		27-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685672
F2-Naphth	<10		10	ug/g		27-MAR-17	
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685672

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-2 S-11131634-032017-TB-002 Sampled By: T. BRINDLE on 20-MAR-17 @ 09:35 Matrix: SOIL							
Hydrocarbons							
F3-PAH	<50		50	ug/g		27-MAR-17	
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685672
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685672
Surrogate: 2-Bromobenzotrifluoride	83.3		60-140	%	22-MAR-17	24-MAR-17	R3685672
Surrogate: 3,4-Dichlorotoluene	88.9		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Acenaphthylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Chrysene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluorene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		24-MAR-17	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
2-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
Naphthalene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Phenanthrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Surrogate: 2-Fluorobiphenyl	100.3		50-140	%	22-MAR-17	24-MAR-17	R3684406
Surrogate: p-Terphenyl d14	92.1		50-140	%	22-MAR-17	24-MAR-17	R3684406
L1904044-3 S-11131634-032017-TB-003 Sampled By: T. BRINDLE on 20-MAR-17 @ 12:30 Matrix: SOIL							
Physical Tests							
% Moisture	17.3		0.10	%	22-MAR-17	22-MAR-17	R3681884
Hydrocarbons							
F1 (C6-C10)	1670	DLHC	200	ug/g	23-MAR-17	27-MAR-17	R3684209
F2 (C10-C16)	75		10	ug/g	22-MAR-17	24-MAR-17	R3685672
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685672
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685672
Total Hydrocarbons (C6-C50)	1750		210	ug/g		27-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685672
Surrogate: 2-Bromobenzotrifluoride	86.3		60-140	%	22-MAR-17	24-MAR-17	R3685672
Surrogate: 3,4-Dichlorotoluene	N/A	SDO:RNA	60-140	%	23-MAR-17	27-MAR-17	R3684209

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-3 S-11131634-032017-TB-003 Sampled By: T. BRINDLE on 20-MAR-17 @ 12:30 Matrix: SOIL							
Hydrocarbons							
L1904044-4 S-11131634-032017-TB-004 Sampled By: T. BRINDLE on 20-MAR-17 @ 12:35 Matrix: SOIL							
Physical Tests							
% Moisture	8.42		0.10	%	22-MAR-17	22-MAR-17	R3681884
Hydrocarbons							
F1 (C6-C10)	19.7		5.0	ug/g	23-MAR-17	24-MAR-17	R3684209
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685672
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685672
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685672
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685672
Surrogate: 2-Bromobenzotrifluoride	82.2		60-140	%	22-MAR-17	24-MAR-17	R3685672
Surrogate: 3,4-Dichlorotoluene	94.4		60-140	%	23-MAR-17	24-MAR-17	R3684209
L1904044-7 S-11131634-032117-TB-007 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:00 Matrix: SOIL							
Physical Tests							
Conductivity	0.265		0.0040	mS/cm		28-MAR-17	R3686336
% Moisture	9.55		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.79		0.10	pH units		23-MAR-17	R3682549
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0027		0.0010		26-MAR-17	26-MAR-17	R3685815
Fraction Organic Carbon	0.0029		0.0010		26-MAR-17	26-MAR-17	R3685815
Fraction Organic Carbon	0.0030		0.0010		26-MAR-17	26-MAR-17	R3685815
Average Fraction Organic Carbon	0.0029		0.0010		26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	0.27		0.10	%	26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	0.29		0.10	%	26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	0.30		0.10	%	26-MAR-17	26-MAR-17	R3685815
Saturated Paste Extractables							
SAR	4.22	SAR:M	0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	5.2		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	<1.0		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	35.1		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	5.3		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	76.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	7.7		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	0.21		0.10	ug/g	28-MAR-17	28-MAR-17	R3686474
Cadmium (Cd)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-7 S-11131634-032117-TB-007 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:00 Matrix: SOIL							
Metals							
Chromium (Cr)	13.7		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	8.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	24.7		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	6.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.0116		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	16.4		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Silver (Ag)	<0.20		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	21.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	48.1		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-7 S-11131634-032117-TB-007 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:00 Matrix: SOIL							
Volatile Organic Compounds							
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	92.7		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	102.3		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		27-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685652
F2-Naphth	<10		10	ug/g		27-MAR-17	
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
F3-PAH	<50		50	ug/g		27-MAR-17	
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685652
Surrogate: 2-Bromobenzotrifluoride	86.9		60-140	%	22-MAR-17	24-MAR-17	R3685652
Surrogate: 3,4-Dichlorotoluene	89.7		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Acenaphthylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Chrysene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-7 S-11131634-032117-TB-007 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:00 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluorene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		24-MAR-17	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
2-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
Naphthalene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Phenanthrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Surrogate: 2-Fluorobiphenyl	99.6		50-140	%	22-MAR-17	24-MAR-17	R3684406
Surrogate: p-Terphenyl d14	90.6		50-140	%	22-MAR-17	24-MAR-17	R3684406
L1904044-8 S-11131634-032117-TB-008 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:05 Matrix: SOIL							
Physical Tests							
Conductivity	0.661		0.0040	mS/cm		28-MAR-17	R3686336
% Moisture	16.1		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.64		0.10	pH units		23-MAR-17	R3682549
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Saturated Paste Extractables							
SAR	3.34		0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	27.3		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	12.1		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	83.4		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	4.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	95.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	6.5		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	0.21		0.10	ug/g	28-MAR-17	28-MAR-17	R3686474
Cadmium (Cd)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Chromium (Cr)	16.5		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	9.1		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	27.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	12.7		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.0396		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	18.4		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-8 S-11131634-032117-TB-008 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:05 Matrix: SOIL							
Metals							
Silver (Ag)	<0.20		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	25.3		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	45.8		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-8 S-11131634-032117-TB-008 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:05 Matrix: SOIL							
Volatile Organic Compounds							
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	84.8		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	95.1		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		27-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685652
F2-Naphth	<10		10	ug/g		27-MAR-17	
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
F3-PAH	<50		50	ug/g		27-MAR-17	
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685652
Surrogate: 2-Bromobenzotrifluoride	86.5		60-140	%	22-MAR-17	24-MAR-17	R3685652
Surrogate: 3,4-Dichlorotoluene	91.0		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Acenaphthylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Chrysene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluorene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		24-MAR-17	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
2-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
Naphthalene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-8 S-11131634-032117-TB-008 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:05 Matrix: SOIL							
Polycyclic Aromatic Hydrocarbons							
Phenanthrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Surrogate: 2-Fluorobiphenyl	100.0		50-140	%	22-MAR-17	24-MAR-17	R3684406
Surrogate: p-Terphenyl d14	91.7		50-140	%	22-MAR-17	24-MAR-17	R3684406
L1904044-9 S-11131634-032117-TB-009 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:10 Matrix: SOIL							
Physical Tests							
Conductivity	0.532		0.0040	mS/cm		28-MAR-17	R3686336
% Moisture	16.2		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.55		0.10	pH units		23-MAR-17	R3682549
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Saturated Paste Extractables							
SAR	4.28		0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	14.2		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	6.8		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	78.4		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	4.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	104		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	5.4		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	0.15		0.10	ug/g	28-MAR-17	28-MAR-17	R3686474
Cadmium (Cd)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Chromium (Cr)	14.7		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	8.4		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	27.4		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	5.8		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.0118		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	16.8		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Silver (Ag)	<0.20		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	23.8		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	44.2		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-9 S-11131634-032117-TB-009 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:10 Matrix: SOIL							
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-9 S-11131634-032117-TB-009 Sampled By: T. BRINDLE on 21-MAR-17 @ 14:10 Matrix: SOIL							
Volatile Organic Compounds							
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	88.6		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	98.2		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		27-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685652
F2-Naphth	<10		10	ug/g		27-MAR-17	
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
F3-PAH	<50		50	ug/g		27-MAR-17	
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
Total Hydrocarbons (C6-C50)	<72		72	ug/g		27-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685652
Surrogate: 2-Bromobenzotrifluoride	90.2		60-140	%	22-MAR-17	24-MAR-17	R3685652
Surrogate: 3,4-Dichlorotoluene	91.8		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Acenaphthylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(a)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(b)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Benzo(k)fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Chrysene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluoranthene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Fluorene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		24-MAR-17	
1-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
2-Methylnaphthalene	<0.030		0.030	ug/g	22-MAR-17	24-MAR-17	R3684406
Naphthalene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Phenanthrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Pyrene	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3684406
Surrogate: 2-Fluorobiphenyl	99.6		50-140	%	22-MAR-17	24-MAR-17	R3684406
Surrogate: p-Terphenyl d14	90.3		50-140	%	22-MAR-17	24-MAR-17	R3684406
L1904044-10 S-11131634-032117-TB-010 Sampled By: T. BRINDLE on 21-MAR-17 @ 17:55 Matrix: SOIL							
Physical Tests							
Conductivity	0.368		0.0040	mS/cm		28-MAR-17	R3686336

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-10 S-11131634-032117-TB-010 Sampled By: T. BRINDLE on 21-MAR-17 @ 17:55 Matrix: SOIL							
Physical Tests							
% Moisture	10.0		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.84		0.10	pH units		23-MAR-17	R3682549
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0035		0.0010		26-MAR-17	26-MAR-17	R3685815
Fraction Organic Carbon	0.0032		0.0010		26-MAR-17	26-MAR-17	R3685815
Fraction Organic Carbon	0.0033		0.0010		26-MAR-17	26-MAR-17	R3685815
Average Fraction Organic Carbon	0.0033		0.0010		26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	0.35		0.10	%	26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	0.32		0.10	%	26-MAR-17	26-MAR-17	R3685815
Total Organic Carbon	0.33		0.10	%	26-MAR-17	26-MAR-17	R3685815
Saturated Paste Extractables							
SAR	7.65		0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	3.7		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	1.1		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	65.5		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	5.8		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	80.5		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	8.2		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	0.23		0.10	ug/g	28-MAR-17	28-MAR-17	R3687014
Cadmium (Cd)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Chromium (Cr)	14.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	7.9		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	30.2		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	49.1		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.0311		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	26.8		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Silver (Ag)	<0.20		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	21.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	82.0		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-10 S-11131634-032117-TB-010 Sampled By: T. BRINDLE on 21-MAR-17 @ 17:55 Matrix: SOIL							
Volatile Organic Compounds							
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	92.7		50-140	%	23-MAR-17	24-MAR-17	R3684856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-10 S-11131634-032117-TB-010 Sampled By: T. BRINDLE on 21-MAR-17 @ 17:55 Matrix: SOIL							
Volatile Organic Compounds							
Surrogate: 1,4-Difluorobenzene	104.5		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		28-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685652
F2-Naphth	<10		10	ug/g		28-MAR-17	
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
F3-PAH	<50		50	ug/g		28-MAR-17	
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
Total Hydrocarbons (C6-C50)	<72		72	ug/g		28-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685652
Surrogate: 2-Bromobenzotrifluoride	87.0		60-140	%	22-MAR-17	24-MAR-17	R3685652
Surrogate: 3,4-Dichlorotoluene	91.3		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Acenaphthylene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Anthracene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(a)anthracene	0.085		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(a)pyrene	0.071		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(b)fluoranthene	0.110		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(k)fluoranthene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Chrysene	0.077		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Fluoranthene	0.164		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Fluorene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
1+2-Methylnaphthalenes	0.215		0.042	ug/g		28-MAR-17	
1-Methylnaphthalene	0.092		0.030	ug/g	23-MAR-17	28-MAR-17	R3686584
2-Methylnaphthalene	0.123		0.030	ug/g	23-MAR-17	28-MAR-17	R3686584
Naphthalene	0.105		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Phenanthrene	0.117		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Pyrene	0.140		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Surrogate: 2-Fluorobiphenyl	97.7		50-140	%	23-MAR-17	28-MAR-17	R3686584
Surrogate: p-Terphenyl d14	92.6		50-140	%	23-MAR-17	28-MAR-17	R3686584
L1904044-11 S-11131634-032117-TB-011 Sampled By: T. BRINDLE on 21-MAR-17 @ 18:00 Matrix: SOIL							
Physical Tests							
Conductivity	0.610		0.0040	mS/cm		28-MAR-17	R3686336
% Moisture	13.9		0.10	%	22-MAR-17	22-MAR-17	R3681884
pH	7.62		0.10	pH units		23-MAR-17	R3682549

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-11 S-11131634-032117-TB-011 Sampled By: T. BRINDLE on 21-MAR-17 @ 18:00 Matrix: SOIL							
Physical Tests							
Cyanides							
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	22-MAR-17	24-MAR-17	R3685556
Saturated Paste Extractables							
SAR	1.29		0.10	SAR		28-MAR-17	R3686423
Calcium (Ca)	52.9		1.0	mg/L		28-MAR-17	R3686423
Magnesium (Mg)	15.0		1.0	mg/L		28-MAR-17	R3686423
Sodium (Na)	41.2		1.0	mg/L		28-MAR-17	R3686423
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Arsenic (As)	6.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Barium (Ba)	88.7		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Beryllium (Be)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B)	7.4		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Boron (B), Hot Water Ext.	0.17		0.10	ug/g	28-MAR-17	28-MAR-17	R3687014
Cadmium (Cd)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Chromium (Cr)	19.5		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Cobalt (Co)	10.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Copper (Cu)	29.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Lead (Pb)	25.5		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Mercury (Hg)	0.0284		0.0050	ug/g	24-MAR-17	24-MAR-17	R3684906
Molybdenum (Mo)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Nickel (Ni)	21.9		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Selenium (Se)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Silver (Ag)	<0.20		0.20	ug/g	24-MAR-17	24-MAR-17	R3685692
Thallium (Tl)	<0.50		0.50	ug/g	24-MAR-17	24-MAR-17	R3685692
Uranium (U)	<1.0		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Vanadium (V)	29.6		1.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Zinc (Zn)	54.5		5.0	ug/g	24-MAR-17	24-MAR-17	R3685692
Speciated Metals							
Chromium, Hexavalent	0.30		0.20	ug/g	22-MAR-17	23-MAR-17	R3684464
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-11 S-11131634-032117-TB-011 Sampled By: T. BRINDLE on 21-MAR-17 @ 18:00 Matrix: SOIL							
Volatile Organic Compounds							
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	87.7		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	98.5		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
F1-BTEX	<5.0		5.0	ug/g		28-MAR-17	
F2 (C10-C16)	<10		10	ug/g	22-MAR-17	24-MAR-17	R3685652
F2-Naphth	<10		10	ug/g		28-MAR-17	
F3 (C16-C34)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652
F3-PAH	<50		50	ug/g		28-MAR-17	
F4 (C34-C50)	<50		50	ug/g	22-MAR-17	24-MAR-17	R3685652

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-11 S-11131634-032117-TB-011 Sampled By: T. BRINDLE on 21-MAR-17 @ 18:00 Matrix: SOIL							
Hydrocarbons							
Total Hydrocarbons (C6-C50)	<72		72	ug/g		28-MAR-17	
Chrom. to baseline at nC50	YES				22-MAR-17	24-MAR-17	R3685652
Surrogate: 2-Bromobenzotrifluoride	82.7		60-140	%	22-MAR-17	24-MAR-17	R3685652
Surrogate: 3,4-Dichlorotoluene	85.1		60-140	%	23-MAR-17	24-MAR-17	R3684856
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Acenaphthylene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Anthracene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(a)anthracene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(a)pyrene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(b)fluoranthene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(g,h,i)perylene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Benzo(k)fluoranthene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Chrysene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Fluoranthene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Fluorene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Indeno(1,2,3-cd)pyrene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
1+2-Methylnaphthalenes	<0.042		0.042	ug/g		28-MAR-17	
1-Methylnaphthalene	<0.030		0.030	ug/g	23-MAR-17	28-MAR-17	R3686584
2-Methylnaphthalene	<0.030		0.030	ug/g	23-MAR-17	28-MAR-17	R3686584
Naphthalene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Phenanthrene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Pyrene	<0.050		0.050	ug/g	23-MAR-17	28-MAR-17	R3686584
Surrogate: 2-Fluorobiphenyl	100.5		50-140	%	23-MAR-17	28-MAR-17	R3686584
Surrogate: p-Terphenyl d14	96.6		50-140	%	23-MAR-17	28-MAR-17	R3686584
L1904044-12 S-11131634-032117-TB-TB1 Sampled By: T. BRINDLE on 21-MAR-17 @ 15:00 Matrix: SOIL							
Physical Tests							
% Moisture	<0.10		0.10	%	22-MAR-17	22-MAR-17	R3681884
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Benzene	<0.0068		0.0068	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromodichloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromoform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Bromomethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Carbon tetrachloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dibromochloromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Chloroform	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dibromoethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904044-12 S-11131634-032117-TB-TB1 Sampled By: T. BRINDLE on 21-MAR-17 @ 15:00 Matrix: SOIL							
Volatile Organic Compounds							
1,2-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,4-Dichlorobenzene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Dichlorodifluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methylene Chloride	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,2-Dichloropropane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		24-MAR-17	
Ethylbenzene	<0.018		0.018	ug/g	23-MAR-17	24-MAR-17	R3684856
n-Hexane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Ethyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	23-MAR-17	24-MAR-17	R3684856
MTBE	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Styrene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Tetrachloroethylene	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Toluene	<0.080		0.080	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,1-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
1,1,2-Trichloroethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichloroethylene	<0.010		0.010	ug/g	23-MAR-17	24-MAR-17	R3684856
Trichlorofluoromethane	<0.050		0.050	ug/g	23-MAR-17	24-MAR-17	R3684856
Vinyl chloride	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
o-Xylene	<0.020		0.020	ug/g	23-MAR-17	24-MAR-17	R3684856
m+p-Xylenes	<0.030		0.030	ug/g	23-MAR-17	24-MAR-17	R3684856
Xylenes (Total)	<0.050		0.050	ug/g		24-MAR-17	
Surrogate: 4-Bromofluorobenzene	98.7		50-140	%	23-MAR-17	24-MAR-17	R3684856
Surrogate: 1,4-Difluorobenzene	108.2		50-140	%	23-MAR-17	24-MAR-17	R3684856
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	23-MAR-17	24-MAR-17	R3684856
Surrogate: 3,4-Dichlorotoluene	88.1		60-140	%	23-MAR-17	24-MAR-17	R3684856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
SDO:RNA	Surrogate diluted out:% recovery not available

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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).

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

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

Reference Information

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

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

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).

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)

Dried, ground and sieved 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

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 techniqueis 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).

TOC-R511-WT Soil TOC & FOC-O.Reg 153/04 (July 2011) CARTER 21.3.2

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental

Reference Information

Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

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

Total xylenes represents the sum of o-xylene and m&p-xylene.

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

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

Chain of Custody Numbers:

15-555091

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 weight of sample
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.

Quality Control Report

Workorder: L1904044 Report Date: 29-MAR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3686474								
WG2501103-4 DUP		**L1903977-5**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	28-MAR-17
WG2501103-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			107.1		%		70-130	28-MAR-17
WG2501103-3 LCS								
Boron (B), Hot Water Ext.			112.4		%		70-130	28-MAR-17
WG2501103-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	28-MAR-17
Batch R3687014								
WG2501104-4 DUP		**L1904250-6**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	28-MAR-17
WG2501104-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			107.6		%		70-130	28-MAR-17
WG2501104-3 LCS								
Boron (B), Hot Water Ext.			108.9		%		70-130	28-MAR-17
WG2501104-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	28-MAR-17
CN-WAD-R511-WT	**Soil**							
Batch R3685556								
WG2498406-3 DUP		**L1904044-2**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	24-MAR-17
WG2498406-2 LCS								
Cyanide, Weak Acid Diss			90.3		%		80-120	24-MAR-17
WG2498406-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	24-MAR-17
WG2498406-4 MS		**L1904044-2**						
Cyanide, Weak Acid Diss			90.4		%		70-130	24-MAR-17
CR-CR6-IC-WT	**Soil**							
Batch R3684464								
WG2498537-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			103.0		%		70-130	23-MAR-17
WG2498220-3 DUP		**L1903714-3**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	23-MAR-17
WG2498537-4 DUP		**L1904044-8**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	23-MAR-17
WG2498220-2 LCS								
Chromium, Hexavalent			107.5		%		80-120	23-MAR-17
WG2498537-2 LCS								

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R3684464								
WG2498537-2 LCS								
Chromium, Hexavalent			108.0		%		80-120	23-MAR-17
WG2498220-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	23-MAR-17
WG2498537-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	23-MAR-17
EC-WT	**Soil**							
Batch R3686336								
WG2501106-4 DUP		**WG2501106-3**						
Conductivity		1.05	1.05		mS/cm	0.2	20	28-MAR-17
WG2501204-1 LCS								
Conductivity			98.7		%		90-110	28-MAR-17
WG2501106-1 MB								
Conductivity			<0.0040		mS/cm		0.004	28-MAR-17
F1-HS-511-WT	**Soil**							
Batch R3684209								
WG2498694-4 DUP		**WG2498694-3**						
F1 (C6-C10)		1670	1700		ug/g	1.9	30	27-MAR-17
COMMENTS: SDO:RNA-Surrogate diluted out: result not available.								
WG2498694-2 LCS								
F1 (C6-C10)			105.6		%		80-120	24-MAR-17
WG2498694-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	24-MAR-17
Surrogate: 3,4-Dichlorotoluene			108.1		%		60-140	24-MAR-17
WG2498694-7 MS		**WG2498694-6**						
F1 (C6-C10)			96.3		%		60-140	24-MAR-17
Batch R3684856								
WG2498678-4 DUP		**WG2498678-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	24-MAR-17
WG2498678-2 LCS								
F1 (C6-C10)			104.1		%		80-120	24-MAR-17
WG2498678-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	24-MAR-17
Surrogate: 3,4-Dichlorotoluene			100.7		%		60-140	24-MAR-17
WG2498678-7 MS		**WG2498678-6**						
F1 (C6-C10)			97.2		%		60-140	24-MAR-17
F2-F4-511-WT	**Soil**							

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3685652								
WG2498444-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			102.0		%		70-130	24-MAR-17
F3 (C16-C34)			112.4		%		70-130	24-MAR-17
F4 (C34-C50)			106.6		%		70-130	24-MAR-17
WG2498444-5 DUP		**WG2498444-4**						
F2 (C10-C16)		41	42		ug/g	2.7	30	24-MAR-17
F3 (C16-C34)		129	128		ug/g	0.8	30	24-MAR-17
F4 (C34-C50)		78	61		ug/g	25	30	24-MAR-17
WG2498444-2 LCS								
F2 (C10-C16)			95.9		%		80-120	24-MAR-17
F3 (C16-C34)			100.1		%		80-120	24-MAR-17
F4 (C34-C50)			84.5		%		80-120	24-MAR-17
WG2498444-1 MB								
F2 (C10-C16)			<10		ug/g		10	24-MAR-17
F3 (C16-C34)			<50		ug/g		50	24-MAR-17
F4 (C34-C50)			<50		ug/g		50	24-MAR-17
Surrogate: 2-Bromobenzotrifluoride			71.3		%		60-140	24-MAR-17
Batch R3685672								
WG2498269-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			94.9		%		70-130	24-MAR-17
F3 (C16-C34)			104.3		%		70-130	24-MAR-17
F4 (C34-C50)			99.5		%		70-130	24-MAR-17
WG2498269-5 DUP		**WG2498269-4**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	24-MAR-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	24-MAR-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	24-MAR-17
WG2498269-2 LCS								
F2 (C10-C16)			95.7		%		80-120	24-MAR-17
F3 (C16-C34)			98.3		%		80-120	24-MAR-17
F4 (C34-C50)			81.6		%		80-120	24-MAR-17
WG2498269-1 MB								
F2 (C10-C16)			<10		ug/g		10	24-MAR-17
F3 (C16-C34)			<50		ug/g		50	24-MAR-17
F4 (C34-C50)			<50		ug/g		50	24-MAR-17
Surrogate: 2-Bromobenzotrifluoride			74.5		%		60-140	24-MAR-17
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R3684906								
WG2499416-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			93.0		%		70-130	24-MAR-17
WG2499416-6 DUP		**WG2499416-5**						
Mercury (Hg)		0.0148	0.0125		ug/g	17	40	24-MAR-17
WG2499416-3 LCS								
Mercury (Hg)			99.5		%		80-120	24-MAR-17
WG2499416-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	24-MAR-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3685692								
WG2499416-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			99.0		%		70-130	24-MAR-17
Arsenic (As)			110.0		%		70-130	24-MAR-17
Barium (Ba)			114.3		%		70-130	24-MAR-17
Beryllium (Be)			82.6		%		70-130	24-MAR-17
Cadmium (Cd)			101.1		%		70-130	24-MAR-17
Chromium (Cr)			110.5		%		70-130	24-MAR-17
Cobalt (Co)			104.7		%		70-130	24-MAR-17
Copper (Cu)			99.6		%		70-130	24-MAR-17
Lead (Pb)			93.7		%		70-130	24-MAR-17
Molybdenum (Mo)			84.3		%		70-130	24-MAR-17
Nickel (Ni)			105.6		%		70-130	24-MAR-17
Selenium (Se)			92.5		%		70-130	24-MAR-17
Silver (Ag)			102.1		%		70-130	24-MAR-17
Thallium (Tl)			101.5		%		70-130	24-MAR-17
Uranium (U)			109.4		%		70-130	24-MAR-17
Vanadium (V)			112.0		%		70-130	24-MAR-17
Zinc (Zn)			100.2		%		70-130	24-MAR-17
WG2499416-6 DUP		**WG2499416-5**						
Antimony (Sb)		0.17	0.17		ug/g	0.2	30	24-MAR-17
Arsenic (As)		3.74	3.79		ug/g	1.4	30	24-MAR-17
Barium (Ba)		53.5	52.0		ug/g	2.9	40	24-MAR-17
Beryllium (Be)		0.42	0.38		ug/g	9.1	30	24-MAR-17
Boron (B)		6.3	6.0		ug/g	4.9	30	24-MAR-17
Cadmium (Cd)		0.083	0.074		ug/g	11	30	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3685692								
WG2499416-6 DUP		**WG2499416-5**						
Chromium (Cr)		13.8	14.0		ug/g	1.4	30	24-MAR-17
Cobalt (Co)		6.96	7.02		ug/g	1.0	30	24-MAR-17
Copper (Cu)		20.4	20.7		ug/g	1.6	30	24-MAR-17
Lead (Pb)		14.3	14.7		ug/g	2.6	40	24-MAR-17
Molybdenum (Mo)		0.34	0.33		ug/g	5.4	40	24-MAR-17
Nickel (Ni)		14.9	15.1		ug/g	0.9	30	24-MAR-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	24-MAR-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-MAR-17
Thallium (Tl)		0.080	0.080		ug/g	1.1	30	24-MAR-17
Uranium (U)		0.384	0.378		ug/g	1.7	30	24-MAR-17
Vanadium (V)		24.2	25.2		ug/g	3.9	30	24-MAR-17
Zinc (Zn)		40.1	39.3		ug/g	2.1	30	24-MAR-17
WG2499416-4 LCS								
Antimony (Sb)			101.5		%		80-120	24-MAR-17
Arsenic (As)			100.2		%		80-120	24-MAR-17
Barium (Ba)			106.0		%		80-120	24-MAR-17
Beryllium (Be)			87.8		%		80-120	24-MAR-17
Boron (B)			92.7		%		80-120	24-MAR-17
Cadmium (Cd)			97.5		%		80-120	24-MAR-17
Chromium (Cr)			98.4		%		80-120	24-MAR-17
Cobalt (Co)			98.7		%		80-120	24-MAR-17
Copper (Cu)			96.7		%		80-120	24-MAR-17
Lead (Pb)			102.7		%		80-120	24-MAR-17
Molybdenum (Mo)			94.1		%		80-120	24-MAR-17
Nickel (Ni)			98.3		%		80-120	24-MAR-17
Selenium (Se)			100.0		%		80-120	24-MAR-17
Silver (Ag)			97.3		%		80-120	24-MAR-17
Thallium (Tl)			101.2		%		80-120	24-MAR-17
Uranium (U)			101.6		%		80-120	24-MAR-17
Vanadium (V)			101.4		%		80-120	24-MAR-17
Zinc (Zn)			90.5		%		80-120	24-MAR-17
WG2499416-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	24-MAR-17
Arsenic (As)			<0.10				0.1	

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3685692								
WG2499416-1 MB								
Arsenic (As)			<0.10		mg/kg		0.1	24-MAR-17
Barium (Ba)			<0.50		mg/kg		0.5	24-MAR-17
Beryllium (Be)			<0.10		mg/kg		0.1	24-MAR-17
Boron (B)			<5.0		mg/kg		5	24-MAR-17
Cadmium (Cd)			<0.020		mg/kg		0.02	24-MAR-17
Chromium (Cr)			<0.50		mg/kg		0.5	24-MAR-17
Cobalt (Co)			<0.10		mg/kg		0.1	24-MAR-17
Copper (Cu)			<0.50		mg/kg		0.5	24-MAR-17
Lead (Pb)			<0.50		mg/kg		0.5	24-MAR-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	24-MAR-17
Nickel (Ni)			<0.50		mg/kg		0.5	24-MAR-17
Selenium (Se)			<0.20		mg/kg		0.2	24-MAR-17
Silver (Ag)			<0.10		mg/kg		0.1	24-MAR-17
Thallium (Tl)			<0.050		mg/kg		0.05	24-MAR-17
Uranium (U)			<0.050		mg/kg		0.05	24-MAR-17
Vanadium (V)			<0.20		mg/kg		0.2	24-MAR-17
Zinc (Zn)			<2.0		mg/kg		2	24-MAR-17
MOISTURE-WT	**Soil**							
Batch R3681884								
WG2498358-3 DUP		**L1904055-1**						
% Moisture		49.9	49.9		%	0.0	20	22-MAR-17
WG2498358-2 LCS								
% Moisture			99.7		%		90-110	22-MAR-17
WG2498358-1 MB								
% Moisture			<0.10		%		0.1	22-MAR-17
PAH-511-WT	**Soil**							
Batch R3684406								
WG2498224-4 DUP		**WG2498224-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-MAR-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-MAR-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3684406								
WG2498224-4 DUP		**WG2498224-3**						
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
WG2498224-2 LCS								
1-Methylnaphthalene			99.1		%		50-140	24-MAR-17
2-Methylnaphthalene			97.5		%		50-140	24-MAR-17
Acenaphthene			98.9		%		50-140	24-MAR-17
Acenaphthylene			93.3		%		50-140	24-MAR-17
Anthracene			90.0		%		50-140	24-MAR-17
Benzo(a)anthracene			93.4		%		50-140	24-MAR-17
Benzo(a)pyrene			93.3		%		50-140	24-MAR-17
Benzo(b)fluoranthene			98.2		%		50-140	24-MAR-17
Benzo(g,h,i)perylene			94.5		%		50-140	24-MAR-17
Benzo(k)fluoranthene			100.8		%		50-140	24-MAR-17
Chrysene			107.6		%		50-140	24-MAR-17
Dibenzo(ah)anthracene			95.9		%		50-140	24-MAR-17
Fluoranthene			85.2		%		50-140	24-MAR-17
Fluorene			95.5		%		50-140	24-MAR-17
Indeno(1,2,3-cd)pyrene			94.8		%		50-140	24-MAR-17
Naphthalene			99.9		%		50-140	24-MAR-17
Phenanthrene			95.8		%		50-140	24-MAR-17
Pyrene			87.5		%		50-140	24-MAR-17
WG2498224-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	24-MAR-17
2-Methylnaphthalene			<0.030				0.03	

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3684406								
WG2498224-1 MB								
2-Methylnaphthalene			<0.030		ug/g		0.03	24-MAR-17
Acenaphthene			<0.050		ug/g		0.05	24-MAR-17
Acenaphthylene			<0.050		ug/g		0.05	24-MAR-17
Anthracene			<0.050		ug/g		0.05	24-MAR-17
Benzo(a)anthracene			<0.050		ug/g		0.05	24-MAR-17
Benzo(a)pyrene			<0.050		ug/g		0.05	24-MAR-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	24-MAR-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	24-MAR-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	24-MAR-17
Chrysene			<0.050		ug/g		0.05	24-MAR-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	24-MAR-17
Fluoranthene			<0.050		ug/g		0.05	24-MAR-17
Fluorene			<0.050		ug/g		0.05	24-MAR-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	24-MAR-17
Naphthalene			<0.050		ug/g		0.05	24-MAR-17
Phenanthrene			<0.050		ug/g		0.05	24-MAR-17
Pyrene			<0.050		ug/g		0.05	24-MAR-17
Surrogate: 2-Fluorobiphenyl			96.8		%		50-140	24-MAR-17
Surrogate: p-Terphenyl d14			84.1		%		50-140	24-MAR-17
WG2498224-5 MS		**WG2498224-3**						
1-Methylnaphthalene			100.4		%		50-140	24-MAR-17
2-Methylnaphthalene			99.0		%		50-140	24-MAR-17
Acenaphthene			101.1		%		50-140	24-MAR-17
Acenaphthylene			95.8		%		50-140	24-MAR-17
Anthracene			90.9		%		50-140	24-MAR-17
Benzo(a)anthracene			97.1		%		50-140	24-MAR-17
Benzo(a)pyrene			95.5		%		50-140	24-MAR-17
Benzo(b)fluoranthene			100.8		%		50-140	24-MAR-17
Benzo(g,h,i)perylene			96.1		%		50-140	24-MAR-17
Benzo(k)fluoranthene			100.4		%		50-140	24-MAR-17
Chrysene			116.1		%		50-140	24-MAR-17
Dibenzo(ah)anthracene			97.7		%		50-140	24-MAR-17
Fluoranthene			87.2		%		50-140	24-MAR-17
Fluorene			97.7		%		50-140	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3684406								
WG2498224-5 MS		**WG2498224-3**						
Indeno(1,2,3-cd)pyrene			95.3		%		50-140	24-MAR-17
Naphthalene			101.0		%		50-140	24-MAR-17
Phenanthrene			95.2		%		50-140	24-MAR-17
Pyrene			89.1		%		50-140	24-MAR-17
Batch R3686584								
WG2499316-4 DUP		**WG2499316-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	28-MAR-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	28-MAR-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-MAR-17
WG2499316-2 LCS								
1-Methylnaphthalene			103.8		%		50-140	28-MAR-17
2-Methylnaphthalene			101.9		%		50-140	28-MAR-17
Acenaphthene			104.0		%		50-140	28-MAR-17
Acenaphthylene			99.3		%		50-140	28-MAR-17
Anthracene			89.0		%		50-140	28-MAR-17
Benzo(a)anthracene			101.2		%		50-140	28-MAR-17
Benzo(a)pyrene			101.4		%		50-140	28-MAR-17
Benzo(b)fluoranthene			102.2		%		50-140	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3686584								
WG2499316-2 LCS								
Benzo(g,h,i)perylene			101.9		%		50-140	28-MAR-17
Benzo(k)fluoranthene			110.4		%		50-140	28-MAR-17
Chrysene			115.5		%		50-140	28-MAR-17
Dibenzo(ah)anthracene			98.4		%		50-140	28-MAR-17
Fluoranthene			91.8		%		50-140	28-MAR-17
Fluorene			100.3		%		50-140	28-MAR-17
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	28-MAR-17
Naphthalene			105.2		%		50-140	28-MAR-17
Phenanthrene			99.99		%		50-140	28-MAR-17
Pyrene			95.1		%		50-140	28-MAR-17
WG2499316-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	28-MAR-17
2-Methylnaphthalene			<0.030		ug/g		0.03	28-MAR-17
Acenaphthene			<0.050		ug/g		0.05	28-MAR-17
Acenaphthylene			<0.050		ug/g		0.05	28-MAR-17
Anthracene			<0.050		ug/g		0.05	28-MAR-17
Benzo(a)anthracene			<0.050		ug/g		0.05	28-MAR-17
Benzo(a)pyrene			<0.050		ug/g		0.05	28-MAR-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	28-MAR-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	28-MAR-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	28-MAR-17
Chrysene			<0.050		ug/g		0.05	28-MAR-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	28-MAR-17
Fluoranthene			<0.050		ug/g		0.05	28-MAR-17
Fluorene			<0.050		ug/g		0.05	28-MAR-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	28-MAR-17
Naphthalene			<0.050		ug/g		0.05	28-MAR-17
Phenanthrene			<0.050		ug/g		0.05	28-MAR-17
Pyrene			<0.050		ug/g		0.05	28-MAR-17
Surrogate: 2-Fluorobiphenyl			98.4		%		50-140	28-MAR-17
Surrogate: p-Terphenyl d14			91.0		%		50-140	28-MAR-17
WG2499316-5 MS		**WG2499316-3**						
1-Methylnaphthalene			100.1		%		50-140	28-MAR-17
2-Methylnaphthalene			98.9		%		50-140	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3686584								
WG2499316-5 MS		**WG2499316-3**						
Acenaphthene			101.2		%		50-140	28-MAR-17
Acenaphthylene			100.2		%		50-140	28-MAR-17
Anthracene			94.1		%		50-140	28-MAR-17
Benzo(a)anthracene			102.3		%		50-140	28-MAR-17
Benzo(a)pyrene			100.8		%		50-140	28-MAR-17
Benzo(b)fluoranthene			101.6		%		50-140	28-MAR-17
Benzo(g,h,i)perylene			103.7		%		50-140	28-MAR-17
Benzo(k)fluoranthene			106.1		%		50-140	28-MAR-17
Chrysene			110.1		%		50-140	28-MAR-17
Dibenzo(ah)anthracene			106.6		%		50-140	28-MAR-17
Fluoranthene			91.1		%		50-140	28-MAR-17
Fluorene			99.3		%		50-140	28-MAR-17
Indeno(1,2,3-cd)pyrene			115.8		%		50-140	28-MAR-17
Naphthalene			100.9		%		50-140	28-MAR-17
Phenanthrene			95.9		%		50-140	28-MAR-17
Pyrene			94.0		%		50-140	28-MAR-17
PH-WT	**Soil**							
Batch R3682549								
WG2498446-1 DUP		**L1904044-1**						
pH		7.09	7.03	J	pH units	0.06	0.3	23-MAR-17
WG2498888-2 LCS								
pH			7.01		pH units		6.7-7.3	23-MAR-17
WG2498888-3 LCS								
pH			7.00		pH units		6.7-7.3	23-MAR-17
SAR-R511-WT	**Soil**							
Batch R3686423								
WG2501106-4 DUP		**WG2501106-3**						
Calcium (Ca)		44.7	44.6		mg/L	0.3	30	28-MAR-17
Sodium (Na)		166	168		mg/L	1.2	30	28-MAR-17
Magnesium (Mg)		5.7	5.7		mg/L	0.6	30	28-MAR-17
WG2501106-2 IRM		**WT SAR1**						
Calcium (Ca)			124.4		%		70-130	28-MAR-17
Sodium (Na)			106.3		%		70-130	28-MAR-17
Magnesium (Mg)			124.5		%		70-130	28-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R3686423								
WG2501106-1 MB								
Calcium (Ca)			<1.0		mg/L		1	28-MAR-17
Sodium (Na)			<1.0		mg/L		1	28-MAR-17
Magnesium (Mg)			<1.0		mg/L		1	28-MAR-17
TOC-R511-WT	**Soil**							
Batch R3685815								
WG2500308-3 CRM		**WT-TOC-CRM**						
Total Organic Carbon			117.3		%		70-130	26-MAR-17
WG2500308-4 DUP		**L1904044-7**						
Total Organic Carbon		0.27	0.27		%	0.2	35	26-MAR-17
WG2500308-2 LCS								
Total Organic Carbon			104.2		%		80-120	26-MAR-17
Total Organic Carbon			104.2		%		80-120	26-MAR-17
Total Organic Carbon			104.2		%		80-120	26-MAR-17
WG2500308-1 MB								
Total Organic Carbon			<0.10		%		0.1	26-MAR-17
VOC-511-HS-WT	**Soil**							
Batch R3684856								
WG2498678-4 DUP		**WG2498678-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-MAR-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	24-MAR-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3684856								
WG2498678-4 DUP		**WG2498678-3**						
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-MAR-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	24-MAR-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-MAR-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-MAR-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-MAR-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-MAR-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	24-MAR-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-MAR-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	24-MAR-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-MAR-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-MAR-17
WG2498678-2 LCS								
1,1,1,2-Tetrachloroethane			91.8		%		60-130	24-MAR-17
1,1,2,2-Tetrachloroethane			95.1		%		60-130	24-MAR-17
1,1,1-Trichloroethane			98.3		%		60-130	24-MAR-17
1,1,2-Trichloroethane			92.9		%		60-130	24-MAR-17
1,1-Dichloroethane			100.8		%		60-130	24-MAR-17
1,1-Dichloroethylene			89.2		%		60-130	24-MAR-17
1,2-Dibromoethane			93.0		%		70-130	24-MAR-17
1,2-Dichlorobenzene			97.7		%		70-130	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3684856								
WG2498678-2 LCS								
1,2-Dichloroethane			102.3		%		60-130	24-MAR-17
1,2-Dichloropropane			99.4		%		70-130	24-MAR-17
1,3-Dichlorobenzene			96.1		%		70-130	24-MAR-17
1,4-Dichlorobenzene			99.9		%		70-130	24-MAR-17
Acetone			108.8		%		60-140	24-MAR-17
Benzene			102.7		%		70-130	24-MAR-17
Bromodichloromethane			97.3		%		50-140	24-MAR-17
Bromoform			92.6		%		70-130	24-MAR-17
Bromomethane			103.3		%		50-140	24-MAR-17
Carbon tetrachloride			98.4		%		70-130	24-MAR-17
Chlorobenzene			96.3		%		70-130	24-MAR-17
Chloroform			102.6		%		70-130	24-MAR-17
cis-1,2-Dichloroethylene			100.0		%		70-130	24-MAR-17
cis-1,3-Dichloropropene			102.5		%		70-130	24-MAR-17
Dibromochloromethane			99.6		%		60-130	24-MAR-17
Dichlorodifluoromethane			70.1		%		50-140	24-MAR-17
Ethylbenzene			92.3		%		70-130	24-MAR-17
n-Hexane			103.1		%		70-130	24-MAR-17
Methylene Chloride			107.6		%		70-130	24-MAR-17
MTBE			96.6		%		70-130	24-MAR-17
m+p-Xylenes			95.6		%		70-130	24-MAR-17
Methyl Ethyl Ketone			106.1		%		60-140	24-MAR-17
Methyl Isobutyl Ketone			96.5		%		60-140	24-MAR-17
o-Xylene			95.0		%		70-130	24-MAR-17
Styrene			96.2		%		70-130	24-MAR-17
Tetrachloroethylene			90.5		%		60-130	24-MAR-17
Toluene			90.2		%		70-130	24-MAR-17
trans-1,2-Dichloroethylene			100.5		%		60-130	24-MAR-17
trans-1,3-Dichloropropene			92.0		%		70-130	24-MAR-17
Trichloroethylene			97.7		%		60-130	24-MAR-17
Trichlorofluoromethane			102.3		%		50-140	24-MAR-17
Vinyl chloride			89.4		%		60-140	24-MAR-17
WG2498678-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3684856								
WG2498678-1 MB								
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	24-MAR-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	24-MAR-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	24-MAR-17
1,1-Dichloroethane			<0.050		ug/g		0.05	24-MAR-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	24-MAR-17
1,2-Dibromoethane			<0.050		ug/g		0.05	24-MAR-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	24-MAR-17
1,2-Dichloroethane			<0.050		ug/g		0.05	24-MAR-17
1,2-Dichloropropane			<0.050		ug/g		0.05	24-MAR-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	24-MAR-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	24-MAR-17
Acetone			<0.50		ug/g		0.5	24-MAR-17
Benzene			<0.0068		ug/g		0.0068	24-MAR-17
Bromodichloromethane			<0.050		ug/g		0.05	24-MAR-17
Bromoform			<0.050		ug/g		0.05	24-MAR-17
Bromomethane			<0.050		ug/g		0.05	24-MAR-17
Carbon tetrachloride			<0.050		ug/g		0.05	24-MAR-17
Chlorobenzene			<0.050		ug/g		0.05	24-MAR-17
Chloroform			<0.050		ug/g		0.05	24-MAR-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-MAR-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	24-MAR-17
Dibromochloromethane			<0.050		ug/g		0.05	24-MAR-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	24-MAR-17
Ethylbenzene			<0.018		ug/g		0.018	24-MAR-17
n-Hexane			<0.050		ug/g		0.05	24-MAR-17
Methylene Chloride			<0.050		ug/g		0.05	24-MAR-17
MTBE			<0.050		ug/g		0.05	24-MAR-17
m+p-Xylenes			<0.030		ug/g		0.03	24-MAR-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	24-MAR-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	24-MAR-17
o-Xylene			<0.020		ug/g		0.02	24-MAR-17
Styrene			<0.050		ug/g		0.05	24-MAR-17
Tetrachloroethylene			<0.050		ug/g		0.05	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3684856								
WG2498678-1 MB								
Toluene			<0.080		ug/g		0.08	24-MAR-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	24-MAR-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	24-MAR-17
Trichloroethylene			<0.010		ug/g		0.01	24-MAR-17
Trichlorofluoromethane			<0.050		ug/g		0.05	24-MAR-17
Vinyl chloride			<0.020		ug/g		0.02	24-MAR-17
Surrogate: 1,4-Difluorobenzene			114.9		%		50-140	24-MAR-17
Surrogate: 4-Bromofluorobenzene			101.6		%		50-140	24-MAR-17
WG2498678-5 MS		**WG2498678-3**						
1,1,1,2-Tetrachloroethane			94.9		%		50-140	24-MAR-17
1,1,2,2-Tetrachloroethane			104.1		%		50-140	24-MAR-17
1,1,1-Trichloroethane			100.6		%		50-140	24-MAR-17
1,1,2-Trichloroethane			98.7		%		50-140	24-MAR-17
1,1-Dichloroethane			104.7		%		50-140	24-MAR-17
1,1-Dichloroethylene			91.2		%		50-140	24-MAR-17
1,2-Dibromoethane			100.6		%		50-140	24-MAR-17
1,2-Dichlorobenzene			100.8		%		50-140	24-MAR-17
1,2-Dichloroethane			109.5		%		50-140	24-MAR-17
1,2-Dichloropropane			104.8		%		50-140	24-MAR-17
1,3-Dichlorobenzene			97.3		%		50-140	24-MAR-17
1,4-Dichlorobenzene			101.9		%		50-140	24-MAR-17
Acetone			125.6		%		50-140	24-MAR-17
Benzene			107.0		%		50-140	24-MAR-17
Bromodichloromethane			102.5		%		50-140	24-MAR-17
Bromoform			99.6		%		50-140	24-MAR-17
Bromomethane			104.5		%		50-140	24-MAR-17
Carbon tetrachloride			100.5		%		50-140	24-MAR-17
Chlorobenzene			99.3		%		50-140	24-MAR-17
Chloroform			107.0		%		50-140	24-MAR-17
cis-1,2-Dichloroethylene			103.9		%		50-140	24-MAR-17
cis-1,3-Dichloropropene			101.3		%		50-140	24-MAR-17
Dibromochloromethane			105.8		%		50-140	24-MAR-17
Dichlorodifluoromethane			71.9		%		50-140	24-MAR-17
Ethylbenzene			92.4		%		50-140	24-MAR-17

Quality Control Report

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3684856								
WG2498678-5 MS		**WG2498678-3**						
n-Hexane			104.2		%		50-140	24-MAR-17
Methylene Chloride			109.5		%		50-140	24-MAR-17
MTBE			99.7		%		50-140	24-MAR-17
m+p-Xylenes			96.0		%		50-140	24-MAR-17
Methyl Ethyl Ketone			118.5		%		50-140	24-MAR-17
Methyl Isobutyl Ketone			107.1		%		50-140	24-MAR-17
o-Xylene			95.5		%		50-140	24-MAR-17
Styrene			97.8		%		50-140	24-MAR-17
Tetrachloroethylene			90.6		%		50-140	24-MAR-17
Toluene			91.8		%		50-140	24-MAR-17
trans-1,2-Dichloroethylene			102.8		%		50-140	24-MAR-17
trans-1,3-Dichloropropene			90.0		%		50-140	24-MAR-17
Trichloroethylene			99.8		%		50-140	24-MAR-17
Trichlorofluoromethane			104.6		%		50-140	24-MAR-17
Vinyl chloride			91.0		%		50-140	24-MAR-17
Batch R3686199								
WG2500486-18 DUP		**WG2500486-17**						
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	28-MAR-17
WG2500486-16 LCS								
Toluene			90.5		%		70-130	28-MAR-17
WG2500486-15 MB								
Toluene			<0.080		ug/g		0.08	28-MAR-17
WG2500486-19 MS		**WG2500486-17**						
Toluene			95.8		%		50-140	28-MAR-17

Quality Control Report

Workorder: L1904044 Report Date: 29-MAR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

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
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.

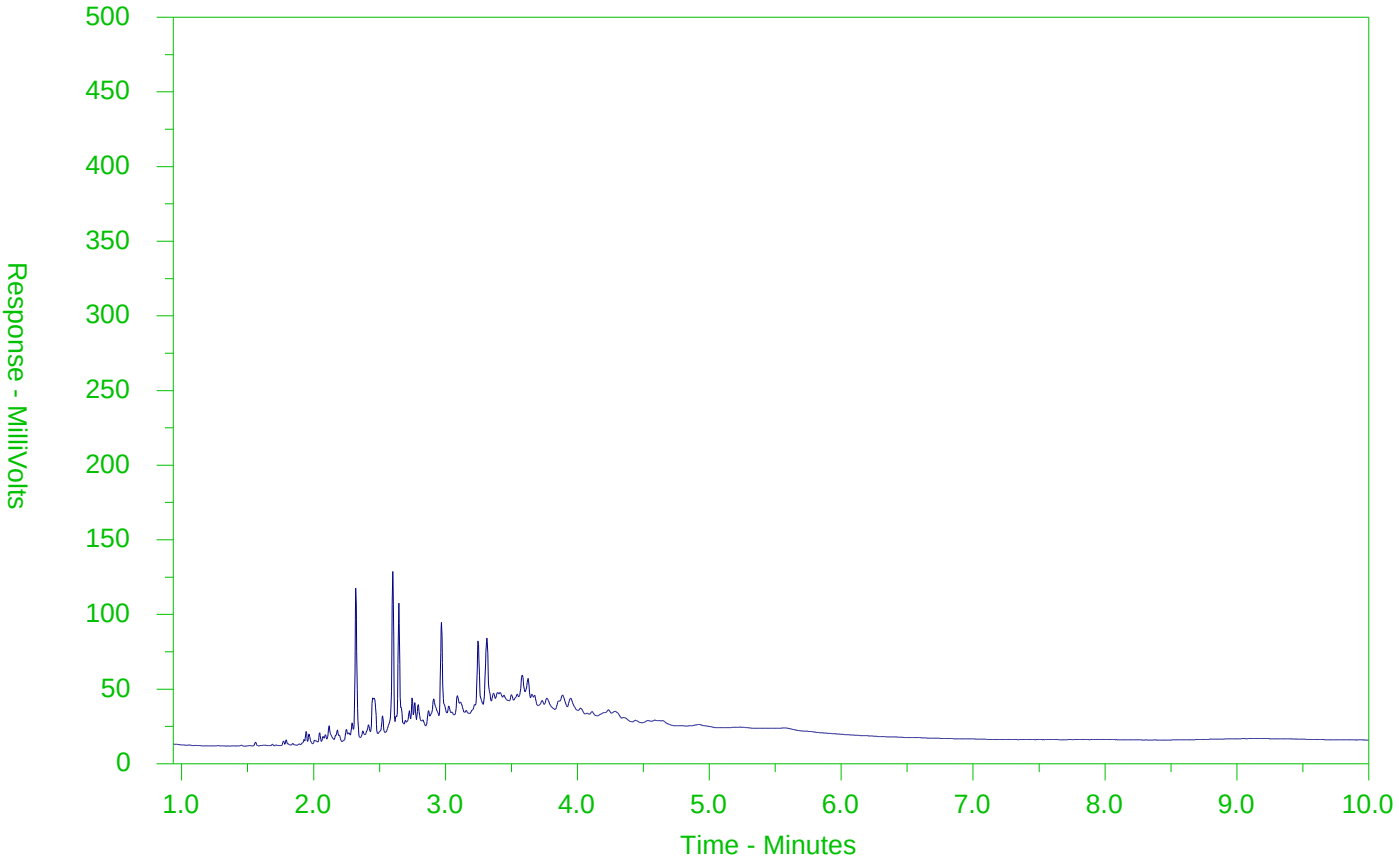
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1904044-1
Client Sample ID: S-11131634-032017-TB-001



←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.

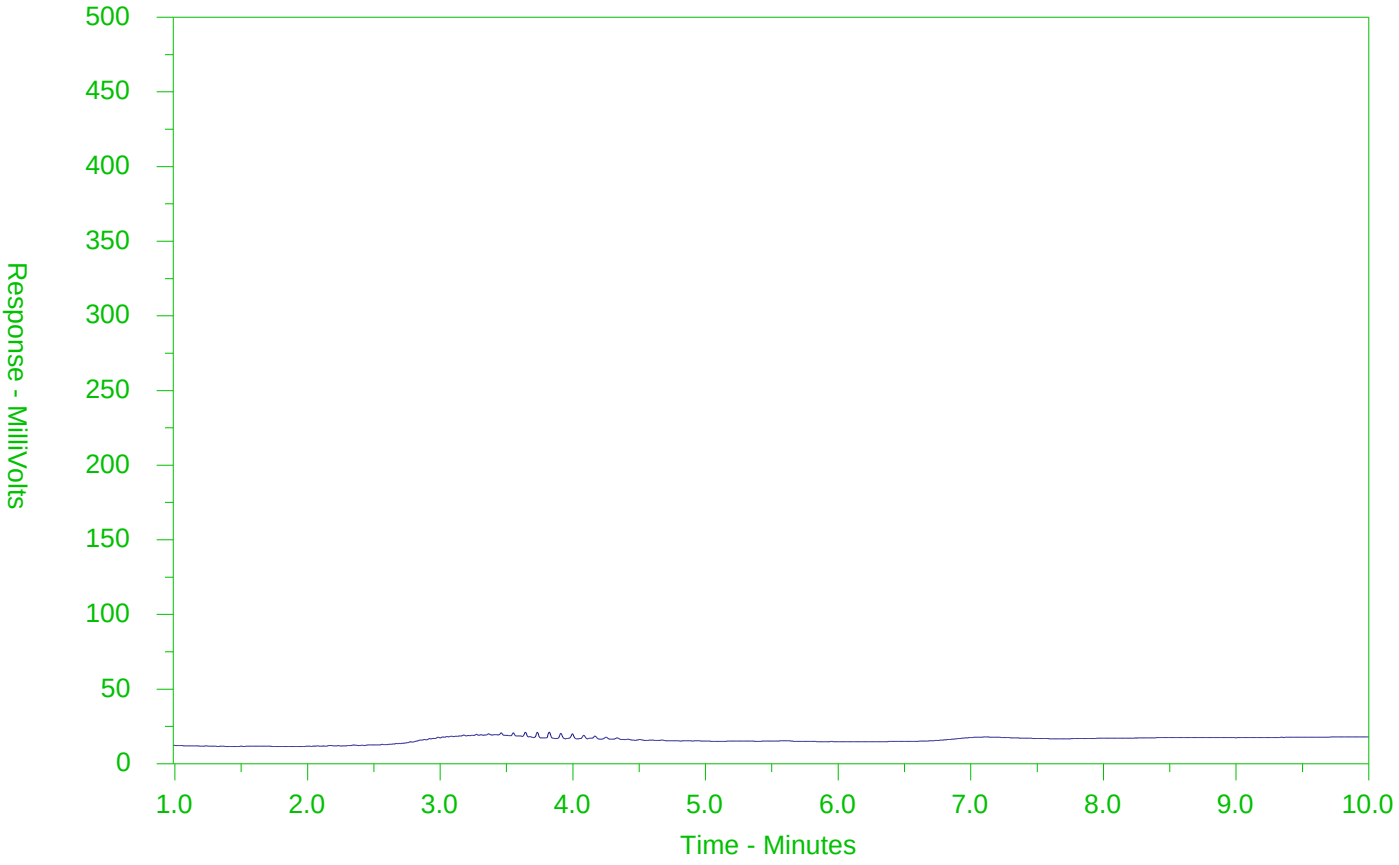
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-2
Client Sample ID: S-11131634-032017-TB-002



←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.

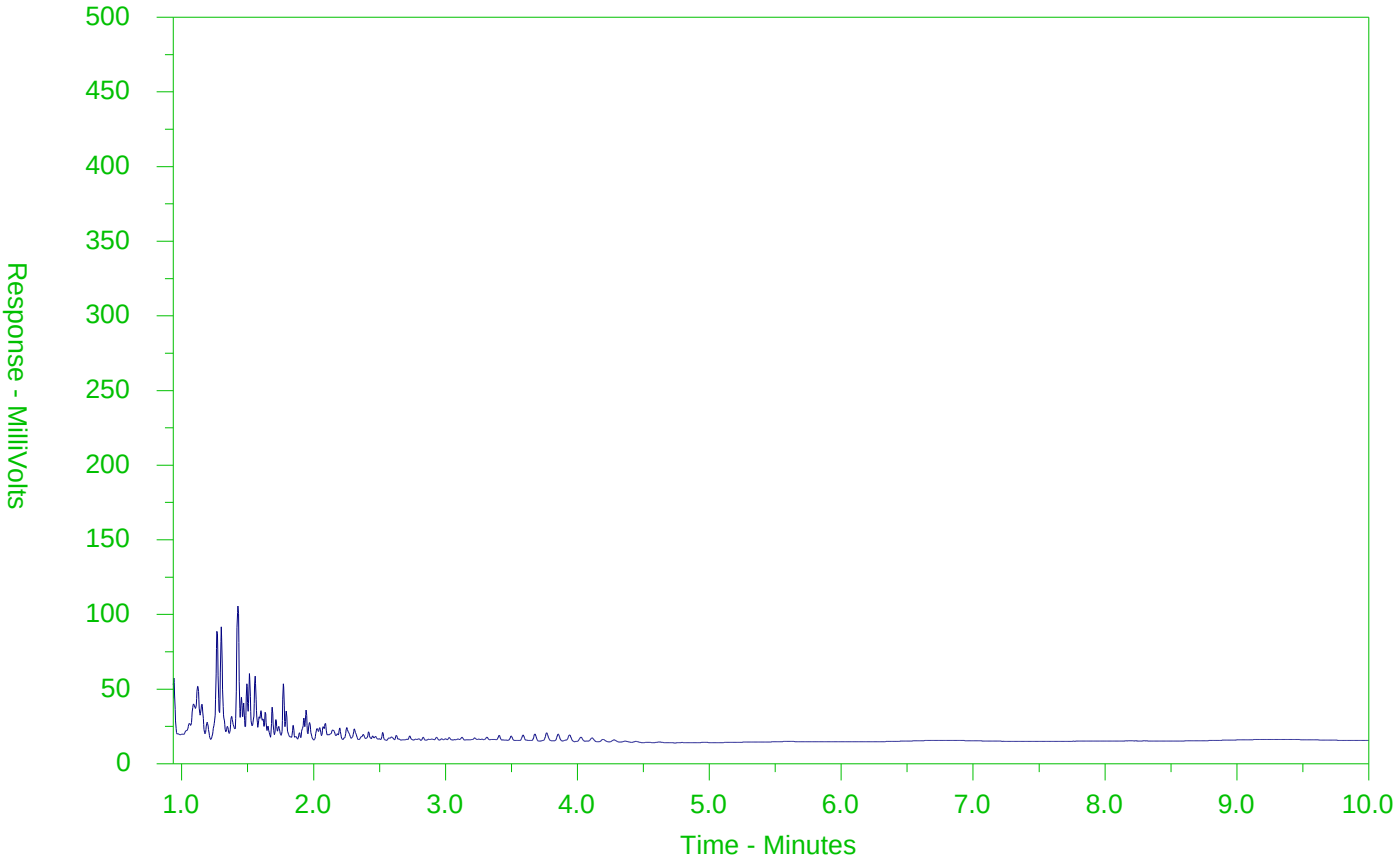
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-3
Client Sample ID: S-11131634-032017-TB-003



←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.

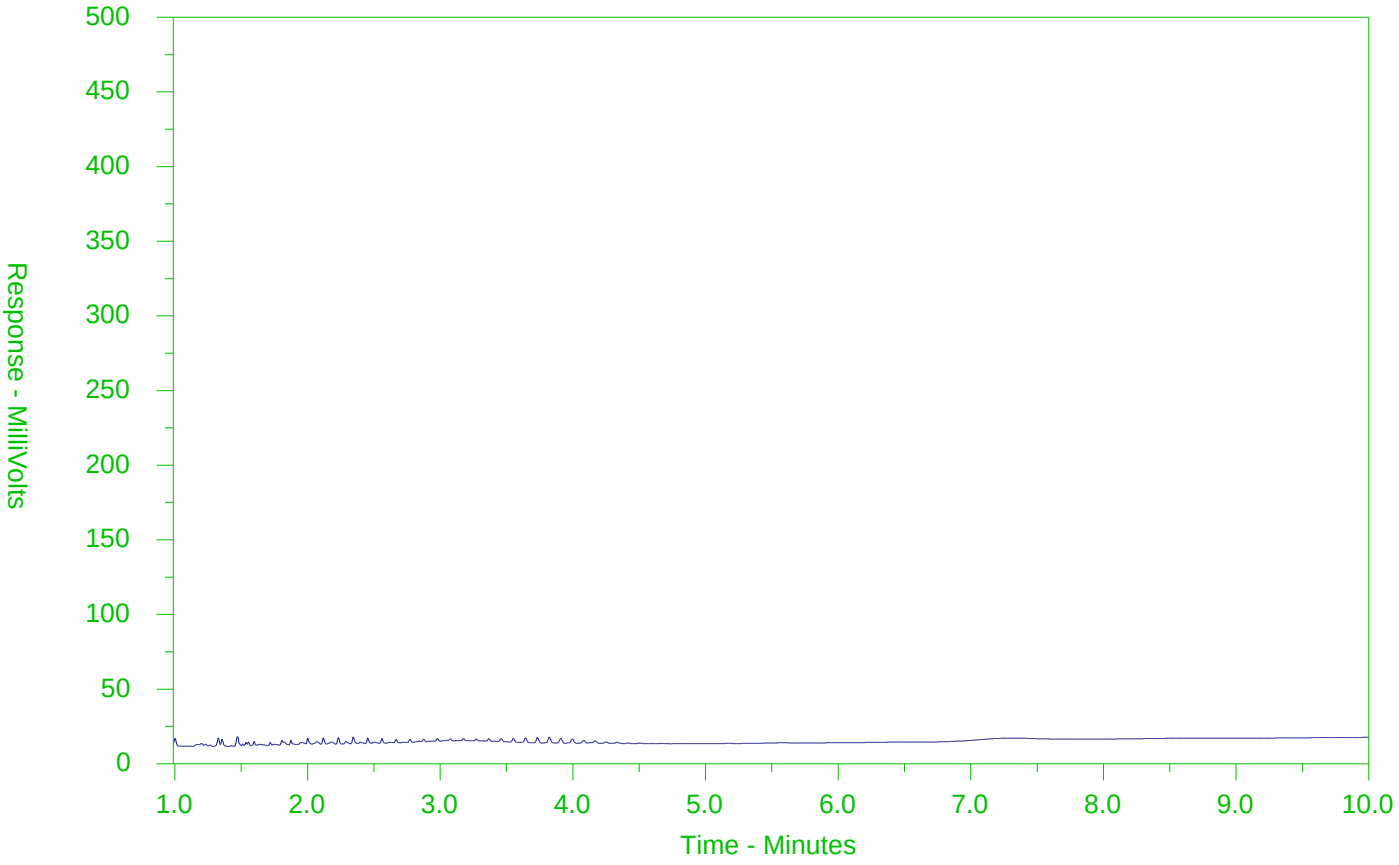
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-4
Client Sample ID: S-11131634-032017-TB-004



←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.

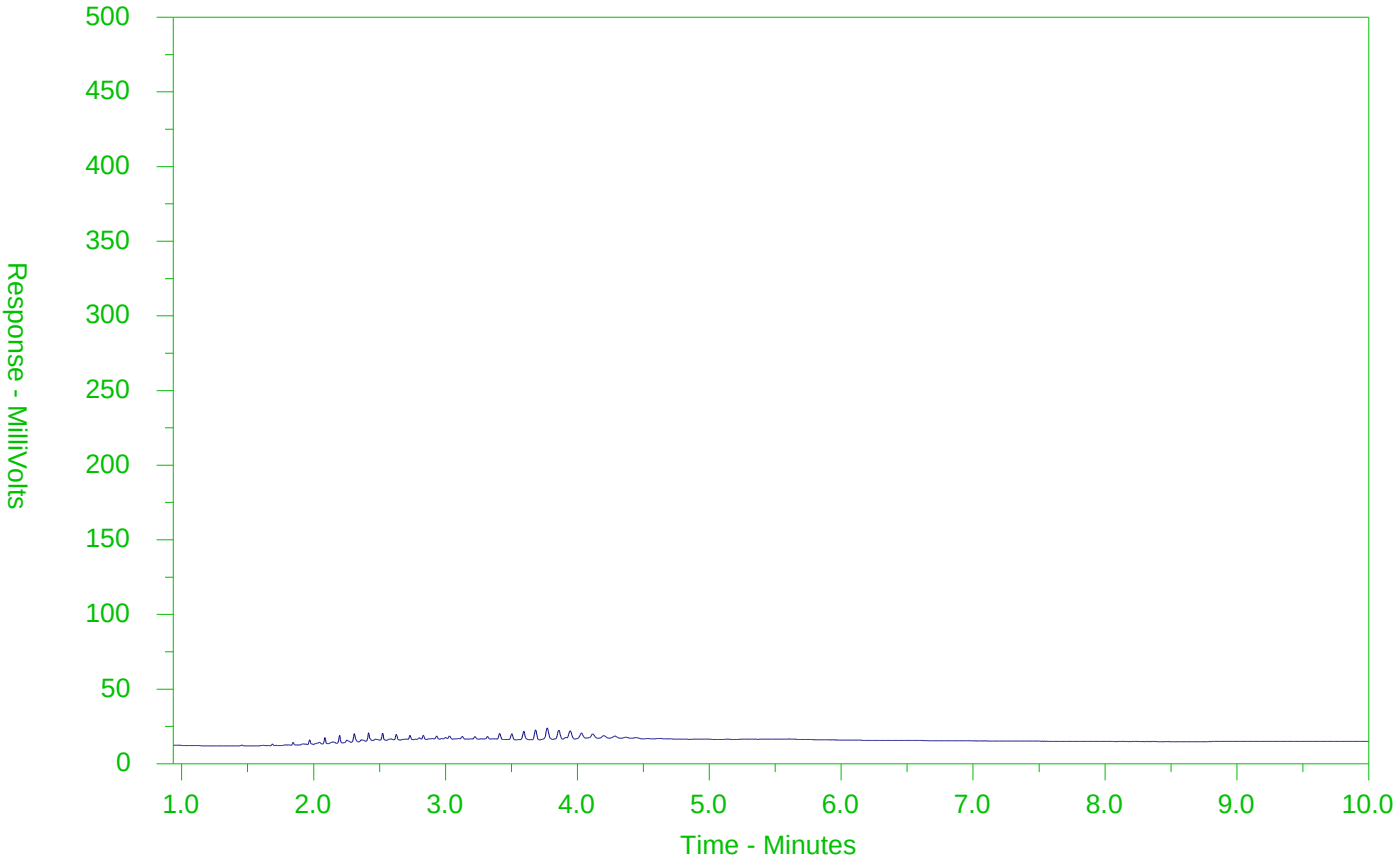
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-7
Client Sample ID: S-11131634-032117-TB-007



←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.

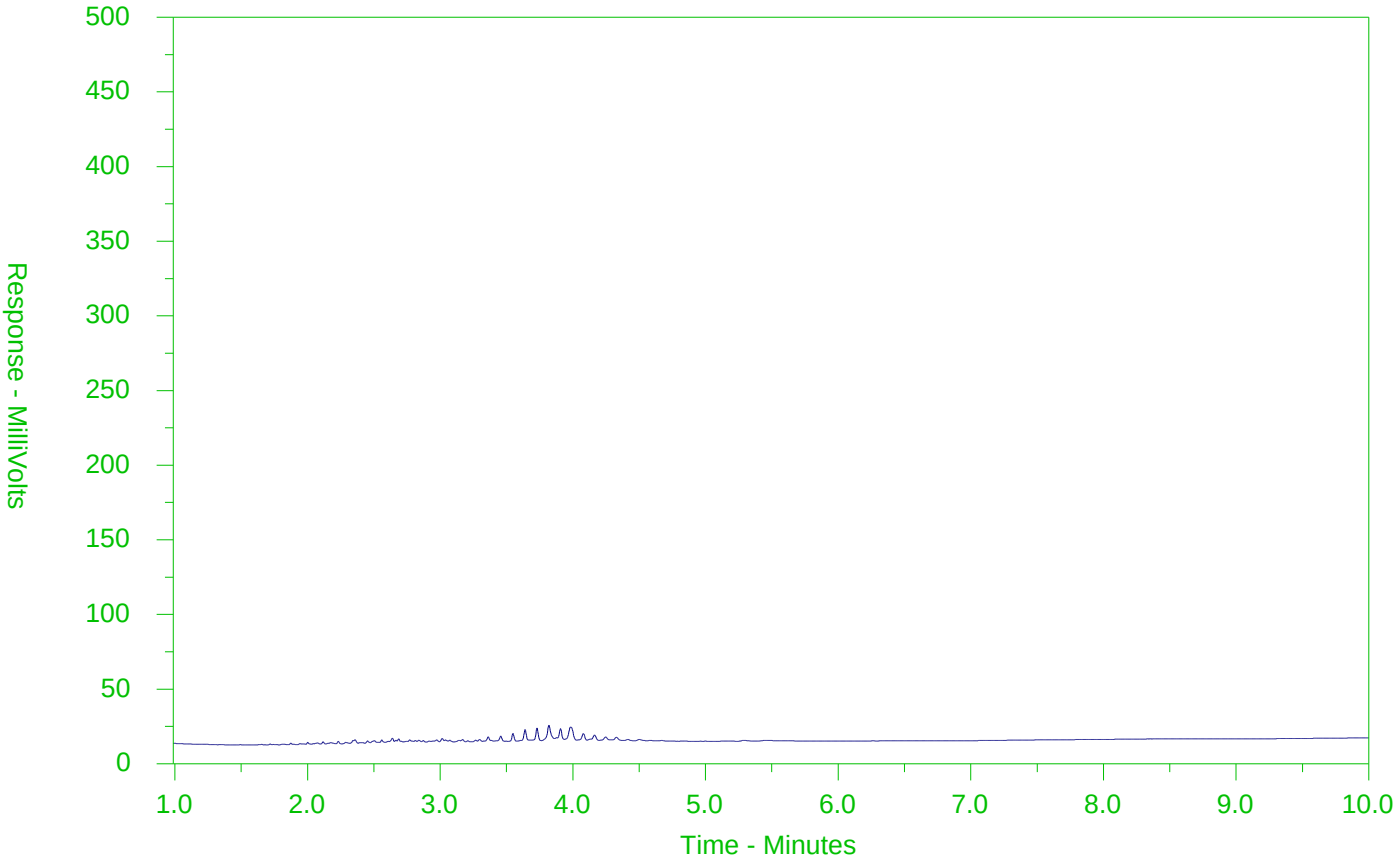
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-8
Client Sample ID: S-11131634-032117-TB-008



←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.

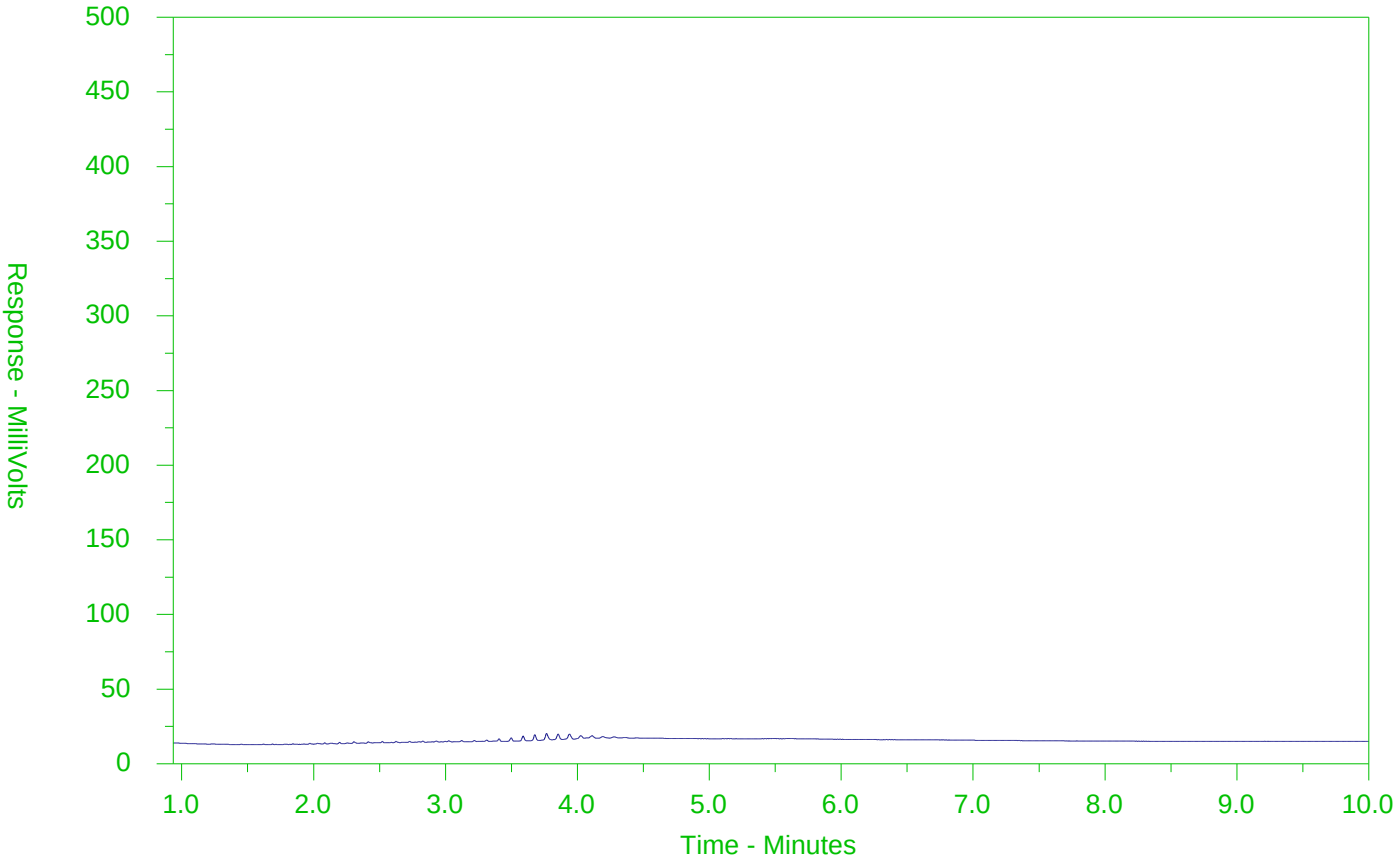
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-9
Client Sample ID: S-11131634-032117-TB-009



←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.

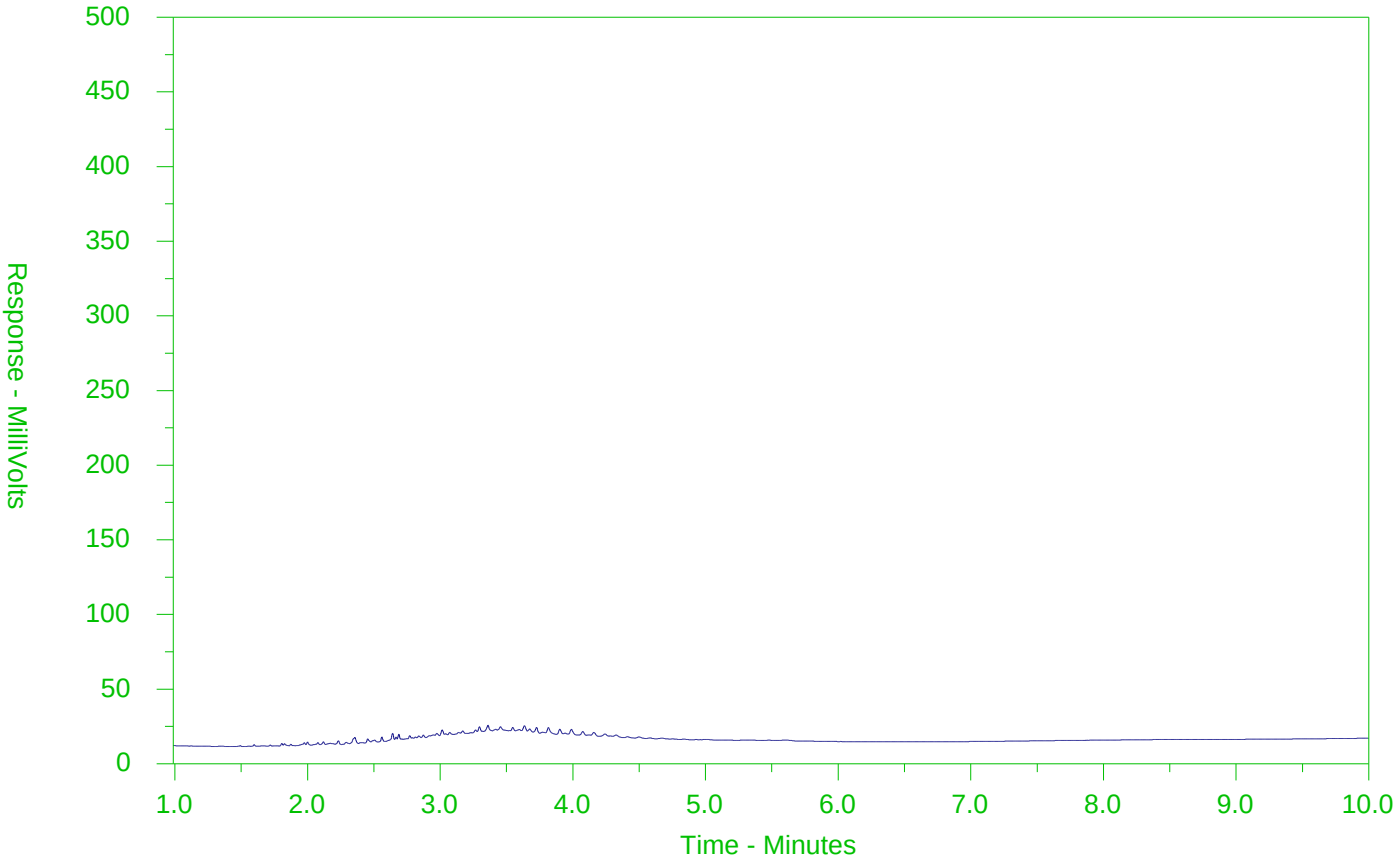
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-10
Client Sample ID: S-11131634-032117-TB-010



←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.

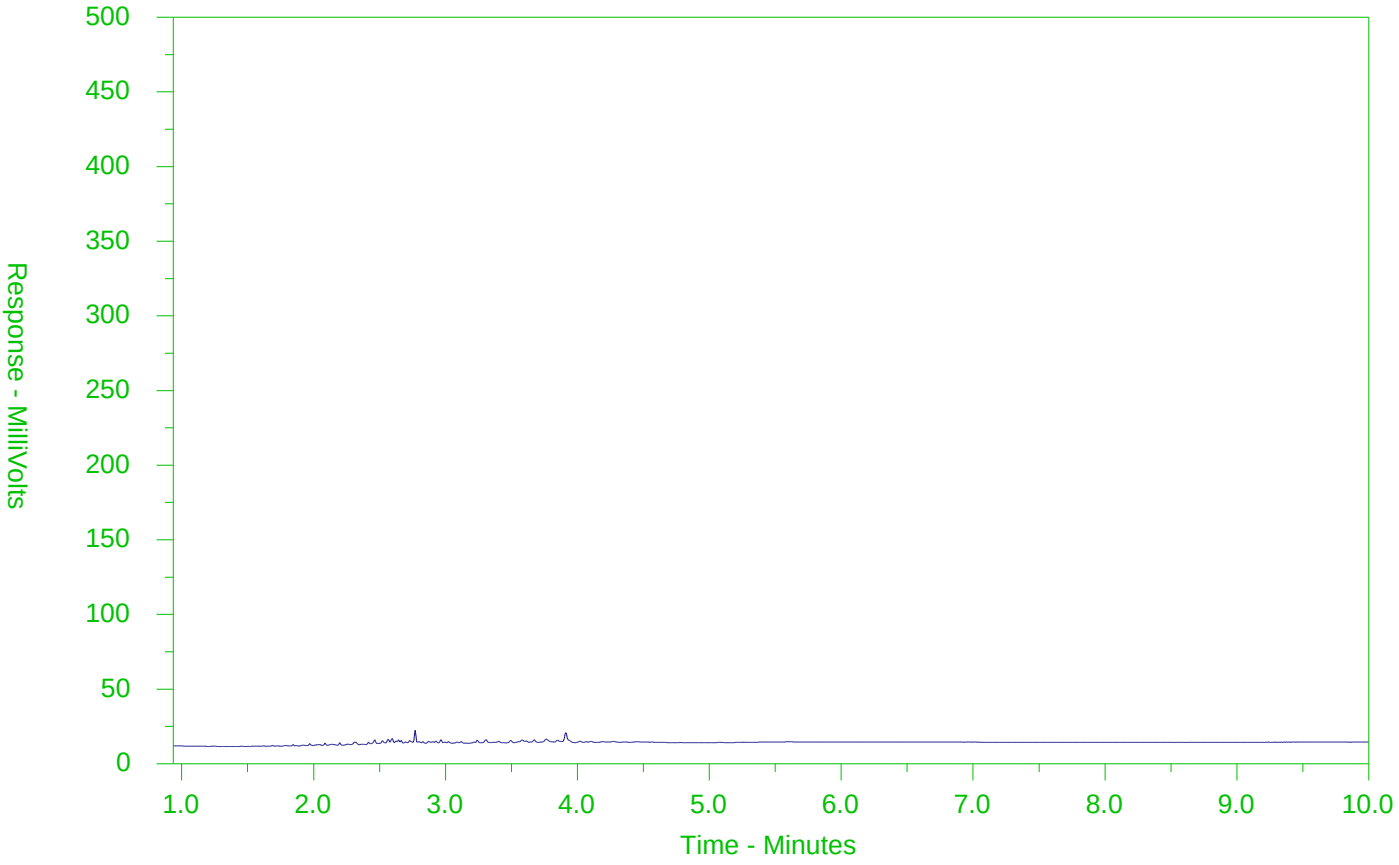
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904044-11
Client Sample ID: S-11131634-032117-TB-011



←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

L1904044-COFC

COC Number: 15 - 555091

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	GHD Limited
Contact:	Preeti Gururajan
Phone:	519-884-0510
Company address below will appear on the final report	
Street:	1051 Colby Drive
City/Province:	Waterloo, ON
Postal Code:	
Invoice To	Same as Report To: YES / NO
	Copy of Invoice with Report: YES / NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: PDF / EXCEL / EDD (DIGITAL)
Quality Control (QC) Report with Report: YES / NO
Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: EMAIL / MAIL / FAX
Email 1 or Fax
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: EMAIL / MAIL / FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #:
Job #: 111131634-20
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L1904044 22 AM
ALS Contact: Laura Ermeta Sampler: T. Brindle

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R]: Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] / 3 day [P3] / 2 day [P2]
EMERGENCY: 1 Business day [E1] / Same Day, Weekend or Statutory holiday [E0]

Date and Time Required for all E&P TATs: dd-mm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Hg-FP	F1	PAH	VOC	Moisture	F2	M+I (for RSC)	VOC, F1						HOLD	Number of Containers
1	S-111131634-032017-TB-001	20-Mar-17	9:30	SOIL	X	X	X	X	X	X	X								4
2	S-111131634-032017-TB-002		9:35		X	X	X	X	X		X								4
3	S-111131634-032017-TB-003		12:30		X	X													3
4	S-111131634-032017-TB-004		12:35		X	X													3
5	S-111131634-032017-TB-005		16:00		X	X												X	3
6	S-111131634-032017-TB-006		16:10		X	X												X	3
7	S-111131634-032017-TB-007	21-Mar-17	14:00		X	X	X	X	X	X	X								4
8	S-111131634-032017-TB-008		14:05		X	X	X	X	X		X								4
9	S-111131634-032117-TB-009		14:10		X	X	X	X	X		X								4
10	S-111131634-032117-TB-010		17:55		X	X	X	X	X	X	X								4
11	S-111131634-032117-TB-011		18:00		X	X	X	X	X		X								4
12	S-111131634-032117-TB-TB1	21-Mar-17	15:00	SOIL								X							

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? YES / NO
Are samples for human drinking water use? YES / NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

- Please see PO for details of analysis
- for RSC

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen / SIF Observations: Yes / No
Ice Packs / Ice Cubes / Custody seal intact: Yes / No
Cooling Initiated

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			2.9°		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
TARYN BRINDLE	03/22/17	14:53				AM	22 MAR 17	1455

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

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**.

GHD Limited (Waterloo)
ATTN: PREETI GURURAJAN
651 COLBY DRIVE
WATERLOO ON N2V 1C2

Date Received: 23-MAR-17
Report Date: 31-MAR-17 09:26 (MT)
Version: FINAL

Client Phone: 519-884-0510

Certificate of Analysis

Lab Work Order #: L1904748

Project P.O. #: PENDING
Job Reference: 11131634
C of C Numbers: 15-555358
Legal Site Desc:

Laura Ermeta
Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1904748-1 S-11131634-032117-TB-012 Sampled By: T. BRINDLE on 21-MAR-17 @ 18:50 Matrix: SOIL							
Physical Tests							
% Moisture	16.1		0.10	%	24-MAR-17	25-MAR-17	R3685179
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	24-MAR-17	27-MAR-17	R3685586
F2 (C10-C16)	<10		10	ug/g	24-MAR-17	28-MAR-17	R3686761
F3 (C16-C34)	73		50	ug/g	24-MAR-17	28-MAR-17	R3686761
F4 (C34-C50)	347		50	ug/g	24-MAR-17	28-MAR-17	R3686761
F4G-SG (GHH-Silica)	800		250	ug/g	27-MAR-17	27-MAR-17	R3687873
Total Hydrocarbons (C6-C50)	420		72	ug/g		29-MAR-17	
Chrom. to baseline at nC50	NO				24-MAR-17	28-MAR-17	R3686761
Surrogate: 2-Bromobenzotrifluoride	81.5		60-140	%	24-MAR-17	28-MAR-17	R3686761
Surrogate: 3,4-Dichlorotoluene	95.0		60-140	%	24-MAR-17	27-MAR-17	R3685586
L1904748-2 S-11131634-032117-TB-013 Sampled By: T. BRINDLE on 21-MAR-17 @ 18:55 Matrix: SOIL							
Physical Tests							
% Moisture	17.0		0.10	%	24-MAR-17	25-MAR-17	R3685179
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	24-MAR-17	27-MAR-17	R3685586
F2 (C10-C16)	<10		10	ug/g	24-MAR-17	28-MAR-17	R3686761
F3 (C16-C34)	<50		50	ug/g	24-MAR-17	28-MAR-17	R3686761
F4 (C34-C50)	53		50	ug/g	24-MAR-17	28-MAR-17	R3686761
Total Hydrocarbons (C6-C50)	<72		72	ug/g		29-MAR-17	
Chrom. to baseline at nC50	YES				24-MAR-17	28-MAR-17	R3686761
Surrogate: 2-Bromobenzotrifluoride	75.1		60-140	%	24-MAR-17	28-MAR-17	R3686761
Surrogate: 3,4-Dichlorotoluene	80.5		60-140	%	24-MAR-17	27-MAR-17	R3685586

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

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

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

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

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).

F4G-ADD-511-WT Soil F4G SG-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

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).

MOISTURE-WT Soil % Moisture Gravimetric: Oven Dried

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

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

Chain of Custody Numbers:

Reference Information

15-555358

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 weight of sample
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.

Quality Control Report

Workorder: L1904748 Report Date: 31-MAR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R3685586								
WG2499492-4 DUP		**WG2499492-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	27-MAR-17
WG2499492-2 LCS								
F1 (C6-C10)			109.3		%		80-120	27-MAR-17
WG2499492-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	27-MAR-17
Surrogate: 3,4-Dichlorotoluene			98.8		%		60-140	27-MAR-17
WG2499492-7 MS		**WG2499492-6**						
F1 (C6-C10)			107.0		%		60-140	27-MAR-17
F2-F4-511-WT	**Soil**							
Batch R3686761								
WG2499635-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			86.9		%		70-130	28-MAR-17
F3 (C16-C34)			89.1		%		70-130	28-MAR-17
F4 (C34-C50)			89.0		%		70-130	28-MAR-17
WG2499635-5 DUP		**WG2499635-4**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	28-MAR-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	28-MAR-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	28-MAR-17
WG2499635-2 LCS								
F2 (C10-C16)			94.8		%		80-120	28-MAR-17
F3 (C16-C34)			92.9		%		80-120	28-MAR-17
F4 (C34-C50)			88.2		%		80-120	28-MAR-17
WG2499635-1 MB								
F2 (C10-C16)			<10		ug/g		10	28-MAR-17
F3 (C16-C34)			<50		ug/g		50	28-MAR-17
F4 (C34-C50)			<50		ug/g		50	28-MAR-17
Surrogate: 2-Bromobenzotrifluoride			77.2		%		60-140	28-MAR-17
F4G-ADD-511-WT	**Soil**							
Batch R3687873								
WG2503097-2 LCS								
F4G-SG (GHH-Silica)			83.3		%		60-140	27-MAR-17
WG2503097-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	27-MAR-17
MOISTURE-WT	**Soil**							

Quality Control Report

Workorder: L1904748 Report Date: 31-MAR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3685179								
WG2499590-3 DUP		**L1904803-1**						
% Moisture		17.4	17.2		%	0.9	20	25-MAR-17
WG2499590-2 LCS								
% Moisture			99.8		%		90-110	25-MAR-17
WG2499590-1 MB								
% Moisture			<0.10		%		0.1	25-MAR-17

Quality Control Report

Workorder: L1904748 Report Date: 31-MAR-17

Client: GHD Limited (Waterloo)
651 COLBY DRIVE
WATERLOO ON N2V 1C2
Contact: PREETI GURURAJAN

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
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.

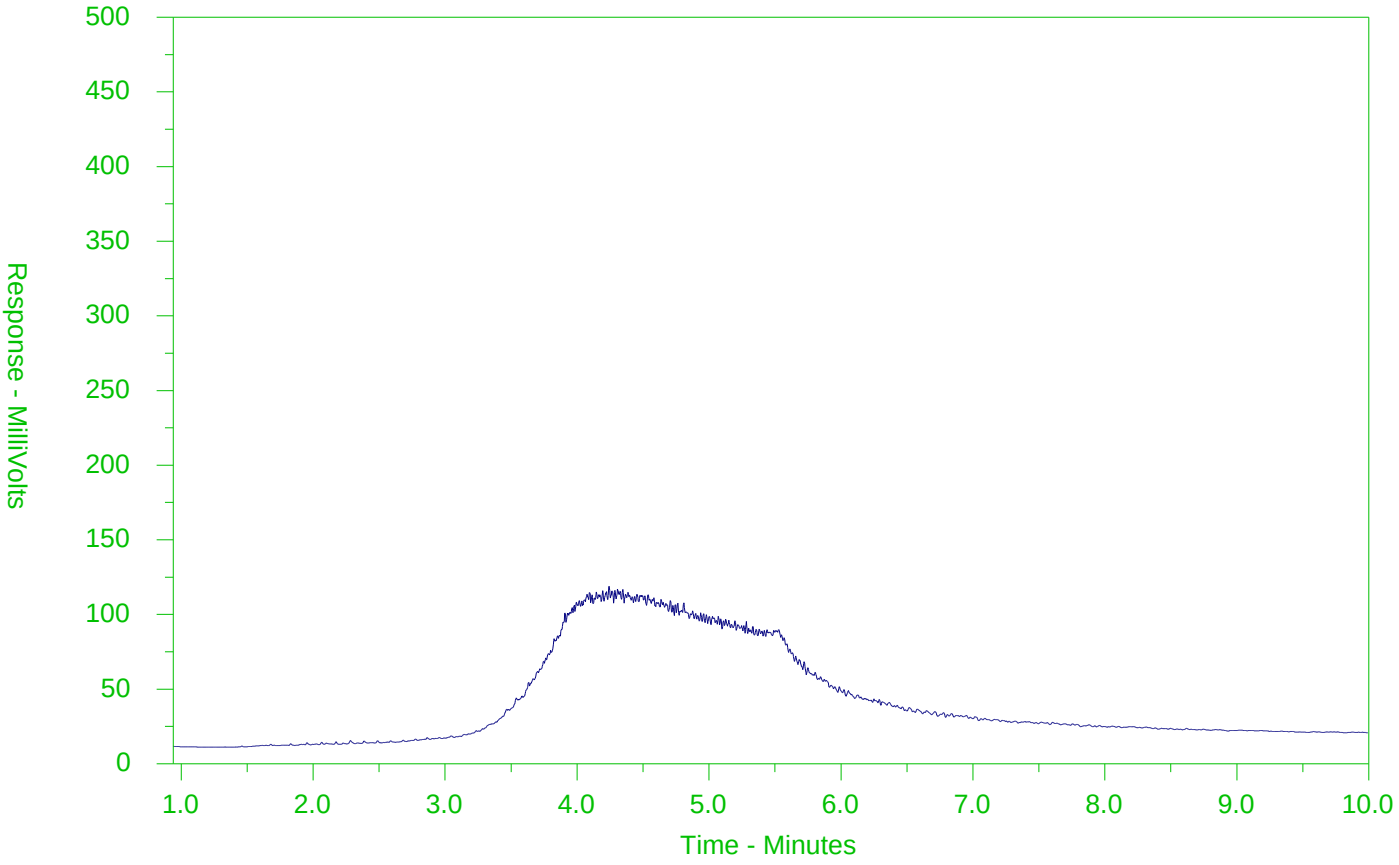
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where 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: L1904748-1
Client Sample ID: S-11131634-032117-TB-012



←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.

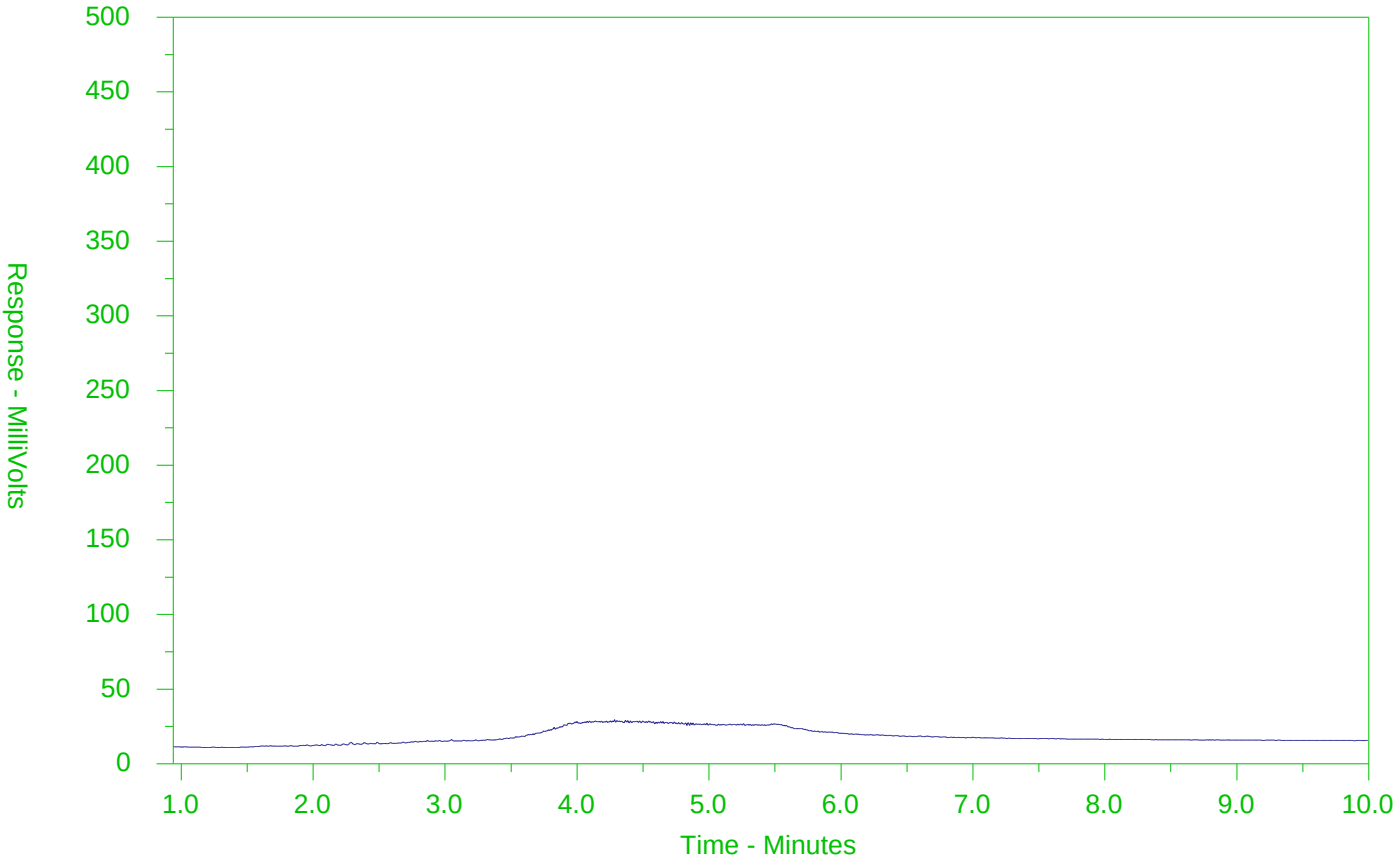
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1904748-2
Client Sample ID: S-11131634-032117-TB-013



←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 - 555358

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	GHD Limited
Contact:	Preeti Gururajan
Phone:	519-884-0510
	Company address below will appear on the final report
Street:	651 Colby Drive
City/Province:	Waterloo, ON
Postal Code:	

Report Format / Distribution

Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2
Email 3

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ | Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Invoice To		
	Same as Report To	☑ YES ☐ NO
	Copy of Invoice with Report	☑ YES ☐ NO
Company:		
Contact:		

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information

ALS Account # / Quote #:
Job #: 1113163 4
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#
Major/Minor Code: | Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L1904748 DPH

ALS Contact: Laura Ermeta

Sampler: T. Brindle

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PHC	Number of Containers
	S-HHIS-QC-					6
1	S-1113163 4-032117-TB-012	21-Mar-17	18:50	SOIL	X	3
2	S-1113163 4-032117-TB-013	21-Mar-17	18:55	SOIL	X	3

L1904748-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

- no extra trip blank for submission
- Please see PO for details of analysis & for RSC

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ | Custody seal intact Yes ☑ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	9.8

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by: PH	Date: 23-MAR-17	Time: 17:05
	03/23/17	17:05						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

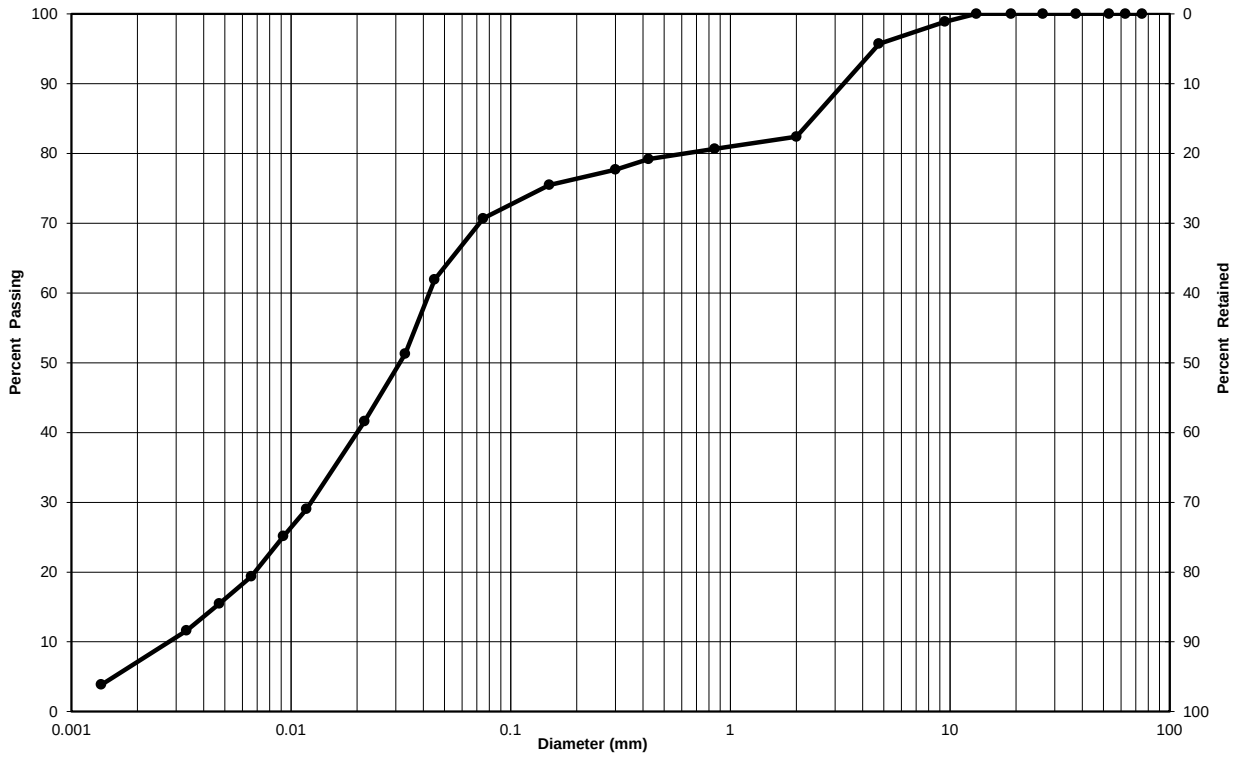
OCTOBER 2015 FRONT

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**.

Particle-Size Analysis of Soils
ASTM D422 (Geotechnical)

Client:	Rankin Construction Inc.	**Lab no.:**	SCL 974
Project, Site:	Rankin - Ph. 2 ESA-Services / Legion Property	**Project no.:**	11131634-20
Borehole No.:	MW3-17	Sample No.:	MW3-17 1.52-2.13m
Depth:	1.52-2.13m	Enclosure:	



Clay	Silt	Sand		Gravel	
		Fine	Coarse	Fine	Coarse
Particle-Size Limits as per AASHTO Classification System (M-145)					

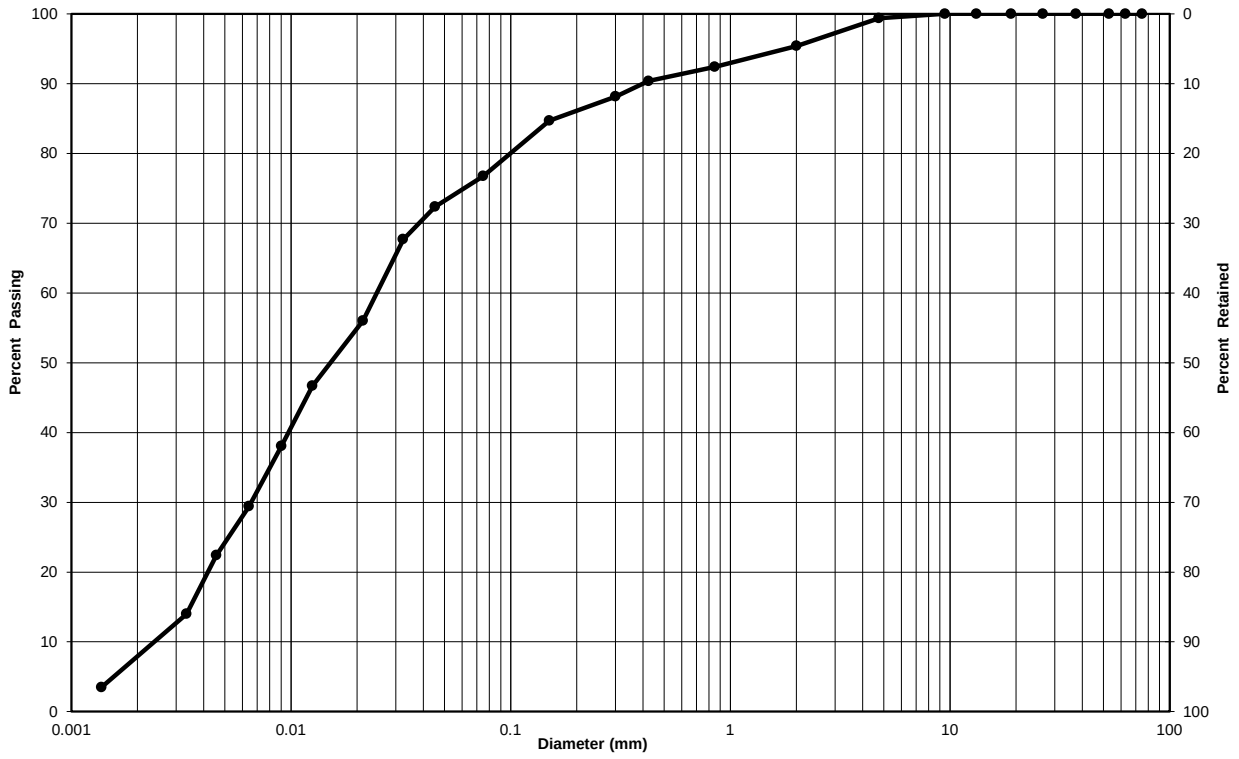
Soil Description	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
Sandy silt, trace clay, trace gravel	4	25	64	7

Remarks:

Performed by:	P. Pelino	**Date:**	March 29, 2017
Verified by:	Wayne Redd	**Date:**	April 4, 2017

Particle-Size Analysis of Soils
ASTM D422 (Geotechnical)

Client:	Rankin Construction Inc.	**Lab no.:**	SCL 974
Project, Site:	Rankin - Ph. 2 ESA-Services / Legion Property	**Project no.:**	11131634-20
Borehole No.:	MW6-17	Sample No.:	MW6-17 1.52-2.13m
Depth:	1.52-2.13m	Enclosure:	



Clay	Silt	Sand		Gravel	
		Fine	Coarse	Fine	Coarse
Particle-Size Limits as per AASHTO Classification System (M-145)					

Soil Description	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
Sandy silt, trace clay, trace gravel	1	22	69	8

Remarks: Silt-size particles (0.074 to 0.002 mm): 69%, Clay-size particles (<0.002 mm): 8%

Performed by:	P. Pelino	**Date:**	March 29, 2017
Verified by:	Wayne Nadd	**Date:**	April 4, 2017



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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